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COMPLETION REPORT

(September 2003 – September 2010)

THE FISHERIES IMPROVED FOR SUSTAINABLE HARVEST (FISH) PROJECT

9 December 2010
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COMPLETION REPORT
9 December 2010

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2003-2010

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List of Abbreviations & Acronyms

2CCM	2nd Conference of Coastal Municipalities in the Philippines
ABU	Asia-Pacific Broadcasting Union
AFMA	Agriculture and Fisheries Modernization Act
AIP	annual investment plan
ANC	ABS-CBN News Channel
APREDEC	Advocacy for Policy Reform and Development of Caraga, Inc.
ARMEG	Advocacy for Resource Management and Environmental Governance
ARMM	Autonomous Region in Muslim Mindanao
ASEAN	Association of Southeast Asian Nations
BAP	best aquaculture practices
BEAT	bay-wide enforcement and action team
BEMO	Bohol Environment Management Office
BIR	Bureau of Internal Revenue
CBEDS	Caglayag-Baybay-Embarcadero-Doyos-Seca Fishermen's Organization
CBFMA	community-based forest management agreement
CCEF	Coastal Conservation and Education Foundation
CCRMP	Camiguin Coastal Resource Management Project
CDA	Cooperative Development Authority
CELEBOSOLE	Cebu-Leyte-Bohol-Southern Leyte alliance
CEPU	Coastal Environment Protection Unit
CFVL	commercial fishing vessel license
CI	Conservation International
CITES	Convention on International Trade in Endangered Species of Fauna and Flora
CLEC	Coastal Law Enforcement Council
CLIN	Contract Line Item No.
CNFIDP	Comprehensive National Fisheries Industry Development Plan
COP	Chief of Party
CPUE	catch per unit effort
CRM	coastal resource management
CRMP	Coastal Resource Management Project
CSO	civil society organization
CSR	corporate social responsibility
CTI	Coral Triangle Initiative
CUSW	Cebu Uniting for Sustainable Water
CVRP	Central Visayas Regional Project
DA	Department of Agriculture
DA-BFAR	Department of Agriculture-Bureau of Fisheries and Aquatic Resources
DAO	Department Administrative Order
DBM	Danajon Bank MPA Network
DCOP	Deputy Chief of Party
DED	Deutscher Entwicklungsdienst (German Development Service)
DENR	Department of Environment and Natural Resources
DF-AAO	Department of Fisheries-ARMM administrative order
DILG	Department of the Interior and Local Government
DOJ	Department of Justice
DOTC	Department of Transportation and Communication
EAF	ecosystem approach to fisheries
EBFM	ecosystem-based fisheries management
ECCCS	Environmental Coalition of Church and Civil Society
ECOGOV	Environmental Governance Project

ECSMF	Executive Course on Sustainable Municipal Fisheries
EEZ	exclusive economic zone
ELAC	Environmental Legal Assistance Center
EO	executive order
FAO	fisheries administrative order
FARMC	fisheries and aquatic resources management council
FCRMIC	Fisheries and Coastal Resource Management Interpretive Center
FIDEC	Fisheries Development Center
FISH Project	Fisheries Improved for Sustainable Harvest Project
FMU	fisheries management unit
FOO	fisheries office order
FPE	Foundation for the Philippine Environment
FPR	FISH Project result
GCM	growth, control and maintenance
GPS	global positioning system
GRP	Government of the Republic of the Philippines
GT	gross ton
GTZ	Deutsche Gesellschaft für Technische Zusammenarbeit GmbH (German Society for Technical Cooperation)
ha	Hectare
HB	House bill
ICM	integrated coastal management
ICRMP	Integrated Coastal Resource Management Proejct
IEC	information, education and communication
IPOA	International Plan of Action
IR	intermediate result
IRR	implementing rules and regulations
ISLAMDUNK	Islahanon Andam Magdumal Nan Kinaiyahan
IUU	illegal, unregulated and unreported fishing
kg	kilogram
km^2	square kilometer
KSRLA	Kasalamatan Sin Raayat Lagasan Association
LBDA	Lanuza Bay Development Alliance
LGC	Local Government Code
LGU	local government unit
LMP	League of Municipalities of the Philippines
M&E	monitoring and evaluation
m^2	square meter
MAC	Marine Aquarium Council
MAFO	Municipal Agriculture and Fisheries Office
MARINA	Maritime Industry Authority
MCLET	municipal coastal law enforcement team
MCS	monitoring, control and surveillance
MDC	Mayors Development Center
MEAT	municipal enforcement and action team
MEDCO	Mindanao Economic Development Council
MENRO	municipal environment and natural resources office
MFARMC	municipal fisheries and aquatic resources management council
MGB	Mines and Geosciences Bureau
MMAA	Muslim Mindanao Autonomous Act
MOA	memorandum of agreement
MOREFISH	Movement for Responsible Fisheries
MOU	memorandum of understanding
MPA	marine protected area
MSN	Marine Protected Area Support Network
MSP	marine spatial planning

MTFDMP	medium-term fisheries development and management plan
MUFTI	Muslim Upliftment Foundation in Tawi-Tawi, Inc.
NAFC	National Agriculture and Fisheries Council
NALECC	National Law Enforcement Coordinating Council
NAMANAKA	Nagkahiusang Mananagat na Nag-amping sa Kadagatan
NAMRIA	National Mapping and Resource Information Authority
NAPC	National Anti-Poverty Commission
NBN	National Broadcasting Network
NEDA	National Economic and Development Authority
NFR	NGOs for Fisheries Reform
NFRDI	National Fisheries Research and Development Institute
NGA	national government agency
NGO	non-governmental organization
NHK	Japan International Broadcasting Inc.
NIPAP	National Integrated Protected Areas Programme
NIPAS	National Integrated Protected Areas System
No.	Number
NPOA	National Plan of Action
NPOA-IUU	National Plan of Action to Prevent, Deter and Eliminate Illegal, Unregulated and Unreported Fishing
NSAP	National Stock Assessment Project
NTC	National Telecommunications Commission
NZAID	New Zealand Agency for International Development
P3DM	participatory 3-dimensional modeling
PAMB	Protected Area Management Board
PAWB	Protected Areas and Wildlife Bureau
PBSA	performance-based service acquisition
PCG	Philippine Coast Guard
PCLET	Provincial Coastal Law Enforcement Team
PCRA	participatory coastal resource assessment
PCSD	Palawan Council for Sustainable Development
PEDO	Police Environment Desk Officer
PEMO	Provincial Environment Management Office
PEMSEA	Partnerships in Environmental Management for the Seas of East Asia
PFARO	Provincial Fisheries and Aquatic Resources Office
PNP	Philippine National Police
PO	people's organization
PR	Project result
PSF	Project Seahorse Foundation for Marine Conservation
RA	Republic Act
REECS	Resources, Environment and Economics Center for Studies, Inc.
REO	regional executive order
RFAO	regional fisheries administrative order
RFMO	regional fisheries management organization
SAF	Special Activities Fund
SAFDZ	special agriculture and fisheries development zone
SALIGAN	Sentro Alternatibong Lingap Panligal
SB	Sangguniang Bayan
SCIPG	Supreme Council for Islamic Preaching and Guidance
SEAT	sanctuary enforcement and action team
SEC	Securities and Exchange Commission
SET	sanctuary enforcement team
SFMEP	Sub-committee on Fisheries and Marine Environmental Protection
SO	strategic objective
SO4	Strategic Objective 4
SOBA	Save Ormoc Bay Aggrupation

SOW	statement of work
SPSC	Surigao del Sur Polytechnic State College
SRA	Social Reform Agenda
SUMACORE	Sustainable Management of Coastal Resources in the Caraga and Bicol Regions
t	ton
TAC	total allowable catch
TALCRECO	Talibon Credit Cooperative
TBFSA	Tawi-Tawi Bay Fish Sanctuary Alliance
TEMO	Tawi-Tawi Environment Management Office
TESDA	Technical Education Skills and Development Authority
TWG	technical working group
UN	United Nations
UN-FAO	United Nations Food and Agriculture Organization
UPMSI	University of the Philippines Marine Science Institute
UPVFI	University of the Philippines in the Visayas Foundation, Inc.
USAID	United States Agency for International Development
VSU	Visayas State University
WCPFC	Western and Central Pacific Fisheries Commission
WWF	World Wide Fund for Nature

CHAPTER 1
Objectives & Broad Strategies

1.1. Introduction

The Fisheries Improved for Sustainable Harvest (FISH) Project was drawn up to respond to the United States Agency for International Development (USAID)/Philippines Strategic Objective 4 (SO4) under the Mission's Results Framework for 2000-2004, "Productive and life-sustaining natural resources protected through improved management and enforcement." For much of its life, however, it operated under the 2005-2009 USAID/Philippines' Results Framework, with a rephrased SO4, "Management of productive, life-sustaining natural resources strengthened." Under this new framework, it also directly contributed to a limited extent to SO3, "Health and well-being of Filipinos promoted through support for improved and decentralized service delivery, increased private sector involvement and social acceptance of family planning and policy reform."

Conceived near the end of USAID's well-regarded Coastal Resource Management Project (CRMP, 1996-2004), FISH was designed to bring to the next level the Philippine experience in coastal resource management (CRM) by building much needed fisheries management capacity especially at the local level. It had a total life of 7 years, consisting of a 5-year base period (2003-08) and a 2-year optional extension period (2009-10) stipulated under a performance-based "cost-plus-award fee" or incentive contract. The contract was awarded based on a performance-based service acquisition (PBSA) or performance-based contracting method of procuring services from the private sector which has been the US Federal Government's preferred method since 2002.

Coming off CRMP's successful campaign to mainstream CRM on the Philippine national agenda, the Project was tasked to work with the Government of the Republic of the Philippines (GRP) through the Department of Agriculture-Bureau of Fisheries and Aquatic Resources (DA-BFAR) and other concerned agencies to harness the local governments' recognition and acceptance of their role as frontline coastal managers to begin a process of reform from open access to managed resource use. A key result area was the adoption of the next crucial benchmark in managing fisheries and coastal resources in the Philippines based on an integrated, ecosystem approach to fisheries management driven by informed, disciplined and cooperative stakeholders at national and local levels, particularly in the municipal marine capture fisheries sector.

This chapter explains the rationale behind this mandate, the work done to develop the Project results framework and the broad strategies that determined technical assistance delivery.

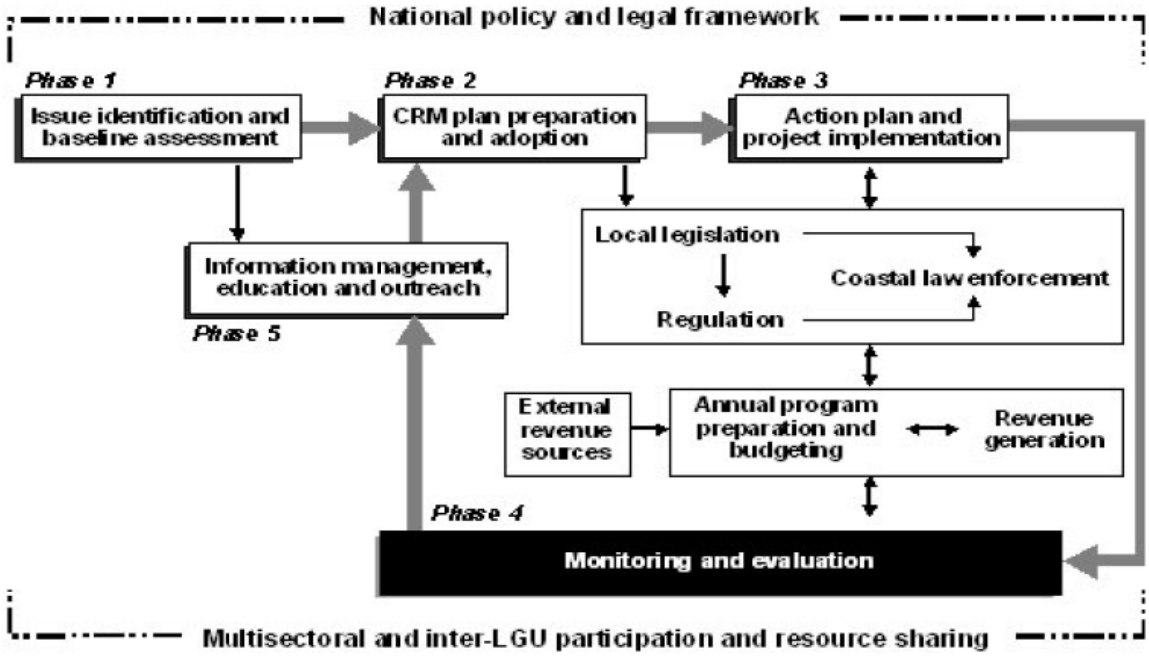
1.1.1. Rationale

The focus on fisheries (rather than on other CRM sectors, or even perhaps on broadening the CRM experience through another CRMP-type project with a wider scope) was all at once timely, necessary and urgent. Close to the end of CRMP, more than 10 years after the Local Government Code devolved the responsibility for managing coastal areas and resources, a critical mass of local

government units (LGUs) had finally began exercising, albeit to a limited extent, such responsibility. CRMP had defined a management process that LGUs could adapt to its various CRM functions. Moreover, it successfully institutionalized this process in more than a hundred LGUs across the country, as well as promoted wide acceptance of the LGU's role as a primary authority in the coastal zone.

CRMP's capacity-building was anchored on the 5-phase management process that included issue identification and resource assessment, plan preparation and adoption, action planning and implementation (encompassing resource allocation, legislation and law enforcement), monitoring and evaluation, and information management, education and outreach (Figure 1.1). Given the scope and mandate of the project, technical assistance was necessarily limited to equipping the national government (specifically the Department of Environment and Natural Resources, or DENR) and LGUs in the basic CRM process that addressed broader coastal issues related to habitat destruction and degradation, primarily through marine protected areas (MPAs) and mangrove management, for which community-based methodologies had been previously tested by various research-based, non-governmental organization (NGO)-led and donor-assisted initiatives.

Figure 1.1. 5-phase CRM process adapted for Philippine local government units
(DENR, 2001)



Still, the remarkable progress made in promoting acceptance of the CRM process particularly among LGUs had created an opportunity to focus on areas that had yet to be significantly addressed by capacity-building initiatives at both national and local levels, primarily those areas that dealt directly with marine fish and fishing, two of the most important components of the coastal ecosystem.

There was an underlying urgency in this opportunity: On March 15, 2003, at a conference organized by CRMP, leading marine and fisheries scientists presented a bleak assessment of the state of Philippine fisheries and issued the following consensus statement (Luna, 2004):

> *"Having reviewed the status of [the country's fishery resources] based on the best available scientific evidence, we have arrived at the following conclusions:*
>
> - *The marine fishery resources of the country are severely depleted. In the case of demersals, for example, biomass levels are today only 10-30% of the levels in the late 1940s. For small pelagics, by the 1980s the average catch rate was only one-sixth of the rate in the 1950s. In reef fisheries, the present catch rates are among the lowest in the world.*
> - *Coastal habitats that are critical for supporting fisheries are severely degraded. Less than one-third of mangrove areas remain of the original 450,000 ha in 1918, and 95% of the remaining mangroves are secondary growth of much lower quality. An estimated half of seagrass beds have been lost or severely degraded during the past 50 years. Over 70% of the coral reefs in the country are in a poor state, while less than 5% are in excellent condition.*
> - *On the average, about 25-30% of total catch is lost due to improper post-harvest practices. Inefficient marketing results in further economic losses.*
> - *Commercial and municipal fishers remain locked in intense competition despite laws designed to separate their fishing grounds. Conflicts between and within these sectors are severe and continue to escalate.*
> - *Poverty is a ubiquitous feature of coastal communities. As high as 80% of small fishers live below the poverty threshold.*
> - *At both national and local levels, our systems for fisheries management are characterized by: (i) inadequate policies; (ii) weak interagency coordination and weak law enforcement; and (iii) inadequate human resources and capacity, infrastructure and equipment.*
>
> *Sustaining the host of benefits obtained from the country's fishery and coastal resources requires urgent and concerted action by responsible authorities and the wider community of stakeholders at the national, regional and local levels… We appeal to responsible authorities and agencies to take stock of the problems and urgently put in place the necessary programs of action for the benefit of current and future generations of Filipinos. Recognizing that progress in sustaining the benefits from our coastal resources will take time and sustained collaborative efforts, we appeal to the wider community of stakeholders for unity in meeting the challenges ahead."*

1.1.2. Scope and focus

Initiated in September 2003, FISH was in a good position to respond to the scientists' call "for improved management of the country's coastal and fishery resources," which identified the following "six critical actions to reverse the decline of Philippine marine fisheries" (Luna, 2004):

- Reduction and rationalization of fishing effort;
- Protection, rehabilitation and enhancement of coastal habitats;
- Improved utilization of harvests;
- Enhanced local stewardship and management of resources;
- Supplemental/alternative livelihood for fishers; and
- Capacity building and institutional strengthening.

The scientists outlined the following "basic steps and processes that accommodate these critical actions" based largely on the above-mentioned CRMP-prescribed CRM process (Luna, 2004):

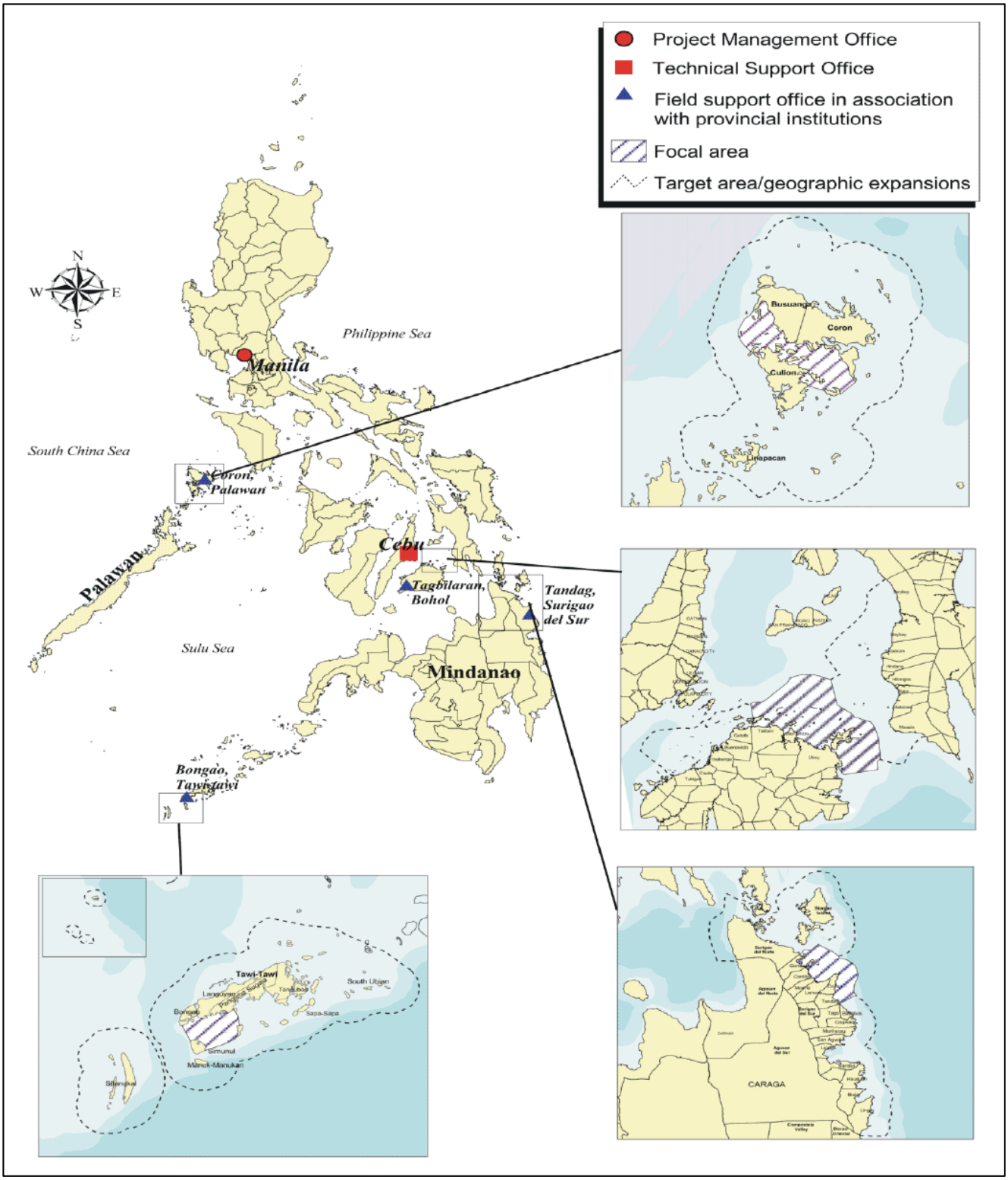
- Resource assessment in a manner that provides useful information for management planning and that informs and educates the stakeholders of concern;
- Coastal resources and fisheries management planning at a scale that facilitates coordination, implementation and feedback into the management planning cycle within and among LGUs;
- Institutional capacity building at various levels in government to facilitate the management planning process and to catalyze implementation using tested techniques and successful field projects;
- Facilitating coordination and participation among and by all concerned stakeholders in the government, non-government and private sectors;
- Raising awareness of the management rules and the process of implementation through various education and media programs;
- Enforcement of rules set by management through multi-sector teams; and
- Research, monitoring and evaluation that continue to inform management planning and implementation.

As well as the specific terms and conditions of USAID Contract No. 492-C-00-03-00022-00 governing FISH, these expert recommendations and developments in Philippine CRM governance guided the formulation of the Project's operational framework. The strategic focus was "marine capture fisheries," primarily those issues that had yet to be significantly addressed by capacity-building efforts at both national and local levels, including overfishing, illegal fishing, habitat destruction, and increasing demand for fish caused by high population growth.

1.2. Objectives & Area of Operation

The objective, as spelled out in the Project's 17-page Statement of Work (SOW), was "to conserve biological diversity in at least 4 biologically and economically important marine ecosystems in the Philippines, as measured by an increase in fish stocks and the maintenance of selected coastal resources that support them with environmental services... to improve the management of these fish stocks and environmental resources, such as coral reefs and mangroves... in order to support a more sustainable yield of marine fish stocks... [and to encourage] the DA-BFAR and LGUs... to replicate this ecosystem management approach in other marine and coastal ecosystems." (USAID, 2003)

Figure 1.2. "Priority ecosystems" (target areas) and focal areas identified in the FISH Project's Statement of Work (USAID, 2003)



The following criteria were considered in the selection of the "priority ecosystems" to be covered under FISH (USAID, 2003):

- Economic value of fish stocks;
- Ecological value of the ecosystem;
- Level of threat to sustainable use of coastal resources and marine fish stocks from fishing pressure and destructive fishing practices; and
- Willingness of local stakeholders to adopt improved fisheries management practices.

Based on these criteria, FISH was directed to operate in 4 areas, where it was expected to result in a 10% increase in fish stocks by end-of-Project (2010), using 2003 as the baseline year. These areas were (1) Calamianes Group of Islands, Palawan, Luzon; (2) Danajon Reef, Bohol, Central Visayas; (3) Mindanao's Sulu archipelago with particular focus on Tawi-Tawi; and (4) Mindanao's Pacific seaboard in Surigao del Sur (USAID, 2003) (Figure 1.2). All 4 were deemed to contain economically important marine fishery and coastal resources, and all except Surigao del Sur were said to be heavily exploited (Tandog-Edralin, 1987). They were all also listed as "very high" to "extremely high" conservation priorities by the Philippine Biodiversity Conservation Priorities Initiative and reported as showing "high" or "very high" reef threat levels (WRI, 2002).

1.3. Implementation Components

The SOW identified "three inter-related components" contributing to the FISH objective:

1. Strengthening the capability of local and national institutions to manage coastal resources and marine fish stocks;
2. Improving national and local policies for more sustainable use of coastal resources and marine fish stocks; and
3. Building national and local support for more responsible management of coastal resources and marine fish stocks (USAID, 2003).

The SOW stated, "Project activities will work to establish sound policies; strengthen the ability of both national and local institutions to plan, implement and evaluate management actions; and build political will to carry out more effective governance of coastal resources and marine fish stocks. The promotion of improved governance – transparency, accountability and participation – permeates throughout the Project implementation. The building of local and national capacity to manage coastal resources and marine fish stocks serves as the core activity of the Project, with advocacy and policy work as support mechanisms to institute responsible management of coastal resources and marine fisheries" (USAID, 2003).

Based on the above specifications of the SOW, FISH listed in its Life-of-Project Work Plan the following 3 main tasks (FISH Project, 2004):

Task 1. **Capacity building for fisheries management**. This task comprised the bulk of field initiatives in the Project sites, which would be devoted to instituting fisheries management in the local governance system. Under this task, local stakeholder groups comprised of strategic LGUs (municipal and provincial), fishing sectors,

regional and provincial DA-BFAR staff and other national government entities, NGOs, academic institutions and private sector groups would be tasked to work with the Project. Participatory resource management planning and the implementation of a variety of fisheries management measures would be pursued, complemented by workshops, trainings and study tours to help build the knowledge, experience and confidence of target stakeholders in planning and implementing fisheries management.

Task 2. **Policy framework improvement for fisheries management.** This task covered 2 main issues: 1) improving the national policy framework for fisheries management to address local priority concerns and applicability, and 2) responding to local policy issues and guiding local policy development. Activities would focus on helping DA-BFAR and other relevant agencies and stakeholders to review and enhance national laws, policies and plans or programs consistent with the principles of sustainable fisheries and national commitments to international fisheries agreements and protocols.

Task 3. **Constituency-building for fisheries management.** The primary concern under this task was to provide support in the following 3 major areas:

a. Promotion of public-private sector partnership to leverage support and expand constituency for fisheries management;
b. Development of multi-media educational campaigns and training programs targeting different stakeholder groups; and
c. Utilization of broadcast (TV and radio), electronic and print media to raise awareness on the causes and effects of overfishing and possible remedies and solutions.

Two additional tasks were defined in the work plan to support and complement the above tasks: Task 4, which covered Project management and performance monitoring, and Task 5, defined as "special performance incentive activities" under a "Special Activities Fund" (SAF). The 5 tasks coincided with the Project's Contract Line Item Numbers (CLIN) 1-5; CLIN 6 corresponded to the performance award/fee. Except for the SAF, which would be terminated in 2008 at the end of the 5-year base period, these tasks would all be implemented well into 2010, the last year of Project implementation.

1.4. Organizational Structure

Following the terms of its plan, the Project set up an organizational structure consisting of a field operations unit; 3 main technical groups tasked to provide policy, fisheries management and information-education-communication (IEC)/training support to Project partners and the field operations group; and an administration support group that was also responsible for managing the SAF.

The organizational structure defined the lines of authority primarily for determining the hub where direction and coordination would emanate and for establishing responsibility centers and

financial controls. Functionally, FISH was intended to work as a flat organization, relying less on written policies and procedures than on team norms. The Project as a whole was meant to work as a team, with the different groups operating as closely linked "cells." This meant, for example, that while the "fisheries management" group was the responsibility center for building the capacity of national and local stakeholders to plan and implement fisheries management, capacity-building would be a task shared by all groups.

The tasks of the Project as well as those of each cell were formally documented and communicated, but the ways in which the cells and their members would relate to and interact with each other were expected to develop over time in the course of implementation. Expertise was intended to be shared and exchanged freely among the cells.

In order to "marry" the best available experiences in CRM and fisheries management, the Project assembled experts in several disciplines, including fisheries science and marine biology; social sciences; policy; organizational development; IEC; training; coastal law enforcement; and community organizing. Formal leaders were appointed to establish accountability, but any team member with the appropriate expertise was expected at any time to step up and provide guidance to any cell requiring specific skills or knowledge.

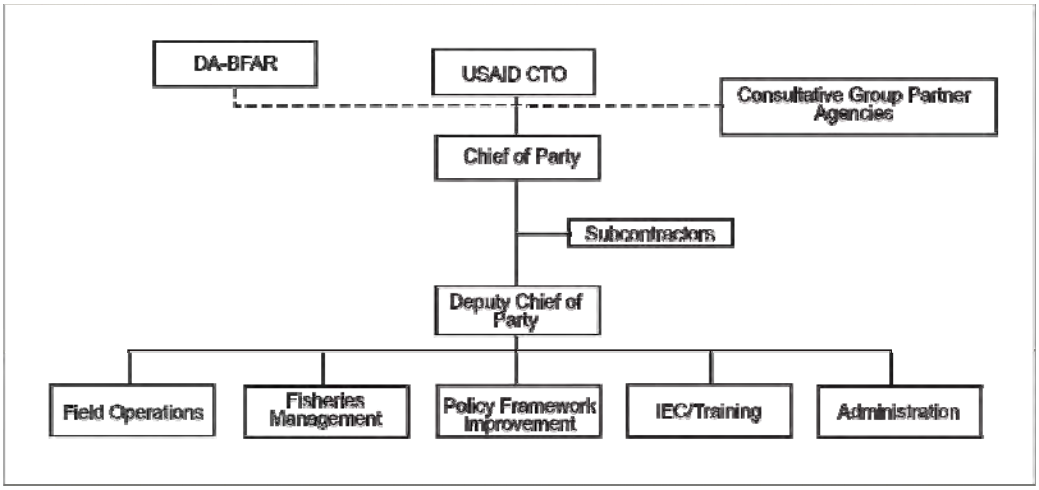
For example, the Project's training experts were assigned to the "IEC/training group," but they were expected to be tapped by and provide advice and guidance to the fisheries management group on the application of appropriate training methodologies to fisheries management. The fisheries experts in the team, on the other hand, were mandated to provide the technical guidance necessary for the IEC and training experts to put together effective training and information materials relevant to the Project's capacity-building objectives.

The organizational and coordination setup created at the start of the Project would go through a few modifications over time, but generally followed the structure shown in Figure 1.3. The Chief of Party (COP), based in Manila, would provide overall Project management and leadership, including policy direction and technical guidance, and deal with external affairs. The COP held the ultimate responsibility for the performance of the Project team and the success of the Project.

Originally, there were 2 Deputy Chief of Party (DCOP) positions – a DCOP for Administration tasked to provide administrative support, personnel and procurement management, and a DCOP for Field Operations responsible for coordinating the provision of technical support to field implementation. Midway through implementation, however, these 2 positions and corresponding responsibilities were merged and assumed by 1 DCOP based in Cebu.

"Advisors" and "specialists" were designated to provide guidance to field implementation in the following areas: fisheries management, IEC, coastal law enforcement and policy. At the field level, site managers with the assistance of the advisors and specialists were responsible for the implementation of management programs in their respective areas, and for coordination with local partners and institutions.

Figure 1.3. FISH Project organizational and coordination structure (simplified)



As needed, the Project would also engage institutional partners to implement some component activities and to augment in-house expertise in policy development, baseline assessment, fisheries profiling, select fisheries management interventions and reproductive health, as well as provide field implementation support.

1.5. Approach & Strategies

In translating the SOW to operational terms, FISH faced the challenge of developing a strategic approach that would bring it as close as possible to its mandated targets, while responding effectively to the realities of implementation, the expectations of the GRP and USAID, and the needs of the LGUs and communities it was mandated to assist. To achieve its target of increasing fish stocks by 10% by 2010, the Project had to accomplish 3 crucial tasks:

1. Put in place management systems to promote an increase in fish stocks;
2. Measure the increase; and
3. Sustain the gains beyond the life of the Project

There was no question that these tasks would be challenging. Although there had long been wide recognition of the need for fisheries management interventions, and some details of how to go about them were available, FISH was essentially attempting something that had not been tried before: Put together a functioning, comprehensive approach to fisheries management based on and driven by the local government and supported by a governance system made up of institutions mandated to perform the various management functions and a constituency that pushes for their implementation. With all these in place it was hoped that the Project would reverse the decline of fisheries in its sites and at the minimum build the capacity of LGUs to sustain the gains.

The Project's overall framework was anchored on catalyzing normative change in the marine capture fisheries sector to directly challenge its culture of open access fishing and the mindsets and practices that perpetuate it. Keeping sight of capacity-building as its core activity, FISH sought to

formulate an approach that was focused but widely applicable, generating lessons and processes in a form that was all at once site-specific, replicable and accessible nationwide. An implicit requirement was the participation and integration of DA-BFAR, as the primary authority and technical assistance provider on matters related to fisheries, into the capacity-building initiative. It had been established that the LGUs lacked the capacity to manage fisheries. This pointed to a weakness in DA-BFAR's service delivery to municipalities, which the Project was expected to address as a matter of course.

1.5.1. Ecosystem approach to fisheries

One premise behind FISH was that the productivity or growth of fish populations could be increased through the use of an ecosystem approach to fisheries (EAF), which as indicated in the SOW, was the preferred approach (USAID, 2003). As defined, this approach would include the following features:

1. It would consider geographically specified fisheries boundaries and management areas;
2. It would take into account current knowledge and uncertainties about the environment and human components of coastal and marine ecosystems as they pertain to fisheries, and strive to balance diverse objectives in using the ecosystem;
3. It would address human activities and environmental factors that affect these ecosystems, the response of the ecosystems, and the outcomes in terms of benefits and impacts on humans; and
4. Where the ecosystem was already degraded, it would work at rebuilding and restoring the ecosystem, and moving toward sustainable use.

To formulate its operational framework for EAF, FISH considered the wealth of local experience in CRM in order to determine how general fisheries management concepts and specific measures could be most strategically integrated into the CRM process. The framework that developed was described as a "convergence of approaches" and "incremental" (FISH Project, 2006). Using the legal and institutional framework for fisheries management already existing (but not effectively functioning) at both national and local levels of government, Project operation was programmed to start "small" on a local scale, building on CRM units already functioning at the barangay, municipal and provincial levels to gradually introduce the strategies, processes, techniques and procedures needed for fisheries management to happen, and at some point scaling up where possible to medium and larger-scale fisheries management.

As defined in the SOW, the Project's "priority ecosystems" (target areas) spanned extensive geographic areas characterized by nearshore and offshore marine environments spread across many jurisdictions (Table 1.1). Tawi-Tawi, the biggest ecosystem in terms of surface area, has more than 300 islands and islets and extensive municipal waters (more than 11,000 km^2). The smallest, Danajon Bank, covers over 2,200 km^2 under multiple jurisdictions (16 municipalities and 2 cities in 4 provinces and 2 regions).

Given the limited life and resources of the Project, it would be impracticable to even attempt to cover these ecosystems in their entirety. The identification of priority areas (focal areas) and priority activities early in Project implementation would be crucial in ensuring that at least one full

planning and implementation cycle would be completed leading up to the integration of fisheries management in the CRM process.

Table 1.1. FISH Project priority ecosystems

Priority Ecosystem/ Target Area	Province	Municipality	Shoreline (kms)
CALAMIANES GROUP OF ISLANDS	Palawan	Busuanga (FA)	120
		Coron (FA)	381
		Culion (FA)	391
		Linapacan**	196
Total	1	4 (3 FA)	1,088
DANAJON BANK	Bohol	Tubigon**	28
		Clarin**	29
		Inabanga**	62
		Buenavista**	32
		Getafe**	77
		Bien Unido (FA)	45
		Trinidad**	8
		Ubay (FA)	61
		President Carlos P. Garcia (FA)	76
		Talibon (FA)	86
	Cebu	Lapu-Lapu City	112
		Cordova	21
	Leyte	Matalom**	14
		Bato**	4
		Hilongos**	12
		Inopacan**	10
		Hindang**	7
	Southern Leyte	Maasin City**	25
Total	4	18 (4 FA)	709
MINDANAO'S PACIFIC SEABOARD IN SURIGAO DEL SUR	Surigao del Sur	Barobo	49
		Bayabas	21
		Bislig	21
		Cagwait	22
		Carmen (FA)	--
		Cantilan (FA)	19
		Carrascal (FA)	74
		Cortes (FA)	35
		Hinatuan	67
		Lanuza (FA)	21
		Lianga	21
		Lingig	74
		Madrid (FA)	3
		Marihatag	20
		San Agustin	25
		Tandag (FA)	14
Total	1	16 (7 FA)	486
MINDANAO'S SULU ARCHIPELAGO WITH FOCUS ON TAWI-TAWI	Tawi-Tawi	Bongao (FA)	20
		Languyan	142
		Mapun	51
		Panglima Sugala (FA)	94
		Sapa-Sapa	58
		South Ubian	44
		Simunul (FA)	29
		Manuk-Manukan	17
		Tandubas	241
Total	1	9 (3 FA)	821

*Focal area **Expansion area

With USAID's approval, FISH drew up an operational plan that identified its focal areas, where it would focus management interventions to effect positive and measurable change over its life-of-Project. One focal area, consisting of between 3 and 7 municipalities, was selected within each of the target ecosystems using a screening process that considered geopolitical aspects, exploitation patterns, feasibility of Project implementation, and resource condition. Invariably, the selection favored areas that made both geographic and operational sense, with fisheries and coastal resources that were in relatively good condition but facing a high degree of threat.

The focal areas would have 2 purposes: first, as "benchmark areas" where Project baselines and performance especially with respect to biophysical indicators could be measured, and second, as a laboratory of sorts where processes could be tested toward the integration and institutionalization of fisheries management in the local governance system.

At the outset at the local level, it was understood that, at least in the first 2 years, Project operations would focus on the focal areas, collecting baseline information as well as filling capacity gaps in those aspects of fisheries management further down in the management cycle, such as law enforcement and IEC. "Early management actions" would be pursued, generally based on stakeholders' (and the LGUs') perceptions of the relative economic importance of a threatened fishery resource and their willingness to accept regulation on its exploitation. This was a strategy to allow the Project to demonstrate to its partner LGUs the benefits of management, build support and constituency for fisheries management, and gradually engender acceptance of "unpopular" measures that would directly address overfishing by restricting and reducing fishing effort. It would also allow the Project time to equip LGUs with the tools they needed to undertake their own fisheries management.

1.5.2. Parameters of technical assistance

Technical assistance was focused on a set of growth, control and maintenance (GCM) mechanisms that promoted ecosystem health and the recovery of fish stocks while emphasizing the active engagement of both national and local stakeholders in a learning-by-doing setting. These mechanisms consisted of specific action items, as follows:

- *Growth mechanisms to enhance fisheries production and marine ecosystem integrity:*
  - ✓ Establishment of networks of resilient MPAs for critical habitats and open water to protect spawning, migration routes, populations of mature fish, endangered species and other resources with no-take "sanctuaries" and management zones.
  - ✓ Promotion of environment-friendly economic development and revenue-generating mechanisms such as marine ecotourism, user-fee systems and appropriate aquaculture.
- *Control mechanisms to allocate access to fisheries and coastal resources:*
  - ✓ Restrictions on fishing gear, fish size limits, fishing areas and seasons to achieve sustainable fishing based on the results of the baseline assessment, critical threats analysis, and stakeholder planning.

- ✓ Registration of fishers and issuance of licenses for fishing vessels and gear (municipal and commercial) based on estimated sustained yield of fish stocks.
- ✓ Establishment of a licensing system supported by legislation for commercial fishing vessels to operate in areas where sustainable yields of fish stocks can be expected and regulated.
- ✓ Training of coastal law enforcement units to enforce fisheries and other coastal resource-related laws.

- *Maintenance mechanisms to improve institutional capacity for fisheries and CRM.*
  - ✓ Development of a fisheries management program based on EAF to address critical threats to fisheries and other coastal resources
  - ✓ Clustering of LGUs into viable fisheries and CRM units in association with interagency and multi-sectoral collaborative mechanisms for planning, implementation and enforcement.
  - ✓ Integration of population and reproductive health programs in fisheries management based on the underlying issue of food security.
  - ✓ Identification of appropriate and efficient market-based incentives for compliance with and investments in sustainable fisheries
  - ✓ Promotion of public-private partnerships for fisheries management.

1.6. Results Framework & Performance Measures

As a development initiative, the Project would be evaluated based on its impacts on governance and society as well as the natural environment. Project performance would be measured against indicators contained in a Results Framework developed based on the SOW at the start of the Project in 2003. The Results Framework (Table 1.2) laid down the expected results, indicators, and units of measure for both the biophysical and institutional capacity outcomes of the various Project activities. Implementation activities and their results were monitored and evaluated regularly to inform Project management, and compiled in quarterly and annual reports according to USAID requirements.

1.6.1. Project Results (PR)

The target FISH Project Result (FPR) of 10% increase in fish stocks at the strategic objective level was set by USAID based on what some fisheries studies had shown as a reasonable average recovery rate of stressed tropical fisheries ecosystems over 7 years of management. To achieve this target, the Project would directly assist fisheries management interventions in the focal areas, where baseline conditions of fish stocks would be determined. At some point during its 7-year term, FISH would expand its operation within each of its priority ecosystems, but the expansion areas would not be included in the calculation of the FPR.

Three intermediate results (IR) and corresponding indicators fed into the strategic objective:

IR1. National and local capacity for fisheries management increased in 4 target areas;

IR2. National policy framework developed supporting sustainable fisheries; and

IR3. Constituency of informed, disciplined and cooperative stakeholders developed and engaged in fisheries management.

There was much discussion on what would constitute the best method of measuring fish stock. The discussion centered on the use of proxy measures that represented "what's taken" versus direct observations that indicated "what's there." The Project was particularly concerned about having an indicator that could be adapted for the use of the LGU and have practical applications in policy-making and resource management, one that the LGU would be capable of generating at reasonable cost. The intention was to encourage the use of baseline and monitoring data not only to evaluate the progress and impacts of Project interventions but also as input to planning and implementation of "early fisheries management actions," and as critical information that could help engage stakeholders and resource users in the management process.

Table 1.2. FISH Project Results Framework contributing to the 2005-09 USAID/Philippines Results Framework

Strategic Objective 4: Management of productive, life-sustaining natural resources strengthened		
FISH Project Result: Marine fish stocks increased by 10% (over baseline levels) in focal areas by the year 2010	PR1	Abundance of selected fishery resources in focal areas (% change in catch rates compared to baseline based on fisheries-independent methods)
	PR2	Catch rate of selected fisheries in focal areas (Average % change in catch rates compared to baseline based on fisheries-dependent methods)
	PR3	Reef fish biomass inside and adjacent to selected MPAs in focal areas (% change in biomass/500 m^2 compared to baseline)
	PR4	Reef fish species richness inside and adjacent to selected MPAs in focal areas (% increase in No. of species/500 m^2 compared to baseline)
	PR5	Benthic condition inside and adjacent to selected MPAs in focal areas (% change in living coral cover compared to baseline)
Intermediate Result 1: National and local capacity increased for fisheries management in 4 target areas	IR1.1	LGUs adopting fisheries registration and licensing programs (No. of LGUs in target areas adopting fisheries registration and licensing programs)
	IR1.2	Law enforcement units, prosecutors, and judiciary trained and/or assisted in fishery law enforcement (No. of coastal law enforcement units established and/or improved and functional in each target area)
	IR1.3	Effort restrictions introduced in focal areas (No. of effort restrictions introduced)
	IR1.4	MPAs established and/or improved to protect critical habitats, migration routes and spawning areas, and functional in focal areas (No. of MPAs and hectares at MPA rating level 2[1])
	IR1.5	Local government units in focal areas adopting CRM (No. of municipalities achieving basic requirements of CRM level 1 benchmarks[2])
	IR1.6	Inter-LGU and interagency collaborative agreements, local policy instruments and ecosystem-based fisheries management plans adopted by concerned stakeholders for fisheries management (No. of agreements/plans signed or adopted among relevant stakeholders)
	IR1.7	Reproductive health (RH)/population programs implemented or improved in each focal area (No. of barangays integrating reproductive health/population management)
Intermediate Result 2: National policy framework developed supporting sustainable fisheries	IR2.1	National fisheries policies supporting sustainable fisheries (e.g. fisheries administrative orders [FAOs], medium-term fisheries development and management plans [MTFDMP], action agendas for international agreements) (No. of national policy instruments developed, reviewed or revised with FISH project inputs)
	IR2.2	(added in 2008) Partner agencies/groups trained by FISH and utilizing Project tools and products to provide technical assistance to LGUs in non-target areas. (No. of partner agencies/groups providing technical assistance to LGUs outside FISH target areas)
Intermediate Result 3: Constituency of informed, disciplined, and cooperative stakeholders developed and engaged in fisheries management	IR3.1	Public-private partnerships supporting fisheries management, social infrastructure, population programs, and socioeconomic development in target areas (No. of public-private partnerships)
	IR3.2	Dissemination and utilization of fisheries management information materials, training modules, policy studies, and project lessons. (No. of information materials distributed and trainings/forums conducted)

[1] Table 1.4 [2] Table 1.5

A decision was made to use a combination of proxy measures using fisheries-dependent (representing "what's taken") and fisheries-independent methods (representing "what's there"). Using parameters that could best describe the changes in fish stocks given the current state of fisheries research (Table 1.3), the resulting estimation procedure reflected a deliberate bias for at least some methodologies that, while adequately measuring FISH performance relative to the terms set by USAID, could be modified and replicated spatially and temporally by the Project's implementing partners, including the LGUs, for their own use, within their technical and financial capabilities. Data gathering was made cheaper by setting up a shorter data collection period, replicated as precisely as possible in "monitoring events" conducted every 2 years. Standards were developed to promote consistency in data collection, reproducing as closely as possible the sampling stations, sampling procedures, and sampling periods.

Table 1.3. Principles and assumptions that guided the estimation procedure developed by the FISH Project to determine "increase in fish stock" (FISH Project, 2005)

1. **Overall increase in fish stock is a pooled value of increase in fish stocks in each focal area.** This value represents changes (expressed as % change) in fisheries-independent catch rates, fisheries-dependent catch rates and reef fish biomass inside and adjacent to selected MPAs between 2004 and 2010. The total surface area of each focal area was used as a weighting factor to represent the relative importance of the measured results from each of the 4 focal areas. This was based on the assumption that the size of the area covered indicated the relative effort or difficulty of achieving the desired result, as well as the area's relative contribution to improved fisheries management from a total Project perspective.
2. **Increase in fish stocks in each focal area represented progress made in each target area**. Resource and time limitations made it impracticable for the Project to attempt to cover the vast extent of its target areas. With much of its effort concentrated on the focal areas, any increases in fish stocks achieved in those areas were taken as a measure of improvement of fish stocks in the target areas.
3. **Increase in fish stocks in each focal area is a pooled value consisting of independent estimates of fisheries-independent catch rates, fisheries-dependent catch rates and reef fish biomass inside and adjacent to selected MPAs in every focal area using various weighting factors**. Each set of data within each focal area was determined based on independent data collected during the baseline assessment in 2004 and subsequent monitoring of the fishery determinants of relevant data in 2006, 2008, and 2010.
4. **Fisheries-independent catch rates could be measured through test fishing with selected fishing gear used in the focal areas.** This entailed deploying the selected fishing gear to various sampling stations during monitoring events to undertake controlled fishing operations "independent" of the normal fishery activities in the area.
5. **Fisheries-dependent catch rates could be measured through catch-and-effort monitoring of commonly used gear in the focal areas.** Catch data collected by enumerators from fishers engaged in the more common fishing practices in each focal area were used to calculate this indicator.
6. **Reef fish biomass could be measured through fish visual censuses conducted inside and adjacent to selected MPAs in the focal areas.** This indicator was calculated from data collected through direct observation of fish abundance in and around the MPAs using standard and accepted fish visual census protocols.
7. **Potential yield estimates from the various components of the resource system provide the main basis for determining and establishing the weighting factor for fisheries-independent catch rates and fisheries-dependent catch rates, as well as reef fish biomass inside and adjacent to selected MPAs**. The relative importance of these 3 indicators within a given focal area was determined by the area of the bottom habitat type expanded by the potential yield of that particular bottom habitat type. The 2 habitat types considered were "soft/hard bottom" (affecting catch rates for demersal and pelagic fisheries) and "coral reefs" (affecting biomass for reef fisheries) in which the coral reefs included all common reef-associated communities such as seagrasses, shallow sand and others that occur at depths of less than 20 meters.
8. **The number of samples could be used to determine the weighting factor for each component fisheries-independent catch rates and fisheries-dependent catch rates, and the area of Project-assisted MPAs as a weighting factor for reef fish biomass**. Each component was weighted according to the number of runs, number of transects, number of catch sampled, and total area of MPAs to represent its proportional emphasis or weight relative to the number of replicates and Project investment made.

The FPR, derived through a formula designed to show changes in fish stocks as an end-result of FISH initiatives, was an aggregate or index of 3 variables or "Project results," namely: (1) abundance of selected resources in focal areas (PR1), catch rate of selected fisheries in focal areas (PR2), and reef fish density and biomass inside and adjacent to selected MPAs in focal areas (PR3).

PR1 and PR2 were both based on the proxy measure "catch per unit effort" (CPUE), which is both scientifically valid and generally accepted by fishers as a measure of changes in fisheries abundance. CPUE is also an indicator of fishers' income and well-being, and was thus a good fit for the Project's development objectives.

The third variable PR3, which measures average changes in reef fish biomass inside and adjacent to selected MPAs, was factored in to represent the relative efforts of the Project to influence fisheries governance, especially through MPAs in shallow coral reef and seagrass areas. The determination of this indicator, when supported by participatory assessment, could also support the Project's development agenda, as it would allow fishers to directly observe the reef and connect its condition to fishing effort and practices in the area, making for better acceptance of the indicator as a basis for regulation.

1.6.2. Intermediate Results (IR)

Progress made at the national and LGU levels in establishing fisheries management as an integral part of CRM and the governance system would be monitored and evaluated according to the indicators for *Intermediate Result 1 (IR1) National and local capacity increased for fisheries management in 4 target areas.* These indicators represented some of the basic ingredients for local CRM, with added emphasis on essential fisheries management actions, as follows:

IR1.1. *LGUs adopting fisheries registration and licensing system.* Under its 2004 Performance Monitoring Plan, the Project was directed to use the indicator "Percentage of municipal fishers and crafts operating in target areas registered and licensed." The indicator was revised in 2006 to target the installation in each LGU of a registration and licensing system through the enactment and implementation of a local ordinance by the municipal LGU, a necessary first step in the fisheries registration and licensing process.

IR1.2. *Law enforcers, prosecutors and judiciary trained and assisted in coastal law enforcement.* A coastal law enforcement unit was defined as a group of individuals constituting a legally established team authorized or deputized to enforce coastal laws.

IR1.3. *Effort restrictions introduced in focal areas.* Effort restrictions would include spatial, temporal and gear-related fishing restrictions, such as zoning, seasonal closures of certain fisheries, and prohibitions on highly efficient gear, respectively. Measures would be counted when adopted through local ordinance, or enforced through the establishment of an implementation system or arrangement, or the allocation of budget.

IR1.4. *MPAs established or improved to protect critical habitats, migration routes and spawning areas, and functional in focal areas.* This indicator would track Project-assisted MPAs achieving at least Level 2 of implementation based on an MPA rating system described in Table 1.4.

Table 1.4. Benchmarks for Level 1 and 2 MPA (White, 2004)

Level 1: MPA *initiated:* Passing (Year 1) (6 points required)

1. *Site selected*
2. *Site surveyed with baseline assessment complete*. Reports available on fish abundance, coral substrate and information on issues and concern
3. *Education program started*. At least 2 types of MPA-related trainings/orientation conducted for directly affected barangay/s
4. *Social acceptance sought*. Members of affected stakeholders (fishers, resource users and social groups, both men and women) consulted:
5. *Management body membership tentatively determined*. The identified management core group has met at least twice regarding the MPA.
6. *Preliminary management plan drafted*

Level 2. MPA *established*: Fair (Year 1 or 2) (12 points required)

1. *Acceptance approved by community and documented* either through barangay resolution or signature campaigns as well as documentation of public consultations/meetings
2. *Education program raising awareness about MPA benefits*. At least 4 documented IEC activities conducted to promote MPAs with participation of affected barangay/s.
3. *Management body formally organized and recognized*. Management group has legal mandate from LGU or is recognized by the LGU.
4. *Management plan adopted by community and LGU or Protected Area Management Board (PAMB)*. Management plan initially implemented and/or endorsed by LGU/Protected Areas and Wildlife Bureau
5. *Ordinance approved by municipal council*
6. *Anchor buoys, marker buoys and/or boundary markers installed*
7. *Management activities started.* At least 2 MPA-related activities conducted, such as maintenance of buoys, patrolling, apprehension of violators, user-fees, etc.

IR1.5. LGUs in focal areas adopting CRM. This indicator would count the number of LGUs adopting CRM and hectares of municipal waters up to 5 kms from the coastline under improved management. To be counted, an LGU would have to achieve at least Level 1 of CRM implementation based on a set of criteria previously set under CRMP (Table 1.5).

Table 1.5. Benchmarks for Level 1 CRM (DENR-CMMO, 2003)

1. *Annual LGU budget allocated for CRM.* This indicator targets increasing and sustained annual budget allocations for CRM by municipal LGUs.
2. *CRM-related organizations formed and active.* To be counted as formed and active, organizations must meet regularly (more than 6 times a year), discuss CRM-related issues, implement projects and plans for integrated coastal management (ICM), facilitate training for members, and undertake networking and linkages with other people's organizations (POs) and LGUs involved in policy and advocacy work for CRM.
3. *Baseline assessment conducted*
4. *Shoreline/foreshore management measures planned and initiated*
5. *At least 2 CRM best practices planned and initiated.* These practices include: fisheries and coastal management ordinances implemented, environment-friendly enterprises established, law enforcement units operational, marine sanctuaries functional, mangroves under community-based forest management agreements (CBFMA), and municipal water boundaries enforced.

IR1.6. Inter-LGU and inter-agency partnerships. This indicator targeted the adoption of collaborative agreements (memorandum of agreements [MOAs], memorandums of understanding [MOUs], joint activities); policy instruments (ordinances, administrative orders, etc.); local, regional or national fisheries management plans; or similar mechanisms.

IR1.7. Reproductive health (RH) programs implemented or improved. This indicator targeted the integration of RH or population management into the development plans of selected barangays. It also contributed to a limited extent to USAID/Philippines' SO3, "Health and well-being of Filipinos promoted through support for improved and decentralized service delivery, increased private sector involvement and social acceptance of family planning and policy reform."

The criteria for *IR1.5* highlighted the minimum actions necessary to start a CRM program. Some of these prescribed actions would not be directly assisted by the Project, but would be part of a CRM and fisheries management plan that the LGUs were expected to adopt with Project assistance. FISH, while not directly involved in such actions, would promote and advocate their implementation by the LGU and other partners, as part of its fundamental strategy to "build upon the lessons learned and experiences of... CRMP" (USAID, 2003) and pursue fisheries management from a broader CRM and ecosystem perspective.

IR2 National policy framework developed supporting sustainable fisheries addressed the need for an improved policy framework for fisheries management. As originally defined, IR2 had 1 indicator -- *IR2.1 National fisheries policies supporting sustainable fisheries* – that measured the degree to which national government agencies (NGAs) agreed on an integrated national policy framework for sustainable fisheries under EAF that also directly supported local fisheries management initiatives.

In 2008, under the Project's proposed extension work plan, a second indicator was added under IR2: *IR2.2. Partner agencies/groups trained by FISH and utilizing Project tools and products to provide technical assistance to LGUs in non-target areas*. This new indicator would show the Project's efforts to disseminate and replicate applicable lessons and experiences from its sites to the greater community of LGUs and fisheries stakeholders across the country.

The indicators for *IR3 Constituency of informed, disciplined and cooperative stakeholders developed and engaged in fisheries management* were as follows:

IR3.1. Public-private partnerships supporting fisheries management, social infrastructure, population programs and socioeconomic development.

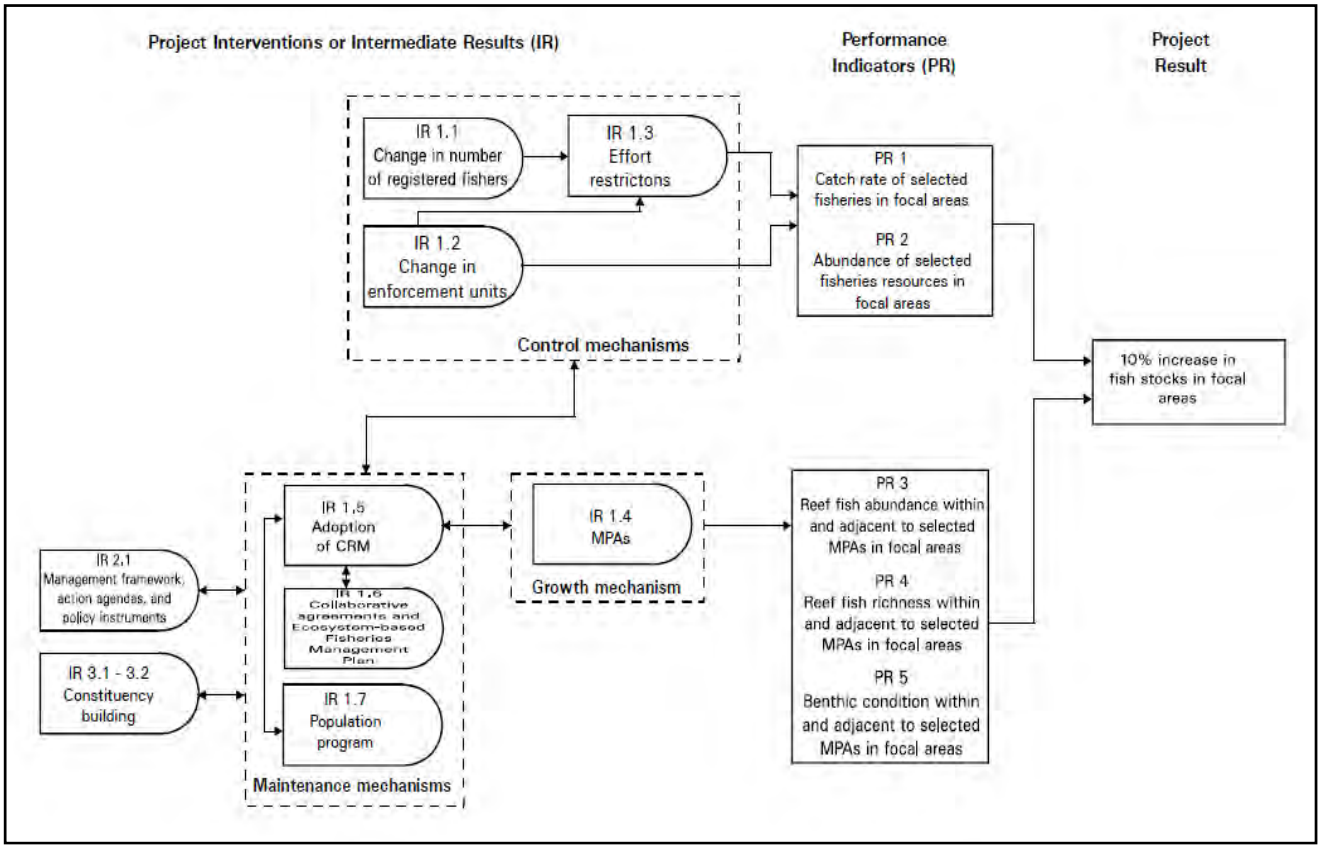
IR3.2. Dissemination and utilization of fisheries management information materials, training modules, policy studies and Project lessons

These indicators were intended to point out the knowledge, attitudes and practices of key target groups in assimilating, accepting and echoing sustainable fisheries messages and practices. Emphasis was placed on involving the private sector, both fishers and groups outside the fishing

sector, in an integrated approach to fisheries management that addressed critical overfishing issues, including related issues such as the often disproportionate population growth in coastal areas.

Combined, the IRs were envisioned to mutually reinforce each other and be reflective of the fisheries management mechanisms that the Project would institute to meet its biological targets. Figure 1.4 illustrates the relationships between the FPR, PRs, IRs and management mechanisms.

Figure 1.4. Relationships between results, indicators and fisheries management mechanisms that guided FISH Project implementation



1.6.3. Special performance incentive activities

The life-of-Project plan defined the following objectives for the SAF-funded special performance incentive activities (FISH Project, 2004):

1) To leverage support from other donor-supported projects, POs, NGOs, LGUs and NGAs for CRM leading to sustainable fisheries management;
2) To augment the capacity of institutions for implementing fisheries management measures or activities that could contribute to the improvement of coastal ecosystem integrity and increase in fish stocks;
3) To develop and introduce livelihood options or appropriate business enterprises for stakeholders directly involved in the implementation of fisheries management measures or dependent on coastal resources for their main source of income; and

4) To provide incentives to stakeholder groups for undertaking and sustaining fisheries management programs.

The implementation of SAF-funded activities was programmed for the base period only and no additional funds would be allocated for such purpose during the extension period, but for the rest of the life-of-Project, these activities would continue to be monitored and evaluated for sustainability.

1.6.3. Performance monitoring

As outlined in its Performance Monitoring Plan (FISH Project, 2004), 2 types of monitoring would be conducted in the course of the Project's implementation, namely:

1. An annual monitoring focusing on measuring the IRs, and
2. Special monitoring events conducted every 2 years from 2006 to 2010 to determine changes in the PRs.

A performance monitoring database system was developed to consolidate and manage data for each FISH-assisted LGU as well as track Project performance, and eventually to be adapted for use by the LGU to monitor and evaluate its own CRM and fisheries management program.

CHAPTER 2
End-of-Project Report Card

This chapter summarizes the Project's achievements based on its Results Framework (Table 2.1). The values reported here are the final adjusted values, estimated after data editing[1] was completed based on results of the final monitoring event (2010). Data editing was done primarily to promote consistency and comparability of results across monitoring events. The values previously reported in earlier official Project documents and the final official values presented in this chapter are shown in more detail in Appendix A and Appendix B, respectively.

2.1. Results Framework: A Quick Review

FISH contributed to the fisheries aspects of the USAID/Philippines SO4: "Management and governance of life-sustaining natural resources strengthened." It also addressed to a limited degree SO3: "Health and well-being of Filipinos promoted through support for improved and decentralized service delivery, increased private sector involvement and social acceptance of family planning and policy reform."

The Project's SO4 target was "overall marine fish stocks increased by 10% (from the 2004 baseline levels) in focal areas by 2010." Increase in fish stocks, expressed as average % change in marine fish stocks, was calculated using the following data:

1. % change in fisheries-independent catch rates compared to baseline;
2. % change in fisheries-dependent catch rates compared to baseline; and
3. % change in biomass/500 m^2 compared to baseline inside and adjacent to selected MPAs.

To support the top-level indicator (FPR), the following results were also determined based on data taken from fish visual censuses and reef surveys inside and adjacent to selected MPAs:

1. % increase in number of species/500 m^2 compared to baseline inside and adjacent to selected MPAs; and
2. % change in living coral cover compared to baseline inside and adjacent to selected MPAs.

The baselines were determined in 2004, after which monitoring events were scheduled every 2 years over the life-of-Project: in 2006, 2008, and 2010. The Project worked in its focal areas to achieve the SO4 target. Operational targets for this strategic objective were 1% increase in marine fish stocks in 2006, 5.5% in 2008 and 10% in 2010.

Improved fisheries governance was shown primarily by the following indicators under IR 2.1 "*National and local capacity increased for fisheries management in 4 target areas"*:

[1] Data editing refers to a range of procedures and processes used for detecting and handling errors in data. Examples include micro-editing/ macro-editing and input/output editing. Edit types refer to the actual nature of edits applied to data during input or output processing. These include: (1) validation edits - to check the validity of basic identification of classificatory items in unit data; (2) logical edits - ensure that two or more data items do not have contradictory values; (3) consistency edits - check to ensure that precise and correct arithmetic relationships exist between two or more data items; (4) range edits - identify whether or not a data item value falls inside a determined acceptable range; (5) variance edits - involve looking for suspiciously high variances at the output edit stage. (UNECE, 2000)

1. No. of LGUs in target areas adopting fisheries management and registration system;
2. No. of coastal law enforcement units established or improved and functional in each target area;
3. No. of effort restrictions introduced in focal areas;
4. No. of hectares of MPAs at rating Level 2;
5. No. of municipalities achieving basic requirements of CRM Level 1;
6. No. of agreements/plans signed or adopted among relevant stakeholders; and
7. No. of barangays integrating reproductive health/population management in their development plans.

Table. 2.1. FISH Project Results Framework contributing to USAID/Philippines Results Framework for 2005-2009

Strategic Objective 4: Management of productive, life-sustaining natural resources strengthened		
FISH Project Result: Marine fish stocks increased by 10% (over baseline levels) in focal areas by the year 2010	PR1	Abundance of selected fishery resources in focal areas (% change in catch rates compared to baseline based on fisheries-independent methods)
	PR2	Catch rate of selected fisheries in focal areas (Average % change in catch rates compared to baseline based on fisheries-dependent methods)
	PR3	Reef fish biomass inside and adjacent to selected MPAs in focal areas (% change in biomass/500 m^2 compared to baseline)
	PR4	Reef fish species richness inside and adjacent to selected MPAs in focal areas (% increase in No. of species/500 m^2 compared to baseline)
	PR5	Benthic condition inside and adjacent to selected MPAs in focal areas (% change in living coral cover compared to baseline)
Intermediate Result 1: National and local capacity increased for fisheries management in 4 target areas	IR1.1	LGUs adopting fisheries registration and licensing programs (No. of LGUs in target areas adopting fisheries registration and licensing programs)
	IR1.2	Law enforcement units, prosecutors, and judiciary trained and/or assisted in fishery law enforcement (No. of coastal law enforcement units established and/or improved and functional in each target area)
	IR1.3	Effort restrictions introduced in focal areas (No. of effort restrictions introduced)
	IR1.4	MPAs established and/or improved to protect critical habitats, migration routes and spawning areas, and functional in focal areas (No. of MPAs and hectares at MPA rating level 2[1])
	IR1.5	Local government units in focal areas adopting CRM (No. of municipalities achieving basic requirements of CRM level 1 benchmarks[2])
	IR1.6	Inter-LGU and interagency collaborative agreements, local policy instruments and ecosystem-based fisheries management plans adopted by concerned stakeholders for fisheries management (No. of agreements/plans signed or adopted among relevant stakeholders)
	IR1.7	Reproductive health (RH)/population programs implemented or improved in each focal area (No. of barangays integrating reproductive health/population management)
Intermediate Result 2: National policy framework developed supporting sustainable fisheries	IR2.1	National fisheries policies supporting sustainable fisheries (e.g. fisheries administrative orders [FAOs], medium-term fisheries development and management plans [MTFDMP], action agendas for international agreements) (No. of national policy instruments developed, reviewed or revised with FISH project inputs)
	IR2.2	(added in 2008) Partner agencies/groups trained by FISH and utilizing Project tools and products to provide technical assistance to LGUs in non-target areas. (No. of partner agencies/groups providing technical assistance to LGUs outside FISH target areas)
Intermediate Result 3: Constituency of informed, disciplined, and cooperative stakeholders developed and engaged in fisheries management	IR3.1	Public-private partnerships supporting fisheries management, social infrastructure, population programs, and socioeconomic development in target areas (No. of public-private partnerships)
	IR3.2	Dissemination and utilization of fisheries management information materials, training modules, policy studies, and project lessons. (No. of information materials distributed and trainings/forums conducted)

[1] see Table 1.4 [2] see Table 1.5

The Project's performance in generating national government and public support for fisheries management was tracked under IR2 *"National policy framework developed supporting sustainable fisheries"* and IR3 *"Constituency of informed, disciplined and cooperative stakeholders developed and engaged in fisheries management."* The original indicator for IR2 was *"No. of national policy instruments developed, reviewed or revised with FISH Project inputs,"* while IR3 was measured by 2 indicators: *"No. of public-private partnerships"* and *"No. of information materials distributed and trainings/forums conducted."* For the extension period 2008-2010, a second indicator was added under IR2 to reflect the Project's effort to promote replication and utilization of its capacity building tools and products: *No. of partner agencies/groups providing technical assistance to LGUs outside FISH target areas*

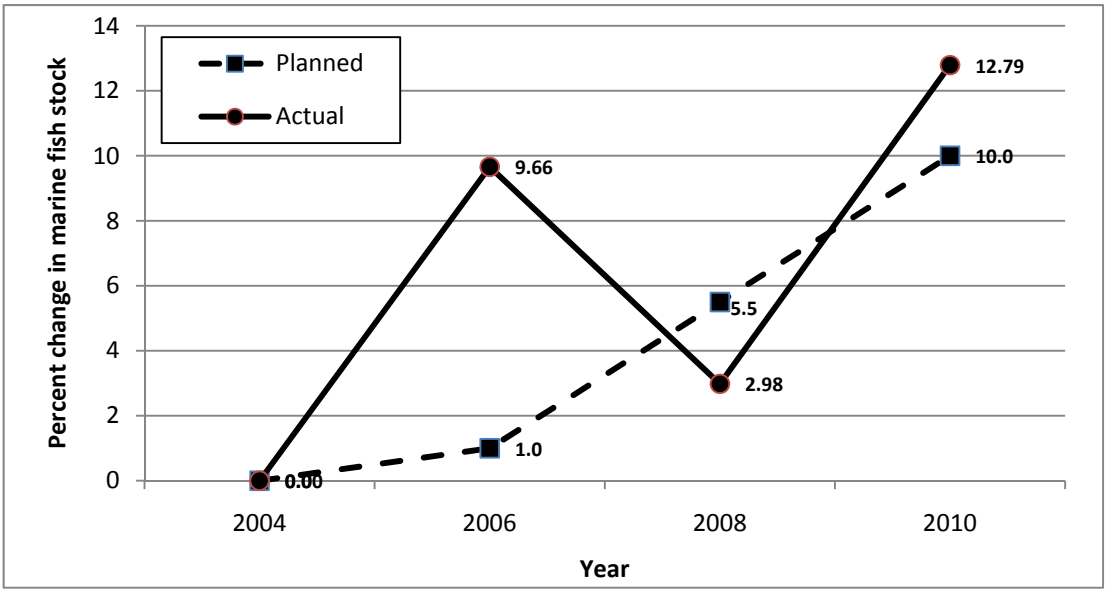
2.2. Results at the Strategic Objective Level

The final monitoring event conducted in 2010 to determine changes in fish stocks from the baseline year 2004 showed that the Project surpassed its target at the SO4 level. At the PR level, a few areas showed mixed results but overall, results were mostly positive. These results are summarized below, and where relevant, brief notes are included to explain their significance to the fisheries management effort.

2.2.1. FPR – Change in fish stocks in focal areas

The estimate of FPR showed increments of 9.66 % in 2006, 2.98% in 2008 and 12.79% in 2010 from the 2004 baseline, as illustrated in Figure 2.1, which also shows a comparison of results against targets.

Figure 2.1. Estimates of changes in fish stocks (FPR) versus targets in the focal areas (2004-2010)



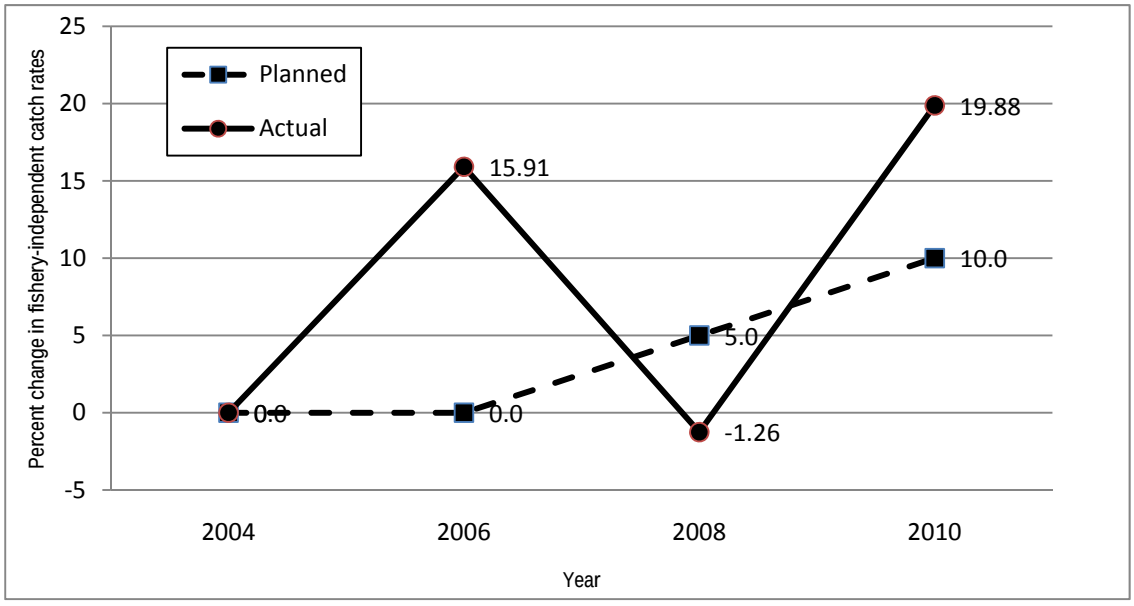
The increase was accounted for mainly by higher reef fish biomass observed in and around the MPAs and increases in catch rates from fisheries-independent surveys. The overall estimate of changes in fish stocks (FPR) reflected changes in PR1, PR2 and PR3 that fed into the SO4, as explained in Table 1.3. This estimate was based only on results taken from those sampling stations (i.e., in the focal areas) where baseline conditions were determined in 2004. In 2006, there were 11 new MPAs added to an original set of 12 MPAs established in the focal areas in 2004. Biophysical changes in these new MPAs were tracked and reported, but they were not included in the computation of the FPR.

2.2.2. PR1 – Change in abundance of selected fishery resources in focal areas

Changes in fish abundance were demonstrated by estimating catch rates using fisheries-independent methods. Increases in the catch rates were recorded in 2006 and 2008 for experimental trawls in Danajon Bank, fish pots in Danajon Bank and Tawi-Tawi Bay and, to a lesser extent, bottom-set long-lines in Lanuza Bay and bottom-set gill nets in Danajon Bank. In 2006, the increases were more than enough to offset the lower catch rates observed with other gear used in the fisheries-independent surveys. This was not the case in 2008, however, where decreases in the catch rates of the other gear resulted in a significant overall decline in PR1 compared to baseline. In 2010, increases in catch rates for most gear used in the test fishing pushed the average catch rate significantly higher, resulting in a 19.88% increase in PR1 (Figure 2.2) and allowing the Project to hit its overall FPR target of 10% (Figure 2.1).

The generally positive changes in catch rates reflected in the fisheries-independent surveys indicated some levels of improvement in fish stocks. However, test fishing was conducted over a very limited time (about 5 days) and so the results could not be taken as a definitive indication of the condition of the resource. It was, however, useful as a way to validate results from a parallel fish catch monitoring conducted by the Project, which lasted about 3 months in each site.

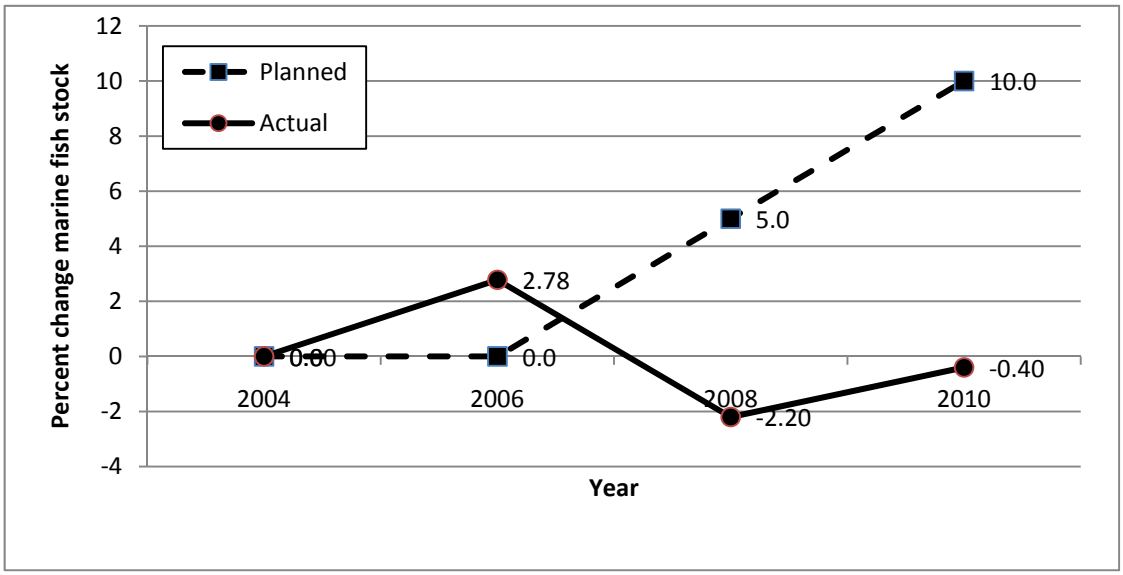
Figure 2.2. Overall changes in fish abundance (PR1) versus targets in the focal areas (2004-2010)



2.2.3. PR2 – Change in catch rate of selected fisheries in focal areas

After barely increasing by 2.78% in 2004-2006, PR2 declined in 2006 to (-2.20%) and stayed in negative territory at (-0.4%) in 2010. (Figure 2.3) The overall decline was primarily due to decreases in catch rates of bottom-set gill nets and bottom-set longlines, which accounted for a major portion of fisheries in the Project sites.[2]

Figure 2.3. Overall changes in fish catch rates (PR2) versus targets in the focal areas (2004-2010)



The overall weighted average of catch rates (expressed in CPUE) recorded in landing sites in 2006 was buoyed up largely by a higher magnitude of increases in catch rates of some gear compared to the decreases. Positive changes reached triple figures for some gear (i.e. Danish seine and hook and line with float in Danajon Bank, crab gillnet and hook and line with float in Lanuza Bay, and set gillnet with plunger and spear in Tawi-Tawi) while negative changes were in the double digits.

In 2008, increases in catch rates experienced by some fisheries were not enough to offset the decreases in catch rates of other fisheries, thus pushing PR2 down to (-2.2). Various types of hook

[2] These findings contradict the results of the fisheries-independent surveys, which showed an overall increase in catch rates of these two gear. The two sets of data are not directly comparable, however, because of the wide difference in the durations of the two types of surveys: as already noted, the fisheries-independent surveys generally lasted only about 5 days, while the fisheries-dependent surveys were conducted over at least 3 months. When the comparison was narrowed to the specific dates when the fisheries-independent surveys were conducted, the inconsistency in the results of the two survey methods became less pronounced. Taking into account other undetermined variables, this provided some assurance that reasonably reliable estimates of the state of fish stocks and their associated fisheries could be taken from the data generated by fisheries-dependent surveys. For this study, the very short duration of the fisheries-independent surveys greatly limited the use of the survey results for fish stock assessment. Because of this, much of the analysis contained in this report focuses on the fisheries-dependent catch data, with the fisheries-independent data serving primarily to validate the results of the fisheries-independent surveys (in addition to being a factor in the estimation of the FPR).

and line and surface-set gillnets and fish pots were among the small-scale and sustenance fishing gear that registered increases in catch rates while bottom-set hook and line and various types of bottom-set gill nets declined.

A major concern emerged and became especially evident during the 2008 monitoring event. The fisheries-dependent surveys indicated that fisheries production appeared to have been captured to a disproportionate degree by capital-intensive gear, such as stationary lift nets and fish corrals, and even illegal gear like round-haul seines and Danish seines that, while significantly much reduced in number compared to 2004, still managed to operate in municipal waters and capture a considerable portion of any increase in biomass that might have been generated through protection and fishing restrictions during the period. This pattern continued through the last monitoring event in 2010, when PR2 improved somewhat but remained in negative territory: most types of hook and line and surface-set gillnets and fish traps as well as a number of efficient, mostly illegal, gear, including Danish seine, round haul seine and various gear using fine mesh net, recorded increases in catch rates, while bottom-set gillnets and bottom-set longlines showed a general decline. However, unlike in the 2008 monitoring event, catch rates were down for stationary liftnets and fish corrals, especially in Danajon Bank. After recording a nearly 350% increase in catch rates between 2004 and 2008, stationary lift nets in Danajon Bank, in particular, recorded a significant decline in 2010, indicating some overfishing of the target species, possibly brought on by overcapacity within the fisheries, as well as overfishing by related fisheries.

These results may reflect changes in fish composition that continue to happen as the ecosystem begins to recover. An immediate effect of protection and restriction of illegal and destructive fishing activities in semi-enclosed shallow bodies of water like Danajon Bank and Coron Bay is that short-lived and fast-growing species, mainly demersal omnivores, increase in number very rapidly, providing food for demersal and pelagic carnivores that occupy higher positions in the food chain. However, demersal carnivores are generally slow-growing and will take time to benefit from the increase in food supply in terms of their own increase in biomass. As a result, small-mesh gillnets, fine mesh nets and similar gear that target the omnivores, and hook-and-line that target pelagic species will show an increase in yield first before those gear (e.g. bottom-set gillnet) that target the demersal carnivores. This may not the case for open and deeper bodies of water like Lanuza Bay and Tawi-Tawi Bay, where the interaction between the bays and the bigger bodies of water adjoining them, the Pacific Ocean in Lanuza Bay and Sulu and Sulawesi Seas in Tawi-Tawi, is very dynamic.

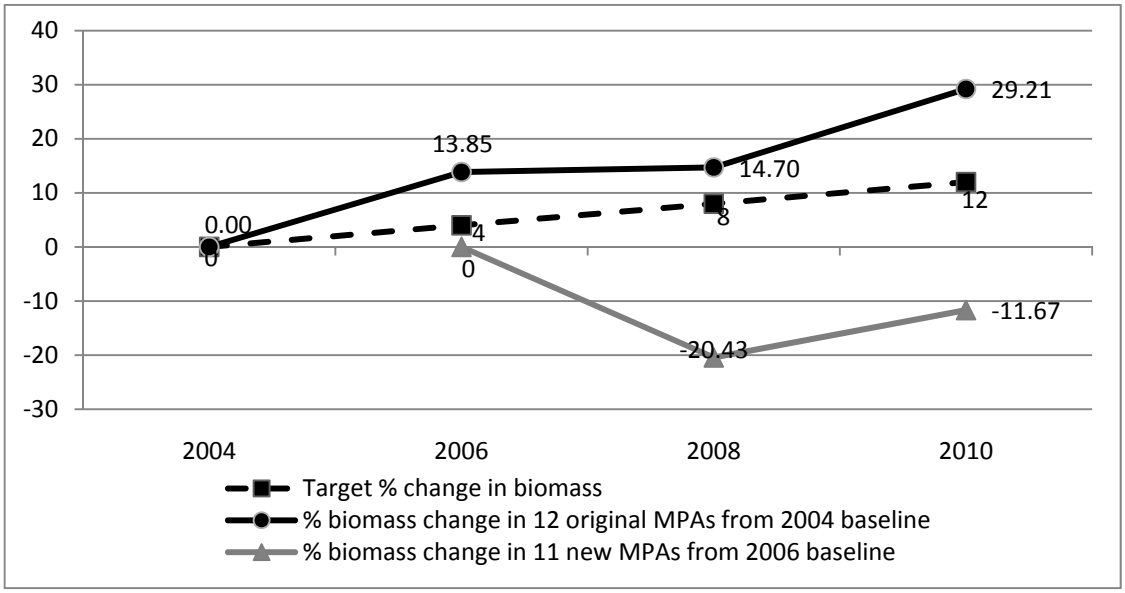
If protection and regulation are not sustained – and this seems to be the case in many of the Project sites – recovery can be quickly reversed. This could explain the seemingly sudden downturn of the stationary lift net fishery, which was allowed to grow at an uncontrolled rate particularly in Danajon Bank. Also, the continued presence – and by some indications resurgence – of some illegal fishing gear poses a grave threat to the gains achieved particularly in the first half of the implementation of FISH, when Project intervention through training in coastal law enforcement and IEC was at its most intensive. Based on results of the 2010 surveys, Danish seine, in particular, appeared to have made a comeback in Danajon Bank during the last election period. Their catch rates were significantly down, however, possibly because of increased competition over a shrinking

resource, but possibly also because at least some LGUs were able to sustain some level of coastal law enforcement that restricted the movement of Danish seine boats to areas of low enforcer presence, which should be expected to be highly exploited, if not already overfished.

2.2.4. PR3 – Change in fish biomass inside and adjacent to selected MPAs in focal areas

Results of fish biomass assessments inside and adjacent to Project-assisted MPAs, shown in Figure 2.4, were hopeful. For 9 of the original 12 MPAs supported by the Project and monitored since 2004[3], reef fish biomass were shown to increase by a low of about 4% and a high of nearly 140% between 2004 and 2010. For the other 3 MPAs, biomass was observed to have decreased by about 21-53%. Overall, combined biomass in and around the 12 MPAs was estimated to have increased by about 24.63%, resulting in a PR3 value (weighted percentage change in biomass) of 29.21 in 2010 (Figure 2.4). Although no clear pattern can be established across the different sites, the overall positive trend over the 8-year period for a number of these MPAs was a hopeful sign that some recovery of the reef ecosystem had been achieved.

Figure 2.4. Weighted percentage change in biomass (PR3) inside and adjacent to selected MPAs in the focal areas (2004-2010)



However, only 4 out of 11 new MPAs that the Project started monitoring in 2006 showed an increase in biomass, ranging from about 27% to 46% in 2010, while the rest showed a decrease in biomass of between 18% and 44%. Such high variability across the sites resulted in a small overall biomass change for the 11 new MPAs of (-4.33%), or a PR3 value of (-11.67) in 2010 (Figure 2.4). Assuming that the MPAs were adequately protected, this observation might suggest that it will take

[3] Although baseline assessments were conducted in all 4 Project sites in 2004, the PR3, PR4 and PR5 values for the Danajon Bank MPAs reported here were estimated using the 2006 assessment results as baseline. This adjustment was made to reduce variability and uncertainty arising from differences between the survey methodologies used by Silliman University Marine Laboratory, which conducted the assessment in Danajon Bank in 2004, and UPVFI, which conducted subsequent assessments in the area (and all MPA assessments in the other Project sites). Such adjustment was based on the assumption that changes in biophysical conditions in and around the Danajon Bank MPAs between 2004 and 2006 were (generally) small enough to be considered insignificant (i.e., $\% \Delta \approx 0$) so that the 2006 values could be assigned to 2004 as the baseline values.

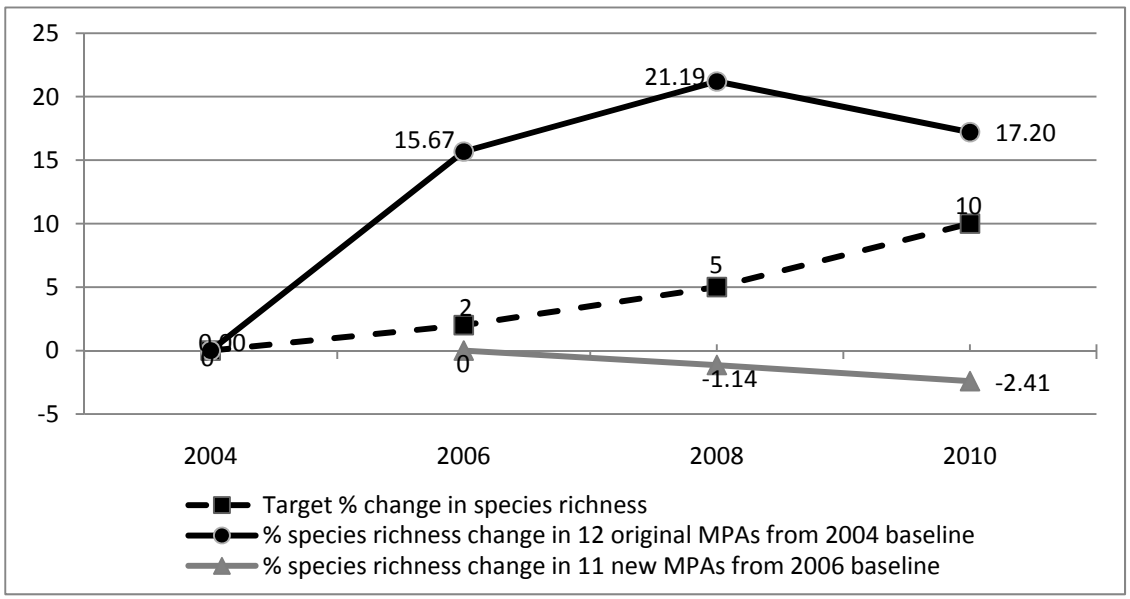
more time for reef fish biomass in the new MPAs to recover compared to the original MPAs. This may be a function of the natural productivity of the reefs themselves – the original MPAs were precisely selected first because resource assessments indicated they had the highest potential among all other sites in the focal areas to support an abundance of marine life. It must be emphasized, however, that the above values were estimated using the *combined results* taken from inside and outside the MPAs. When the inside-outside results were disaggregated, they generally indicated higher biomass (bigger size fishes) inside the MPAs and therefore could be taken to mean that protection had begun to pay off in terms of some recovery of fish stocks at least in the strict protection zones.

Mixed results were observed in the remaining 2 PRs – PR4 and PR5, which were used by the Project to measure biophysical changes but were not factored into the computation of the FPR. Like the PR3 values, PR4 and PR5 values represented the combined results from inside and outside the MPAs.

2.2.5. PR4 – Change in species richness inside and adjacent to selected MPAs

PR4, representing the number of species per 500m^2 of MPA cover and adjacent areas, increased by about 22.6% overall across the sites compared to the baseline year, resulting in a PR4 value of 17.20 (Figure 2.5). For the 11 new MPAs, species richness appeared to be largely unchanged, with an overall percentage change of about (-2.8%) between 2004 and 2010, resulting in a negative PR4 value of (-2.41) for 2010.

Figure 2.5. Weighted percentage change in species richness inside and adjacent to selected MPAs (PR4) in the focal areas (2004-2008)



Taken individually, the results were a little more encouraging: Ten of the 12 MPAs monitored since 2004 and 7 of the new MPAs registered positive results, although in a few of these MPAs, the changes were too small to be significant. Still, where they were noted, the positive

changes were encouraging in that improved species richness is one of the earliest signs of coral reef recovery, and a visible sign of a growing coral reef community and improving food web.

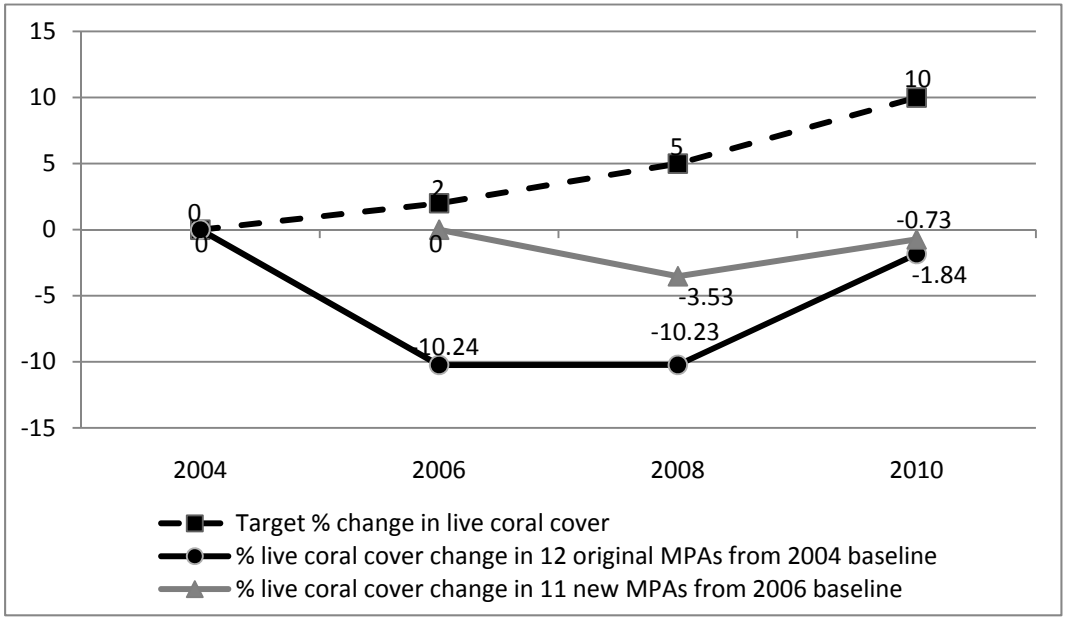
2.2.6. PR5 – Change in benthic condition inside and adjacent to selected MPAs

Individual results for this indicator were generally positive -- 9 of the original 12 MPAs registered positive changes or remained unchanged (i.e., within natural variability) from the 2004 baseline values, and 3 showed clearly negative changes (all in Tawi-Tawi, where live hard coral cover decreased by 34-63% compared to the baseline). Among the 11 MPAs monitored from 2006, the 3 Tawi-Tawi MPAs likewise showed clearly reduced live hard coral cover compared to the baseline, while hard coral cover in and around the rest of the MPAs were largely unchanged.

Researchers were unable to pinpoint the cause of the decline in Tawi-Tawi -- assuming that the MPAs were adequately protected (and by most accounts they were), it could have been caused by a combination of any number of factors, including a "steady warming" of sea surface temperatures (SST) in nearby Sulu-Celebes Sea, which is reported to have exhibited a linear SST trend of 0.23^{o}C since 1982 (Belkin, in press) in (Heileman, 2008), a Crown-of-Thorns outbreak in 2006, pollution (i.e. increased nutrient load from domestic wastes), etc.

A coral bleaching incident associated with the 2009/10 El Niño North-Southern Oscillation (ENSO) was reported in Calamianes, but this was not clearly evident in the results of the 2010 MPA monitoring conducted by the University of the Philippines in the Visayas Foundation Inc. (UPVFI) in the area.

Figure 2.6. Weighted percentage change in live coral cover inside and adjacent to selected MPAs (PR5) in the focal areas (2004-2010)



Because of the decline of live coral cover in Tawi-Tawi and mostly unchanged coral conditions inside and around MPAs in the rest of the Project sites, overall average changes in live

coral cover from 2004 to 2010 were insignificant (within natural variability) at 3.4% for the 12 original MPAs and -10.10% for the 11 "new" MPAs, with PR5 estimated at (-3.53) and (-0.73), respectively (Figure 2.6).

2.3. Intermediate Results

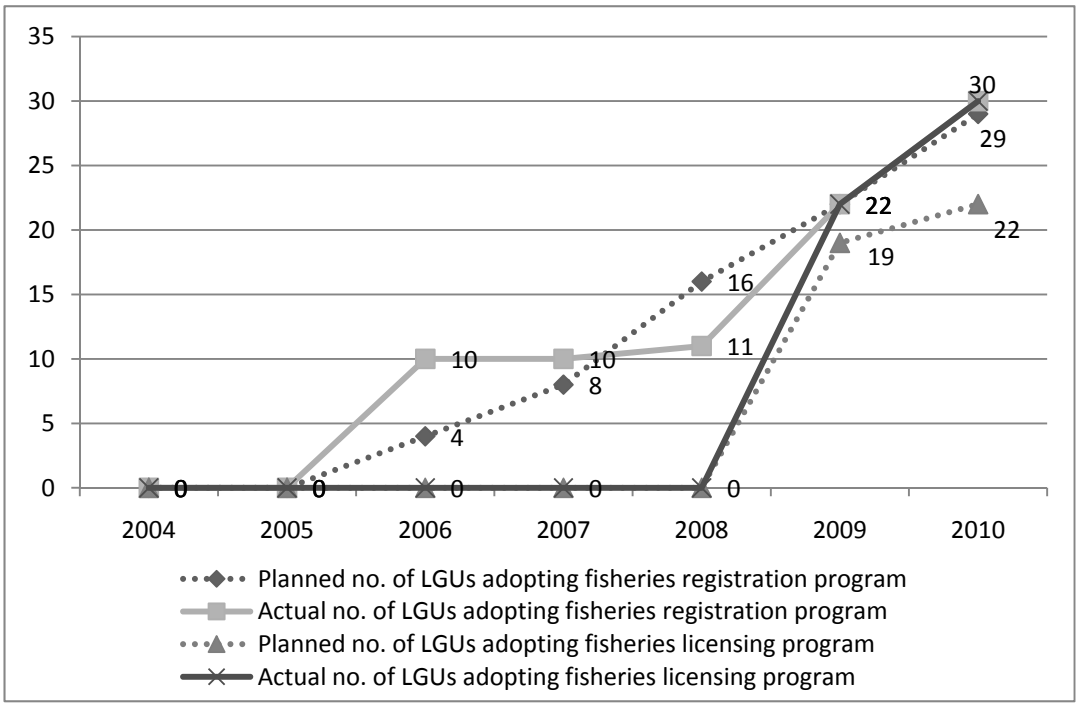
Progress in meeting IR indicators was monitored and evaluated every year against pre-determined targets based on 2004 baselines. Based on the 2010 performance monitoring results, all life-of-Project targets were exceeded. Results covered both focal and expansion areas.

This section discusses Project accomplishments that respond directly to the Project Results Framework. A more substantive discussion of the Project's strategies, milestones, outcomes and impacts are presented in Chapter 3.

2.3.1. IR 1: National and local capacity increased for fisheries management

IR1.1. Number of LGUs adopting fisheries registration and licensing programs. FISH exceeded its overall target of 29 LGUs adopting fisheries registration (Figure 2.7). In many of the LGUs that had adopted fisheries registration and licensing programs, registration was well underway, but licensing still had to be fully utilized as a tool for managing fishing effort.

Figure 2.7. No. of LGUs adopting fisheries registration and licensing programs (IR1.1) in target areas (2004-2010)

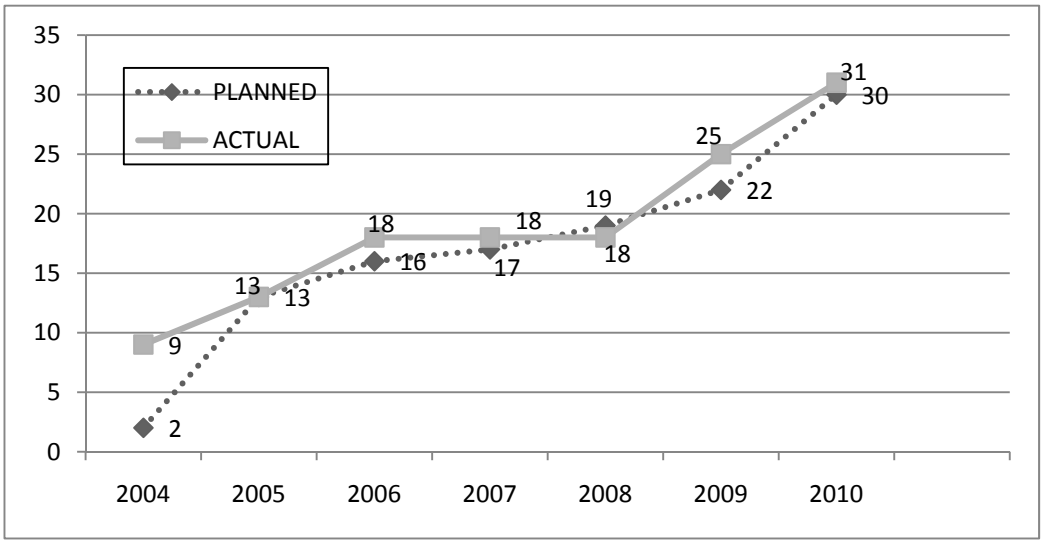


IR1.2. Law enforcers, prosecutors and judiciary trained or assisted in coastal law enforcement. FISH assisted in putting into operation or strengthening 31 law enforcement units in its sites, exceeding its overall target of 30 (Figure 2.8). Of the 31, at least 3 units were operated at an inter-LGU or provincial level. Each municipal team was supported by a budget allocation legislated

by the municipal legislative council or *Sangguniang Bayan* (SB) and, for the most part, conducted sea patrols based on an operational plan that the Project helped formulate.

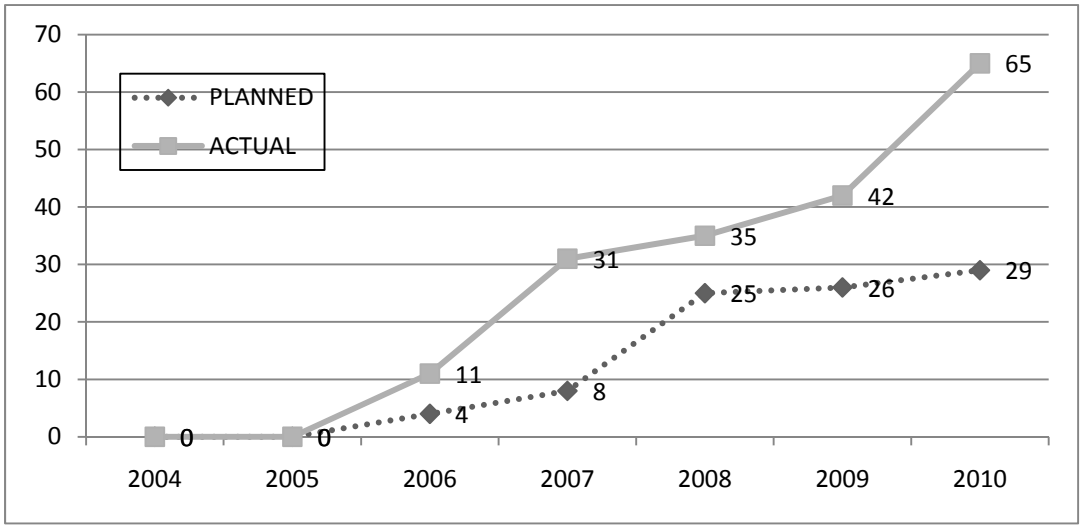
FISH also assisted the organization of community-based law enforcement units, which were trained in operational planning, post-operations assessment, and various aspects of coastal law enforcement. Through the SAF, some units were also provided global positioning system (GPS) receivers, patrol boats, telescopes and other logistical support.

Figure 2.8. No. of law enforcement units established and functional (IR1.2) in target areas (2004-2010)



IR1.3. Fishing effort restrictions introduced. The Project facilitated the adoption of various forms of fishing effort restrictions, including closed seasons for siganid and grouper, a ban on the catching and selling of berried blue crabs, and regulations against the use of fine mesh nets and compressor in fishing. Overall, 65 fishing effort restrictions were recorded in 2010, more than double the target set for the whole life-of-Project (Figure 2.9).

Figure 2.9. No. of fishing restrictions introduced (IR1.3) in target areas (2004-2010)



IR1.4. MPAs established at Level 2 of implementation. Targets for this indicator were set as number and area (in hectares) of MPAs at Level 2 of implementation based on the benchmarks listed in Table 1.4. At the end of 2010, FISH surpassed its life-of-Project targets for both number and area of MPA, with 49 Project-assisted MPAs (target: 35) covering 10,272 hectares (target: 700) meeting Level 2 benchmarks for MPA implementation (Figures 2.10 and 2.11). The Project helped strengthen the management of these MPAs through the development of ordinances and management plans, and the organization of community-based management bodies.

Figure 2.10. No. of MPAs enforced (IR1.4) in target areas (2004-2010)

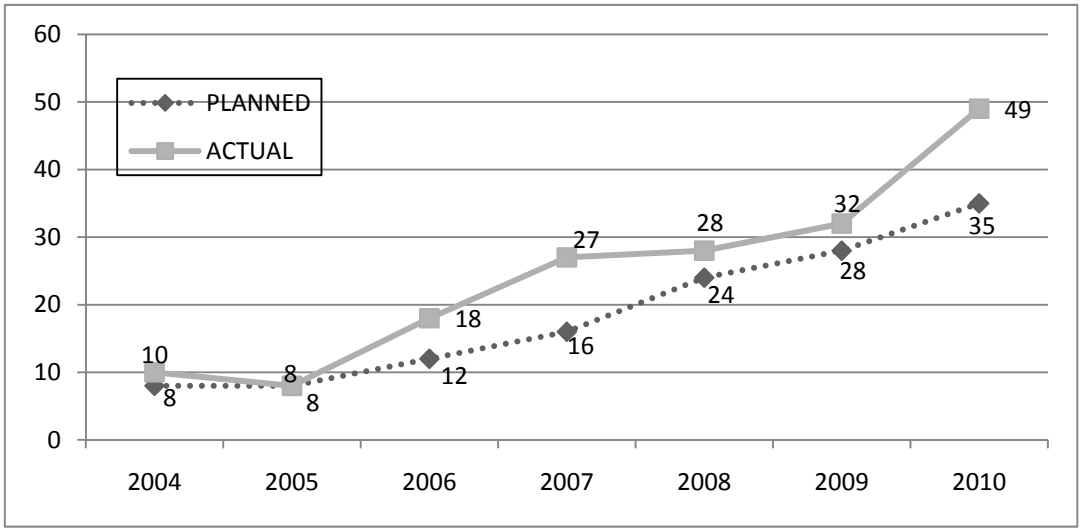
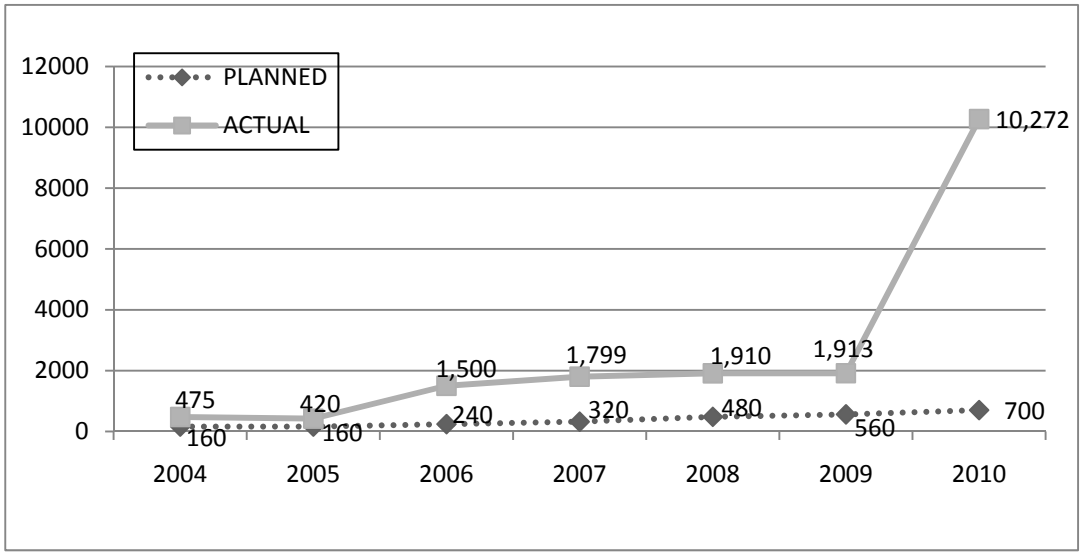


Figure 2.11. Area (hectares) of MPAs enforced (IR1.4) in target areas (2004-2010)



IR1.5. LGUs adopting CRM. Thirty LGUs in the focal and expansion areas achieved the basic requirements of CRM level 1 benchmarks (Table 1.5) by the end of 2009, representing 375,065 hectares of municipal waters up to 5kms from the coastline (Figures 2.12 and 2.13). This result exceeded the life-of-Project target of 29.

Figure 2.12. No. of LGUs achieving Level 1 CRM (IR1.5) in target areas (2004-2010)

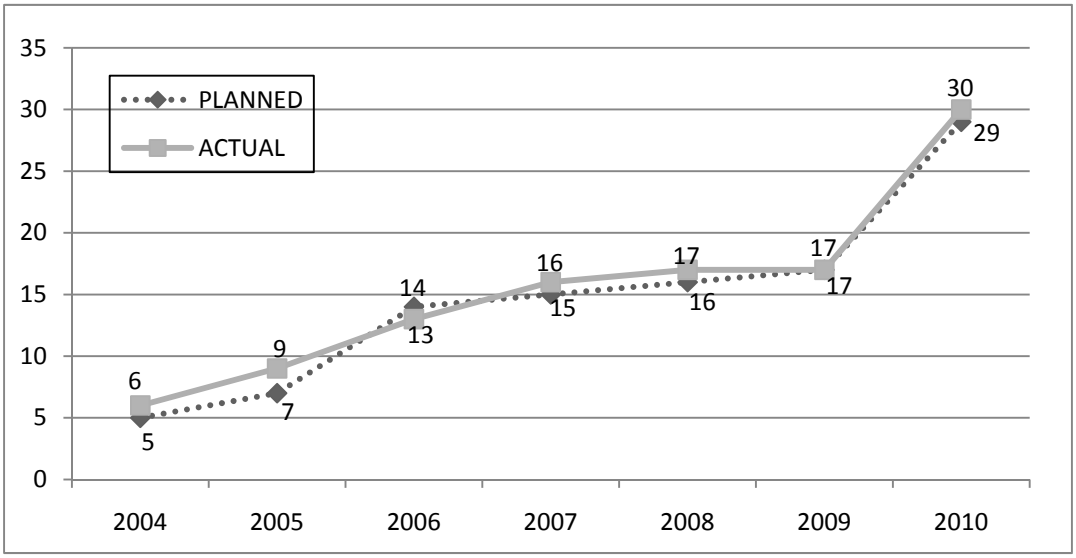
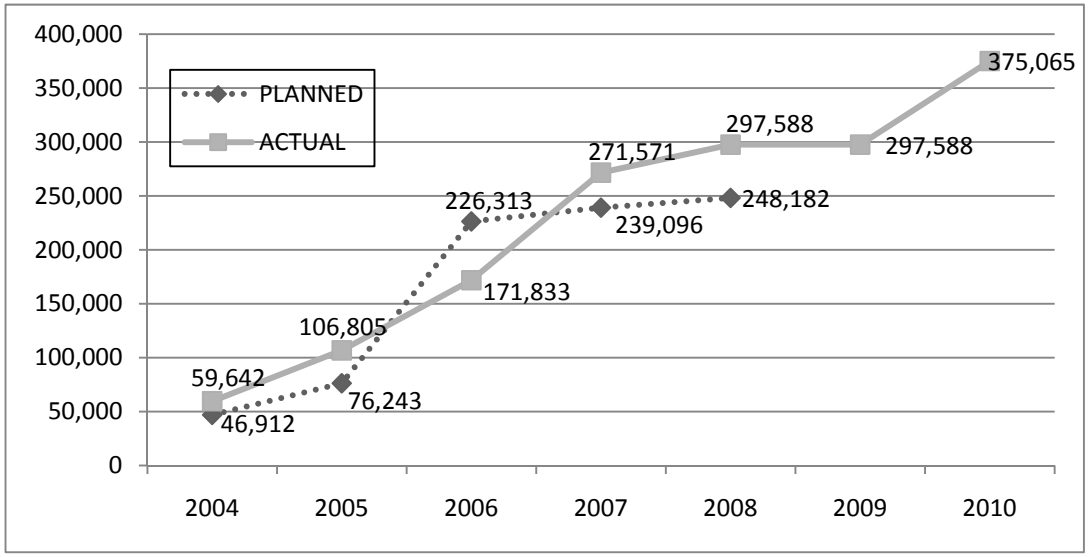
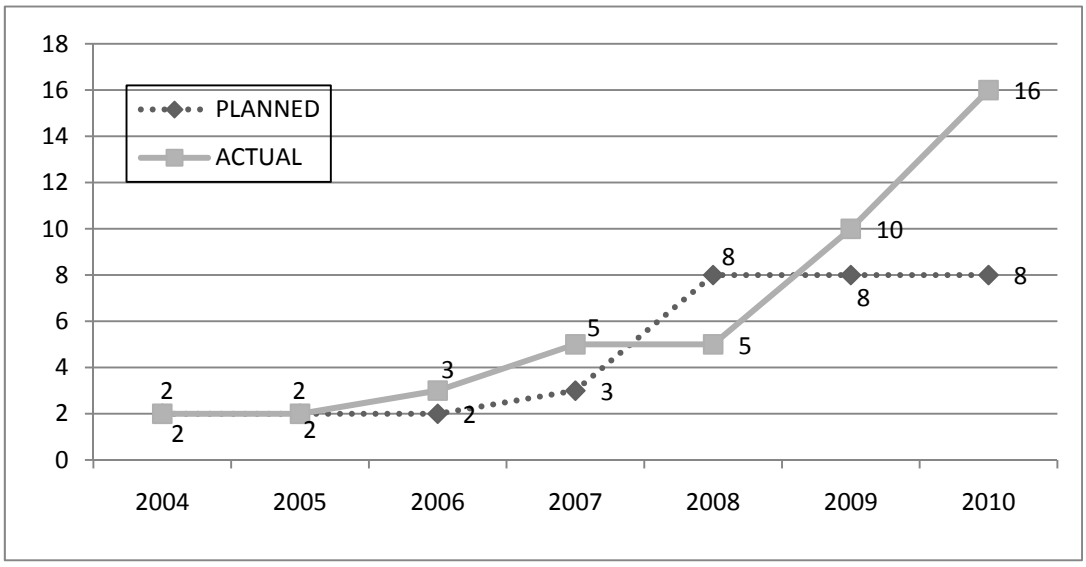


Figure 2.13. Area (hectares) of municipal waters up to 5kms from shoreline under improved management (IR1.5) in target areas (2004-2010)



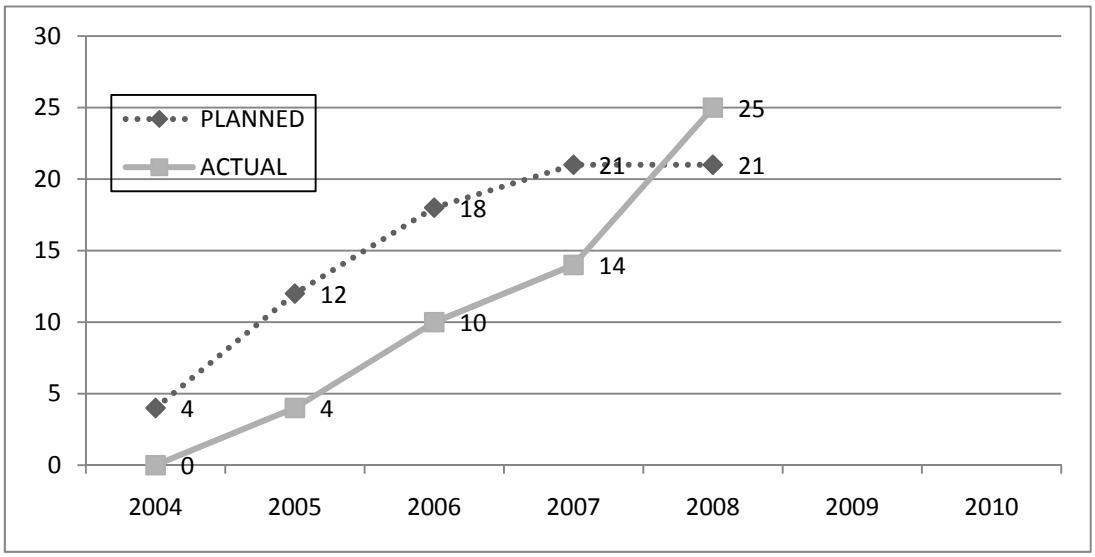
IR1.6. Inter-LGU and inter-agency collaborative agreements/plans signed or adopted. As early as 2009, the life-of-Project target for this indicator was exceeded. By the end of the exit phase in 2010, the Project added 6 more collaborative agreements/plans to its total, bringing the final figure to 16, double the overall target of 8 (Figure 2.14). Results for this indicator consisted almost entirely of collaborative arrangements for law enforcement and MPA networks. Some notable exceptions were the more comprehensive (by definition) integrated municipal fisheries and aquatic resources management council in Leyte, the CELEBOSOLE alliance consisting of provinces with jurisdiction over Danajon Bank (Cebu, Leyte, Bohol and Southern Leyte), and the Calamianes Integrated Fisheries Management Plan.

Figure 2.14. No. of inter-LGU/inter-agency collaborative agreements/plans signed or adopted (IR1.6) in target areas (2004-2010)



IR1.7. RH programs implemented or improved in focal areas. Twenty-five barangays had incorporated RH into their respective development plans by the end 2008, 4 more than the life-of-Project target of 21 (Figure 2.15). Officially, the Project's technical assistance in connection with RH was concluded in 2007, but the work to integrate RH in the development plans of 11 additional barangays continued through 2008 (largely through the LGUs' initiative), and was completed and reported only that year. All 25 barangays reported were in the focal areas, where the Project's technical assistance package included RH.

Figure 2.15. No. of barangays integrating RH into their development plans (IR1.7) in target areas (2004-2008*)

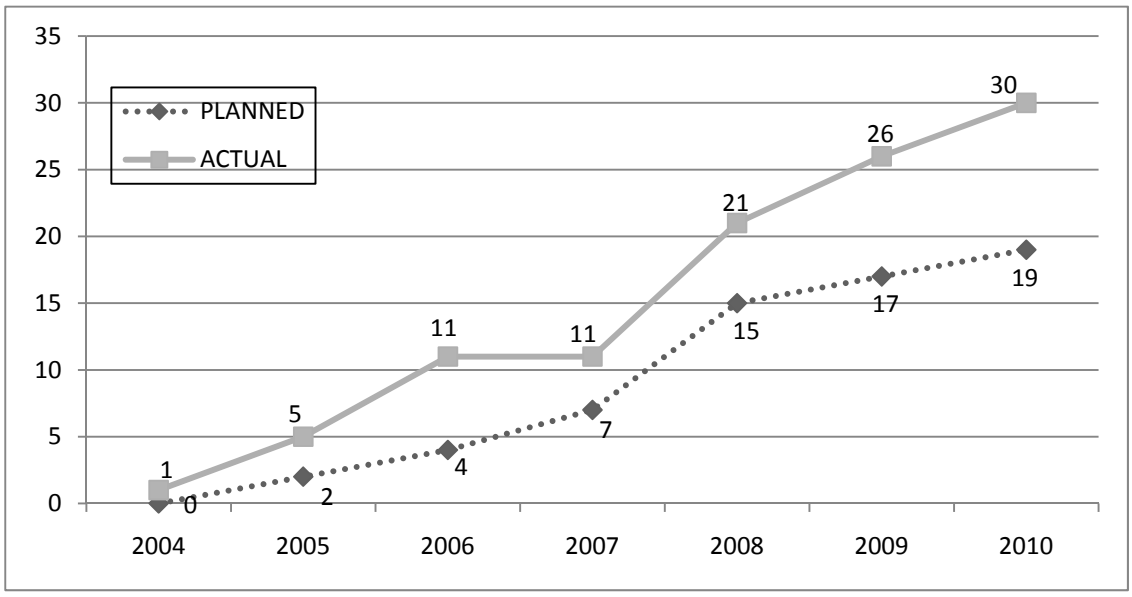


* Technical assistance in RH was concluded in 2007, and the last monitoring for this indicator was done in 2008

2.3.2. IR 2: National policy framework developed supporting sustainable fisheries

IR2.1. National policies supporting sustainable fisheries. FISH contributed to this IR through the development and adoption of policy instruments for fisheries management. As early as end-2009, right before the Project entered its exit phase, the formulation, review or revision of 22 policy instruments had been initiated, 3 more than the life-of-Project target of 19. The final result for this indicator was 30, exceeding the overall target by nearly 60% (Figure 2.16). Most notable among the policy work assisted by FISH was the landmark Comprehensive National Fisheries Industry Development Plan (CNFIDP), which defined the development framework and strategies for Philippine fisheries over 20 years.

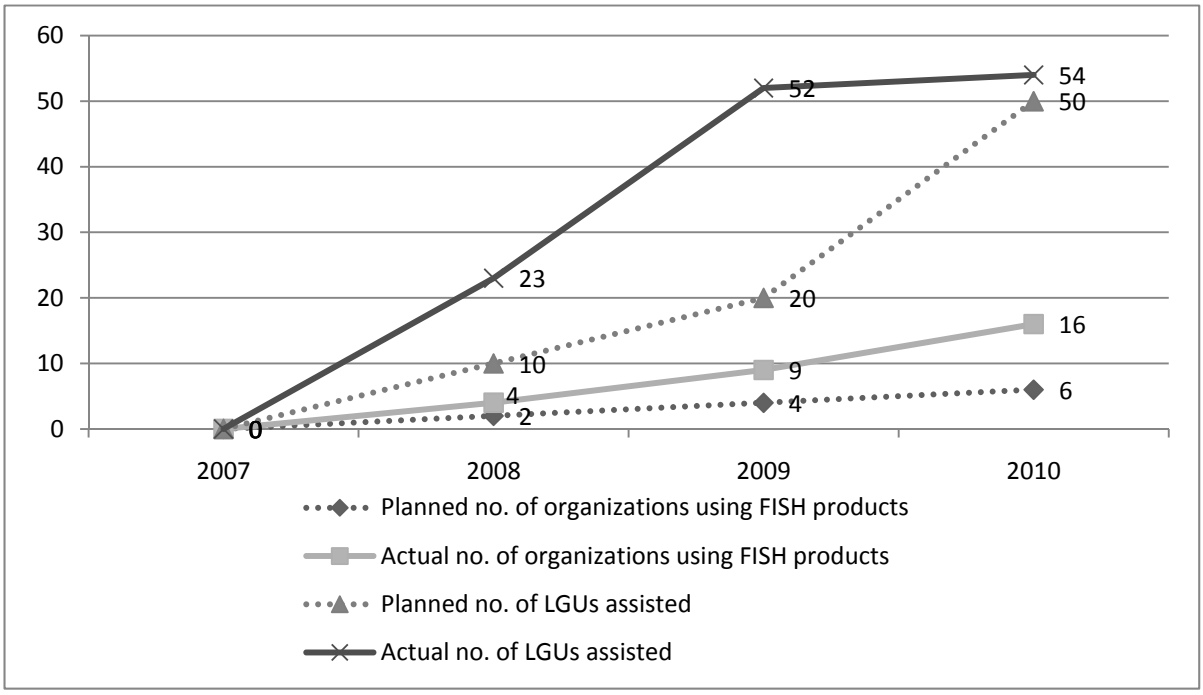
Figure 2.16. No. of national policy instruments developed, reviewed and revised with FISH Project inputs (IR2.1) (2004-2010)



Other highlights under IR2 were the adoption in 2004 of the Implementing Rules and Regulations of Executive Order (EO) No. 305, which devolved the registration of municipal fishing boats to LGUs, and the formulation of policy instruments that defined essential provisions for sustainable fisheries, including the National Plan of Action (NPOA) to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (IUU), guidelines for registration and licensing of municipal and commercial capture fisheries, and a policy study and a draft FAO on the adoption of EAF in the Philippines.

IR2.2. Replication of fisheries management and governance practices to other LGUs (outside the 4 target areas), agencies, NGOs and other projects through policy advocacy, training and technical assistance. This indicator was added to the results framework under the Project's extension work plan (2008-2010), and was therefore monitored only from 2008, with 2007 as the baseline year. In 2009, FISH surpassed its life-of-Project target for both number of partner-organizations providing assistance and the number of LGUs they assisted using FISH tools and products. The final results for this indicator were 54 LGUs assisted (target: 52) by 16 partner organizations (target: 6). (Figure 2.17)

Figure 2.17. No. of partner-organizations providing assistance and no. of LGUs they assisted using FISH tools and products (IR2.2) (2004-2010)



2.3.3. IR 3: Constituency of informed, disciplined and cooperative stakeholders developed and engaged in fisheries management

IR3.1. Public-private partnerships supporting fisheries management, social infrastructure, population programs, and socio-economic development in target areas. FISH surpassed in 2009 its life-of-Project target for this indicator, tapping 29 private sector partners (compared to the 2010 target of 16) to support its LGU and community partners and various initiatives in the focal and expansion areas. The final result was 30, with one new partner added in 2010 (Figure 2.18). A significant number of such initiatives, particularly community-managed MPAs, were funded through the SAF, which required substantial leveraging from Project partners.

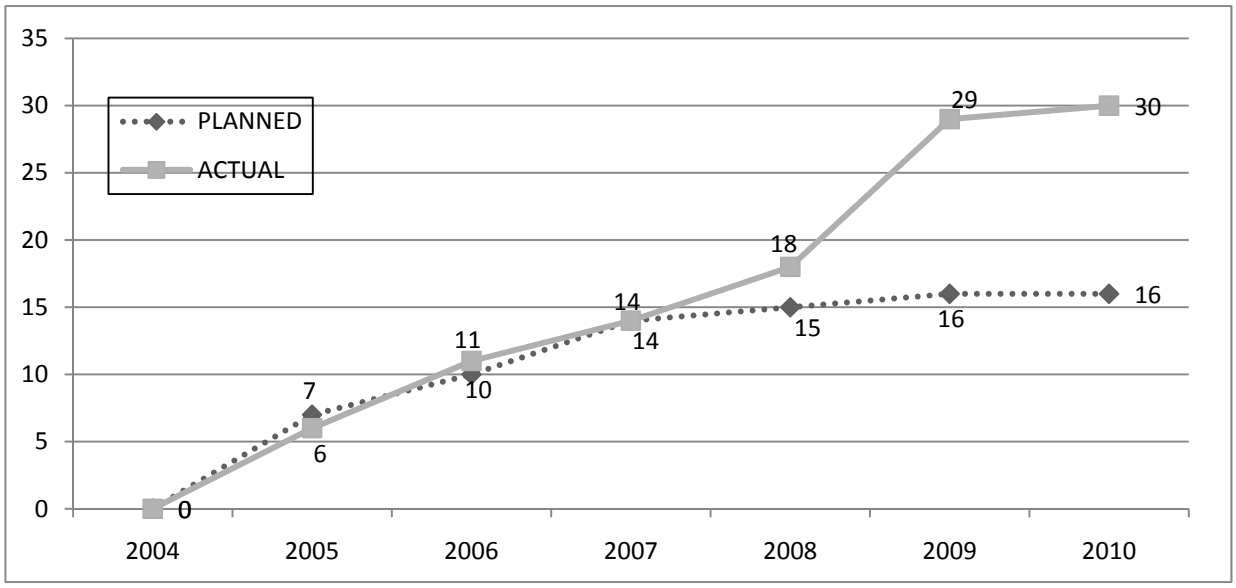
The Project also engaged the business sector and other organizations as partners in its advocacy activities. Below are some highlights:

- Partnerships with Knowledge Channel Inc. and the government-owned National Broadcasting Network (NBN) to air over cable and public television, respectively, the FISH Project's video documentary series "Under Construction: The Making of a Coastwise Nation."

  Corporate sponsorships from Mackmayer Printers for the large-format printing requirements of the Talibon Fisheries and Coastal Resource Management Interpretive Center (FCRMIC); Destinations Media, Inc. for the coverage, production and broadcast of DA-BFAR's Fish Conservation Week celebrations in Region 7; and various business firms in the form of free materials and tools for the painting of marine-themed murals in Danajon Bank.

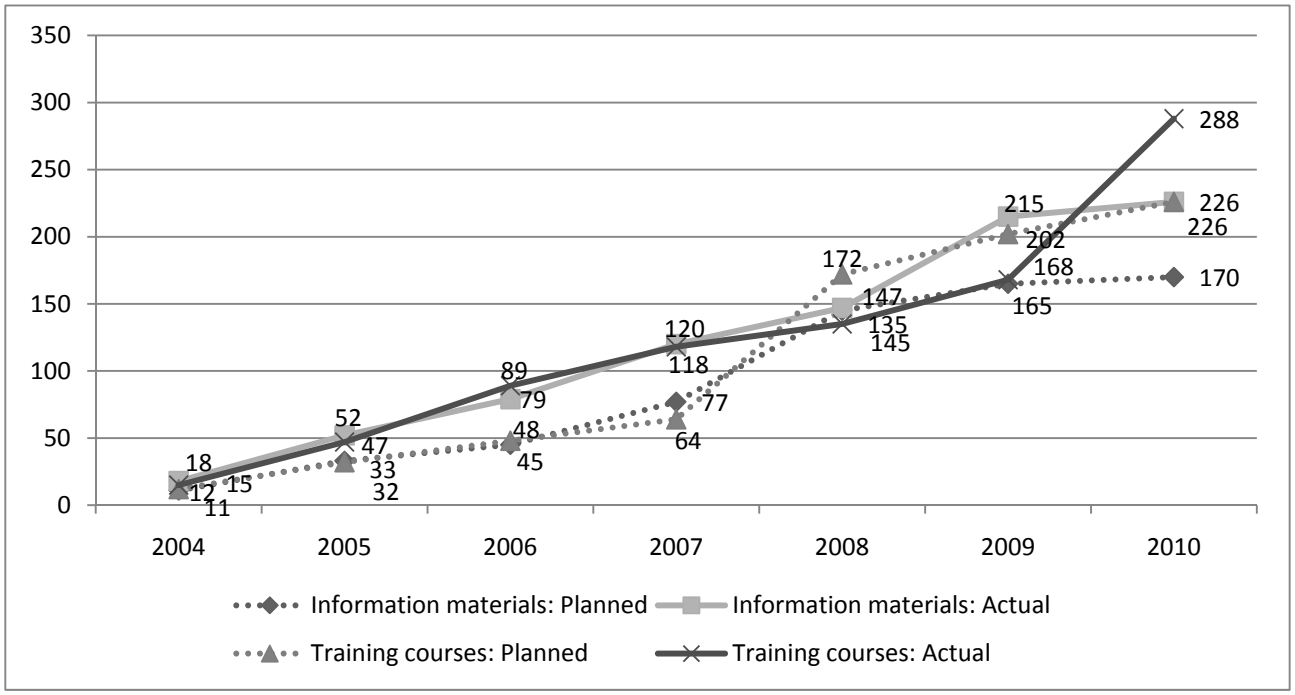
- Partnership with the Foundation for the Philippine Environment (FPE) for the conduct of a participatory 3D modeling (P3DM) workshop that produced a 3m X 6m 3D model of Danajon Bank to be used as centerpiece exhibit at the Talibon FCRMIC and as a planning tool for the LGU.
- Partnership with the Muslim Upliftment Foundation in Tawi-Tawi, Inc. (MUFTI) in Tawi-Tawi for the formulation and declaration of a *fatwa* (legal opinion or ruling in Islam) for marine environmental protection (with SAF support).
- Partnership with the youth sector in Calamianes, Palawan for the organization of *Tangay y Laud Calamianes* (I Love the Ocean-Calamianes), a movement to build champions among local residents.
- Partnership with the Catholic clergy of the Archdiocese of Cebu and the Archdiocese of Talibon in the conduct of advocacy activities on "Saving Danajon Bank"; Sea Knights, a group made up of the members of the Catholic Clergy and scuba diving enthusiasts who support coastal and fisheries management
- Partnership with the NGOs such as the Advocates for Policy Reform and Development of Caraga, Inc. (APREDEC), Environmental Legal Assistance Center (ELAC), Visayas State University (VSU) and Save Ormoc Bay Aggrupation (SOBA) in the development and production of radio programs and advocacy activities.
- Partnerships with the following organizations to support the conduct of the 2nd Conference of Coastal Municipalities (2CCM): League of Municipalities of the Philippines (LMP); Mayors Development Center (MDC); WorldWide Fund for Nature Philippines (WWF); Conservation International (CI); German Society for Technical Cooperation (GTZ); Marine Protected Area Support Network (MSN); UP Marine Science Institute (UPMSI); NGOs for Fisheries Reform (NFR); Camiguin Coastal Resource Management Project (CCRMP) of the New Zealand Agency for International Development (NZAID); and Coastal Conservation and Education Foundation (CCEF);
- Partnership with LMP and MDC on the development and conduct of the Executive Course on Sustainable Municipal Fisheries (ECSMF).
- Partnership with WWF and CI in the production of the the 2nd edition of the Directory of CRM Learning Destinations
- Partnership with UPMSI, USAID/DENR Environmental Governance Project and others in the production of the 2nd edition of the Coral Reef Monitoring Guide
- Partnership with Voyage to the Future Project of the Asia-Pacific Broadcasters Union (ABU) and NHK Japan
- Partnership with the ABS-CBN News Channel in the production of *Hinagpis ng Dagat* (Sigh of the Sea) which documented the major fishery issues in the Philippines, ongoing efforts in the FISH sites to address them and management measures recommended by key players in the fishing sector.

Figure 2.18. No. of public-private partnerships supporting fisheries management (IR3.1) (2004-2010)



IR 3.2. Dissemination and utilization of fisheries management information materials, training modules, policy studies and Project lessons. The Project's accomplishments contributing to this indicator included 226 various IEC activities and materials and 288 training workshops completed in 2010. These numbers exceeded the life-of-Project targets (Figure 2.19).

Figure 2.19. No. of fisheries management information materials distributed and trainings/forums conducted (IR3.2) (2004-2010)



The Project produced the whole range of IEC materials from leaflets and posters, through books radio plugs and TV documentaries, to electronic media (DVD, Internet, etc.), for dissemination to its focal areas and the general public. IEC activities included study tours and high-impact social mobilization activities timed to coincide with special events such as Month of the Ocean (May) and Fish Conservation Week (October). Training included planning, law enforcement, MPA management, species-specific fisheries management, and organizational development.

CHAPTER 3
Local Implementation

The bulk of the FISH Project's effort at the local level was necessarily concentrated in municipal waters, the major battleground in the competition over fishery resources. FISH was mandated to work with individual LGUs in its focal areas to build their capacity to locally manage fisheries in their areas of jurisdiction while encouraging collaboration among different LGUs sharing the same fisheries ecosystems. Having an approved results framework early in its implementation allowed the Project to lay out its program of action almost from the start, but implementation was not quite as straightforward. After all, FISH was embarking on an initiative that had not been previously attempted. The fisheries management measures were familiar and the 'science' was well-established, but they needed to be defined in terms of the Project's capacity-building approach relatively, especially under EAF.

For example, developing the procedure for estimating the FPR took substantive deliberation, largely because there were few estimation procedures available that could be applied directly in the short term to Philippine fisheries management at the local level. All told, it took the Project a full year to develop a suitable fish stock assessment methodology, and then collect and analyze its baseline data.

A major challenge was building capacity in generally data-poor environments, under the shared jurisdictions inherent in the Philippines' system of municipal waters. The Project laid down its operational framework at the outset, but by necessity, it had to tackle this particular challenge opportunistically, as local resource management capacity and initial interventions developed on the ground. It was a slow process, like capacity-building initiatives in the social, political and development spheres usually are.

As the Project began to wind down, there were evidences of clear progress in terms of laying the foundations for fisheries governance based largely on the basic CRM planning process, as well as persistent gaps and emerging issues that should be taken into account when planning for future projects with similar objectives as FISH.

This chapter discusses local level interventions and approaches, and highlights the key accomplishments. Generally, local level activities directly assisted and capacitated partner LGUs according to the set of indicators under *IR1. National and local capacity increased for fisheries management in 4 target areas* and *IR3. Constituency of informed, disciplined and cooperative stakeholders developed and engaged in fisheries management.* The targets and results are summarized in Chapter 2 and presented in greater detail in Appendix A and Appendix B; here the process and means of achieving these results are elaborated.

3.1. Planning & Implementation Process

FISH officially started in September 2003, but real groundwork started in earnest only in 2004. For much of its first few months, the Project focused on setting up its site offices in Coron, Palawan (serving the Calamianes area); Tagbilaran, Bohol (serving Danajon Bank); Tandag, Surigao del Sur (serving the Lanuza Bay area); and Bongao, Tawi-Tawi (serving the Tawi-Tawi Bay LGUs). A fifth site office opened in 2008 to serve Leyte and Southern Leyte in Danajon Bank.

Site managers were hired and fielded immediately to establish presence at the local level. This was closely followed by the recruitment of site and technical assistants to fill the demands and workload brought about by the full implementation of field activities. As activities became more intensive with the implementation of project interventions, community organizers were deployed to provide direct support to local stakeholders, and additional experts were hired as needs developed over the course of Project implementation.

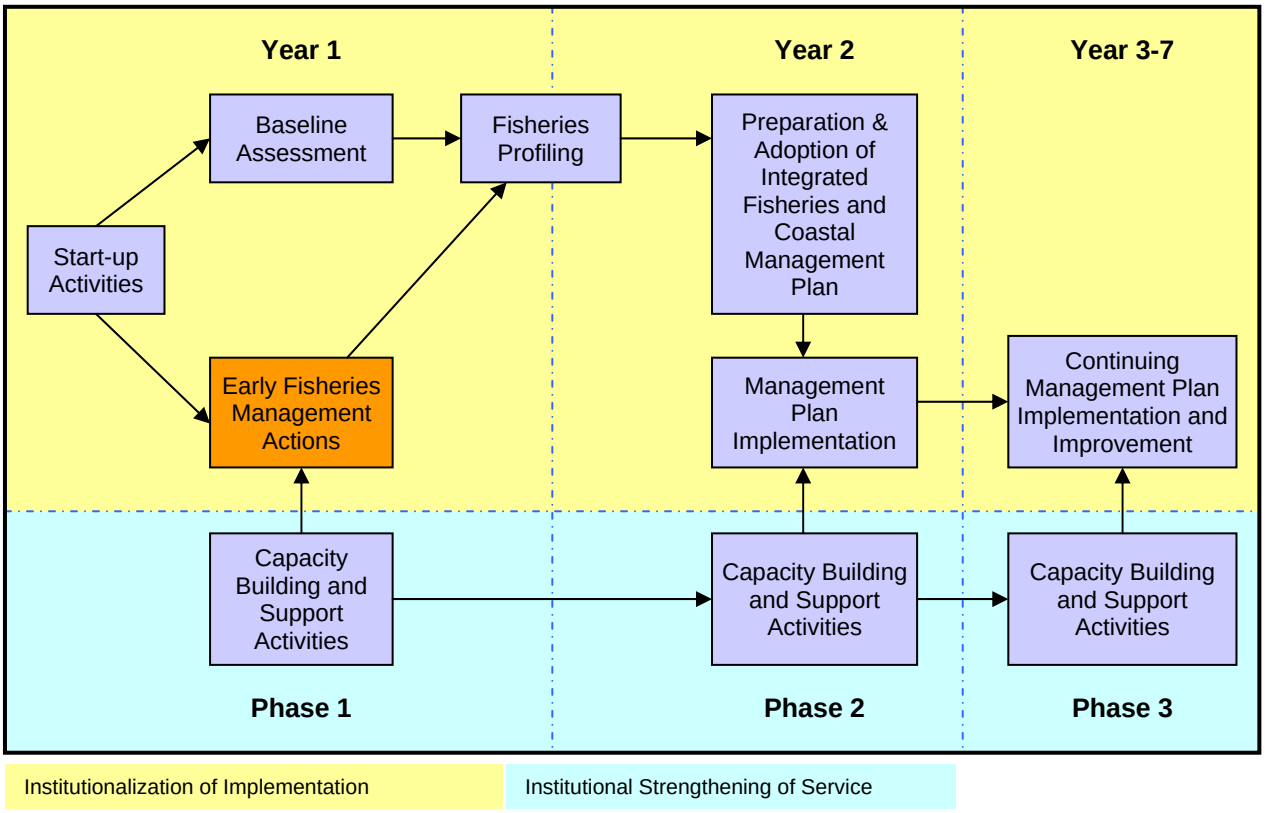
Generally, the technical assistance package for local implementation was a combination of training (based on participatory peer and adult learning and learning-by-doing processes), IEC, and legal, regulatory and policy support focused on building local capacities to manage fisheries, protect fish habitats (mainly coral reefs) and enforce fishery laws. And for the most part, as prescribed by the Project's SOW and approved results framework, emphasis was placed on activities that addressed issues related to illegal fishing and habitat destruction, and to a lesser extent, overfishing and increasing demand for fish caused by high population growth.

3.1.1. Approach and Activities

Implementation in the focal areas was generally intended to proceed according to the process and timeline shown in Figure 3.1, which was defined at the beginning of the Project. However, as a technical assistance project with sustainability of implementation as the long-term goal, the Project was expected to adapt to every LGU's level of awareness and acceptance of fishery issues, as well as their absorptive capacity for relevant skills and technologies. Indeed, as things turned out, implementation went only as fast as each LGU's willingness and capacity to accept assistance. Also, interventions were not necessarily introduced in the exact order that they were listed in the timeline, as the Project sometimes had to adjust to each partner-LGU's declared priorities, while keeping an eye on its own objectives.

Overall, it can be said that initial acceptance of fisheries management by LGUs and stakeholder groups was not as warm as the Project would have wanted. Some LGUs did not see overfishing and illegal fishing as a priority problem requiring concerted interventions and solutions. There was also a tendency among many LGUs to view fisheries management as an end in itself, rather than a means to ensure food security and alleviate poverty. These points of view were pervasive across the bureaucracy, from the mayor to members of the technical staff mandated to manage fisheries, who often regarded fisheries management as an "additional" job with no corresponding remuneration, and an added burden to their already meager financial and human resources.

Fig. 3.1. FISH Project implementation timeline (FISH Project, 2004)



Most resource users were just as lukewarm. A good number of fishers and community members initially believed that fisheries management would mean taking away their rights and access to livelihood from fishing. While acknowledging that their fish catches were declining and indeed had been on a steady decline for many years, they refused to appreciate that fisheries management was necessary to provide them with a stable and sustainable food supply and income from the sea.

This lack of community acceptance only reinforced the LGUs' rather tepid response to the Project's early attempts to introduce fisheries management measures. To a large extent, LGUs were less easily swayed by the urgent need for management than by political considerations, for instance, how well a program could help or hamper a sitting official's bid for re-election. FISH officially started operations about 10 months before a general election in 2004. In a number of areas, it meant waiting out the election season, when most local officials were focused on winning the vote and avoiding potentially controversial programs, including often contentious fisheries reform. This caused at least a few months of unwelcome -- albeit anticipated -- delay in getting many LGUs to engage in a meaningful way with the Project and its work. Even so, at the outset, FISH attempted to establish linkages with key LGU personnel and other potential "champions" that could serve, at the appropriate time, as a springboard for the full implementation of capacity-building activities. At the same time, the Project set about the essential first steps toward achieving its performance targets.

3.1.1.1. Baseline assessment. Logically the first order of business, baseline assessments were conducted in the focal areas in 2004, and consisted of 2 main monitoring events: fisheries surveys using proxy measures of fish stocks, and MPA surveys using direct observations of habitat condition. The indicators were % changes in fisheries-dependent and fisheries-independent catch rates, and % changes in reef fish biomass, fish species richness and benthic condition inside and adjacent to selected MPAs. All information went toward building local databases that could in the future be used locally for management as well as integrated into national databases to monitor long-term trends in resource condition and exploitation.

Although there had been efforts by earlier projects to incorporate biophysical indicators in the evaluation of Project performance, this was perhaps the first time that an attempt was made to incorporate fisheries management evaluation methodologies as part of the technical assistance package to the LGU. It was not a straightforward task, given the state of work in the development of assessment methodologies for tropical fisheries in a decentralized management setup such as the Philippines, and given that EAF was the long-term vision. As well as applicable locally, the chosen methodologies, parameters and reference points had to be replicable across LGUs, and relevant and applicable to the whole ecosystem and beyond. This was the recurring theme in the Project's work at the local level.

The baseline fisheries assessment was done over 8 months in 2004 and consisted of about 5 days of test fishing using selected fishing gear in pre-determined sampling stations, 3-month catch-and-effort monitoring, and fish visual censuses inside and adjacent to selected MPAs. The time it took to identify and define relevant indicators and formulate a baseline assessment plan compelled the Project to move its baseline year to 2004, a year later than prescribed by its SOW. And while a full year's worth of baseline information would have been more technically desirable, facing time and financial constraints, FISH had to settle for the minimum assessment work to evaluate Project performance.

Achieving measurable changes in fish stocks remained a priority, so much so that in communicating its objectives to its partners, the Project on many occasions emphasized its desired result of "a 10% increase in fish stocks." In hindsight, this probably put undue focus on a yet uncertain outcome rather than on the mandatory fisheries management actions needed to achieve it. But it also served to draw attention to the sorry state of municipal fisheries, which was highlighted in the baseline assessment reports.

Baseline assessment procedures and methods were designed in such a way that subsequent monitoring events in 2006, 2008 and 2010 could be conducted in the same or at least a similar manner, replicating sampling stations, sampling procedures, and sampling periods (using the lunar cycle as reference) to ensure comparability and minimize variations as much as possible (Table 3.1). All potential practical means to measure changes in marine fish stocks, both fisheries-dependent and fisheries-independent, were reviewed.

Table 3.1. Baseline assessment procedures used by the FISH Project (FISH Project, 2005)

Assessment of capture fisheries

Two major tasks were performed in each focal area: experimental or test fishing lasting about 5 days and a 3-month catch-and-effort monitoring period. Initial activities included the finalization of the sampling design for test fishing, harmonization of catch-and-effort monitoring procedures, and standardization of forms and templates. Likewise, preliminary test fishing stations for candidate fishing gear were mapped out and possible deployment of enumerators were evaluated.

Pre-sampling activities in each focal area included a round of inspection of the entire area prior to actual field mobilization, focusing on rapid site appraisal and informal interviews with randomly selected local fishers and government authorities, mostly members of the LGU. The purpose of this activity was to obtain preliminary insights into the nature and extent of the fishing operations in the study area. The data provided the basis for subsequent work scoping and scaling of field manpower to execute the sampling plan. This was followed by the recruitment and organization of the test fishing and field monitoring teams to implement the pre-designed scope of work within the specified timeframe. The latter entailed a preparatory phase for hiring, training, tasking, deployment, and trial runs for data collection.

In each focal area, a selection of fishing gear types was randomly deployed for the fisheries-independent surveys; the general plan was to deploy fishing gear in fishing areas randomly selected for the study. Meanwhile, catch and effort of all fishing gear were monitored over 3 months for the fisheries-dependent survey; catch-and-effort data were collected at representative landing sites selected for the study.

MPA Assessment

In each focal area, assessment teams conducted reconnaissance surveys of MPAs to be included in the baseline assessment. The following set of criteria (Table 3.1.1) guided the selection process.

Table 3.1.1. Criteria for selection of MPA

Criterion	Rationale
1. Recently established or not functioning well	Benefits (or lack thereof) from the MPA should be traceable to the supportive initiatives of the FISH Project
2. Minimum size of 10 hectares; preferred size greater than 20 hectares	More likely to be effective and thus more likely to exhibit detectable signs of improvement
3. No-take zone is present and likely to be enforced	Strong community support or interest in establishing or managing an MPA
4. Habitat has ecological value and potential for improvement	Live coral cover present, possible source or sink for coral reef and fisheries recruitment

In selecting potential MPA sites, the following were considered: 1) exposure to waves, 2) coastline shape/indentation, 3) proximity to mangroves and linked shallow water habitats, and 4) coarse estimates of living coral cover and general reef condition as determined by manta tow surveys.

Manta tow surveys covered as many of the reef areas as possible to construct a broad picture of the distribution of live coral cover within the chosen portion of the focal area. Geographical coordinates of each observation were obtained using a handheld GPS unit. The results were plotted on a map of the focal area to assist the selection of sites where performance baselines would be measured.

The significance of site selection should be noted. Not only did it establish sites to be surveyed in detail using transects, it identified areas where the Project would encourage MPA establishment and management by local communities. As a rule, 5 transects inside and 5 transects adjacent to an MPA were established for data collection, for a total of 10 transects per MPA. Likewise, the assessment of a potential MPA site generally involved the use of 10 transects evenly distributed throughout the site. In some instances, however, unforeseen circumstances necessitated deviations from these rules.

Generally, the choice of methods and the parameters measured were influenced by the following considerations (FISH Project, 2005b):

1. Skills available and sustained use of the gear in the focal area;
2. Practicality, so that the assessment procedure could be carried out by the stakeholders even after the life-of-Project; and
3. Versatility, allowing the collection of other fisheries-related data and information useful to fisheries management evaluation and planning.

Table 3.2. Summary of baseline assessment results in focal areas (FISH Project, 2005)

The Project baseline was determined over several months in 2004 using the most practical methods applicable for the exploited multi-species fish stocks in the tropics. To get a better picture of the state of harvestable fish stocks in the focal areas, the monitoring team employed both fisheries-independent and fisheries-dependent survey methods. The fisheries-independent survey was designed to provide relatively unbiased estimates of stock sizes; the fisheries-dependent survey provided estimates of catch rates for all fishing gear used in each area.

Findings confirmed results of earlier studies that showed fish stocks in the 4 Project focal areas to be in poor condition. In Danajon, for example, trawl test fishing resulted in an average catch of 4.54kg per 30-minute trawl operation from 19 sampling stations and 7.6kg in 5 control stations. But jellyfishes, sea urchins and starfishes constituted about 71% of the catch; excluding them from the computation would mean an average catch of only 1.33 kg. This is equivalent to an average trawlable biomass density of 0.45 t/km^2, estimated using the average trawling speed of 2.65 km/hr and head rope of 8.9 meters. It indicates a very low demersal standing biomass for Danajon Bank, even lower compared to highly overfished traditional fishing grounds like Manila Bay in 1992-93, Lingayen Gulf in 1978-79, and San Miguel Bay in 1995-96 (Table 3.2.1).

The dominant species in the catch was the pony fish, *Leiognathus splendens*, which comprised 42.9% of the total catch volume. This was followed by lizard fish (*Saurida tumbil*), puffer fish (*Arothron sp*.), flathead (*Platycephalus indicus*), and goatfish (*Upeneus tragula*). Most of the catch did not belong to the valuable species category, and valuable species appeared only in small numbers and often very small individual sizes. All these indicate heavy exploitation of the demersal stock that has resulted in biological overfishing.

Table 3.2.1. Estimates of average demersal stock biomass from trawl survey in Danajon Bank (2004) compared to other fishing grounds in the Philippines

Fishing ground	Year	Biomass (t/km^2)	Source
Carigara Bay	1979-80	2.00	Armada & Silvestre, 1981
	1995-96	1.04	Pura, et al., 1997
Lingayen Gulf	1978-79	1.33	Villoso & Aprieto, 1983
	1987-88	0.57	Ochavillo et al., 1989
Manila Bay	1949-50	4.61	Warfel & Manacop, 1950
	1968-72	1.71	Silvestre et al., 1986
	1992-93	0.47	Armada, 1994
San Miguel Bay	1947	10.60	Warfel & Manacop, 1950
	1980-81	2.13	Vakily, 1982
	1992-93	1.96	Cinco et al., 1995
	1995-96	1.31	Soliman & Dioneda, 1997
Danajon Bank	2004	0.45	FISH Project, 2005

Surveys using bottom-set longline showed catch per operation was highest in Coron Bay and lowest in Tawi-Tawi Bay. However, taking into consideration the typical number of hooks used in each area, catch per operation was highest in Tawi-Tawi Bay and lowest in Danajon Bank (Table 3.2.2).

Table 3.2.2. Summary of catch per operation of bottom-set longline used in test fishing in the FISH Project focal areas in 2004 (FISH Project, 2005)

	Focal area			
	Danajon Bank	Coron Bay	Lanuza Bay	Tawi-Tawi Bay
Number of hooks	**1,000**	**800**	**800**	**200**
Survey stations result:				
Average catch per operation	4.77	7.06	4.87	3.71
Standard deviation	3.03	3.20	3.63	2.89
N	30	33	30	69
Control stations result:				
Average catch per operation	5.66	3.48	4.11	0.95
Standard deviation	2.39	2.30	0.71	0.64
N	5	2	6	2

The catch in Danajon Bank was dominated by *Therapon jarbua*, locally known as "*bugaong*" followed by *Lethrinus lentjan* or "*katambak*"; species with higher economic value, such as the groupers and the snappers, were not well represented. With the exception of the squirrel fishes or *Apogon* sp*.,* all the other species comprising the top 10 in the catch of the bottom-set longline in Coron Bay had high economic value, where the catch was dominated by premium species like the groupers and snappers. Various threadfins (*Nemepterus* spp.) and *Lethrinus lentjan* were the dominant species in Lanuza Bay and Tawi-Tawi Bay, respectively.

Using fish traps, the surveys recorded a catch rate of only 1.06kg per fishing run (2 days soaking time) in Danajon Bank, compared to 5.48 kg per fishing run (3 days soaking time) in Tawi-Tawi Bay (Table 3.2.3). Catch in Danajon Bank was dominated by *Monocanthus chinensis*, *Thalamita* sp. and *Pentapodus setosus*, together representing almost 50% of the catch. Fish trap catches in Tawi-Tawi Bay were better and dominated by higher valued species, including various *Scolopsis* species (*Scolopsis dubiosus, S. personatus, S. taeniopterus)* and goat fishes (*Parupeneus barberinus, P. heptacanthus, Upeneus tragula)*.

Table 3.2.3. Summary of catch per test fishing operation using fish trap in Danajon Bank and Tawi-Tawi Bay (2004)

	Danajon Bank	Tawi-Tawi Bay
Survey stations:		
Average catch per operation	1.06	5.48
Standard deviation	0.68	3.58
N	30	23
Control stations:		
Average catch per operation	1.93	
Standard deviation	0.52	
N	5	

The highest mean reef fish biomass in selected and potential MPAs was recorded in Danajon, then Calamianes, Tawi-Tawi and Lanuza Bay. The mean reef fish biomass values at Danajon and Calamianes were moderate while those in Tawi-Tawi and Lanuza Bay were low compared to estimates from reefs in other parts of the country. There were, however, specific sites in Tawi-Tawi where reef fish biomass was moderate.

Mean species richness was lowest in Danajon Bank, then Calamianes, Lanuza Bay and Tawi-Tawi. In fact, researchers found the mean species richness in Danajon Bank to be markedly lower than the mean species richness in Calamianes, the second lowest. Researchers also observed the highest and lowest reef fish species richness values at Tawi-Tawi and Danajon, respectively.

Living coral cover was also lowest in Danajon Bank. In general, the trend in mean live hard coral cover across the focal areas reflected the trends in reef fish abundance and species richness.

Tawi-Tawi had relatively better fish stocks compared to the other sites, but even there, fish abundance and diversity were found to be much lower than what they should be based on experts' estimates of the area's natural productivity.

Catch-and-effort monitoring also found Danajon Bank to have the lowest mean catch rates and Tawi-Tawi the highest.

The first 2 considerations were of practical relevance in the context of the Project's objective to improve LGU capacity for fisheries management. To support this objective, it was important that the test fishing activities employed gears commonly used in each site to promote adaption of the methodologies by the LGUs. Participation in monitoring events by members of the LGU technical staff was encouraged to promote the transfer of skills, particularly in the data collection methods prescribed by the Project. Such participation turned out to be very limited however because of a shortage of available qualified local personnel – most technical personnel assigned by the LGU to CRM and fisheries management could not be involved full time in the drawn-out data collection process as they were preoccupied with coastal law enforcement, MPA concerns and other day-to-day responsibilities demanded by their jobs.

Overall, the condition of fish stocks in the 4 focal areas was found to be poor, varying only in their relative depletion. Baseline assessment results showed that Calamianes, with the highest biomass, and Tawi-Tawi, with the highest biodiversity, were in relative terms apparently the least depleted (Table 3.2). But even in these areas, many fish stocks, if not already overfished, were clearly under heavy fishing pressure and needed some form of intervention.

Paradoxically, the relative condition of the resource did not reflect the supposed experience of concerned LGUs in CRM – Danajon Bank, where the LGUs were deemed most experienced in CRM compared to LGUs in the other focal areas, was found to have the most depleted fishery resources, recording in most cases the lowest mean catch rates and species richness (Table 3.2). Whatever its cause, such contradiction underscored the imperativeness of the Project mission to address gaps in the CRM process directly related to managing fishing.

The first year of local implementation was essentially an entry phase in which FISH focused on building a relationship with its partner LGUs and the NGAs and NGOs that supported them. Key to promoting goodwill was the Project's ability to demonstrate its sensitivity to top-of-mind fishery issues in the focal areas. Following the CRMP model, FISH technical assistance was based on a consultative and participatory planning process that had been proven to work well in engaging major stakeholders to a significant degree in decision-making. But such mode of assistance is by nature a usually protracted process, often criticized as "long in planning but short on implementation." To address this concern, the Project implemented the planning process while simultaneously underscoring the "action" part of the fisheries management cycle by incorporating into its work plan some key start-up activities that produced evident benefits over a fairly short period, including "early fisheries management actions," coastal law enforcement and the establishment of MPAs.

3.1.1.2. CRM planning. The effort to systematically install some form of resource management planning process in each focal area LGU began fairly early in the life-of-Project. For the most part, this activity was determined by the individual LGUs' existing capacities in resource management and their readiness to accept specific interventions. As one might expect, the various LGUs had varying degrees of experience in CRM but overall they lacked the relevant capacities needed to manage their coastal resources, specifically fisheries.

The Tawi-Tawi LGUs were the least developed in terms of CRM or fisheries governance, and in fact hardly seemed to practice any semblance of governance in general. Absenteeism was common among both elected officials and the rank and file, and policy-making, if it happened at all, was done remotely from the officials' residences, sometimes even outside their municipalities. The LGUs in Danajon Bank and Lanuza Bay on the other hand had some experience in CRM, although their initiatives were scant and not programmatic and moreover could not prosper for lack of sustained support from local officials. On the whole, in all the sites, the LGUs had other priorities they deemed "more important" than CRM or fisheries management and, at least at the start of FISH, they failed to see resource management as a way to achieve their other development objectives.

LGUs did accept fairly quickly the Project's RH interventions. RH was built into the Project's design based on USAID's strategy to address "some of the country's most important development challenges," namely economic growth and governance, family planning and health, and environment. That RH was well-accepted by the LGUs was not surprising, given the relatively well-organized health offices in many municipalities and the focal areas' demographic profile: high population growth rates, high population momentum, low contraceptive prevalence rates, and relatively high unmet need for family planning. As generally follows, the higher the population growth rate, the higher the resource depletion rate. Through a subcontract with PATH Foundation Philippines Inc. (PFPI), the Project initially worked in 10 of the most densely populated barangays in its focal areas to bring in RH information and services, combining these with fisheries conservation messages. More significantly, it assisted in the preparation of a CRM/RH development plan in each of these 10 barangays. The intention was to integrate the barangay plans into the municipal CRM plans, setting a precedent for the rest of the focal areas. Subsequently, the Project's RH program was replicated in 15 more barangays, bringing the total of barangays served to 25.

In all the focal areas, there was very limited support for CRM or fisheries management from the LGUs' usual sources of technical and financial assistance. There were some provincial offices designated to perform this function in Bohol, Palawan and Surigao del Sur, but their staff were mostly based in the capital and they too were hampered by insufficient resources to respond effectively to the LGUs' needs. For the same reasons, the NGAs with relevant mandates, including DA-BFAR, DENR, the Philippine National Police (PNP) and Philippine Coast Guard (PCG), and state colleges and universities were not any more effective even if they were physically present in some of the Project sites.

The Project sought to address these gaps using the planning and implementation process developed by USAID/DENR CRMP in 1996-2004 as the framework for institutional development for LGUs. By design, this process is a capacity-building exercise heavily anchored on participatory and experiential, learning-by-doing approaches where every activity is a learning event that engages stakeholders in the critical steps of planning and decision-making. In Tawi-Tawi and Calamianes, participatory coastal resource assessments (PCRA) involving community members were conducted and fed into plan preparation; in Danajon Bank and Lanuza Bay where the LGUs had prior resource assessment experience, however, plan preparation commenced immediately using available

information from existing PCRA reports and other sources (some LGUs in both Danajon Bank and Lanuza Bay would later do their own PCRA as part of the assessment of plan implementation).

PCRA was more than just a resource assessment exercise; it also served as a social marketing strategy to engage community members in resource management, as well as ensure that their views were considered in planning. PCRA is a well-proven way to facilitate the numerous decisions that must be made in planning and implementing successful resource management by focusing on resource assessment from the perspective of resource users. It was especially useful in the Tawi-Tawi focal area, where most local officials and community members were experiencing for the first time the different aspects of the CRM planning and decision-making process, particularly those related to the establishment and management of MPAs. Observing firsthand the condition of the resources under their care helped them to appreciate better the need to protect and manage these resources.

Initially, the Project employed the PCRA method previously developed by CRMP. Later, a modified method was used to train trainers in the FISH expansion areas in Leyte and Surigao del Norte, where additional activities such as "market walks" were added to incorporate the collection of fish catch data and provide specific fisheries information that could be useful for developing specific fisheries interventions.

Study tours. To complement the planning process and implementation of early fisheries management actions, FISH designed and sponsored study tours to municipalities and provinces implementing successful CRM or certain specific fisheries management interventions that the Project was promoting. Through these tours, local officials from the Lanuza Bay and Tawi-Tawi focal areas visited Masbate and some Central Visayan provinces to observe and learn about ongoing municipal CRM initiatives, primarily coastal law enforcement, MPAs and IEC. They also examined the role of the Province as assistance provider in these initiatives. Later in the life-of-Project, FISH partners from Bohol and Lanuza Bay visited Palompon, Leyte for its successful siganid closed season, and Bohol officials also visited Masbate, Palawan and Tawi-Tawi to learn about their CRM experiences. Each of these study tours was a structured training program that started with a briefing at the FISH office in Cebu City on the objectives, expected outputs and areas of interest at each destination, and ended with a debriefing session that included an evaluation of how well the objectives of the tour were met and the preparation of an outline plan that indicated how the participants intended to use their learning experience to enhance their CRM programs.

But with or without PCRA, training incorporated participatory activities and mapping exercises that allowed participants to conduct rapid "diagnostic" appraisal of the status of their coastal habitats and fisheries, identify the range and geographic locations of problems and issues, discuss appraisal results and prioritize the identified issues and problems. This process often led to consensus that indeed problems existed, which in turn resulted in some expression of commitment from participants to take action to solve the problems. Workshop proceedings were put together in leaflet forms as "mini-profiles" and served as input to subsequent discussions on fisheries management.

Misconceptions about fishery issues that emerged from the discussions were further discussed and corrected through various small forums as well as large-group meetings and workshops. By conveying transparency and sincerity in helping stakeholders address specific problems, the Project managed to change to some degree the common perception that fisheries management means "taking away" the fishers' right to earn a living, delimiting fishing grounds or favoring certain stakeholder groups. The workshops and meetings were also sources of information on the dynamics of the various communities and stakeholder groups, their respective levels of self-

efficacy and the leadership potentials of individuals who would eventually be tapped as advocates or champions.

To increase buy-in from key local officials for CRM the Project employed another well-proven and popular social marketing and educational tool – study tours to municipalities and provinces implementing various successful CRM programs. In some cases, these study tours provided some decisive moments for local officials that were vacillating over the importance of CRM or its chances of actually producing any form of benefits for the LGU or fisheries stakeholders. Direct testimonies from fellow LGU officials and government workers who proudly enumerated their successes in CRM were especially powerful "if-they-can-do-it-so-can-we" motivators for still undecided mayors from the FISH sites.

Much of the initial planning, spearheaded by the IEC/training component, was focused on meeting the criteria for the FISH *IR1.5 (LGUs in focal areas adopting CRM)*. It addressed broad CRM areas, including fisheries, habitat protection, shoreline development, coastal tourism, waste management, enterprise development, coastal zoning, coastal law enforcement, and legal and institutional development, with no emphasis on any particular area of concern. The exercise was limited to identifying non-specific strategies and programs of actions, so the plans that came out of it provided only general directions for CRM and very few specifics on the different strategies and programs identified for implementation. It involved several consultations and briefings with local communities, LGU technical staff, local chief executives, and members of the *Sangguniang Bayan* (SB), a process that took up to 4 years to complete and was focused on achieving the following outcomes corresponding to the minimum actions necessary to start a CRM program: 1) adoption of a CRM plan through a local ordinance; 2) annual budget allocation for CRM; 3) establishment of an office (or a section within an existing office) with its own budget allocation and trained personnel; and 4) program implementation, primarily MPA establishment/management and law enforcement.

Organizational development. The Project's main strategy to institutionalize CRM as an organic function of the LGU was anchored on the creation of an office dedicated to coordinating and delivering CRM as a basic service. The objective was to establish the CRM office as part of the regular organizational structure of the LGU, but this was not always possible because of budgetary, legal and various other technical constraints. The Tawi-Tawi focal area LGUs each created a Municipal Agriculture and Fisheries Office (MAFO) as part of its regular structure and staffing pattern, but for the most part, the Project's partner LGUs designated one person, an existing office (usually the Municipal Agriculture Office or MAO) or some personnel assigned to such existing office to coordinate CRM. To capacitate the concerned LGU offices or personnel, the Project facilitated organizational development meetings with LGU staff tasked with various CRM duties, including MPA monitoring and management, coastal law enforcement, IEC, community organizing, and the specific fisheries management interventions supported by FISH. These meetings included coaching, mentoring, and performance monitoring and evaluation, as well as consultations to clarify relevant policy, systemic, procedural and other organizational concerns that emerged in the course of the implementation of the various interventions.

To fast track the implementation of key programs, even before the CRM plan was adopted, capacity-building was immediately undertaken for the major activities that the Project was mandated to assist, mostly involving training designated personnel in coastal law enforcement, habitat protection (mainly through MPAs) and early fisheries management actions. Multi-sectoral technical

working groups (TWGs) were convened in each LGU to serve as the Project's primary partners in building consensus on potentially controversial issues, such as law enforcement and the introduction of specific management measures. Along with particular stakeholder groups, the TWGs were the primary beneficiaries of the Project's capacity-building activities.

3.1.1.3. Early fisheries management actions. The so-called "early fisheries management actions" consisted mainly of species-specific fishing effort restrictions that were perceived by both decision-makers and resource users as "non-threatening" and could easily be undertaken in each of the focal areas. Implementing partners and resource users were consulted to help the Project come up with a list of species requiring management and chosen for 4 reasons: 1) they were present in all Project sites and constituted a significant portion of the fish catch; 2) information on their biology was available; 3) those who targeted them were (or were before they became overfished) solely dependent on the fisheries for livelihood; and 4) they involved a relatively simple management process that could be developed into an easy learning model for LGUs and replicated nationwide.

After further consultations, the Project prescribed a minimum mesh size for blue crab gill net in Danajon Bank, Calamianes and Lanuza, where blue crabs were a commercially important commodity. Only Talibon and Bien Unido in Danajon Bank eventually adopted an ordinance to manage the collection of blue crabs, primarily through mesh size regulation in Talibon and Bien Unido.

In Panglima Sugala, Tawi-Tawi, abalone – highly priced in the export market and under heavy harvesting pressure – was the species of choice. Stakeholders agreed to designate an MPA in an area identified as a vital habitat for the species. This was very consistent with a key principle of EAF, which states that management measures should consider not only the target species but also other elements of its ecosystem, including the target species' habitat.

To the extent possible, the early actions were pursued as capacity-building activities and supported by the IEC and policy development components. Focal LGUs were encouraged to participate in the planning process leading up to the enforcement of a management measure, from information gathering through stakeholder consultations and the drafting of appropriate policies to the formulation of strategies for implementation. As well as building local capacity to design and implement fisheries management, the strategy was also intended to generate the desired benefits to promote acceptance of "harder" measures that could result in more effort restrictions and perhaps even effort reduction. With the early management actions in place, the Project hoped to develop a viable model for introducing new effort restrictions and other relevant interventions.

But although new restrictions were clearly needed to reduce fishing effort, the level of compliance with existing regulations was low to begin with, so any suggestion to introduce new restrictions was expectedly met with skepticism. To build confidence in the effectiveness of certain measures to control fishing effort, FISH set about assisting the LGUs in revising or enhancing the enforceability of locally initiated but "dormant" fishing effort ordinances where they already existed. This was the case in Talibon and Bien Unido in Danajon Bank and Cortes in Lanuza Bay. Talibon enacted in 1998 an ordinance regulating the harvesting of gravid siganids, Bien Unido had a closed

season ordinance for siganids since 2002, while Cortes had an ordinance banning the harvesting of siganid fry from as early as 1996. If at all, these ordinances were never consistently implemented because of a lack of clear implementation guidelines and mechanisms.

In Danajon Bank, there were also strong doubts among stakeholders that the regulations could be implemented in a fair and consistent manner. During consultations on the closed season of siganid fisheries, stakeholders showed they understood the benefits of management, collectively agreed on the actions and policies that needed to be taken, and vowed to comply and take part in enforcement, with one caveat: The closed season must be fair to all and not allow certain sectors or individuals to benefit more than the others, or they would refuse to comply.

To help allay their concerns, the Project invited a group of LGU officials and community leaders from Danajon Bank to visit Palompon, Leyte to observe that municipality's *Bantay Danggit,* a program that had successfully engaged villagers in the enforcement of periodic closed seasons for siganids. This visit provided the impetus for local officials and stakeholders to support a similar closed season in their municipalities. With the Project's help, the LGUs in Danajon Bank, as well as Cortes in Lanuza Bay, adopted new ordinances or amendments to existing ordinances and devised the implementation guidelines needed to improve the enforcement of siganid management, essentially focused on closed seasons based on the lunar cycle, which influences the spawning cycles of many fish species, including siganids.

For the most part, existing laws did not need any revisions or enhancements, because for a variety of reasons the basic problem was, simply, lack of enforcement. That the Project would put law enforcement high on its agenda at the outset was par for the course, a crucial first step because in most of the focal areas at the time when FISH started, fishery law enforcement was weak, if at all present. To even begin to manage and reduce fishing effort, it had to encourage and help the LGUs eliminate what was already defined by law as illegal – and obviously excessive and unwanted -- fishing.

3.1.1.4. Law enforcement. Illegal fishing was indeed prevalent in the Project sites despite the existence of clearly enforceable laws, including municipal fishery ordinances based on the Fisheries Code. This was perpetrated mainly by commercial fishers poaching on municipal waters and by fishers using active gear, dynamite and cyanide or some other poison in areas far from public view.

Initial situational assessments indicated that many gaps in law enforcement could be traced to infrastructural, technical and legal issues in prosecution. Enforcers not only lacked the necessary skills to fulfill the special requirements of fishery law enforcement, but they also faced unique challenges related to, for example, the lack of cyanide detection facilities and fish examiners required to collect and preserve defensible evidence. Furthermore, in the relatively remote areas where FISH operated, there was a lack of prosecutors and judges – on average, judges of the circuit courts reported only 2-3 work weeks a year on the islands, because they must divide their time between the 5-6 courts assigned to them. Often, enforcers faced harassment suits that prospered more easily than similar suits on criminal cases, and often, they did not have easy access to defense counsel.

And there was the lack of capacity – and in a few cases apparent lack of interest – among LGUs to fully exercise their mandates in coastal law enforcement. Sometimes, lack of capacity was

tied to their lack of understanding of the social, economic, technical and political dynamics of certain fishery violations. For example, LGUs generally did not understand the intricate relationships between the trade of nitrate-based fertilizers and blasting caps, and the use of these products in dynamite fishing. Because of this, conventional strategies aimed at dynamite fishing did not factor in such relationships and were often ineffective and costly.

The level of interest of political leaders in the Project sites to enforce coastal and fishery laws was generally influenced not only by their knowledge and understanding of the issues, but also by the political and economic interests that predominated at the time, particularly during an election year. In places where commercial fishing concerns traditionally held political and economic clout, for example, political leaders tended to tiptoe around the issue of poaching by commercial fishers on municipal waters, or to selectively enforce the law against the use of active gear. This was the case with a few LGUs in Danajon Bank and Lanuza Bay, where Danish seines were allowed to operate in municipal waters long after the law stated that they could not. In the municipality of Cantilan in Lanuza Bay, local officials cast a tolerant eye toward trawls targeting pink shrimp, a local specialty product, despite clear legal prohibitions on the operation of active gear in municipal waters.

Law enforcement issues were further clouded by problems related to the delineation of municipal waters mandated under the Fisheries Code. Many of the LGUs in the Project sites had not officially delineated their municipal waters, and in a number of places, delineation had become a contentious issue between LGUs with boundary disputes. This issue was especially critical in the enforcement of the ban on commercial fishing in municipal waters – given the fuzzy boundaries, commercial fishers charged for violating this ban often got off on mere technicality. Commercial fishing intrusion by operators from Manila, Lucena, Bicol and the Visayas was particularly rampant around Calamianes and Tawi-Tawi, with Tawi-Tawi also experiencing periodic incursions by fishing vessels from Malaysia.

As might be expected in areas where enforcement was inconsistent or lacking, there was also an observable culture of disrespect for the rule of (fishery) law, and therefore very poor compliance. By and large, violations of fishery laws were regarded as *mala prohibita*, or wrong only because the law prohibited them, and so there was no real social pressure on people to follow them. Indeed, in some areas, violations were sometimes encouraged. In Tawi-Tawi, for example, dynamite fishing – rampant even on ordinary days – was openly encouraged during the few days following the Ramadan and other occasions, for example, as part of death and wedding rituals, when large gatherings for meals are common. A similar practice was observed on some islands in Danajon Bank during fiestas and birthday celebrations.

All of the above forces were present in some form and to varying degrees in the different LGUs that FISH worked with. In many cases, they were evidenced by inadequate budgetary support given to fishery law enforcement, or worse, political interventions during operations. Even so, to say that all LGUs had little interest in addressing fishery issues would not be fair or accurate. There were, in the FISH sites, a number of progressive local officials that pushed for reforms and several previous initiatives that provided a platform and opportunities for the Project to go at full throttle in trying to build local capacities for fishery law enforcement.

Adult learning methodologies. The principles of adult learning were used extensively in the development and conduct of our various training courses and IEC activities. Lecture discussions were combined with workshops, mapping exercises, games and ice breakers to maintain participants' interest and raise their level of information absorption.

Many training activities employed interactivity and elements of fun to enhance the learning experience. For example, the Project devised an exercise that quizzed participants on the value of coastal and marine resources; mayor participants who went through this activity realized that they knew very little about these resources and that, because natural resources were generally considered free and allocated no monetary value, most people regarded them as more valuable when converted to other uses.

Another exercise involved participants identifying and discussing the wide range of telltale signs of fish stock depletion in their respective areas and estimating the extent of the problem; the information generated during the discussions often developed into a solid introduction to the causes of overfishing.

One game that the Project often used, called "Let's go fishing," simulated open access fishing: Paper cutouts of fishes of assorted types and sizes were spread all over the training room; when told by the facilitator to "go fishing," most participants scrambled to get as many paper cutouts as they could, turning chairs over, peeking under tables, snatching the cutouts off walls, and generally uncaring about the mess they created. The object of the game was to cause a chaotic situation of "every man for himself" to illustrate the impacts of open access fishing. As a takeoff point for discussing the various forms of overfishing, the facilitator would also ask participants to measure the fishes they "caught," using a fish ruler that FISH developed to show the minimum adult sizes of commercially valuable species.

Indeed, the mere existence of locally initiated, although largely unimplemented, fishery ordinances showed that some LGUs at one time or another had been concerned about the state of their fisheries. LGUs in Danajon Bank and Lanuza Bay, where commercial fishing intrusion was a highly charged issue, had attempted with some degree of success to work together to resolve common concerns. In Danajon Bank, the LGUs had organized the Coastal Law Enforcement Council (CLEC), a forum for cooperation and addressing common concerns, while the Lanuza Bay LGUs had their own Lanuza Bay Development Alliance (LBDA). Even in Tawi-Tawi, where there was very limited local experience in any form of resource management and relatively low awareness of conservation issues, local officials and law enforcers alike generally welcomed the promise of technical assistance in fishery law enforcement.

The law enforcement component focused on building local capacities to enforce and improve the law enforcement environment. Skills training was the primary activity, but the assistance package also included establishing linkages between LGUs, enforcement units and agencies; lobbying for adequate budgetary support from the LGU; encouraging NGOs and civil society support; offering legal advice; supporting relevant policy reforms; and providing limited logistical support, primarily through the SAF.

Enforcement training was conducted in several stages, from the basic enforcement course to enhancement and specialization courses fitted to the peculiar needs of individual sites. Basic enforcement training began as soon as a municipal enforcement unit – usually called "MCLET" (Municipal Coastal Law Enforcement Team) -- was organized. The existence of enforcement units was required not only because they were an indicator of Project performance in fishery law enforcement but also because they would be the main focus of skills and capacity building.

The basic course covered fisheries and maritime law enforcement topics and legal and tactical approaches to site-specific violations. Enhancement training focused on the enforcement of site-specific ordinances covering such measures as temporal and spatial restrictions (including MPAs), registration and licensing, navigation, investigation and report writing, while specialization courses

consisted of the standard fish examiner's training course offered by DA-BFAR, plotting and chart work, media relations, and trainers' training.

IEC was also a key module in coastal law enforcement training courses, particularly in the aspects of prevention and detection in the law enforcement continuum. It covered relevant skills and methods that coastal law enforcers could use to "sell the law" and promote compliance, emphasizing the role of enforcers as "public educators" who could help transform community perception toward illegal fishing, especially cyanide and dynamite fishing, as highly undesirable and unacceptable behaviors. Because illegal activities thrive in the absence of strong moral or ethical standards, training highlighted the role of enforcement in strengthening and then maintaining the moral values and ethical norms of the communities they served.

Between courses, municipal compliance and enforcement teams received coaching and their performance was periodically assessed to gauge their learning progress and identify remaining skills and knowledge gaps. Field assessment results were plugged into the performance monitoring database system to guide action planning at both the LGU and Project levels.

As Project implementation progressed, new strategies and activities were identified to address outstanding issues and take advantage of the opportunities that emerged. Such issues and opportunities came out as early as the initial rapid appraisals conducted in the first year of FISH. These events were marked by open and non-confrontational discussions on otherwise sensitive subjects such as the use of dynamite in fishing and graft and corruption in the LGU and even among law enforcers. As a result, the names of suspected violators were revealed almost naturally and, combined with information from key informant interviews, were submitted to the local police for investigation and action.

To the extent possible, all concerned enforcement agencies and stakeholders were involved from the early stages of capacity-building, beginning in fact with the situation assessments. This created opportunities for the various agencies to clarify their duties and responsibilities, determine the scopes and limitations of their capabilities, and explore possible areas of collaboration. For example, the fishery law enforcement training included actual operational planning sessions involving the LGU, PNP and other enforcement agencies present in the area, allowing them to identify there and then specific issues that they could work on together. In some cases, there were opportunities to execute the plan in a training environment, thus giving participants a real-time, learning-by-doing experience in law enforcement.

As it turned out, training was among the easier stages of the technical assistance process. The coaching and mentoring that followed proved to be more challenging, often requiring FISH staff members, usually the site managers and community organizers, to get involved in conflict resolution, motivate law enforcers and constantly remind local politicians of their sworn duty to uphold the law. These were not easy tasks, especially in some Project areas where illegal fishing was a socially acceptable enterprise that even politicians or their families engaged in, and where nearly everyone was related to everyone else by blood or marriage.

To deal with these challenges as well as contribute to the Project's constituency-building objectives, the law enforcement component pursued collaboration with various groups and sectors

that helped to reduce the opportunity for graft or willful neglect of duty by the LGU by increasing public scrutiny of the enforcement effort. Among those that were involved were NFR, ELAC, APREDEC, EcoGov, Project Seahorse Foundation for Marine Conservation (PSF), Marine Aquarium Council (MAC), and the German Development Service (DED)/GTZ.

Where applicable, the Project used results from the baseline stock assessments as they became available to convince LGUs of the urgency of enforcing certain laws. There were no historical data on changes in biomass over many years that could be found for the focal areas, but by comparing its results with secondary information from other areas, the Project was able to show some indications of how serious the depletion of fish stocks had become. For example, the Project was able to demonstrate that the standing biomass in Danajon Bank was at 10% of the biomass recorded in Manila Bay in 1950 and a mere 4% of that in San Miguel Bay in 1947. This alarmed local officials in Ubay and Talibon enough to finally crack down on illegal fishing in the area. The enforcement campaign included commercial Danish seines that had long been able to freely operate there despite repeated complaints from small fishers and clear prohibitions on commercial fishing and the use of active gear in municipal waters.

A formal agreement forged with the national leaderships of PNP and PCG, the 2 enforcement agencies likely to be present in the municipality, also helped fill some of the common gaps in enforcement, primarily the LGUs' lack of technical expertise to enforce and their seemingly universal lack of funding and equipment. Whenever possible, the Project invited officials of PNP, PCG and DA-BFAR to attend trainings and special events and used these occasions to facilitate dialogue and feedback and bridge communication gaps between national and regional offices on the one hand and field personnel on the other.

Stakeholder participation was of course sought and their involvement as "champions" or advocates of good fishing was encouraged. More specifically, at the barangay level in areas where there were FISH-assisted MPAs, community-based fish wardens were trained and deputized to perform guard and patrol duties in and around the MPAs. This was where the Project focused most of its commodity support for law enforcement. Through the SAF, the Project helped several POs involved in the enforcement of MPA rules by providing funds for the construction of watch towers and purchase of searchlights, binoculars, 2-way radios, logbooks, monitoring boats, uniforms, charts, GPS, typewriters, legal references, evidence containers, and in some areas, temporary detention areas inside monitoring centers or guardhouses.

3.1.1.5. Marine protected areas. Among the various management actions in the Project's suite of interventions, area closures primarily to protect coral reefs through the establishment of MPAs was perhaps among the most familiar to the LGUs. The number of community-managed MPAs in the Philippines has grown tremendously in the last 2 decades, especially after the devolution of critical resource management functions to the LGUs, which initiated many of these MPAs. At the start of the Project, there were several MPAs already existing in its sites, except perhaps in Tawi-Tawi, where most local officials were being oriented for the first time to their CRM mandate. Having previously seen the benefits of MPAs, many LGUs were more than willing to accept assistance from FISH to establish more MPAs in their municipalities, or strengthen the management of the ones that were already in place.

In some cases, the LGUs appeared to be primarily motivated by expectations on the potential of an MPA to generate tourism revenues. The development of new dive destinations was certainly the main motivation for the LGU of Coron in the Calamianes, which had aspirations for tourism – understandable given the tremendous natural potential of the area. The Project took advantage of such interest to engage local officials in the management planning process, using the consultative process to level off expectations and, as implementation progressed, slowly introduce fisheries management objectives.

The opposite was true for Tawi-Tawi. Although blessed with both natural and cultural features and considerable potential for tourism, the province is located in an area where unsettled socio-political conditions remain a deterrent to tourism development. Here, from the onset of the planning process, the Project had to emphasize the potential of MPAs to contribute to the recovery of fish stocks and the improvement of fisheries. Study tours were the key strategy employed to convince local officials of the benefits of MPAs – these tours included successful MPAs in Bohol, Negros Oriental and Cebu, where fishers had directly benefited from the recovery of resources inside and around the MPAs.

Where an MPA was already established by municipal ordinance with adequate provisions, the Project focused on organizing and training a community-based management council to run it, and if they qualified, provided them through SAF with commodity support for the demarcation and protection of the MPA. Otherwise, assistance necessarily included site selection, technical survey and policy support leading to the adoption of an ordinance declaring the establishment of the MPA and then its physical establishment. For all MPAs whether old or new but especially those that would be tracked for the calculation of PR3, PR4 and PR5, baseline conditions were determined and the MPAs monitored every 2 years by independent survey teams, mainly from UPVFI.

The decision to rely on expert surveys rather than participatory assessment methods to track changes in the biophysical conditions of the MPAs was made amid concern within the Project that participatory, “stakeholder-centric” methods would not generate the scientifically reliable data deemed more appropriate for the calculation of the Project results. Nevertheless, in Calamianes and Tawi-Tawi, results from the PCRA were also considered in MPA planning and to help community members appreciate better through firsthand observation the importance of coral reefs and the need to protect and manage these resources.

Besides training in coastal law enforcement, community members tasked to manage the MPAs in the various focal areas were trained in IEC and advocacy work to help build support for the MPAs. Fish wardens were expected to enforce MPA rules and regulations but more likely than not, they would rely on “enforcer presence and verbal persuasion” to discourage violations, and depend on other community members not only to obey the rules but also to help guard the MPA and report threats or violations.

Where the MPA had the potential to attract visitors, such as in Coron, the Project assisted the LGU in putting in place a user fee system to at least partially pay for its maintenance. In all cases, considerable effort was taken to convince the various LGUs to include the MPAs in their annual investment plans (AIP). The SAF was a major source of funding for a number of MPAs but it lasted

only so long – FISH had to make the LGUs understand that they needed to identify funding sources and mechanisms early enough for management and protection to be sustained.

In many of the communities assisted by the Project, within a year of the establishment of the MPAs, fishers began reporting some improvement in their fish catches. Fisher testimonies were shared with local officials to rally them to continue their support for the existing MPAs and in addition, to consider the establishment of new MPAs. Midway through the Project's base period, hydrodynamic and larval dispersal studies commissioned by FISH were completed and provided new information on current and larval dispersal patterns and potential ecological interactions in the focal areas. The Project encouraged LGUs to invest in new MPAs that were selected based on these studies to meet the requirements of an MPA network.

MPA networks. To better support its fisheries management objectives, FISH attempted to establish MPA networks in its sites based on results of hydrodynamic and larval dispersal studies that analyzed current patterns to determine the extent of dispersion of plankton and larvae in each focal area. MPA networks are believed to be more effective than single MPAs in terms of improving fish catch and conserving biodiversity. Working with the MPA managers, the Project used the hydrodynamic and larval dispersal data to determine if any of the existing MPAs in its focal areas were ecologically linked and found out that, in fact, most of them were interconnected. Subsequently, from 2007 onwards, the data were also used to guide the selection of new MPA sites in Calamianes and Tawi-Tawi.

FISH also assisted the organization of the management groups that would take charge of each network, namely the Calamianes MPA Network, Danajon Bank MPA (DBM) Network, Lanuza Bay's Nagkahiusang Mananagat na Nag-amping sa Kadagatan (NAMANAKA), and Tawi-Tawi Bay Fish Sanctuary Alliance (TBFSA). Presided by duly elected officers, each of these organizations formulated their own management plans and policies, and held regular meetings with secretariat support from FISH.

MPA networks are regarded as generally more effective than single MPAs in protecting multiple elements of an ecosystem such as, in this case, larval sources and sinks. In addition, with regard to the Project's objective to promote EAF, an MPA network provided an opportunity to illustrate in a practical way the concept of the ecosystem, without the need to belabor some of its rather abstract definitions.

3.1.1.6. Instituting a fisheries management framework in local governance. Despite being a major strategic theme, much of the planning needed to address the wide range of current and potential fishery issues in each site and deepen the institutionalization of fisheries management planning was not undertaken until late in the life-of-Project. The Calamianes focal area LGUs completed their inter-LGU comprehensive fisheries management planning toward the end of the Project's base period in 2008, but similar activities in the rest of the sites was reprogrammed for the 2-year extension phase of FISH.

There were a number of reasons for putting off the comprehensive planning to the latter part of the Project. First, there were questions about the absorptive capacity of partner LGUs. As discussed previously, in most of the focal areas but particularly in Tawi-Tawi where coastal resource governance was virtually nil at the start of implementation, the Project opted to start capacity-building with the basic requisites of CRM, focusing on those areas where the benefits of management could be demonstrated in the short term, either by direct implementation or through the experience of other LGUs.

Second, while the general CRM planning process for LGUs had been undertaken many times before and was well understood, there was no prior experience in the Philippines in applying a comprehensive fisheries management planning process in an LGU setting, certainly not one that also incorporated the principles of EAF. Given this, the Project opted to wait for the outcomes of its initial interventions to help define the specific elements of a fisheries management process that Philippine LGUs could undertake on their own with some level of confidence and an acceptable chance for success.

Third, the approved results framework for FISH specified the adoption of inter-LGU fisheries management plans, a process that, compared to municipal-level planning, required much more coordination and arbitration -- and therefore time -- to complete. Even discussions on the formulation of the Calamianes Comprehensive Fisheries Management Plan, the first to be completed among the 4 sites, could only proceed after sufficient buy-in from the focal LGUs for fisheries management was achieved. In Coron specifically, local officials were quite vocal about tourism development being their main priority and at first showed little interest in the type of technical assistance that FISH had to offer. After some of the FISH-assisted MPAs started attracting tourists and generating revenue from user fees, however, they gave the Project a second look and became more engaged in its capacity-building initiatives. The planning process – involving the LGUs of Busuanga, Coron, Culion, and Linapacan – took over one year to complete. The plan was finally adopted by the concerned LGUs in June 2008, just 3 months before the Project's base period ended, leaving FISH hardly any time to assist its implementation.

Fourth, the Project's priority to improve the fishery law enforcement environment in its focal areas, if successful, would effectively result in the limitation of fishing activities that, although illegal, had in many cases gone on for many years and were generally tolerated socially. Any meaningful planning toward managing the overfished resources in the FISH sites would naturally result in recommendations for new restrictions, and it was argued that the introduction of too many new restrictions on top of the enforcement of existing regulations before the benefits of reducing illegal fishing became apparent would be socially unacceptable, too politically sensitive, and therefore unlikely to succeed.

Lastly, there was concern within the Project that the available information on the various fisheries in its sites was not adequate for the purpose of doing a comprehensive fisheries management planning, especially under EAF. It was decided that more information on the local fisheries system was needed to guide planning and ensure strategies and actions that, as well as being truly doable and relevant to the local situation, addressed a wide range of current and potential fishery issues and the requirements of sustainable fisheries under EAF.

In EAF, the fisheries management planning process should start with the best available information on the functions of the various ecosystem components and the configuration of the fishing effort exploiting harvestable resources in a defined area. Many of the critical information needed – for example, the habitat needs of the different life history stages of organisms that represent the "significant food web" and how their removal relates to standing biomass, production, optimum yields, natural mortality and trophic structure – were not available in the FISH sites.

The Project did attempt an ecosystem modeling exercise involving the Danajon Bank focal areas to determine and establish the appropriate fishing gear and effort configuration that would have served as a basis for pursuing biophysical targets, particularly increased fish stocks through the establishment of appropriate levels of fishing effort. Information from a rapid appraisal conducted in 2004 and the baseline assessments were used to develop the ecosystem model, a simulation of various scenarios from which stakeholders could agree on one scenario that they regarded as most appropriate for their situation and management objectives. The exercise was undertaken to gauge stakeholder acceptance of a managed fishing regime where effort would be controlled and allocated among legitimate users. In the end, however, the LGUs were deemed not ready for such an intervention, because the ecosystem modeling participants were less concerned about regulating lawful (but probably excessive) fishing than eliminating – or at least reducing – the still rampant illegal fishing activities happening in their fishing grounds, primarily cyanide, dynamite and commercial fishing and other fishing that used active gear.

Nevertheless, throughout the Project life, specific fishery issues were tackled "in increments" whenever and wherever in the focal areas there was an opportunity to do so. The mode of technical assistance delivery toward capacity-building was primarily through LGU participation in stakeholder consultations and coordination activities leading to the development of model species-specific management initiatives. Besides the above discussed early management actions to regulate the harvesting of blue crabs, siganids and abalone, FISH proposed minimum and maximum size limits for the harvesting of coral trout (*suno*) in Calamianes but dropped the proposal when the provincial government of Palawan declared a closed season for live coral trout.

To effectively engage stakeholders and encourage partners to adopt appropriate fisheries management measures, FISH messages highlighted issues that directly affected fishers, such as, 1) fish stocks would continue to decline if no action was taken to address the issues; 2) solving the complex problem of overfishing would have a greater chance to succeed by breaking it down into its various components; 3) illegal fishing had tremendous impacts on fishers' livelihoods; and 4) fisheries management must consider natural biological processes like spawning and recruitment of species. Messages that underscored not only the problems but also the solutions were repeated for emphasis and generally proved to be the most effective.

Given the stakes involved – in most cases, the fishers' and their families' sole means of living – the process was inherently drawn out and tedious, involving often difficult negotiations between regulators and fishers, and sometimes among fishers. And like in all processes of negotiation, the outcome was usually a compromise, rather than the ideal, solution. At least in one case in Cantilan and Carrascal in Lanuza Bay, for various reasons, the LGUs did not enforce the law against the use of trawl to catch pink shrimp. (Trawl, being an active and destructive gear, is prohibited in municipal waters.) But they did come up with a regulation that limited the operation of shrimp trawls to a specified time during the year when their target species was most abundant, and agreed to apply a similar regulation to beach seines, another gear used to catch pink shrimp. Although not a definitive solution, it at least contributed toward reducing the by-catch of the fisheries. It also demonstrated to the concerned LGUs the role of research in crafting local policies in general and local fisheries regulations in particular.

Meanwhile, the Project pursued the institutional work needed to sustain the gains it hoped to achieve in capacity-building. The opportunity to establish a key requisite of fisheries management in the local governance system came up early in the life-of-Project. In 2004, with Project support at the national level, DA-BFAR issued the implementing guidelines for EO 305 ("Devolving to municipal and city governments the registration of fishing vessels 3GT and below"), allowing the Project to begin the process of developing a fisheries registration and licensing system with its partner LGUs. The plan was to eventually set up a "one-stop-shop" that administered both registration and licensing, but registration was pursued first in order to build public trust in the system. Registration was relatively easier to promote to fishers than licensing because fishers regarded it as a way to claim their privilege to fish; licensing, on the other hand, was often associated with regulation and taxation and thus more difficult to "sell."

The fisheries registration system was installed in each of the focal LGUs through a series of workshops leading toward the adoption of a municipal ordinance that officially instituted the system. Project assistance was sought and provided to train municipal personnel to administer the system, and qualified LGU staff were further trained and certified by the Maritime Industry Authority (MARINA) in admeasurement, a prerequisite to the official registration and documentation of all boats. Standard registration and licensing forms and databases were developed to help ensure that the information collected could eventually be integrated and used to monitor fishing trends on a larger geographic scale, such as at an inter-LGU, regional or wider fisheries ecosystem level. In addition, the Project put together an information management system designed for easy entry and retrieval of the various information gathered from registration and licensing, catch-and-effort monitoring, and other fisheries activities.

Qualified personnel from each of the focal LGUs in Danajon Bank and Calamianes were also trained in catch-and-effort monitoring. The plan was to deploy the trainees to data collection assignments over 3 months to determine how effectively each organization could implement a catch-and-effort monitoring program, but the trainees, citing other duties and lack of resources, were unable to complete the task. Even so, the Project continued to encourage the LGUs to invest in evaluation and monitoring by underscoring the importance of timely information in determining the progress of interventions, detecting remaining and emerging issues and planning forward to ensure that solutions were identified and applied before any problem became irreversible.

Fish stock and MPA assessments presented an opportunity to demonstrate just how important data collection and the periodic review and evaluation of management interventions were to promoting sustainable fisheries. The results showed that, overall, fish stocks seemed to have improved, most likely because of better law enforcement and the MPAs. On closer examination, however, the catch-and-effort monitoring data showed the possible emergence of new threats especially to small-scale fishers.

To illustrate, in Ubay in Danajon Bank during the first 3 years of FISH, the Project's intervention facilitated an intensive campaign against commercial fishing intrusion that successfully reduced the number of Danish seines operating there from 27 units at the start of the Project to 0 in 2006. The drive against dynamite fishing also appeared to be at least partially successful, with the number of dynamite fishers decreasing to about half their number in 2004. Encouragingly, total

fisheries production in the area rose from about 1 million kg in 2004, about 27% of which came from illegal fishing, to more than 1.7 million kg in 2006, with illegal fishing output reduced to just over 2% of total production.

However, even as total output from legal fishing activities rose significantly, the catch rates of most small-scale fishers actually decreased. Besides the intrusion of Danish seines from neighboring municipalities into Ubay's waters, the catch-and-effort data revealed 2 other possible reasons: 1) the total number of fishers (estimated from an inventory of gear) increased more than two-fold, and 2) there was a spike in the number of stationary lift nets from 4 in 2004 to 16 in 2006. The former was most likely merely a reaction to the increased fisheries productivity in the area as it was not sustained in the succeeding years, but the latter trend held through 2008, with the stationary lift nets further increasing to 20 units. In addition, there was also a big increase in the number of fish corrals, from 16 in 2006 (it was 17 in 2004) to 48 in 2008.

There was cause for concern because while small-scale fishers (who made up the majority of the local fisheries sector) were generally experiencing lower catches, the few operators of fish corrals and stationary lift nets seemed to be capturing most of the benefits of improved management and increased productivity from the MPAs, with fish corrals recording an increase of more than 400% in total production and stationary lift nets more than 3,000%. Although passive gear were permitted by the LGU, stationary lift nets proved to be highly efficient, and in addition most if not all of the fish corrals reportedly used fine-mesh nets (which are, strictly speaking, illegal). Indeed, even with their numbers rapidly rising, fish corrals registered an increase in average catch rate from 4.59 kg in 2004 to 8.54 kg in 2008, as did stationary lift nets, from 10.31kg to 62.10kg.

There was also concern that the fish corrals (particularly in Talibon) and stationary lift nets (mainly in Ubay) had in fact already started to cause growth overfishing in the area. Despite the massive increases in production from these fisheries between 2006 and 2008, for instance, Ubay's total fish landings actually decreased by nearly 300,000kg during the period.

Highlighting these results, the Project encouraged the concerned LGUs to consider limiting the number of both gear and, in Talibon's case, regulating the mesh size of fish corrals. In partnership with DA-BFAR, it initiated research on these gear types and their impacts for more definitive recommendations. Negotiations started in late 2008 and were still underway more than a year later, even as a few operators, apparently already experiencing declining production, had reportedly begun to voluntarily dismantle their installations. Indeed, Danajon-wide in 2010, the average catch rate of stationary lift nets fell 10.1% compared to 2004, the first time since the Project started monitoring the fisheries. As of this writing, the Project has completed data collection and begun collating the information for analysis. The LGUs have committed to accept the Project's recommendations as soon as the study is completed and adequate information becomes available to support the proposed restrictions.

FISH also promoted fisheries use zoning midway through its 5-year base period, but issues related to the delineation of municipal waters in many of the focal areas dragged out the process well into the 2-year extension period. In due time with Project assistance, most of the focal area LGUs completed the delineation process, but there were a few that could not because of unresolved boundary disputes. To get around boundary issues, the Project persuaded concerned LGUs to set

aside the debate about who had jurisdiction over the disputed areas (or pursue it in other forums) and focus instead on the fishery resource uses that they shared with neighboring municipalities. This allowed the Project to begin the zoning exercise as part of its performance milestone for the extension period.

> ***Municipal water delineation.*** The delineation of municipal waters is one key CRM mandate that LGUs cannot do individually. The process is inherently consultative because it requires agreement between LGUs on the extent of their respective areas of jurisdiction, and it sometimes involves contentious boundary disputes between two or several LGUs that require third-party arbitration. Responding to requests from its partner LGUs and working with NAMRIA, the Project facilitated the resolution of long-standing boundary disputes between the municipalities of Clarin, Inabanga and Buenavista in Danajon Bank. It also assisted the validation of coastal terminal points and subsequent delineation of municipal waters in 6 municipalities in Surigao del Norte, an expansion site. However, the delineation exercise was not concluded successfully in Calamianes, where overlapping claims on certain islands and islets proved to be too polemical to resolve. There was no delineation attempted in Tawi-Tawi, where municipal waters are very extensive and Project resources were focused on ensuring that the nearshore resources which local communities have immediate access to and heavily depended on were properly managed (primarily through MPAs and community-based law enforcement).

Zoning mostly involved marine spatial planning (MSP) focused on fishery resource use within defined ecosystems shared by the different LGUs in the focal areas to determine and evaluate the interactions among the various uses, identify multiple uses and resolve any existing or potential conflicts through proper allocation of space. The planning exercise was patterned primarily after a similar process introduced in Australia's Great Barrier Reef, but modified and abbreviated to fit the focal areas' much smaller spatial expanse, on-going parallel initiatives in the areas, and available technical staff and financial resources. Other experiences were also considered, including those from Tun Sakaran Marine Park in Sabah, Malaysia; the Wakatobi and Komodo National Parks in Indonesia; the integrated coastal zone management zoning scheme in Xiamen, China; and the integrated land, coastal and sea use zoning of Batangas Bay and Bataan.

> ***Fisheries zoning.*** The Project designed a participatory zoning process that included orientation training, fisheries mapping, and consultations with local stakeholders to determine and propose solutions to existing or potential use conflicts. The solutions were added to the zoning map, which was validated through a series of community-level meetings with municipal and *barangay* officials in all LGUs in the 4 focal areas, as well as Leyte. Parallel executive-legislative consultations were also conducted and inputted into the final zoning map, which was presented in a public hearing and then officially adopted through a municipal ordinance or similar policy instrument.

The zoning plans, as well as ecosystem models developed by the Project for each of the focal areas, fisheries registration data and other information collected from the implementation of various management interventions, were fed into the fisheries management framework planning conducted in 2010 as part of the Project's exit plan. The framework plan outlined the fisheries management interventions already in place as well as other measures to be undertaken by each LGU over a 5-10 year period, including fishing effort configuration strategies and schemes that would guide municipal fisheries managers toward establishing the appropriate levels of fishing effort.

3.1.1.7 Broadening the constituency for fisheries management through information, education and communication. Addressing open access fishing and promoting changes in fisheries exploitation behavior and practices necessitates the following driving forces: 1) effective local fisheries governance; 2) stakeholder engagement and building social capital; 3) enhancing stakeholder awareness/knowledge; 4) promoting environmental ethics and best practices; and 5) nurturing leaders

and champions. Working on the premise that IEC has a critical role to play in each of these driving forces, the Project integrated into all of its activities the major IEC strategies of social marketing, social mobilization and development support communication, aimed primarily at developing a constituency for fisheries management within as well as outside the fishing sector. Incorporated into many of the training designs developed by the Project for example were problem-solving and role-playing exercises to help facilitate discussions among the various stakeholders and provide the context by which to bring out the message that while poverty is often used as an excuse for illegal fishing, it is illegal fishing that has caused and continues to deepen the now pervasive poverty in coastal communities.

Activities were targeted mostly at the following stakeholders: 1) key players or resource users who directly or indirectly contributed to fisheries problems; 2) decision-makers whose support was needed to address the problems; 3) opinion leaders who wielded some amount of influence in the community; 3) various sectors who were likely to be affected by the consequences of fisheries management decisions; and 5) organizations or individuals who were in a position to help and promote fisheries management.

Foremost, the Project's constituent was of course the LGU, and as well as all other interventions, most IEC activities were directed at this primary audience. FISH messages generally emphasized the LGU's mandate and corresponding responsibility to manage their municipal waters, and that failure to deliver this mandate could make an LGU liable to higher authorities or the electorate. Initially, orientation meetings and information caravans spearheaded by the IEC team were held by way of introducing the Project to its target LGUs and other constituencies. Site teams then actively focused on the office of the mayor as well as the municipal council and where possible, the fisheries and aquatic resource management councils (FARMCs), which had influence on the LGU's policy-making as an advisory body. Through a good amount of interpersonal communication and persistence, they slowly built the social capital needed to establish working relationships with the LGU.

The fishing communities were also an important audience for the Project, next only to the LGUs. From the IEC standpoint, the objective was to get resource users to accept "managed fisheries." This proved to be a difficult process. In all the Project sites, the fishing communities were seldom smooth functioning social units. A good number of fishers were migrants, with very little or no kinship relations and social obligations in the localities where they fished. In many instances, their relationships with other fishers were characterized by competition dynamics. A key challenge that needed to be hurdled by the Project was the lack of trust in the traditional, top-down process of management and decision-making which was often perceived as non-transparent and favored certain sectors or individuals over others.

Ecological evangelization. Religion, along with the corresponding institutions that nurture it, has always played a key role in forming the mindset and consciousness of Filipinos. Recognizing this, FISH reached out to members of the Catholic clergy and Muslim religious groups for assistance and support in promoting environmental values and ethics to stakeholders in Danajon Bank and Tawi-Tawi, respectively.

In Danajon Bank, working with the Augustinian Province of Sto. Niño de Cebu and other members of the clergy, the Project organized a pilgrimage to the small islands off Bien Unido, Bohol, in an attempt to convince residents there to conserve and protect their endangered fishery resources. "Duaw Sto. Niño" (Visit of the Holy Child) provided residents of the geographically remote islands the opportunity to venerate the Holy Child, a highly revered figure in the Philippine Catholic church. At the same time, it allowed organizers to spread the Catholic Church's doctrine on "stewardship and care for God's creation." The *Sun.Star Daily* online edition reported: "When the 'Duaw Sto. Niño' made a stop at Bilangbilangan last Monday, Sherila Batonghinog, 38, a resident, thought a celebrity was on the island. When she saw it was the image of the Child Jesus, she cried for joy. '*Niari na gyud ang Ginoo among isla* (God has finally come to our island),' Batonghinog said." (Vestil, 2009)

FISH also supported (through SAF) the Supreme Council for Islamic Preaching and Guidance, Inc. (SCIPG) in the formulation and dissemination of the Philippines' first ever fatwa (religious ruling) on marine conservation. The *fatwa* was formulated by a group of *Ulama* in a series of *mushawarah* (consultation and research) and officially issued by the MUFTI in 2006. Disseminated in 4 language versions (English, Arabic, Sama and Tausug), the *fatwa* specifically deals with blast fishing, cyanide fishing, the harvesting of juvenile fishes, and the protection and conservation of marine habitats. It categorically declares dynamite and cyanide fishing as "prohibited in Islam" because they cause direct or indirect harm to humans and the environment. It also declares the harvesting of juvenile fishes as "undesirable" if it involves wastage "such as throwing away or abandoning dead tiny fishes" and that the protection and conservation of marine habitats is a "collective obligation of the community."

The Project developed and produced 3 video materials – targeted mainly at its Cebuano-speaking sites – that linked environmental degradation to the excesses of human activities. Two of these videos were shown during Lenten rites and the third video in a mass for the environment held during the *Sinulog* festival in Cebu.

FISH also spearheaded efforts to form the Environmental Coalition of Church and Civil Society (ECCCS), a group of various environmental organizations in Cebu that aims to promote the strategic spread of ecological evangelization among the various environmental subsectors.

Consensus-building and negotiations were 2 methodologies employed by the Project that sought to address resource use conflicts not only among resource users but also between resource users and the LGU. In this regard, the Project played a key facilitation role particularly in defusing confrontational situations. In Panglima Sugala, Tawi-Tawi, for example, a potentially violent situation erupted between resource users who were divided on the issue of setting up an MPA in the area. With the Project's help, the mayor presided a mediation meeting that allowed all parties to air their grievances and come to a "gentlemen's agreement" to exercise restraint and allow the MPA initiative to continue without further trouble. Similar facilitation and mediation roles were performed by the Project over issues related to site selection for MPAs, municipal water delineation and fisheries use zoning.

In an effort to build social capital among and between LGUs and resource users, the Project made sure that fishers were represented in briefings, meetings, workshops and other activities. Existing POs were identified and engaged in the process, and their respective leaders were invited to become members of the TWG. Building and calling upon social capital was an especially important factor in Tawi-Tawi, where social networks and family ties are paramount when making decisions or implementing programs. The establishment of MPAs, for example, was coursed through 2 channels: the LGUs and recognized community leaders. In addition, as was true for all Project sites, the initial recruitment of law enforcers and volunteers to guard the MPAs was done mostly within the family and clan circles of the recognized village chiefs and, in many instances, it was social capital rather than altruism that served as the foundation for volunteerism.

Through IEC, the Project also tried to reach out to illegal fishers (both commercial and small-scale), who proved to be particularly elusive. Quite understandably, illegal fishers refused to attend training and IEC activities and indeed were openly hostile to any overtures of engagement or participation. Often, residents claimed that most illegal fishers in their area were "dayo" or migrants from other islands or provinces, but in many cases, community members were in fact directly or indirectly protecting illegal fishers with whom they had familial or other connections and shared the bounties of illegal fishing.

To reach illegal fishers, the Project devised innovative non-confrontational ways to deliver its messages on responsible fishing and cultivate the social value that illegal fishing is an undesirable behavior from both the individual fisher's point of view and the collective view of society. In Danajon Bank, it tapped local school-based talents to provide acting training to children of illegal fishers and out-of-school youth, who successfully produced and staged a play for community theater that depicted the huge harm caused by illegal fishing to the environment and society.

Another strategy was to organize simultaneous IEC activities and medical missions to underserved island communities. Key partners in this activity were the Philippine Navy and PNP which provided medical personnel and worked alongside resource persons from FISH, DA-BFAR and the LGU to engage residents in discussions about the importance of protecting their fishery resources. In addition, the Project worked with members of the Catholic clergy who initiated "ecological evangelization" activities aimed at conveying the message that illegal fishing is an immoral act and a sin against humanity. Anecdotal reports said these activities resulted in a drop in illegal fishing, indicating that new social norms might have already started to develop at least in the communities that were specifically targeted.

To reinforce these emerging social norms, the Project sought to expand the constituency and social capital for fisheries management beyond the fisheries sector and brought in business, academe, media and other non-fishery sectors closer to fishery issues. For example, in Tawi-Tawi, Islamic religious groups and the local media became dependable allies for disseminating important messages on responsible fishing. In Surigao del Sur, 2 radio stations aired a weekly radio program that tackled a wide range of fishery issues from law enforcement to specific provisions of local fishery ordinances; hosted by lawyers, this radio show was patronized by LGUs and fishers for the insightful legal and technical advice it offered.

In Danajon Bank and Calamianes, the local business sector supported the mural painting activities, exhibits and sea camps organized by the Project for the youth and fisherfolk, while various academic institutions were key partners for IEC in Surigao del Sur. Through the activation of the "I Love the Ocean" movement (locally named *Tangay 'Y ang Laud Calamian*, or Friends of the Calamian Sea), the tourism, youth and school sectors in Calamianes were also involved in fishery matters, working alongside fishers during special events and sea camps.

The tourism sector was a particularly important constituency for Coron, because of the LGU's bias for tourism development; here, the Project engaged the SB chair of the tourism committee in discussions on the potential contributions of CRM and fisheries management to the area's development as a tourism destination. Study tours developed for Calamianes focused on the

user fee systems of MPAs to emphasize the potential "tourism benefits" that the protection of coastal resources could generate.

Alongside its various constituency-building activities, the Project produced a wide range of print materials that directly supported management interventions. Posters that showed the top fishery law violations and translated into the majority language of the target areas were developed for use as "prompts" by the LGUs and local police – displayed at strategic spots such as fish landing sites, public markets and municipal halls, these posters carried the contact details of responsible LGU offices and the PNP and exhorted the public to report any observed violations.

To hammer home the message that illegal and destructive fishing was the cause of poverty and not its effect, the Project created flipcharts showing various cause-and-effect diagrams. For example, one flipchart showed a despondent fisher surrounded by denuded mangroves, a few pieces of small-size fish and dynamite bottles, with the words in bold letters "*Ang pagkaguba sa kinaiyanhong bahandi maoy sinugdan sa pagkalisud sa panginabuhi*" (Poverty began when we started destroying our natural resources). Other flipcharts depicted the poor as the biggest victims of illegal fishing and the future of coastal communities becoming increasingly desperate in the presence of illegal and destructive fishing. These flipcharts were used in orientation sessions with fishers and never failed to elicit spirited reactions.

Numerous popular information materials were developed to enhance stakeholder knowledge of fishery issues and emphasize the need for fisheries management. Early in its implementation, FISH produced a documentary called "Under Construction: The Making of a Coast-wise Nation," which traced the development of CRM in the Philippines and served as the Project's introduction to its partners. It also produced informational materials that explained in easy-to-read format the otherwise technical subjects of open access, overfishing and fish as a biologically renewable but finite resource. For example, a pamphlet called "Go easy on the sea" talked about the causes of fisheries decline and various measures to address them; spin-off posters were developed that highlighted its main points, and leaflets and radio plugs discussing the importance of coastal habitats and the need to protect them were produced and disseminated in the majority languages of the target areas.

As its contribution to the growing body of references developed specifically for use by LGU personnel in their CRM work, the Project also produced a sourcebook that explains the concepts and principles that Philippine LGUs and other relevant organizations can apply to achieve sustainability, particularly in the municipal marine capture fisheries sector. Endorsed by DA-BFAR, this publication presents a framework for building capacities in municipal fisheries management across different levels of government and stakeholder groups. Another publication, the 2nd edition of "Mending Nets: A handbook on the prosecution of fishery and coastal law violations," was produced in 2008, 4 years after the 1st edition was published under CRMP; endorsed by the Office of the Solicitor General and PNP-National Law Enforcement Coordinating Council (NALECC), this edition included new administrative issuances relevant to coastal law enforcement that came out after the 1st edition went to press.

Participatory 3D modeling (P3DM). "P3DM integrates participatory resource mapping (people's knowledge) and spatial information (contour lines) to produce stand-alone scaled relief models that have proved to be user-friendly and relatively accurate data storage and analysis devices and at the same time excellent communication media. Relief models may also contain additional geo-referenced information obtained from field surveys, GPS readings and secondary sources. The latter generally applies to virtual features like administrative boundaries, watershed classifications based on scientifically defined parameters, and others.

P3DM is a relatively new communicative facilitation method used in innovation processes related mainly to resource use and tenure. The method has been conceived to support collaborative initiatives aimed at increasing public participation in problem analysis and decision-making. The process within which P3DM is used may unfold at different levels involving a variety of stakeholders and diverse strategies.

In a practical context, the intervention phase wherein a 3D model is manufactured leads participants through a collective learning process to the visualization of their economic and cultural domains in the form of a scaled and geo-referenced relief model, which can be used subsequently for different purposes...

Among the different visualizing methods used to spatially reproduced people's knowledge, P3DM is the one which – by adding the vertical dimension and using simple communication means like colors, shapes and dimensions – offers substantial advantages for depicting cognitive maps..." (Rambaldi and Callosa-Tarr, 2002)

Besides the popular media, other strategies were employed to disseminate vital information that supported the Project's advocacies. FISH messages were reinforced by the "visible presence" of management measures (but not necessarily the Project's presence). For example, coastal law enforcers operating in the focal areas were encouraged to wear uniforms that clearly distinguished their role, and MPAs were distinctly marked by buoys and guardhouses.

Taking the cue from environmental educators who espouse the use of highly visual tools and the experiential learning process in adult learning, the Project employed environmental interpretation as an IEC strategy for enhancing awareness and knowledge on coastal and fishery resources and developing among stakeholders a stronger sense of ownership for their coastal and marine resources, with people being able to better appreciate the natural resources that are in their own "backyard." Exhibit centers were set up in Bien Unido, Bohol and Bongao and Panglima Sugala, Tawi-Tawi to provide continuing information services focused on CRM, in particular fisheries management. In Talibon, Bohol, the LGU adopted a local ordinance to establish a full-service interpretive center dedicated to fisheries and CRM matters; administered by the municipal agriculturist, the center opened in 2007 with 1 LGU casual employee assigned to regularly man it and staff from various offices providing necessary support services as needed.

The exhibits in all 4 sites were developed through story-building workshops participated in by members of the LGU and representatives of the local fishing communities. Talibon's interpretive center is particularly noteworthy for having been developed largely through a participatory planning process that helped stakeholders appreciate the grandeur and uniqueness of the Danajon Bank ecosystem and its ecological importance not only locally but also globally. The Center's main showpiece was a 3m by 6m relief map of Danajon Bank that was constructed using the P3DM process developed by the National Integrated Protected Areas Programme (NIPAP), a special project implemented in 1996-2001 by the DENR-PAWB.

All these IEC modes and strategies came into play as the Project began to recommend new fishing restrictions to address emerging issues related to resource distribution, and facilitate a planning process that more comprehensively tackled resource use issues toward fisheries use zoning.

IEC training was integrated into many of the workshops that the Project facilitated, but in Talibon, because of the presence of an interpretive center there, a deliberate effort was made to deepen the institutionalization of IEC as a basic service of the LGU. Here, members of the LGU staff involved in the interpretive center's operation and programs participated in a strategic planning process aimed at strengthening the center's role in promoting policies and actions that support CRM and fisheries management.

3.1.1.8 Policy support. The Project's policy assistance at the local level was largely driven by the requirements of law enforcement and specific fisheries management actions that the LGUs agreed to adopt. The Project actively sought feedback from law enforcers on their experience in enforcing various fishery ordinances, and used this to recommend or advocate policy reforms, in most cases involving the amendment or repeal of expressed provisions for law enforcement and the restatement of certain penal provisions.

Most of the municipal ordinances that came out during the life-of-Project were mere adoptions of a national law. Many LGUs adopted municipal fisheries ordinances that were almost exact copies of the Fisheries Code. In Bongao, Tawi-Tawi, the Project assisted the formulation and eventual adoption of a local ordinance prohibiting the catching and transport of "mameng" (Humphead wrasse), a species listed under Appendix 2 of the Convention on International Trade in Endangered Species of Fauna and Flora (CITES) and therefore already protected by national law. The local adoption of a national law or its provisions served a practical purpose: to allow the LGU to generate revenues from administrative fines on fisheries violations and strengthen the local enforcement of the prohibitions.

A common complaint among enforcers was the difficulty of pursuing fishery cases, which some LGUs sometimes directly administered by negotiating "out-of-court settlements" that were quite often not legally defensible. One important policy work that sought to directly address this was a study on the establishment of a municipal or city administrative adjudication board to hear and administratively resolve cases involving violations of fishery laws in municipal waters.

Through SAF, the Project commissioned ELAC to undertake a study on the constraints that LGUs faced in administering fishery cases, examine their existing policies and practices in dealing with such cases, and devise local government administrative adjudication systems or models that are participatory and transparent, engender a sense of accountability among adjudicators and consider both practicality and due process. This study resulted in the development of a training course for LGUs interested in establishing their own administrative adjudication boards for fisheries.

To assist policy and funding support for CRM and particularly fisheries management, the Project commissioned a study to formulate a framework for carrying out cost-and-benefit analysis of LGUs' investments in CRM. The study also run a pilot test using relevant data from Ubay, Bohol to show how the framework could provide estimates of the economic losses from the destruction of coastal resources and quantify the benefits gained from management.

Other policy work undertaken by the Project sought to address specific local issues such as the live reef food fish trade in Palawan and the use of nitrates. As part of its assistance to Tawi-Tawi, the Project assisted the regional DA-BFAR office in the Autonomous Region in Muslim Mindanao (ARMM) in the formulation of a number of fisheries-related policy instruments, including the

implementing rules and regulations (IRR) of Muslim Mindanao Autonomous Act (MMAA) 86 or the ARMM Fisheries Code, and Regional Executive Order (REO) 16 s. 2006, which created an inter-agency regional monitoring, control and surveillance team in ARMM to help reinforce the enforcement capabilities of Tawi-Tawi's provincial coastal law enforcement team (PCLET) and similar enforcement units in the region. In addition, it assisted the adoption of regional FAO (RFAO) 57 s. 2009 providing guidelines on the catching and trading of tropical fishes in ARMM, an especially important concern for Tawi-Tawi, where a still relatively rich source of tropical fishes remains available amid diminishing catches and tighter controls in the traditional sources of these lucrative commodities.

The Project also assisted national policy initiatives to support fisheries management at the local level that were still at various stages of development at the end of 2009 and thus were not taken up by local implementation. These included the guidelines for the implementation of Republic Act (RA) No. 9147 (Wildlife Act) for aquatic wildlife, which while already published, had yet to be widely disseminated to the LGUs, and other policies that had not been signed, such as the NPOA-IUU and a FAO on municipal fishing registration and licensing. The uptake of these and other policies into the government system was largely determined by the priorities of the agencies concerned, particularly DA-BFAR. As a technical assistance project, FISH could advocate certain policies and facilitate and assist the policy work needed for their adoption, but whether at the local level or other levels of government, the final decision to adopt and implement policies rested solely on government. The Project's policy work at the national level is discussed in greater detail in Chapter 4.

3.1.1.9 SAF utilization and management. As with other components of FISH, the utilization of the SAF was also determined by the existing absorptive capacities of the Project's partners. The SAF was originally designed as a subcontract and grants program to provide direct funding support through small grants that would be bid out to local non-profit organizations based on certain competency-based performance criteria. However, because of the relative isolation of most of the Project sites, the SAF evaluation committee found hardly any potential partners locally that had the desired competencies and capabilities. The few organizations that could have qualified were based in the urban centers at a considerable distance from where they would be required to operate. Tapping them to serve as intermediaries would have been cost-inefficient and contrary to the SAF program's objective to develop on-site capacities.

Consequently, the terms of the SAF were modified to better fit the field realities, and the program was offered (rather than bid out) to local organizations who were interested to undertake habitat management, coastal law enforcement, livelihood development, institutional development, policy work and other activities to support fisheries management. Eligibility requirements were reduced to the minimum needed to ensure project completion and accountability, primarily prior experience in development work, the capacity to share project costs in cash or kind, and registration under an appropriate government agency, usually the Securities and Exchange Commission (SEC) or Cooperative Development Authority (CDA), which requires accredited organizations to observe certain standards and procedures for record keeping and financial control.

SAF-assisted activities had a funding ceiling of Php1 million and a timetable for completion not exceeding 1 year, with option to renew based on performance, need and availability of funding.

Most of the organizations that qualified for the SAF were NGOs tasked to manage community-based MPAs and assist the Project's various capacity-building initiatives. Most of the grantees' contribution to project expenses was made through cost-sharing, co-funding, internal funding, or a combination of these 3 modes. For the most part, contributions based on the fair value of voluntary labor and other in-kind contributions were accepted as cost-sharing and were sometimes augmented by counterpart funding from the municipal government or the barangay. For the few well-established organizations that participated, office space, equipment, staff time and similar in-kind contributions were also counted as cost-sharing.

Even with the reduced requirements however, the Project could not find eligible partners in a few of its focal areas. To address the issue, the call for proposal was opened to groups that were not legally registered or accredited but had prior experience in resource management with past projects. Final funding approval, however, was premised on these groups getting the necessary registration or accreditation from proper authorities. Where needed, the Project assisted the registration or accreditation process, and even sponsored a workshop on proposal writing for prospective grantees.

A notable example of an unregistered organization that received the Project's call for proposal was APREDEC, which used to be a group of loosely affiliated lawyers who provided legal services to local officials in the Lanuza Bay focal area facing countersuits from the illegal fishers that they apprehended. Responding to the opportunity to participate in the SAF, the group decided to formally organize and acquire accreditation. Under SAF, they provided direct assistance to the Lanuza Bay LGUs in reviewing and assessing relevant coastal and fisheries ordinances to improve enforceability and compliance. They also helped harmonize the fisheries codes of the 7 LGUs with jurisdiction over Lanuza Bay and conducted paralegal workshops to help build the LGUs' capacity in enforcement.

Other examples of SAF grantees and the services they provided include:

1. SCIPG in Tawi-Tawi, which was responsible for the formulation and dissemination of the *fatwa* on marine conservation (see 3.1.1.5);
2. Kasalamatan Sin Raayat Lagasan Association (KSRLA), a PO in Tawi-Tawi with several years of experience in providing social services (mainly focused on child care and livelihood development) in Lagasan village, Bongao, Tawi-Tawi that expanded its program through SAF to include assistance to community-managed MPAs in Bongao and neighboring municipalities;
3. Advocacy for Resource Management and Environmental Governance (ARMEG), a newly created organization in Tawi-Tawi that had public environmental education as its main goal;
4. Talibon Credit Cooperative (TALCRECO) in Bohol, which adopted fisheries management as a part of its CSR (corporate social responsibility) program;
5. ELAC, the environmental NGO that conducted a study on fisheries adjudication (see 3.1.1.6);
6. Hayuma Foundation, an NGO which assisted the establishment and management of MPAs in Calamianes; and
7. PSF, an NGO which assisted the establishment and management of MPAs in Danajon Bank.

The last 3 NGOs listed above had several years of prior experience in managing environmental projects in their respective areas, but all 3 (especially Hayuma Foundation and PSF) worked mostly if not exclusively with communities and at times had an adversarial relationship with government. Under SAF, as the Project's partners in capacity-building, they were required to work closely with LGUs as well as their target communities and were expected to establish themselves as long-term providers of technical assistance to the LGUs.

All told, a total of 22 proponents were awarded the SAF: 10 NGOs (2 of them repeat grantees), 3 cooperatives and 9 POs (Table 3.3). The NGOs and cooperatives assisted 18 communities and POs implementing MPAs in Calamianes, Bohol and Tawi-Tawi and supported policy, enforcement, institutional development and advocacy work in 17 LGUs across the focal areas. The 9 POs, all in Lanuza Bay, directly implemented the projects, which primarily supported MPAs.

Table 3.3: No. of SAF grantees by Project site and type of organization

Site	Total	NGO	Cooperatives	PO
Calamianes	4	2	2	
Danajon	3	2	1	
Surigao	11	2		9
Tawi-Tawi	4	4		
Total	**22**	**10**	**3**	**9**

Four of the 22 SAF grantees were organized purposely to tap the SAF. These grantees were assisted by FISH in securing the registration requirements from authorized institutions (e.g. SEC or CDA, Bureau of Internal Revenue [BIR], and banks) to formalize their existence as organizations with juridical personality. The others which were already organized, were strengthened or assisted by the Project to fully qualify as some of them lacked important requirements such as eligibility to issue receipts and transact business with the banks.

A total of 16 grant agreements, approximately 58% of the total SAF awarded, was given to 16 qualified organizations providing assistance to 27 MPAs, while 42% went to 6 organizations that assisted 17 municipalities in local policy enhancement, law enforcement, institutional development and IEC/advocacy work through the SAF grantees. Table 3.4 shows the distribution of the grants by project type.

Table 3.4: SAF distribution per project type

Project Type	Number of SAF Grants	Total project cost	SAF grant amount	Local counterpart amount
Marine protected areas	**16**	10,717,814.00	7,830,791.00	2,887,023.00
Fisheries management	**1**	1,193,180.00	994,780.00	198,400.00
Local policy enhancement and enforcement	**3**	3,989,100.90	2,998,588.94	990,512.00
Institutional development	**1**	1,430,500.00	1,000,000.00	430,500.00
IEC /Advocacy	**1**	821,994.00	670,265.00	151,729.00
TOTAL	**22**	**18,152,589.00**	**13,494,424.90**	**4,658,164.00**

Under the original FISH timetable, the entire SAF should have been fully utilized by the end of the base period in 2008, but payment releases were completed only toward the latter part of 2009, largely because of the late submission of documentary requirements by some of the grantees.

3.1.2. Impacts

The achievements of FISH toward complying with its results framework and commitments to USAID are detailed in Chapter 2. This section looks behind the numbers to examine the impacts of technical assistance, particularly relative to the Project's objectives to improve local CRM governance (particularly fisheries governance) and catalyze the behavioral changes needed for sustainable fisheries to happen.

3.1.2.1. Local CRM and fisheries governance. A review of local CRM and fisheries management capacities was undertaken in 2009 to determine the impacts of FISH on local CRM and fisheries governance, assess the progress of the LGUs' CRM and fisheries management program implementation and build the LGUs' capacity to evaluate its performance in CRM and fisheries management. For the most part, the review noted observance by the assisted LGUs of the 4 minimum criteria for basic CRM that the Project promoted, i.e. 1) adoption of a resource management plan supported by clear policy; 2) allocation of annual budget for some CRM and fisheries management measures; 3) establishment of an office (or a section within an existing office) run by a trained staff dedicated to doing CRM; and 4) implementation of some CRM measures and support services.

As noted above, the broad CRM planning process was started early and continued through virtually all of the Project's base period, resulting in the adoption of CRM plans in all the focal areas. But the adoption of the CRM plan itself did not guarantee the implementation of a program or activity identified in the plan. For the most part, LGUs implemented only those programs or activities that FISH (or other projects) assisted. These included MPAs, fishery law enforcement, IEC and the early fisheries management actions described in this chapter (see 3.1.1.3). Some LGUs also implemented mangrove management, with assistance from other projects such as the USAID/DENR EcoGov Project in Danajon Bank.

FISH tracked a number of indicators to measure progress in CRM and fisheries governance in its focal areas, including the creation or strengthening of offices or personnel positions in the local bureaucracy, budget allocations, and access to external assistance for purposes of CRM and fisheries management.

The Project regarded the presence of an office with a clear mandate to undertake CRM and fisheries management as a major requirement for the institutionalization of its interventions. A full-service office with the right complement of well-trained staff would have been the ideal, but it was not something that could be implemented in the short term in any of the focal area LGUs because of budgetary limitations and rules that effectively constrained the LGUs from establishing new permanent personnel positions.

Thus, the service delivery mechanisms for CRM and fisheries management were mostly carried out through an office already existing within the LGU, usually as "intervening duties" assigned to some (or one) of its personnel by an ordinance or executive order. Typically, these

mechanisms were installed in the MAO as a section, in a specially created office directly administered by the mayor, or in the case of Tawi-Tawi, in the MAFO. The designated office served primarily as the implementing unit of the core CRM programs and in some cases also functioned as a coordinating office for support and other implementation activities, particularly coastal law enforcement and policy development (Table 3.5).

Table 3.5. Competencies gained by LGU CRM units from FISH Project interventions (based on a capacity review conducted by the Project in 2009)

Program/Activity	Competencies
CRM/Fisheries Planning	Coordinate with the municipal planning and development office to review and update CRM/fisheries plans and zoning plans and include projects and activities in the LGU's annual investment program (AIP); through the mayor's office, work with the SB to allocate regular budget for staff, office maintenance and operations and review regulations of the zoning plan
MPA/MPA Network	Provide technical and funding assistance to POs or community-based management groups for maintenance, enforcement and monitoring activities; coordinate regular meetings and reporting of the MPA network and review of management plans; through the mayor's office, work with the SB to allocate regular budget for MPA maintenance and enforcement and review revenue generation mechanism if any
Effort restriction	Coordinate with the municipal coastal law enforcement team on the enforcement regulations of the fishing effort restrictions and monitor results; through the mayor's office, work with SB in consultation with the municipal coastal enforcement team to review regulations to enhance implementation of management measures
Registration and licensing	Coordinate with the municipal treasurer's office on registration and licensing and maintain a database of registrants and licensees; through the mayor's office, work with the SB in consultation with appropriate LGU offices to review regulations on allocations and policy on the proceeds of revenues generated from registration and licensing
Coastal law enforcement	Coordinate with the municipal coastal law enforcement team on the formulation of operations plan, conduct of regular patrols and post-operation assessments; conduct of coordination meetings with relevant offices within and outside the municipality to address enforcement concerns; through the mayor's office, work with the SB in consultation with the municipal coastal enforcement teams to review regulations to enhance implementation of management measures including allocation of budget for enforcement operatives, acquisition of enforcement assets, patrol operations among others
Monitoring and evaluation	Plan and organize monitoring teams, conduct monitoring activities, analyze monitoring results, present results to stakeholders and maintain database; through the mayor's office, work with the SB to allocate a regular budget for staff and conduct of monitoring activities and review policies informed by the monitoring and evaluation results
IEC , training and technical assistance	Provide training and extension services and technical assistance to coastal communities and recommend policy support to SBs

Based on a scoring system that FISH devised for its capacity review of Project-assisted LGUs in 2009, the 29 FISH-assisted LGUs together scored 71% in terms of coordinating 10 basic CRM functions, and 69% on implementing these functions. Bohol, which had the highest number of Project-assisted LGUs, recorded the highest scores, while Tawi-Tawi, with only 3 LGUs assisted, had the lowest scores for these competency-based questions (Table 3.6).

The numbers generally reflected how far capacity-building had progressed in each Project site – Bohol was significantly "more mature" in this respect than the rest of the sites. The Bohol LGUs scored more than 80% on understanding the mandate of the designated CRM offices as the

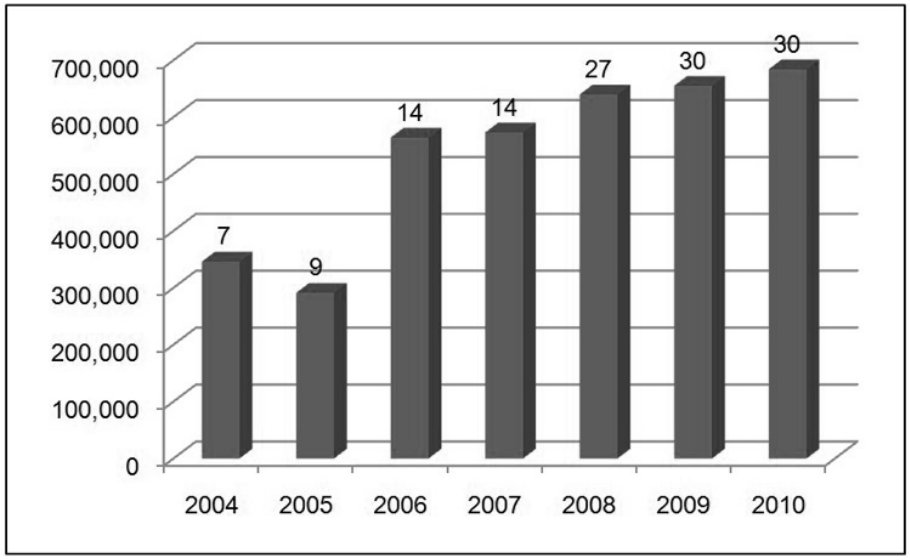
Table 3.6. Capacity scores of FISH Project-assisted LGUs relative to coordinating and implementing 10 basic CRM functions (based on a capacity review conducted by the Project in 2009)

Site	No. of LGUs reviewed	Capacity score	
		CRM coordination	CRM implementation
Bohol	9	84%	89%
Leyte/So. Leyte	7	49%	42%
Calamianes	4	23%	25%
Surigao del Sur	6	42%	45%
Tawi-Tawi	3	19%	20%
	29	**71%**	**69%**

primary implementors and coordinators of coastal and fisheries-related programs, compared to the LGUs in the other sites, which scored less than 50%. Competency levels varied from LGU to LGU and from one area of CRM to the next, and generally reflected the programs and activities that the Project supported in each site. Generally, the focal area LGUs scored a high 70% in terms of their self-professed confidence in their ability to carry out specific functions related to CRM planning, law enforcement, MPA management, IEC, and to a certain extent, fisheries registration and licensing, except in Calamianes, where the LGUs scored a much lower 50% on the same competency-based questions.

Based solely on budget allocations, the LGUs' level of interest in CRM appeared to have increased over time. There was a significant increase in the LGUs' total CRM budget allocations in 2010 from when FISH started in 2004. Budget allocations for CRM averaged about Php669,000 for each LGU in 2010 (with 30 LGUs reporting), up 93% compared to the Php346,000 recorded in 2004 (with 7 LGUs reporting) (Fig. 3.2). The amount was barely enough to cover the minimum requirements of CRM, but it was remarkable nonetheless given that, to begin with, many of the LGUs in the focal areas were 5th and 6th class municipalities with very limited resources.

Fig. 3.2. Average LGU budget for CRM in the FISH Project sites (2004-2010)



On average, about half of the CRM budget was taken out of the 20% development fund – not the ideal scenario perhaps but a definite improvement from what it was in 2004. In addition, an analysis of AIPs in the Project sites indicated that, at least on paper, LGUs were increasingly incorporating into their annual budget programming the specific programs and activities identified in their CRM plans, particularly those that FISH specifically promoted.

In practice, of course, as is typical among Philippine LGUs, the AIPs were never implemented to the letter. Also, despite the significant increase in overall budget allocations, CRM actually received only a small proportion of the LGU's total funds, which had to be divided up among many other "priority" development concerns. For example, well before FISH started, the mayor of Cortes, Surigao del Sur was already a strong advocate of CRM, but budget records from 2006 showed that his municipality allocated only 6% of its Php4.5 million development fund for CRM. As program implementation progressed, the Project's advocacy effort did help to draw more LGU investments toward addressing CRM issues, but the increased allocations were not nearly sufficient to meet the funding requirements of CRM.

Nevertheless, "budget allocation" was one area where most LGUs appeared to have the highest confidence level – they scored 96% on the appropriation of a regular budget to maintain the CRM office and its operations and the inclusion of CRM projects and activities in the AIP. Moreover, the LGUs on average scored 90% relative to the capacity needed to fund law enforcement operations and the acquisition of enforcement assets. However, while the LGUs scored a high 82% on the inclusion of MPA establishment and maintenance in the AIPs and 86% on the review and enhancement of MPA management after FISH assistance was completed, they scored only 54% relative to the capacity level needed to fully assist community-based management groups in regularly monitoring the biophysical conditions of the MPAs.

Coastal law enforcement was another area of competence that the LGUs were fairly confident about. In the 2009 capacity review, FISH-assisted LGUs scored about 80% on the formulation of operational plans, post-operational assessments and review of fishery regulations to improve the enforcement of management measures. In this respect, the Coastal Environment Protection Unit (CEPU) of Ubay, Bohol demonstrated the highest level of competence, with members of the team often serving as resource persons for basic enforcement trainings and operations planning workshops within and outside the Project sites. In general, the LGUs scored a low 30% in terms of the capacity level required to coordinate the activities of the various agencies involved in coastal law enforcement in their areas, a critical strategy toward improving enforcement and compliance levels.

Many LGUs were also not equipped to fully administer the fishery registration and licensing system, much less utilize it for fisheries management. Although the LGUs scored a high 86% on fishery registration and licensing, they were only really performing the administrative function of recording fishers' names, boats, gear and other information and collecting registration fees when required by local ordinance. FISH helped a number of its focal area LGUs to set up a standard computerized database management system for storage and retrieval of registration and licensing information, but it was not clear that the database was properly maintained, if at all.

None of the LGUs had the capacity to analyze the data either, and there was no indication that any of them actually used any of the fisheries information they collected to determine effort

configuration for the purpose of managing fishing effort. What was evident and potentially problematic was the tendency of most LGUs to focus on the prospect of raising additional revenues from fisheries registration and licensing rather than its intended use for fisheries management. To be fair, putting in place the mechanisms that allowed the LGUs to register municipal fishers and their fishing implements took long enough, which did not leave much time for the Project to provide the CRM offices the training they needed to make full use of the registration and licensing system or to demonstrate in practical terms how the system fitted in the overall fisheries management framework.

Indeed, given that building organizational capacity is a complex and drawn-out process to begin with, there was only so much capacity development that could be attempted in the focal areas within the Project's 7-year lifespan. The Project's decision to focus on the broad CRM planning process and already proven (and well-accepted CRM strategies), although perhaps the most practicable at the time, eventually meant less time for developing the much-needed capacities that could help the LGUs strategically address critical fisheries management issues in the short term. The highest competency levels the LGUs gained appeared to be in MPA establishment and management, enforcement of fishery laws and regulations, and IEC, primarily because these activities were started almost at the outset of Project implementation and thus partner LGUs, including those that did not have prior exposure to CRM, had the longest experience in implementing these activities compared to, for example, planning when and what fishing restrictions to apply.

Still, even the minimum capacity to identify and prioritize broad CRM concerns as well as specific fishery issues and make informed decisions on how to manage them allowed LGU officials and technical staff alike to take ownership of and responsibility for their decisions. Although not quantifiable, there were attitudinal changes related to the LGU's improved capacity and readiness to take action that were quite discernable and thus worth noting. For example, a number of the local chief executives in the focal areas at first showed indifference or even resistance to FISH interventions but over time, as they learned more about the issues that the Project was trying to address, they began to support and became more engaged in the CRM planning and decision-making process.

The development of technical staff members was also remarkable in some LGUs, and their commitment to the job appeared to grow as they gained more competence and understanding of the issues involved and what it entailed to address them. The latter was particularly evident by the way they shared their own realizations of the value of CRM in interviews and other forums, or worked long hours performing various tasks related to coastal law enforcement or CRM, even if they were not formally educated or officially designated to do these tasks to begin with – many times, in the face of serious threats to their physical well-being. In various interviews with FISH, they professed getting a sense of accomplishment simply from hearing small fishers say that their catches were improving.

A horticulturist by education and originally assigned to the MAO in Ubay, Bohol, Ralph Lagura first got involved in FISH activities in 2004. Since then he has been working with the CRM office of Ubay as a fish examiner, a job he trained for under DA-BFAR as part of his responsibilities in CRM. In an interview with the Project in 2008, Lagura described his new job as physically taxing and risky but also mentally rewarding. Besides spending long hours and facing natural hazards at sea, he said he received harsh threats from illegal fishers angered by his participation in enforcement operations and the prosecution of fisheries violations. But, he added, there had also been many

Changing mindsets. Nurbert Sahali was not always an advocate of coastal and fish conservation. In 2004, when he first assumed office as mayor of Panglima Sugala, Tawi-Tawi, Philippines, he was lukewarm to initiatives by FISH to institute a coastal and fisheries management program in his town.

"At first I thought, 'What's the big deal? It's just fish. There's plenty more where it comes from.' We have this huge productive fishing ground. I thought we were doing fine," he said. "But Sir (Nur) Harun (FISH Project Tawi-Tawi site manager) was persistent. He and his staff were always there, explaining why it was important that we protected and managed our sea."

Sahali said he started to pay attention not only to what Harun and his staff were saying but also to what was happening around him. "I'd visit the market, and I'd hear people quarreling over the high price of fish," he recalled. "Fish had become scarce. I realized that everything the FISH people told me -- the dynamiting, cyanide fishing, mangrove cutting -- it was all there, and it was taking away our source of food."

A study tour sponsored by FISH in 2005 sealed Sahali's commitment to the Project's conservation cause. He was impressed by the Apo Island Protected Seasape in Negros Oriental, its beautiful and diverse reef life, and the community's self-sufficiency in managing the sanctuary. He marveled at how 'tame' the fishes were in the Gilutongan Island Fish Sanctuary in Cordova, Cebu. And he rued all the more everything that his town had lost. "I knew how beautiful and abundant our sea used to be, because I saw it as a child. It was more beautiful than Apo Island, and our fishes were as tame as in Gilutongan."

He resolved to bring it all back. "As Sir Harun kept telling me, as mayor, I am the key to change," he said. (Sia, 2008)

grateful words from subsistence fishers who said their families were "eating better because of the work we do, and nothing can be more gratifying than that."

Also worth noting was the perceptible improvement in the working arrangements among the different offices within the LGU that came out of the CRM planning process. With the wide range of concerns that must be tackled during plan preparation and implementation, more coordinative relationships were perforce developed among the various responsible LGU offices. Social welfare officers in the different sites found that their expertise in the conduct of surveys and understanding community dynamics was essential in the formulation of long-term development plans for coastal communities. The math skills of the municipal engineering officers, planning officers and treasurers of the Bohol, Lanuza Bay and Tawi-Tawi LGUs came in handy in developing a functional fisheries registration and licensing system in their respective areas. And, with their background in biological sciences, rural health workers in Surigao del Sur and Leyte proved to be the most proficient candidates for certification as fish examiners.

There is never enough technical or financial assistance to go around, so it is not surprising that LGUs are often heard saying they do not get the support they need when they need it. The 2009 capacity review gave FISH-assisted LGUs an average score of less than 50% on access to funding, technical and policy support from traditional sources – mainly the province, NGAs, NGOs and academic institutions. Only Bohol scored above 50% (Table 3.7), but available assistance was limited to certain aspects of CRM planning, MPA establishment and law enforcement (through the CLECs), which were already being provided by the Bohol Environment Management Office (BEMO) well before the Project came in.

Table 3.7. Capacity scores of FISH Project-assisted LGUs relative to access to external sources of support after FISH Project completion based on a capacity review conducted by the Project in 2009

Sites	No. of LGUs reviewed	Capacity score		
		Funding Support	Policy Support	Technical Support
Bohol	9	34%	42%	53%
Leyte/So. Leyte	7	14%	19%	34%
Calamianes	4	3%	8%	8%
Surigao del Sur	6	6%	31%	41%
Tawi-Tawi	3	7%	6%	16%
	29	**20%**	**33%**	**47%**

In the other sites, stakeholders indicated that there was virtually no institutional support system that they could depend on for funding support outside of the LGUs themselves. Even so, albeit limited, progress was achieved in developing institutional arrangements that could help further develop local capacities in CRM. The participatory process that the Project promoted and the sheer necessity of coordination opened up opportunities to establish formal and informal linkages with external partners that could serve well the LGUs that decide to pursue collaborations for CRM.

Already, the LGUs' interactions with judges and prosecutors as they followed illegal fishing cases contributed to the enrichment of local ordinances. For example, judges suggested that ordinances should limit court discretion by stipulating the menu of actionable options in penalizing a violator because giving the court full discretion would give the judges the option to dismiss the case or merely reprimand violators if only to free up their dockets in favor of "more pressing" cases.

Through coastal law enforcement, LGUs had the opportunity to work closely and establish alliances with national enforcement agencies, such as the PCG and Philippine Navy, not only in CRM but also in other areas of mutual concern, such as disaster management and peace and order.

An important alliance between municipal LGUs and some provincial governments also started to develop through the intervention of FISH. For example, for the first time, the Provincial Fisheries and Aquatic Resources Office (PFARO) in Surigao del Sur channeled assistance through the LGU for the maintenance of some MPAs and livelihood development training for MPA managers; it also began to conduct coordination meetings with all LGU fisheries technicians to find ways to complement local initiatives. Indeed, in nearly all Project sites, concerned offices at the provincial level started to allocate some of their resources to support CRM implementation at the municipal level. The amount varied from Php300,000 in Surigao del Sur to Php4 million in the Project's expansion area in Surigao del Norte, where with FISH assistance the Provincial Environment Management Office (PEMO) facilitated the delineation of all municipal waters in the province, except for those around the municipalities bounding Mainit Lake that had boundary disputes with their neighbors in the adjoining province of Agusan del Norte.

In relative terms, the amount of provincial assistance was very small compared to what each province might have been capable of providing, but it was a milestone nonetheless because for many of these offices, it was only the first time that they were fulfilling their mandate as a service provider

in CRM to the municipalities. Indeed, in a few cases, it was with FISH assistance that the role of the province as CRM service provider to the municipal LGUs was clarified. In Tawi-Tawi where the province had no formal provisions within its organization for delivering CRM services to municipalities, the Project facilitated the formulation and adoption of a provincial environment code that created the Tawi-Tawi Environment Management Office (TEMO) and defined the province's environmental policies.

Being mostly start-ups, the provincial offices concerned were still not fully equipped to provide the complete suite of services needed by LGUs to run a fully functional, fully integrated CRM program that incorporates fisheries management with all other areas of CRM. Bohol's BEMO probably had the longest experience in assisting municipal LGUs, but even its services were limited to CRM planning, MPA management and coastal law enforcement in a few municipalities. For the most part, in terms of human and financial resources and overall office capacity, the provinces had very limited means to adequately fulfill their mandates as CRM service providers, or even to simply take over the support role performed by FISH.

Specifically for fisheries management at both provincial and municipal levels, the effort to capacitate LGUs was largely only at entry level – a good start, but there's a long way to go. For virtually the entire life-of-Project, fisheries management activities covered mainly the basics of identifying and planning a few effort restriction measures in an experimental foray to determine the LGUs' absorptive capacity and readiness to undertake fisheries management in its simplest form. At both Project and field levels, the realities of implementation afforded little opportunity to develop and test a comprehensive fisheries management planning process based on the principles of EAF. This process would have trained local fisheries managers to use analytical tools for finding and broadly applying the best available information (both scientific and user-supplied) in order to detect, locate and identify localized fisheries problems; determine priority issues; understand their interrelationships with the biological, economic and social elements of the larger fisheries system; assess management options, select the best plan, obtain financial support, implement the plan, monitor and evaluate implementation based on appropriate indicators and reference points, and adapt management as needed – all integral to fisheries management under EAF that aims to balance diverse societal objectives covering both human use and ecosystem objectives.

Notwithstanding the constraints, the Project was able to demonstrate that fisheries management, even at the most basic level, should consider the relationships between policy, science and public participation. The closed season for siganids and size limits for blue crabs that were adopted in various Project sites were based on both scientific and stakeholder knowledge of the spawning behaviors, life stages and habitat needs of the species as well as local fisheries catch trend and gear use data, and were supported by municipal ordinance. Using information from crab fishers, the LGUs introduced spawning cages for berried blue crabs to allow these crabs to spawn before being harvested, and following the recommendation of fisheries experts from the Project, they made sure that the cages were located in the interface areas of seagrass and sandy bottoms to improve the survival rates of both spawning and young crabs.

Without further external assistance, it is doubtful that the LGUs can build on this limited experience to adequately and promptly adapt their policies and programs to the ever-changing dynamics of the fisheries system. However, in accepting their fisheries management mandate, they have opened doors for assisting organizations to bring in more aid and take capacity-building to the next level. The overall fishery gains that were achieved through not only fisheries-specific measures but all Project interventions (i.e., including MPAs, coastal law enforcement, IEC and policy support) might not have been fully satisfactory in terms of the objectives of EAF and the FISH framework, but they were palpable enough to allow an active constituency within the bureaucracy and among resource users to grow and demand better fisheries management services from government and its development partners.

3.1.2.2. Fishing norms and practices. Stricter fishery law enforcement, IEC and the emerging benefits from habitat protection and effort restrictions all contributed to bring about small but obvious changes in fishing patterns in the Project sites. Although not totally eliminated, Danish seine, trawls, and dynamite fishing in some areas were considerably reduced. By most accounts, there was at least some compliance with fishery laws in the focal areas in Danajon Bank, Lanuza Bay and Tawi-Tawi (fisheries data from Calamianes offered scant information on illegal fishing practices that, based on anecdotal evidence, might have existed in the area).

For example, records show the number of dynamite fishers in Bongao, Tawi-Tawi fell by nearly 61%, while in Bohol, the number of Danish seines and trawls dropped 46% and 55%, respectively. In Lanuza Bay, the catch rate from Danish seine fishing was down more than 35%, indicating that, even as the number of units on record remained fairly steady and even increased in 2008 (Danish seine operators were permitted by DA-BFAR), they might have been prevented to some extent from operating in municipal waters.

However, compliance seemed to have been mostly driven by fear of apprehension rather than the fishers' desire to follow the law or "do what's right." Indeed, in many areas, there was an apparent shift to other illegal fishing practices that were not as strictly monitored and might actually have been tolerated by LGUs, or to other municipalities where enforcement was lacking. The use of fine mesh nets in impounding gear also seemed to be largely tolerated in Danajon Bank, where the number of fish corrals using fine mesh nets rose by about 32% between 2004 and 2008. Also in Danajon Bank, an increase in illegal fishing was noted in 2010, an election year – even Danish seines, which appeared to have been totally eliminated in Ubay in 2006, appeared to be making a slow comeback there, with 2 units and 4 units recorded in 2008 and 2010. In Bongao, Tawi-Tawi, the enforcement of the ban on shipments of the CITES-protected *mameng* failed to totally stop the illegal activity, as traders simply moved their business to another town (Sibutu), where the LGU allowed it.

Also quite pronounced was the increased use of gear types that were not strictly regulated or considered illegal, including modified gears that might have been destructive (or at least inappropriate to current use) but not specifically regulated by any existing law. Notable among these were the stationary lift nets in Ubay, Bohol in Danajon Bank, which multiplied from only 4 units in 2004 to 20 units 4 years later. Although a passive gear, the stationary lift net proved to be overly efficient for use in an area where major fish stocks were already overfished and the competition for fishery resources

quite intense. As noted in Chapter 2, it appeared from available fisheries data that the stationary lift nets and other efficient gear captured a disproportionate amount of any increases in fisheries productivity that might have been generated during the period 2004-08 by MPAs, law enforcement and other measures to protect fishery resources in the area. While the catch rates were mostly down or increased only slightly for gillnets and lines (except for troll, which rose more than 150%), stationary lift nets registered a whooping increase in catch rate of about 350%, despite the substantial increase in the number of units. By the time the LGU agreed to consider the Project's recommendation to reduce the number of lift nets operating in the area, the fishery had started to show a downward trend. As earlier noted, based on results of the Project's catch monitoring in 2010, the average catch rate of stationary lift nets in Danajon Bank declined by 10.1% from the 2004 baseline.

This kind of trend was of course not unexpected. It is normal for fishers to adjust quickly to new fishery rules by modifying their gear or shifting to other gears, and it is not uncommon for some fishers to skirt the law if they could. It was not clear if local fisheries managers appreciated the significance of these developments in terms of the need to promptly address emerging threats through continuous monitoring and adaptive management of the various fisheries. It was unlikely that they would have been able to properly diagnose every problem and determine the best solution, given their still limited capacity in fisheries management. For one, they still lacked the necessary means to adequately monitor and measure changes in fishing patterns and fish stocks in order to effectively manage fishing effort.

Despite its original intention to develop a procedure to measure changes in fish stocks that LGUs could also use, the Project concluded that the estimation procedure used to measure progress toward its strategic objective of increasing fish stocks, while adequate for its purpose, was not directly applicable to or suitable for LGU use. For this reason, and because the Project did not make much headway in its effort to institute catch-and-effort monitoring as a regular function of its partner LGUs, no attempt was made to "teach" the procedure to any of the Project's LGU partners and deepen local capacity to manage fishing effort. Instead the Project developed during the exit phase a template for the development of benchmarks, indicators and reference points for fisheries management that formed part of our recommendations to our partners (see Appendix I). These performance measures need to be further refined and built into the CRM benchmarking system that was developed by CRMP and has already been adopted by DENR to evaluate the level of performance of LGUs in CRM.

What was encouraging in the FISH experience was the development of a new ethic on fishing in its sites, especially among individuals in both government and the fishing communities that directly participated in the capacity-building effort. There was, for example, a perceptible change of outlook among those who went through at least one of the Project's many law enforcement trainings and IEC activities with regard to the severity of illegal fishing as a legal offense. In the past, even law enforcers sometimes tended to dismiss illegal fishing as a minor misdemeanor or breach of law that harmed nobody, or an "act of necessity" when committed by marginal fishers that just got by with their meager income from fishing. Through their participation in FISH activities, they claimed to understand the dangerous and far-reaching consequences of illegal fishing. Some even went further and said that in fact every act of "bad fishing" was a serious offense, even when there was nothing in the law that said it was, because it had serious immediate and long-term impacts not only on fishers'

incomes and livelihoods but also the overall present and future well-being of communities and the entire nation.

The same new outlook was observed among LGU staff assigned to CRM duties and community members who were directly involved in, for example, guarding MPAs. Some even described their work as "not just a job, but also a life mission," a conviction that was affirmed and strengthened by the participation of the church in the campaign against unsustainable fishing, which added a moral dimension to their advocacy efforts. In 2 island communities in Bien Unido, Bohol where the Project's partners from the Catholic clergy brought their ecological evangelization mission, some members of the illegal fishers' families later expressed "shame" and remorse for their involvement in illegal fishing. They did however insist that it would be difficult for them to shift to other livelihoods without government support. Because illegal fishing originating in these communities caused major enforcement problems to all 4 LGUs in the Danajon focal area, all mayors concerned worked together to get the Technical Education Skills and Development Authority (TESDA) to open training opportunities not only to families of fishers who had given up their illegal fishing gear, but also to members of POs who had supported the LGU's CRM program from the outset.

To a certain extent, increased public participation in advocacy and other FISH activities helped create transparency in the delivery of CRM services and promote accountability in local government. The participatory approach used by the Project engendered frequent interactions between resource users and those in government that clarified the roles each had to play in the management of resource use. In law enforcement particularly, such interactions developed public trust and confidence in law enforcers, especially among community members directly involved in the process.

In Calamianes, for example, community leaders used to perceive the local police as inefficient and uninterested in enforcing fishery laws, so they conducted sea patrols on their own, usually with support from NGOs. If they had any interaction with the police at all, it was when an operation resulted in the arrest of illegal fishing suspects or the seizure of fishing paraphernalia, at which time they had to turn the case over to the police. This was where misunderstandings and the prevailing lack of trust between the police and community members often became evident – the police might refuse to accept seized items and suspects for fear that the arrest was not conducted properly, or if they did accept a case and prosecute it, it would get dismissed on technical grounds. This fueled among community members more suspicions of police negligence or inefficiency, or worse, connivance in illegal fishing.

Regular meetings, dialogues, site exposure trips and trainings that allowed community members to interact with the police and local authorities in a learning setting helped resolve misconceptions on both sides and create an atmosphere of mutual trust and confidence. On the one hand, community members learned to appreciate that policemen were highly vulnerable to harassment suits when the rules of arrest and seizure were not followed and unless they were members of the Maritime Group, they were not necessarily trained in maritime law enforcement, making them prone to errors in judgment. On the other hand, the police realized that many communities had sufficient

training in coastal law enforcement and could be relied upon to exercise due discretion and follow proper procedures when making an arrest. As community-police-LGU interactions moved from training to actual operations, opportunities arose for all sides to witness each other's hard work, capacity and sincere intent to fight illegal fishing, which increased their confidence and trust levels, which in turn encouraged further cooperation and collaboration.

The lingering concern at the end of FISH about the LGUs' commitment to sustain CRM was well-founded, especially that the Project closeout happened in an election year when many new municipalities had a change in political leadership. Because support for every development program usually hinges on the perceived priorities of decision-makers, any hope for the sustainability of CRM in the FISH-assisted LGUs must lie in the stakeholders' stated desire to carry on the work they had started and their ability and commitment to bring their concerns to their leaders' attention. Despite the perceptible capacity gaps that remain, this is not at all a false hope, for there now exists in many FISH-assisted LGUs and the communities they serve active constituencies for sustainable fisheries that, if they so wish, can exert political pressure to maintain or expand relevant programs.

3.2. Scaling Up to a Larger Management Area

According to the United Nations Food and Agriculture Organization (FAO), the ecosystem approach requires 5 key elements: (1) definition and scientific description of the ecosystem in terms of scale, extent, structure and function; (2) assessment of its state in terms of health and integrity as defined by what is acceptable to society; (3) assessment of threats; and (4) maintenance, protection, mitigation, rehabilitation, etc., using (5) adaptive management strategies. (Garcia, 2003)

Viewed in the context of managing fisheries within specified fisheries boundaries and management areas, the first requirement proved to be a major challenge for FISH. In general, the spatial distribution of the harvested stock and the scope of the area to be covered by a desired management unit do not match the jurisdictional areas of existing institutions or management systems. The situation is far from the case of large-scale fisheries covered by international bodies such as the Western and Central Pacific Fisheries Commission (WCPFC), which has some control over tuna and large pelagic management initiatives in the region.

In the Philippines where political and administrative jurisdictions over fisheries are mostly defined by municipal waters, the distribution of stocks – and perhaps even a good part of the critical stages of their life cycle – occurs across several municipal boundaries. Under this setup, EAF necessarily involves both small-scale and large-scale actions, by individual LGUs in their own turf or by a group of LGUs through big-group or small-group collaboration covering a wide area across multiple jurisdictions in order to manage trans-boundary issues that affect a fisheries ecosystem. For this reason, the Project attempted to pursue from the outset inter-LGU planning for fisheries management. But if pushing fisheries management at the municipal level was challenging, scaling up management to one that had ecological significance on a larger scale proved doubly so, given the manifold institutional, informational and economic barriers at the inter-LGU level.

In the focal areas, 4 major activities were undertaken to set the stage for larger-scale management: (1) strengthening the legal basis for inter-LGU cooperation through, for example, the

formulation or review of existing inter-LGU arrangements; (2) management planning at the inter-LGU level; (3) facilitating the allocation of budget and other resources by cooperating LGUs to sustain inter-LGU operations; and (4) establishing a functional secretariat to provide policy and plan coordination, monitoring and feedback through information management, education and outreach at the inter-LGU level.

Early in its implementation, the Project worked toward the adoption of a harmonized fisheries management framework plan to provide guidance to its LGU partners in the formulation of their respective fisheries management programs, with some encouraging initial results: In Bohol, the provincial governor issued an executive order creating an inter-municipality fisheries management planning TWG tasked to draft a Danajon-wide fisheries framework plan. In Surigao del Sur, LGUs approved a review of the coastal and fisheries components of the Lanuza Bay Environmental Management Framework Plan to determine how to integrate into it relevant fisheries management objectives and strategies. In Calamianes, stakeholders agreed to develop a Calamian-wide integrated coastal fisheries management plan on which the concerned LGUs would base their respective management programs and strategies.

But, as has already been noted, because of institutional and other constraints, the comprehensive fisheries management planning process that was originally intended to happen at the inter-LGU level during the second year of Project implementation did not start until much later. This left no time at all for the plan to be implemented and fisheries management to complete even one cycle. Nevertheless, the Project did make significant headway in getting its focal area LGUs to work together on other critical interventions – notably coastal law enforcement, broad CRM planning, MPAs and IEC – that had been started earlier and thus progressed further than fishing effort management. Coordination was undertaken through existing inter-LGU arrangements where such existed, such as the LBDA in Lanuza Bay, CLEC in Danajon Bank, and a MOA between the Calamianes LGUs that called for a coordinated approach to fisheries management. In Tawi-Tawi, where there was little opportunity to institute such arrangements, the Project pushed the harmonization of management initiatives in order to induce some level of coordination.

In particular, law enforcement was a natural venue for coordination. LGUs realized from experience that because of the high mobility of illegal fishers and the trans-boundary nature of many fisheries violations, some aspects of enforcement could be done effectively and efficiently only by LGUs working together. In fact, LBDA was initiated by 2 municipalities in Surigao del Sur specifically to address poaching by commercial fishers that originated from one of their neighboring towns. Over time, the alliance expanded to other common development concerns and grew as an organization – LBDA was the only inter-LGU arrangement in the FISH sites that had a specific provision for funding and other operational support from member LGUs.

But even in Tawi-Tawi where no inter-LGU setup existed, the Project was able to engender cooperation by training the different municipal operating units together, a cost-effective strategy to provide opportunity for government enforcers and community volunteers from different municipalities to work as a team. It also facilitated an inter-agency collaboration agreement for the

formation of the TBFSA that created a platform for key CRM players in the province to experience what it would take to organize and accomplish a joint undertaking.

In Danajon Bank where fishery resources span across 4 provinces in 2 regions, the Project participated in discussions initiated by PATH Foundation to formalize CELEBOSOLE, which could have served as a venue for Danajon-wide planning and consultations. Despite the signing of a MOA among the concerned provincial governments, however, the initiative did not prosper because of differences in approach and priorities of the various parties involved. The Project thus focused its effort to expand its work to Leyte and Southern Leyte on providing direct assistance to municipal LGUs, particularly through IEC support and training in the establishment of MPAs, coastal law enforcement and CRM planning. The task was made easier by the fact that the Project's initial entry into Leyte and Southern Leyte was made in response to specific requests from some LGUs in these 2 provinces. Being demand-driven, capacity-building was carried out immediately, largely bypassing the persuasion stage that in other areas determined the LGUs' acceptance or rejection of an intervention or dictated the pace of its implementation.

It can be said that, by and large, the effort to "scale up" management to a larger area was pursued dynamically in response to opportunity or demand. But it can also be said that the Project created its own opportunities by constantly seeking ways to bring its message to fisheries stakeholders in its focal areas as well as its bigger target areas and beyond. The task of steering LGUs through the early stages of capacity development for fisheries management might have been fraught with great challenges, but it also gave FISH the unique chance to literally define a development mindset that could potentially shape the way fisheries would be managed in the future.

There was limited occasion to apply in practical terms the ecosystem approach specifically to fisheries, but in many ways through its various interventions, the Project was able to "work the ecosystem message" and promote some basic ecosystem approach principles. This was particularly true for those principles that pertain to decentralization of management to the lowest appropriate level, stakeholder and multi-sectoral participation, use of relevant scientific and user-supplied information, conservation of ecosystem structure and functioning, adaptive management, ecosystem interactions, sustainable use, social equity, precautionary principle, and management at appropriate temporal and spatial scales based on long-term objectives.

Much of the work in EAF was limited to building the appropriate mindset, but this is an essential first step in any change initiative. For fishery resource use to move from open access to managed fisheries under EAF, fisheries managers must undergo a "frame-shift" and transform the way they view, understand and respond to fishery issues. The ecosystem mindset must be deeply embedded in the governance system for the desired change to happen, and realistically speaking, this will take much more effort than FISH already accomplished. Nevertheless, what the Project succeeded in doing is significant in itself, because it has established a sustainable direction that its focal area LGUs can take, and set the right tone for future capacity-building initiatives for fisheries management by LGUs.

CHAPTER 4
National Implementation

In the Philippines, the EAF challenge appears doubly daunting in the face of constraints in a national institutional set up that, while still being retrofitted for decentralization, is also being called upon to take local fisheries management efforts to a higher level of coordination, if not integration. The FISH Project's view and the cornerstone of its work at the national level was that integration was expected even under the current decentralized setup of government. The 1998 Fisheries Code recognizes the LGU's jurisdiction in the management of municipal waters, while explicitly declaring the policy of the State "to manage fisheries and aquatic resources in a manner consistent with the concept of an *integrated coastal area management in specific natural fisheries management areas, appropriately supported by research, technical services and guidance provided by the State"* (RA 8550, 1998. Italics provided).

Much of the Project's focus at the national level was to point up this State policy and, where possible, define the work needed to enforce it. This involved assisting DA-BFAR, other relevant agencies and stakeholders in reviewing and enhancing national laws, policies and plans or programs consistent with sustainable fisheries and the Philippine government's commitments to international fisheries agreements and protocols.

This chapter describes what was accomplished in this regard, based primarily on the work done at the national level to support *IR 1. National and local capacity increased for fisheries management in 4 target areas*, generally encompassing the activities under *IR 2. National policy framework developed supporting sustainable fisheries* and *IR. 3. Constituency of informed, disciplined and cooperative stakeholders developed and engaged in fisheries management.* The indicators for these IRs were a measure of the degree to which NGAs agreed on an integrated national policy framework for sustainable fisheries based on EAF that also directly supported local fisheries management initiatives. The Project performance monitoring results are detailed in Chapter 2; this chapter describes the approaches and activities that produced the results and their impacts.

4.1. Policy Development

Like that of local implementation (Chapter 3), a key objective of the Project's work at the national level was to encourage a frame shift, a change in the way relevant government agencies regarded and exercised their responsibility in fisheries management *vis a vis* the LGU, so that it emphasized more clearly the national government's critical role as "integrator" and provider of technical services and guidance to the LGU. To support this, initial activities included reviewing national laws, policies and plans or programs consistent with sustainable fisheries and national commitments to international fisheries agreements and protocols, many of which are founded on or espouse ecosystem-based assumptions, concepts, values and practices. Policy issues negatively impacting local fisheries management were analyzed to guide the national policy improvement process and arrive at policy formulation consistent with local priority concerns and applicability. Insofar as it is the principal caretaker of the country's fisheries and aquatic resources at the national level, DA-BFAR was the

Project's main partner in the consultative review process that also involved the Department of teh Interior and Local Government (DILG, particularly the PNP), DENR, and major stakeholder groups.

The review process established that in broad terms Philippine policy is generally attuned to the ecosystem approach. The principles of human and ecosystem well-being, maximum biological productivity, sustainable use and equity are enshrined at the very top of the country's legal and regulatory framework. In *Article XII: National Economy and Patrimony*, the 1987 Philippine Constitution declares:

> *"The goals of the national economy are a more equitable distribution of opportunities, income and wealth; a sustained increase in the amount of goods and services produced by the nation for the benefit of the people; and an expanding productivity as the key to raising the quality of life for all, especially the under-privileged.*
>
> *"…The State shall protect the nation's marine wealth in its archipelagic waters, territorial sea, and exclusive economic zone and reserve its use and enjoyment exclusively to Filipino citizens.*
>
> *"…The Congress may, by law, allow small-scale utilization of natural resources by Filipino citizens, as well as cooperative fish farming, with priority to subsistence fishermen and fishworkers in rivers, lakes, bays, and lagoons."*

In addition, the Philippines is a signatory to international agreements that set forth many of the principles upon which the concept of EAF has developed. These include the 1995 FAO Code of Conduct for Responsible Fisheries, 1992 Convention on Biological Diversity, 1992 Action Agenda for Sustainable Development, and the United Nations Convention on the Law of the Sea, among others.

Philippine commitment to these international agreements is firmed up by national laws. In the case of fisheries, such commitment is fleshed out in the 1998 Philippine Fisheries Code, which emphasizes poverty alleviation, social equity, food security, rational use of resources, people empowerment and sustainable development through the protection of fisheries and aquatic resources, optimal utilization of existing resources, maintenance of ecological balance and the quality of the environment, and improvement and rationalization of the domestic market (DA-BFAR, 2005). The Code is supported by other national laws such as the Local Government Code of 1991 (LGC 1991), the Agriculture and Fisheries Modernization Act (AFMA) and the National Integrated Protected Areas System (NIPAS) Act, among others. (Table 4.1)

One important finding that came out of the review was that a dichotomy existed between policy and practice in Philippine fisheries administration. On paper, national policy adhered to and emphasized the principles of sustainable development, but in practice, the immediate need to provide an inexpensive and steady supply of fish to a rapidly growing population got the bigger share of national government attention than the increasingly urgent need to limit fishing effort to sustainable levels. This bias was evident in the type of assistance provided to LGUs by national agencies, most of which focused on increasing fisheries production through aquaculture and mariculture, or the provision of production inputs such as fishing nets and motorized boats. It was also greatly felt in the challenging process of engaging some national agencies in the capacity-building process needed to fully institutionalize fisheries management at the local level.

Table 4.1. Important Philippine policies relevant to EAF existing at the start of the FISH Project

National policy instruments aimed at improving service delivery by enhancing local autonomy

- RA 7160, the Local Government Code of 1991 devolved to the LGUs the management of coastal waters up to 15 km and provides mechanisms for LGUs to collaborate with each other and consolidate and coordinate their efforts, services, and resources for common purposes. Nothing prevents these common efforts from involving national government agencies if necessary. Generally, LGUs have full freedom and authority to define their cooperation and coordination arrangements, which may incorporate any activity, including EAF.
- RA 7586, the National Integrated Protected Areas System (NIPAS) Act of 1992 authorizes the establishment of protected landscapes and seascapes which may be located wholly or partially within municipal and/or national waters. Such waters, which may obviously include fishery resources, come under the management jurisdiction of a multi-sectoral, multi-agency body called the Protected Area Management Board (PAMB) led by the DENR. The PAMB's inherent nature departs from fisheries in that the objective is defined in terms of protection and conservation, not exploitation, which is the case in fisheries.

National policy instruments aimed at improving people's access to opportunities for undertaking sustainable livelihoods

- RA 8435, Agriculture and Fisheries Modernization Act (AFMA) of 1997 provides a development framework over a special area – the Strategic Agricultural and Fisheries Development Zone (SAFDZ), for the development and industrialization of the agricultural sector for the purpose of attaining food security and self-sufficiency, and expressed acceptance of the principle of sustainable development to guide the careful and judicious use of the country's natural resources for the purpose of long-term sustainability.
- RA 8550, the Philippine Fisheries Code of 1998 provides that (i) it is the policy of the State to ensure the rational and sustainable development, management and conservation of the fishery and aquatic resources in Philippine waters, including the Exclusive Economic Zone (EEZ) and in the adjacent high seas, consistent with the primordial objective of maintaining a sound ecological balance, and protecting and enhancing the quality of the environment (Section 2(c)); and, (ii) that this may be undertaken by the management of fishery and aquatic resources in a manner consistent with the concept of an integrated coastal area management in specific natural fishery management areas, appropriately supported by research, technical services and guidance provided by the State (Section 2(f).
- RA 8425, Social Reform and Poverty Alleviation Act of 1998 institutionalized the processes of the Social Reform Agenda (SRA), mandating the National Anti-Poverty Commission (NAPC) to enhance the programs, approaches and strategies to strengthen the partnership between government and the basic sectors. It also provides for the Adoption and Integration of the SRA in the National Anti-Poverty Action Agenda and identifies fisheries and aquatic resources conservation, management and development as a flagship program for fishing communities.

Special laws providing special legal regimes for specific areas of sustainable development

- RA 7611, The Strategic Environmental Plan for Palawan Law of 1992 established the Palawan Council for Sustainable Development (PCSD), which has jurisdiction over an entire island ecosystem and its adjacent marine waters.
- RA 6734, the Organic Act for the ARMM of 1987, as amended by RA 9054 of 2001, defines the complete suite of governmental powers of ARMM, including a fisheries jurisdictional zone up to 15 km from the shoreline.
- MMAA 86 Fisheries Code for the ARMM in 1999, mostly adopts the provisions of the Fisheries Code, except that it limits the extent of municipal waters to 12 km and extends regional waters to 22.5 km (this is not consistent with RA 9054 above, which states that regional waters cover those waters "up to 15 km from the coastline of the autonomous region but within the territorial waters of the Republic.")

Indeed, some at DA-BFAR have opined that fisheries management was second only to food security in its list of priorities, revealing an operational policy somewhat discordant with the state policy declared in the Fisheries Code that fisheries management is a means to achieve food security and not an end in itself:

"*Sec. 2. Declaration of Policy – It is hereby declared the policy of the State:*

"a) to achieve food security as the overriding consideration in the utilization, management, development, conservation and protection of fishery resources in order to provide the food needs of the population;

"c) to ensure the rational and sustainable development, management and conservation of fishery and aquatic resources in Philippine waters...;" and

"f) to manage fishery and aquatic resources in a manner consistent with the concept of an integrated coastal area management in specific natural fishery management areas, appropriately supported by research, technical services and guidance by the State."

Such prevailing opinion among some personages was nonetheless explicable in terms of the practical, not to mention political, considerations of meeting the livelihood needs of fishers at one end of the spectrum, and consumption and demand for fish at the other. Limiting fishing effort to levels necessary to restore depleted fish stocks might in the short term result in loss of livelihood for a significant number of fishers and a decrease in fisheries production, which could cause a tight supply situation amid increasing demand for fish, which in turn could lead to seafood price spikes, a scenario that was unlikely to be perceived as politically tenable given too few viable livelihood and food supply alternatives. Publicly at least, fisheries officials often understated the fact this dire scenario would happen anyway if fishing effort were not managed and if the depletion of fish stocks were allowed to continue.

4.1.1. Approach and activities

Among the Project's first activities was to engage DA-BFAR, primarily through consultations with the bureau's management and key staff toward formulating the appropriate policy work. This resulted in the identification of a list of priority policy actions to be supported by the Project. In order to deal with the varied policy requirements of the partners, the Project adopted a set of criteria to guide the selection process (Table 4.2) but also allowed some flexibility with regard to policy items identified as critical by its partner agencies.

A primary objective was to improve policy support for EAF in order to meet Project objectives as well as enable relevant agencies and institutions to sustain and apply EAFM strategies beyond the scope and life of the Project. The DA-BFAR officially became the Project's partner implementing agency in 2005 through a MOA (see appendix K) between USAID, DA and DILG that defined its responsibility to "provide available technical support staff as needed for effective Project implementation and to ensure sustainability of Project results," (DA, 2005) among others.

Meanwhile, the Project started to directly address some critical policy issues affecting its target areas that required national-level discussion. Attention was necessarily centered on its focal areas, but there was also conscious effort to pursue policy actions that supported fisheries management initiatives across a wide cross section of Philippine coastal LGUs.

4.1.1.1. Policy work to directly enhance initiatives at the focal area level. An early policy output was a study on the live reef food fish trade that the Project commissioned to the Resources, Environment and Economic Center for Studies, Inc. (REECS). Aimed primarily at addressing

Table 4.2. Criteria used in the selection of priority policy actions to be supported by the FISH Project

Primary Criteria -- used principally to evaluate the significance of a candidate policy work given the range of alternative policy activities and instruments that the Project could target during its lifetime.

1. *Impact/Substance* – These criteria were used to evaluate the importance of a candidate policy work given key issues and opportunities impacting the fisheries sector and the policy environment through which these issues and opportunities could be addressed. They included:
    a. Strategic importance or relevance of the policy work to key issues and opportunities in the sector and the policy handles by means of which these could be addressed;
    b. Catalytic spread or extent by which the policy work could help catalyze subsequent work on other policy activities and/or instruments;
    c. Size or magnitude of beneficiaries to be potentially benefited or impacted by the candidate policy work; and
    d. "Closeness" to implementation or the amount of time or work needed for the candidate policy work to be used or implemented by mandated institutions.
2. *Partner's viability* – Based on these criteria, the Project weighed the viability of the policy work from the perspective of its partner institutions. They included:
    a. Partner's perceived priorities; and
    b. Partner's readiness or capability to implement outputs generated through the candidate policy work in terms of personnel, technical, and financial capabilities.
3. *Project's (operational) viability* – These criteria were used to evaluate how well and how timely the Project could carry out the candidate policy work. They included:
    a. Project's comparative advantage, relative strength or advantage to pursue the candidate policy work (given the Project's objectives and financial, manpower and technical capabilities) compared to other groups active in policy development in the Philippines;
    b. "Gestation" time or the amount of time the Project would need to bring a candidate policy work to completion -- necessarily, the outputs should be deliverable within the Project's lifespan and contribute within the desired timeframe to stated Project objectives; and
    c. Costs or budgetary requirements to complete a candidate policy work

Start-Up (Supplemental) Criteria – used mainly during the start-up phase (first 2 years) to evaluate how a candidate policy work could contribute toward:

1. Enhancing the *Project's visibility* among various groups, personalities and institutions in fisheries development and conservation;
2. Establishing the Project in a *leadership role* in fisheries development and conservation or toward producing *early impacts* leading to such leadership role.
3. Establishing, reinforcing or building *relationships and alliances* to support Project activities and successes.

weighty issues related to the Palawan live reef food fish trade such as overfishing and habitat destruction, this policy study was used as reference for the Palawan Live Reef Fish Ordinance of 2005. The ordinance regulates the collection of live reef fish, particularly in Calamianes, where a significant portion of the Philippine live reef fish trade is concentrated (in 2002, Calamianes supplied 55% of the total volume of live food fish produced in the Philippines) (Padilla, 2003).

Although Palawan-centric, the live reef fish study could serve as a useful input to designing a national live reef food fish trade policy that tackles the rapid expansion of live food fish trade to many coastal provinces, including all 3 of the FISH target areas in Tawi-Tawi, Lanuza Bay and Danajon Bank. Moreover, it espouses many of the principles of ecosystem approaches – as input to policy-making, it has the potential to further orient policy significantly toward EAF.

Another policy initiative that was completed early in the life-of-Project focused on EO 305, which devolved to municipal governments the registration of municipal fishing vessels (not more than 3GT) consistent with their mandates under the Local Government Code and Fisheries Code. Supported by LMP and NAPC's Fisherfolk Security Council, this EO addressed vital issues related to vessel registration, for example by making registration easier for small-scale fishers. (The old setup

required all fishers to go to the PCG to register their boats, not particularly easy in remote areas without convenient access to PCG offices.)

The Project assisted the implementation of EO 305 by facilitating the formulation of the framework and guidelines for the registration and licensing of both municipal and commercial fishing vessels. To assist the process of adoption and subsequent implementation of the EO, the Project provided training in admeasurement and other skills relevant to vessel registration and licensing. The immediate objective was the adoption of the EO and its guidelines by the focal area LGUs, which was a commitment of the Project under its SOW. But the longer term objective was for all coastal LGUs nationwide to have their own fishery registration and licensing system – to achieve this, the Project tapped one of its partner agencies, the DILG, to encourage the various leagues of LGUs to lead the implementation of EO 305 (DILG, 2007).

Of particular interest to the Project was DA-BFAR's mandate and capacity to ensure that registration and licensing becomes an integral part of the country's fisheries management system across all levels of management. The Project ensured that DA-BFAR was involved in its training activities, in order to put registration and licensing in the agency's action agenda. With regard to the long-term EAF vision, it also sought the agency's commitment to coordinate the installation of an operative system of registration and licensing in every coastal LGU that secures the rights of legitimate small-scale fishers and inputs into the coastal resource and fisheries management process at the local (LGU) level and could be systematically uploaded through some form of inter-LGU integration to the national and international levels of management. To this end, it assisted the formulation of an FAO that defined the mechanics and guidelines for municipal fisheries registration and licensing.

4.1.1.2. Policy work toward fisheries reform and EAFM. The Project's priority policy actions included studies related to the implementation of a commercial fishing vessel license reduction scheme and the use of data from the National Stock Assessment Project (NSAP) to inform plans to manage fishing effort. The Project also began the process of developing an EAFM framework for Philippine fisheries alongside an integrated fisheries management unit (FMU) system. This framework was based on the following definition of EAFM adapted from the UN-FAO (Garcia, 2003):

> *"The ecosystem approach to fisheries management considers geographically-specified fisheries management that takes account of knowledge and uncertainties about, and among, biotic, abiotic, and human components of ecosystems, and strives to balance diverse societal objectives. Such an approach will address human activities and environmental factors that affect an ecosystem, the response of the ecosystem, and the outcomes in terms of benefits and impacts on humans. A distinguishing feature of an ecosystem approach is an emphasis on protecting the productive potential of the system that produces resource flows. For an ecosystem that is already degraded, the goal becomes one of rebuilding or restoring the ecosystem."* (see also Batongbacal, 2009)

Having coincided with the 2nd review period for the 1998 Fisheries Code, the Project also made the study of the Code's implementation a top priority, focusing mainly on consolidating and

Table 4.3. Salient features of the Comprehensive National Fisheries Industry Development Plan

- Provides the strategic directions to be undertaken over the next 20 years (2006-2025) to manage Philippine fisheries, and lays out the key project interventions that may be implemented over the first medium term plan (2006-2010).
- A product of extensive consultations at all levels of governance, involving many concerned agencies and a whole array of stakeholders.
- Science-based, taking into account the best available scientific/technical information. Structurally, the plan is divided into 5 chapters.
- Aims to promote the sustainable development and adaptive management of the Philippine fisheries sector.
- Provides a status assessment (past and present) of the fisheries situation in the country including the bio-physical, socio-economic and institutional dimensions.
- Explains pertinent sustainable development concepts, such as inter- and intra-generational equity, holistic development, integrated management and carrying capacity as well as relevant guiding principles specific to the fisheries sector that include precautionary principle, ecosystem-based management and decentralized administration.
- Describes development trends and challenges.
- Provides a prognosis for Philippine fisheries in terms of status and benefits, highlighting the development scenarios in relation to various driving forces and pointing out 2 desired pathways: (1) expansion of environment-friendly aquaculture and (2) substantial reduction in post-harvest losses.
- Describes the strategic vision and mission over a 20-year period. The sectoral vision is: "A sustainable and competitive fisheries industry that contributes to food security and provides optimum socio-economic benefits to Filipinos: The long-term goal is to sustain the industry's socio-economic benefits without jeopardizing the fishery resources and the associated habitats."
- Adopts the following strategic objectives: 1) Rationalize utilization of fishery resources; 2) Protect fisheries habitats; 3) Reduce resource use competition; 4) Maximize full potential of aquaculture; 5) Promote competitiveness of fisheries products; 6) Minimize post-harvest losses; 7) Enhance capability of LGUs, NGAs and local communities; 8) Promote appropriate fishery policies; and 10) Strengthen institutional partnerships.
- Presents the first medium-term programs and projects which include the following measures:
  - ✓ Measures to address sustainable and equitable utilization of municipal fishery resources for the benefit of small-scale fishers and coastal communities, such as: 1) Validation of priority use rights through municipal registration and licensing; 2) Enhancement of locally managed marine areas; 3) Sustainable fisheries livelihood support; 4) Fishery law enforcement enhancement; and 5) Rationalization of municipal fishing effort
  - ✓ Measures geared toward rational exploitation, sustainable development and conservation of fisheries and aquatic resources in Philippine commercial waters, including the EEZ and the adjacent high seas, such as: 1) Rationalization of fishing effort in overfished commercial fishing areas; 2) Development and implementation of a monitoring, control and surveillance (MCS) system for commercial fisheries; 3) Development, adaptation, and promotion of selective environment-friendly and cost-effective fishing gear and practices; and 4) Exploratory fishing in EEZ and beyond, and in under-exploited commercial fishing grounds.
  - ✓ Measures aimed at increasing the contribution of the aquaculture industry in national development through the adoption of progressive and economically competitive technology under a framework of social equity and environmental sustainability, such as: 1) Institutionalization of best aquaculture practices (BAP); 2) Establishment of standards for quality and implementation of farm-based hazard analysis and critical control point; 3) Rationalization of policies on the introduction of live aquatic organisms; and 4) Empowerment of small holders and fisheries in aquaculture.
  - ✓ Measures that support the development of comprehensive programs on product safety and quality systems, development of market and marketing systems for Philippine fish and other aquatic products, and eventual reduction of post-harvest losses, such as: 1) Strengthening of the fish inspection system; 2) Development of national quality standards for fish and fisheries products; 3) Reduction of fisheries post-harvest losses; and 4) Development of "Model Villages for Philippine Fisheries Post-Harvest."
  - ✓ Measures to address the critical capacity gaps of the institutional system, as well as develop the management capacity and institutional partnerships for effective management of the fisheries sector, such as: 1) Improvement of policy and regulatory framework for fisheries; 2) Building institutional capacity of DA-BFAR; 3) Enhancing fisheries management capacity through partnerships; 4) Organizing networks of local fishers and aquaculture communities; 5) Building alliance for integrated co-management of ecosystems; and 6) Budget estimations and institutional arrangements and mechanisms for plan implementation, monitoring and evaluation. Implementation features DA-BFAR in the lead role, assisted by a fisheries development coalition and various partnership initiatives.

prioritizing proposed amendments in the areas of capture fisheries, aquaculture, post harvest facilities, activities and trade and the penal provisions. Following consultations with DA-BFAR, in direct response to a provision in the Fisheries Code requiring the formulation of a national plan for fisheries, it assisted in the preparation of the CNFIDP, which defines the operational framework and blueprint for fisheries management in the Philippines over 20 years (Table 4.3).

To ensure that the plan reflected the wide range of perspectives of various stakeholder groups, the Project facilitated a highly participatory and consultative process involving organizations and individuals from the government, non-government and private sectors that had a stake in or impact on the fisheries sector. Co-chaired by DA-BFAR, the consultation process lasted 4 years, from 2004 to 2008, and involved situational analysis, threat analysis, scenario assessments, drafting of action agendas, setting of agenda priorities and review and revision of policy resulting from the process. Subsequently, through internal briefings and tasking, the Project assisted the bureau's management in the process of preparing the final CNFIDP.

As part of the Philippines' commitment to the International Plan of Action (IPOA) to prevent deter and eliminate IUU adopted by the UN-FAO in 2001, the Project also assisted the formulation of the NPOA-IUU (Table 4.4). As with most Project activities, in keeping with a key principle of EAF, plan preparation followed a participatory process involving government agencies and NGOs involved in fisheries management and conservation (NPOA-IUU, 2005).

Table 4.4. Salient features of the National Plan of Action to Prevent, Deter and Eliminate Illegal, Unregulated and Unreported Fishing (2005)

Anchored on the provisions of national laws, primarily the Philippine Fisheries Code of 1998, otherwise known as Republic Act (RA) 8550, that provides for the development, management and conservation of the fisheries and aquatic resources of the country, the NPOA-IUU discusses the following:

- Areas that can be improved in the systems and mechanisms in the Philippine fisheries sector to reinforce the Fisheries Code's effectiveness in addressing issues that render it weak and insufficient;
- International and national policies that aim to address all aspects of IUU fishing in an effective manner;
- Measures related to Flag State responsibilities to ensure that fishing vessels entitled to fly the Philippine flag do not engage in or support IUU fishing;
- Coastal State Measures to prevent, deter and eliminate IUU fishing in the EEZ;
- Port State Measures to control port access by fishing vessels to prevent IUU fishing;
- Trader-related measures for adoption by Regional Fisheries Management Organizations (RFMOs) to which the Philippines is a party;
- Research initiatives and efforts undertaken in the country in the field of fisheries, as well as areas for further research and collaboration in support of IUU fishing deterrence and prevention;
- National commitments to RFMOs relevant to the prevention, deterrence, and elimination of IUU fishing; and
- Special requirements of developing countries like the Philippines in their efforts to make progress in eliminating IUU fishing.

The document outlines current measures and efforts to address all aspects of IUU fishing and identifies specific actions and country commitments to reinforce the Fisheries Code and address gaps or weaknesses in the Philippine fisheries management systems and mechanisms. Broadly, the

Philippines committed to include the NPOA-IUU in the CNFIDP, and specifically to organize a Philippine MCS network and the institutionalization of joint commitments among DA-BFAR, MARINA, PCG and National Telecommunications Commission (NTC) to manage fishing capacity, key requisites to a well-coordinated integrated national system to monitor and regulate IUU fishing.

Besides the NPOA-IUU, the Project assisted 2 other country commitments, namely, the NPOA on the Conservation and Management of Sharks and Rays, and the Philippine NPOA on the Coral Triangle Initiative (CTI) on Coral Reefs, Fisheries and Food Security, and priority policy action items identified by partner institutions, such as mangrove reforestation, a proposal to close Manila Bay fisheries, climate change and administrative adjudication for fisheries.

On occasion, the Project was also called upon to provide "expert opinion," such as in the case of 4 House bills proposing the establishment of "modified mariculture development parks" in Tawi-Tawi – in this case, it advised against a plan to raise *mameng* in cages for export purposes, as it could lead to overfishing of juveniles and further complicate the enforcement of measures to protect this red-listed species.

One policy work the Project pursued independently of its partner agencies and other stakeholders was an initial attempt at designing a benchmarking system for fisheries management based on a CRM benchmarking system developed by CRMP for Philippine municipalities and cities and adopted by DENR as part of its national CRM reporting and benchmarking system. Specifically, the work focused on developing a preliminary set of standards against which LGU performance in fisheries management could be measured.

4.1.2. Results and Impacts

All told, the Project assisted the review, formulation or revision of 30 national and local policy documents and studies, including a set of proposed bills amending certain provisions of the Fisheries Code that was submitted to DA-BFAR and Congress in 2005. The specific policy instruments corresponding to these documents and studies are listed in Table 4.5 according to the type of fisheries management mechanisms (growth, control or maintenance) that they supported. In addition, as previously mentioned in *4.1.1.2* the Project reviewed 4 House bills providing for the establishment of "modified mariculture development parks" in 4 areas in Tawi-Tawi and advised against certain provisions on the cage culture of the red-listed *mameng* and its transport from the province. However, the Project's recommendations did not make it to the final versions that were approved by Congress and submitted to the Senate in 2009, so these bills were not reported in the Project results.

Not counting the mariculture development House bills, nearly one-third of the outputs of the Project under *IR2.1* addressed policy concerns in ARMM, ranging from controls on tropical fish collection and trading to the establishment of a commercial fisheries licensing system in the region. This was not a reflection of any deliberate bias for ARMM, but rather the offshoot of a perceived need shared among ARMM officials to develop local fisheries policies according to the provisions of the Organic Act for ARMM (RA 6734 as amended by RA 9034) and the ARMM Fisheries Code

Table 4.5. Policy documents and studies supported by the FISH Project

Policies promoting growth mechanisms

- HB (House Bill) 5990 providing for the establishment by LGUs of MPAs covering at least 10% of coastal areas.
- Draft FAO adopting and implementing the NPOA on Conservation and Management of Sharks and Rays.
- RFAO 17-2009 providing the rules and regulations on the lease of fishponds in ARMM, including the reversion of abandoned fishponds to their original natural state

Policies promoting control mechanisms

- Draft FAO providing the rules and regulations on the registration and licensing of commercial fishing vessels, fisherfolk, fish workers and gear
- Draft FAO providing the rules and regulations on the registration of municipal capture fisheries for implementation by LGUs
- Draft FAO on the National Plan of Action on illegal, unreported and unregulated fishing.
- Joint DILG-DOJ-DOTC-DA No. 1 series of 2005 providing the implementing guidelines for EO 305 series of 2004 on the devolution of the registration of fishing vessels 3 GT and below to LGUs
- DILG Memorandum No. 37 series of 2007 enjoining the Leagues to lead the implementation of EO 305
- Evaluation of policy options for live reef food fish trade in Palawan
- Draft FAO providing guidelines for the implementation of the Wildlife Act (RA 9147) for aquatic wildlife
- Draft FAO on the implementation of a commercial fishing vessel licensing reduction scheme
- REO (Regional Executive Order) 16 series of 2006 creating an Inter-Agency Regional MCS Team in ARMM
- Draft REO adopting the Operations Protocol for the ARMM MCS Team
- RFAO (Regional Fisheries Administrative Order) 50 s. 2009 establishing a commercial fisheries licensing system in ARMM
- RFAO 57 s. 2009 on tropical fish collection and trading in ARMM
- REO 003 s. 2009 creating a TWG for the formulation of the ARMM Comprehensive Regional Fisheries Development Plan

Policies promoting maintenance mechanisms

- NPOA-CTI. Philippine National Plan of Action for the Coral Triangle Initiative on Coral Reefs, Fisheries and Food Security
- Proposed HBs amending certain provisions of Republic Act (RA) 8550 (Philippine Fisheries Code of 1998)
- Proposed HB 227 establishing the Department of Fisheries
- Draft FAO establishing an ecosystem-based management framework for Philippine fisheries
- FOO 213 s. 2008 adopting the CNFIDP
- FOO 217 s. 2008 adopting an Integrated Fisheries Management Unit Scheme in the Philippines
- DF-AAO (Department of Fisheries-ARMM Administrative Order) 01-2006 providing the implementing rules and regulations for MMAA 86 (Fisheries Code of ARMM)

(MMAA 86). By and large, therefore, technical assistance was demand-driven and as a result, 6 out of the 8 ARMM policies supported by the Project were adopted or implemented by concerned regional agencies. For that matter, ARMM policies also made up about one-half of the FISH-assisted policies that were actually adopted or implemented.

Overall, only about one-third of the policies supported by FISH had reached the adoption or implementation stage at the end of 2009. Notable among these were the CNFIDP, implementing guidelines for the registration of municipal fishing vessels, and a fisheries office order (FOO) on the adoption and implementation of an integrated FMU scheme. The low rate of policy adoption reflected not only still unresolved differences in philosophy and priorities among stakeholders but also the

highly consultative and participatory, but inherently time-consuming, process that the Project employed toward achieving its policy objectives. For example, the CNFIDP went through numerous subsector consultations and TWG reviews – a process that took 4 years – before it was adopted through an FOO in 2008. On the other hand, the NPOA-IUU and the FAOs on municipal and commercial fisheries registration and licensing were pushed to the back burner and remained there 5 years after they were completed, as DA-BFAR pursued other priority concerns.

Nevertheless, stakeholder participation was essential to help ensure that all sectoral and organizational concerns were properly ventilated and considered in policy-making and that critical implementation issues were identified. While the eventual policy issuances might not have adequately addressed all stakeholder concerns or guaranteed effective implementation, the consultation process did enable the concerns of stakeholders to be identified, opened communication channels among stakeholders, and established or strengthened working relationships among concerned institutions and stakeholder groups – all valuable ingredients for improving implementation and further advancing policy reform.

The CNFIDP was a product of stakeholder participation and perhaps the most significant policy document that came out of the Project's 7 years of implementation, with implications to Philippine fisheries over 2 decades. Extensive consultations at all levels of governance involving relevant agencies and a wide range of stakeholders helped ensure that it represented the different views and concerns of the many sectors affected by and impacting Philippine fisheries, while bringing out their shared vision for the future of fisheries in the country. What came out of the discussion was a clear call "to promote the sustainable development and adaptive management of the Philippine fisheries sector" based on fundamental sustainable development and environmental principles as well as the principles of EAF, partnership and decentralized administration (Table 4.6). This reflected an emerging consensus that while the current decentralized setup of LGUs managing municipal waters had set off a multitude of local initiatives and encouraged primary stakeholders to take personal responsibility for fisheries management, there was still a need to include ecosystem considerations in the management equation, and this required a wider, more integrated approach involving closer coordination and partnerships between all concerned institutions and stakeholders.

Table 4.6. Concepts and principles guiding the Comprehensive National Fisheries Industry Development Plan

Sustainable development concepts
1. Inter- and intra-generational equity
2. Holistic development
3. Integrated management
4. Carrying capacity
Principles for fisheries sector development
1. precautionary principle
2. ecosystem-based fisheries management
3. participatory management
4. partnership
5. decentralized administration
6. polluter pay principle
7. accountability

It is too early to determine whether or not the one dozen or so FISH-assisted policy instruments that were actually adopted have in fact positively impacted the specific fisheries management concerns that they were intended to address. But this much can be said: the sheer amount of work that the Project put into pushing policy reform was a major accomplishment in itself and could only contribute positively to shaping the still evolving policy landscape for fisheries in the Philippines.

4.2. Constituency Building

The many inherently contentious issues that must be dealt with in fisheries reform made constituency-building imperative to Project implementation at both national and local levels. At the national level, the Project focused on strengthening and expanding the constituency for fisheries management to generate political influence and leverage support for its policy initiatives. This involved the identification of organizations and individuals who were in a position and willing to serve as advocates or champions of policy reform toward sustainable and responsible fisheries, as well as providers of fisheries management information and technical assistance to the LGUs.

In operational terms, there really was not much distinction between the Project's policy initiatives and constituency building activities. Indeed, it can be said that the consultative and participatory process that the Project employed in its policy work was very much an exercise in constituency-building, as the process of constituency-building was in many ways also a process of informing policy-making. The 2 components worked in tandem, always informing, complementing and reinforcing each other, so they were both present in nearly every Project activity. Nevertheless, in setting strategic directions, a distinction was made in terms of each component's objectives: while the policy component was obviously focused on bringing about relevant policy change, the constituency-building component was primarily concerned with ensuring substantial stakeholder presence and involvement in the reform effort. This section highlights the constituency-building aspect of Project activities.

4.2.1. Approach and activities

At the national level, constituency-building was employed primarily as a strategy to support the Project's policy work, and where applicable, to catalyze institutional change. A great deal of the constituency-building effort was naturally centered on DA-BFAR itself: For much of its life, the Project worked with key DA-BFAR officials and technical personnel to build a constituency base for its policy initiatives within the bureau. Banking on its staff's prior good working relationships with some DA-BFAR personages, the Project tried to generate support from within the bureau by engaging its officials in candid discussions on critical policy issues, while enlisting the technical staff in the policy work needed to initiate the reform process. Simultaneously, it broadened its constituency to include other government agencies with mandates relevant to fisheries management. DILG was of course included as an implementing partner, and for various specific concerns, other agencies such as the National Fisheries Research and Development Institute (NFRDI), National Agriculture and Fisheries Council (NAFC), National Economic and Development Authority (NEDA), Mindanao Economic Development Council (Medco) and the ARMM government.

The Project also tapped the 1,560-member strong LMP, reviving an old alliance developed during CRMP that helped that project achieve a strategic spread of best practices in coastal management. With FISH, LMP focused on building a constituency for fisheries management anchored on a network of peers called Movement for Responsible Fisheries (MOREFISH) composed of like-minded local chief executives who actively advocated environmental protection and marine conservation in the LGU community and concerned NGAs, particularly DA-BFAR.

Also with LMP, the Project engaged LMP's MDC in the development and implementation of the ECSMF and the conduct of 2CCM. Designed specifically for LGU officials, the ECSMF was a training program on basic CRM and fisheries management. 2CCM, on the other hand, was a follow-through of a similar conference held in 1999 that resulted in the adoption of a 15-point resolution on CRM (CRMP, 2000) – it was convened on June 28-30, 2009 in Cebu City to evaluate how well the 1999 resolution was implemented and to discuss developments in the fisheries sector, including the NPOA-CTI and climate change.

A number of the constituency building activities that the Project pursued at the national level aimed to directly support local implementation, but were also designed to help expand the national constituency for fisheries management. For example, the Project participated and supported the annual and special meetings of the PNP-NALECC. The NALECC provided the Project a venue to report to the whole law enforcement community the activities undertaken in the sites, ventilate issues hindering enforcement, clarify policies that affected field enforcement and mobilize support from the PNP and other enforcement agencies to the concerned LGUs when it became imperative. At the same time, it was the Project's intention to contribute to the development of NALECC as a policy recommending body by making it a conduit of proposed policy measures and improvements as they were experienced on the ground.

The Project also sought to build the support base specifically for EAF within DA-BFAR and other relevant NGAs. Throughout 2007 to 2009, briefings were held especially for officials of DA-BFAR and the ARMM on the critical need for adopting EAF, as well as for DILG and NEDA during FISH TWG and consultative group meetings. For the Project, this signaled the beginning of the institutional work needed to set in operation a system of governance favoring a more integrated EAF. Additionally, after NSAP results showed that most fisheries in the Philippines were in significant decline, the matter was discussed with NAFC through its Committee on Aquaculture and Fisheries.

Outside of its core group of partner agencies, the Project started to build a constituency for EAF among LGUs, with LMP (through MOREFISH) serving as the main conduit of information to emphasize the pivotal role of LGUs in managing municipal fisheries under EAF. Through NFR, NGOs and POs were also consulted to generate support for the preliminary EAF framework that the Project developed. All told, 17 area consultations with NGOs and POs were conducted nationwide.

As results from its sites became available, the Project put to good use its field experiences to illustrate either the benefits of sustainable fisheries policies, or the implications of unsustainable policy decisions. Local experiences were documented for dissemination through various media, including print, broadcast and the Internet. Documentation served 3 purposes: 1) to record and share Project lessons to a wider audience; 2) to recognize and affirm the experiences and achievements of

partner LGUs and their individual staff in the various aspects of CRM and fisheries management; and 3) to generate positive feedback on good governance in fisheries management to help influence policy directions at the national level.

The Project compiled 84 "success stories" from its focal areas that also served as its contribution to the "Telling Our Story" section of the USAID website. Working with ANC, it also produced "*Hinagpis Ng Dagat*" (Sigh of the Sea), a documentary report on the issues facing Philippine fisheries, current measures to address such issues, and the viewpoints and recommendations of various stakeholders and other key players in the fisheries sector. Shot almost entirely in the FISH focal areas, the report highlighted the management efforts of Project partners.

All FISH-assisted LGUs were included in the second edition of the Directory of CRM Learning Destinations, which was first published under CRMP to promote the work done by participating LGUs as well as provide a resource for those looking for examples of past and current CRM practices. Nearly 100 cities and municipalities participated in the second edition and took advantage of the opportunity to share their best practices not only with FISH Project's partner LGUs but the wider community as well.

To establish itself as a source of objective information on fisheries policy issues, the Project made a point of expanding its reach and sphere of influence beyond its sites by sharing its training and IEC materials and expertise as widely as possible. For example, it supported the US Department of the Interior-Philippine Biodiversity Conservation in the conduct of a national environmental law enforcement training and summit where Project lessons in enforcement were shared with a national audience. By invitation from different institutions and projects, it disseminated its technical assistance strategies and approaches through various forums, not only in the Philippines but also overseas.

The Project participated in workshops and conferences in the U.S., Mexico, Malaysia, Norway and other countries and submitted numerous articles authored by its staff to several publications, including local dailies and international technical and scientific journals. And, through its website at http://oneocean.org, it made practically all of its training and IEC products freely available to anyone with access to the Internet, in order to contribute to the global knowledge base on CRM and fisheries management and more importantly, to harness the power of information sharing to help catalyze much needed changes in fisheries policies and practices in its sites, as well as across the Philippines and the world.

4.2.2. Results and impacts

The Project had much to show in terms of audience reach and the sheer number of its IEC products. Overall, it produced more than 200 titles in various formats (print, radio, video, etc.), with over 100,000 copies of its print materials reaching various organizations and individuals nationwide, and radio, TV and the Internet expanding its reach at least ten-thousandfold more across the world. However, it would be difficult to measure how much these modes of information dissemination actually contributed to constituency-building that directly supported the Project's policy work. What was clearly evident was that demand for information was never lacking, and in fact the demand grew as the Project's IEC materials reached more people, indicating at least increasing interest in the

fishery issues that the Project highlighted. These materials became popular sources of information not only for Project sites but also for areas supported by other donor-funded projects such as GTZ, CCEF, Sustainable Management of Coastal Resources in the Caraga and Bicol Regions (SUMACORE), Plan International, Partnerships in Environmental Management for the Seas of East Asia (PEMSEA) and Integrated Coastal Resource Management Project (ICRMP).

The impacts of constituency-building activities involving interpersonal interactions were much easier to gauge. From about 5,600 participants that attended the Project's 180 consultation meetings, conferences, workshops and trainings emerged at least a few dozen peer trainers, advocates and champions for sustainable fisheries not only across the FISH sites but also among participating organizations with regional or national influence. In terms of influence, the biggest of such gatherings was the 2CCM, which the Project organized with LMP (through MOREFISH) and other partners. The conference was attended by close to 600 mayors, technical staff and representatives from NGOs and donor-funded projects and resulted in the adoption of 14 resolutions that addressed various issues related to fisheries, food security and climate change, including the conduct of the conference of coastal municipalities as a biannual event (Table 4.7). It was also attended by 30 representatives from the CTI member countries (Indonesia, Philippines, Malaysia, Timor-Leste, Papua New Guinea and Solomon Islands) who participated in a week-long exchange program based on the ECSFM that the Project organized and hosted.

The Project's partnership with LMP proved to be particularly productive in terms of leveraging support for fisheries management and sharing Project lessons for application in other areas. Through the League's MDC, a total of 88 mayors participated in the ECSFM. Through MOREFISH, LMP also helped the Project push policy reform, in particular by passing a resolution endorsing to both its member-LGUs and DA-BFAR the adoption of the FMU scheme.

Engaging civil society in fisheries reform. As part of its constituency building, FISH promoted the NGOs' role as a provider of independent expertise to LGUs. APREDEC, our main partner for Lanuza Bay, used to be a loose organization of like-minded professionals – mainly lawyers -- who championed the rights of marginal fishers in Surigao del Sur. In 2006, prompted by an opportunity for funding under the FISH SAF, the group decided to formally organize. They worked with the Project until 2009, helping introduce policy reforms that strengthened LBDA. Simultaneously, with our assistance, they beefed up their capability to assist the Lanuza Bay LGUs in the technical aspects of coastal management, including resource assessment, community organizing, law enforcement, and IEC.

"We now have in our organization not only lawyers but also community organizers and technical experts," APREDEC founder Gerardo Maglinte told FISH in an interview in 2008.

He revealed plans to expand the group's operation to the entire Caraga region. "We've built a good relationship with LGUs, while keeping our independence as an NGO. This allows us to serve both as a catalyst of change and as a source of support for the LGUs."

The group continues to produce a radio show that was developed with FISH assistance to provide a public forum for the discussion of coastal problems and their solutions. (Sia, 2009)

Meanwhile, the Project's engagement with the NALECC led to the institutionalization of a mechanism for concerned agencies to monitor, report, and discuss fishery law enforcement issues and find appropriate solutions. In addition, its partnership with various NGOs, advocacy and religious groups established the role of civil society as a provider of independent expertise, legal assistance and moral guidance on CRM and fisheries management to both LGUs and resource users. For example, its NGO partner in Surigao del Sur, APREDEC, while still largely focused on assisting Lanuza Bay LGUs, has set its sights on expanding its operation to the entire Caraga region through the Caraga Lawyers Network. Also, the *shariah* organization SCIPG in Tawi-Tawi and the Catholic clergy's

"ecological evangelists" in Cebu remain a primary source of moral guidance on fisheries matters for the faithful in the areas they directly serve, as well as those areas where they exercise indirect influence.

At the national level, the Project's collaboration with NFR was instrumental in connecting the community of stakeholders with policymakers and promoting transparency in policy decisions. The broad-based community involvement that NFR and other partner NGOs brought into the policy-making process not only contributed to improving the relevance of draft policies, but also added significantly to the policies' legitimacy, visibility and influence.

That said, community involvement must continue. Well-defined operational frameworks may not be enough impetus to drive substantive change in institutional priorities. An engaged constituency led by LMP, NFR and their allies in national government could be the compelling force to push the reform process forward and spur change-resistant institutions to finally put policy into action toward sustainable fisheries under EAF.

Table 4.7. Resolutions adopted at the 2nd Conference of Coastal Municipalities in the Philippines

Res. No. 1. Calling on LMP and DA-BFAR to assist member municipalities in establishing inter-LGU cooperative arrangements in fisheries management.
Res. No. 2. Calling on LMP and concerned agencies to institutionalize the CCM as a biannual event to provide a forum for coastal municipalities to discuss common environmental and development issues.
Res. No. 3. Calling for the inclusion of marine areas as a basis for the computation of the internal revenue allotment (IRA).
Res. No. 4. Urging Congress to elevate DA-BFAR into a department of national scope to ensure sufficient funding for the management of the coastal and fishery resources of the Philippines.
Res. No. 5. Calling for the enhancement of IEC activities by all concerned agencies and the MDC in the areas of climate change, marine biodiversity and population management.
Res. No. 6. Requesting the Department of Education to integrate climate change and marine biodiversity in school curriculums.
Res. No. 7. Calling for the enactment and implementation of financial measures necessary for the empowerment of LGUs in adopting an integrated and strategic coastal and fisheries resource management.
Res. No. 8. Requesting DA-BFAR to implement the CNFIDP.
Res. No. 9. Requesting the PNP to assign at least 2 PNP personnel per municipality to enforce fishery and coastal laws.
Res. No. 10. Directing the LMP and MDC to formulate a model administrative adjudication ordinance and to capacitate LGUs in the operationalization of the adjudication process.
Res. No. 11. Requesting the DA-BFAR to provide patrol boats and other necessary paraphernalia to coastal communities in need.
Res. No. 12. Enjoining the DENR to support coastal municipalities nationwide in undertaking mangrove rehabilitation and conservation programs and other appropriate buffer zone measures to help mitigate the impacts of climate change.
Res. No. 13. Requesting the Department of Justice (DOJ) to create paralegal teams to assist LGUs in the prosecution of fishery-related cases.
Res. No. 14. Enjoining the LMP to create a TWG to monitor the gains of the first and second conferences of coastal municipalities using exemplary initiatives of LGUs as baselines.

CHAPTER 5
Project Management

Chapters 3 and 4 discussed the Project's accomplishments and the constraints it faced in pushing its agenda, particularly those related to its implementing partners' absorptive capacity and willingness to participate. This chapter presents an insider's view of the "backroom" operations of FISH, and examines important aspects of Project management and their impacts on implementation and outcomes.

A key management objective was to deliver the desired results in the most timely and most cost-effective manner. The Project's success in this regard was the product of prioritization, consistent administrative support, and a strong focus on results, combined with flexibility, opportunism, inclusiveness, leveraging and a Project staff complement with an excellent mix of skills and experience.

5.1. Project Design & Organization

FISH was designed to "build upon lessons learned and experiences" of past and ongoing CRM initiatives in the Philippines. These initiatives included the Central Visayas Regional Project (CVRP) supported by the World Bank, the Fishery Sector Program supported by ADB and several smaller projects supported by USAID in the 1980's. However, FISH was most heavily influenced by the USAID-assisted CRMP, the project that immediately preceded it. CRMP was a major success in terms of mainstreaming the broad terms of CRM on the national agenda. As a follow-through, FISH was conceived to advance and deepen the capacity building that CRMP started. The FISH operational framework was therefore quite similar to that of CRMP, except on the following points:

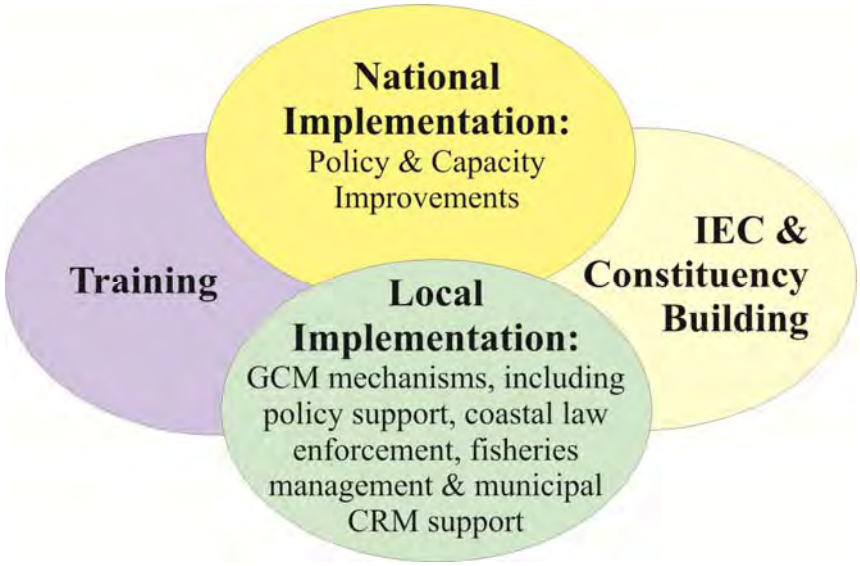
1. While CRMP tackled broad CRM concerns and was national in scope (its main objective was to achieve a "strategic spread" of CRM), FISH had a relatively narrower focus, being concerned primarily with fisheries management in 4 target areas;
2. CRMP performance at the strategic objective level was measured by a governance indicator (kms of coastline under improved management), while FISH performance was measured by a biophysical indicator (change in fish stocks); and
3. FISH was implemented under a "cost-plus-award fee" or incentive contract that used performance-based contracting methods to promote compliance with contract requirements or achievement of the results or objectives stipulated in the contract.

The FISH results framework (Chapter 1) was developed at the outset to provide a system for measuring Project performance and guidance to Project staff and its partners among LGUs and NGAs. Early in the Project, there was substantive discussion on what the desired FPR – at least a 10% increase in fish stocks in the focal areas by 2010 – represented. Some within the Project suggested it was the "target" that the Project had to prioritize to meet its contractual obligations, as indeed it was. Others said the FPR was only an indicator of how well the Project would deliver its

core function of capacity-building. Largely because FISH was an incentive contract tied to biophysical targets, there was consensus to prioritize achieving the target FPR, in the process prioritizing IRs which more directly contributed to it.

The internal design of FISH reflected the primary thrusts of the Project Components at the national and local levels (Figure 5.1), and its organizational chart (Figure 5.2) indicated how the various Project personnel should relate to each other within the larger components of the Project design. The organizational structure of FISH was not meant to be hierarchical but rather reflected a more horizontal spread of responsibilities to allow staff members to communicate and share with others in the Project and learn how to perform multiple roles.

Figure 5.1. Major components of FISH Project

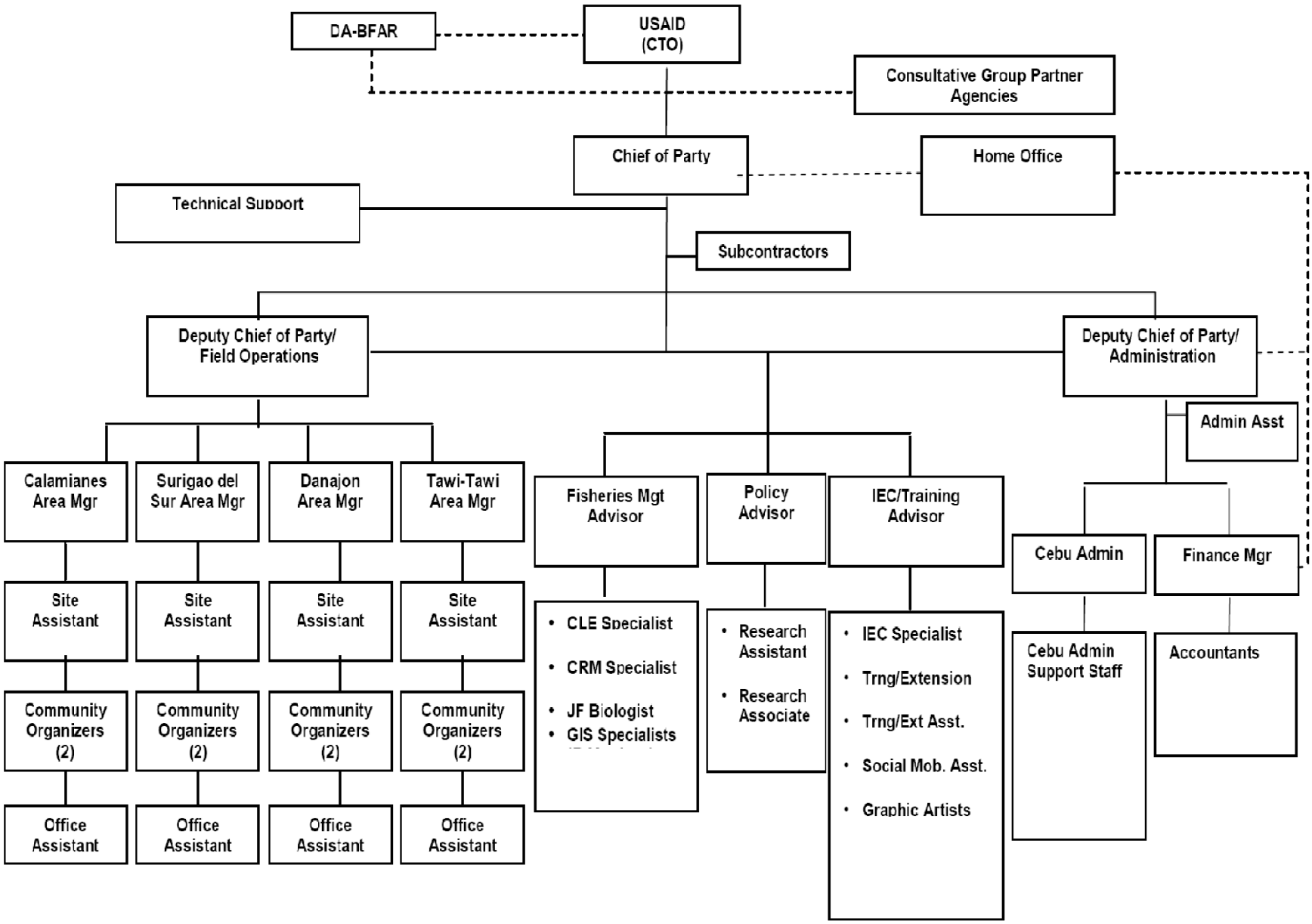


5.2. The Project Planning Cycle

The internal planning for FISH objectives and activities was highly inclusive and participatory. During the first 3 years of implementation, Project-wide planning meetings were conducted every quarter, usually in Cebu City for the majority of the Project staff. The Project developed its annual and quarterly work plans in these meetings and reported on progress, issues and lessons learned. Subsequently, because of budget constraints, Project-wide planning was reduced to 2 meetings a year. Although decisions on Project direction were not all made in these meetings, they were discussed as needed informally and openly so that all concerned could share in decisions for changes or improvements in Project priorities and implementation.

As already noted, the organizational setup was drawn up to encourage a flexible and open management style based on a horizontal, rather than hierarchical decision-making. This allowed the Project Components to make decisions fairly independently according to their own assessment of their respective work challenges, which greatly reduced response time. The usual downside of such "flat organization" approach pertains to potential fragmentation and disconnects among components. Substantive effort was put by management to address this issue. Among others, the Project-wide

Figure 5.2. FISH Project organizational chart



planning meetings and Project Component managers' meetings attempted to enhance cross-component communication, coordination and collaboration, as well as Project-wide coherence and integration.

The steady depreciation of the US dollar against the Philippine peso that started in late 2005 resulted in a much faster burn rate (in peso terms) than originally projected. This impelled prioritization of Project activities. As the end-of-base period drew near, the need to deliver the biophysical results as a contractual obligation became a compelling argument to prioritize those activities that were "ready to go" and generated the fastest direct results (e.g. MPAs, fishery law enforcement). As noted in Chapter 3, some activities were initiated only during the 2-year extension period, after the Project had satisfactorily met its terms of reference for the base period.

In keeping with its participatory approach, the Project tried to engage its partners in decision-making in regard to implementation. This was particularly true in the focal areas, where the LGUs in particular were constantly in the loop on most Project implementation matters. At the national level, DA-BFAR, DILG and – toward the latter part of the Project – LMP, were drawn into as many Project initiatives as possible, especially in policy and institutional development. Although not all partners could be in all meetings, key partners were invited, as appropriate, depending on their level of involvement with FISH and their organizational mandates.

5.3. Management & Leadership

Many of the FISH staff members were held over from CRMP, bringing with them not only their combined expertise in the various aspects of CRM (e.g., coastal law enforcement, IEC, advocacy, training, institutional development, participatory capacity building, community-based MPAs, community organization and highly specialized areas such as GIS for coastal zone management), but also their considerable social capital and high familiarity with working under a USAID project with LGUs and coastal communities. In addition, to beef up expertise in fisheries management, Project management recruited some of the leading experts in fisheries science and policy in the Philippines and other new specialists based on criteria broader than simply technical expertise such as:

- Willingness to learn and work outside of their comfort area or expertise;
- Ability to create or accept innovative ideas on how to better achieve FISH objectives;
- Ability to work in a team environment among a range of people and backgrounds;
- Ability to grasp the bigger picture of what FISH was doing; and
- Willingness to give a little extra to make the Project a success.

Management of project personnel is a major concern for all large projects for various reasons. First, people are hired for definite periods of time so there is some insecurity about tenure. Second, expectations for performance are quite high given the watchful eye of project supporters and the high (but risky) objectives of innovative and pioneering projects. These and other concerns put project personnel under a certain amount of stress and FISH was no exception. FISH addressed these issues by trying to make clear and "doable" objectives of work for each Project employee. Key points of relevance for personnel management in FISH included:

- Keeping people informed of what is going on as promptly as possible;
- Encouraging a common vision for objectives for all persons in the Project;
- Rewarding leadership but showing compassion for problems and lesser achievers;
- Being open to discussion and listening so that problems do not fester; and,
- Being fair and gender-sensitive with all concerned and in all activities.

The Project supported both regular employees and consultants. Consultants largely had short-term contracts with specific scopes of work. This helped focus their work and such contracts were reviewed annually to make sure they were appropriate. All permanent employees underwent an annual personnel evaluation. This was performed among staff members with each member selecting several other -- usually more senior -- employees to do their evaluation. All staff evaluated the COP. This system helped staff to see their strengths and weaknesses and helped them to be more candid about themselves in their work.

Needless to say, there were many interesting situations that arose over the 7 years of FISH with respect to personnel issues and concerns. In an effort to minimize problems and their impact on the Project and its work, a basic rule of management was to treat all parties equally and with respect, and in a professional manner. Also, the Project organization, being quite horizontal, provided much opportunity for Project staff to be self-motivated, self-sufficient and responsible in their own right. This aspect of FISH tended to make most staff and consultants enthusiastic and enterprising in their work.

5.4. Performance Monitoring

To measure its performance against the Results Framework set out in the approved Performance Monitoring Plan, the Project put into effect a monitoring system consisting of the following 2 types of monitoring events:

1. A periodic monitoring focusing on measuring the IRs (semi-annual), and
2. Special monitoring events conducted every 2 years from 2006 to 2010 to determine changes in the PRs.

In addition, in 2009, the Project made an assessment of its SAF program, which was completed at the end of the 2003-08 base period. The assessment was undertaken to measure Project performance in implementing the program and to determine the impacts of SAF activities on overall Project objectives.

Results from these performance monitoring and assessment activities were shared widely with FISH staff and partners to show progress toward Project objectives and, to a certain extent, to guide the planning of implementation activities. These results are discussed in Chapter 2-4 and presented in detail in Appendix A and Appendix B; they are therefore not covered further here. Appendix A is a compilation of Project results as reported in various official FISH documents, while Appendix B shows the final Project results reflecting adjustments made after data editing was completed in 2010.

A second set of monitoring activities was conducted throughout the Project life to track Project management, dealing specifically with internal management concerns related to expenditures, information management and quality control. These are discussed below.

5.4.1. Cost-effectiveness

FISH developed a rigorous system of tracking expenditures so that over time the amount and percentage of budget used for different activities could be tracked and analyzed. In addition to regular budget items that were automatically accounted for, all personnel time was tracked according to time spent within different components and geographical localities of the Project. In this manner, the portion of any person's time devoted for technical (e.g. training, policy work, monitoring, CRM planning in a given field area) or administrative tasks could be determined. This has enabled the Project to know what resources were truly devoted for field level work as opposed to national policy or project administration.

A breakdown of overall Project expenditures by general categories of expense is shown in Table 5.1. A breakdown by Project component is shown in Table 5.2 that indicates the relative amounts spent on capacity building, policy development and IEC/constituency building activities at various levels of government.

Table 5.1 Proportion of expenditures by budget line item to total Project cost*

Component	% of Expenditures
CLIN 1: Capacity development	40
CLIN 2: Policy development	14
CLIN 3: Constituency building	24
CLIN 4: Project management and performance monitoring	18
CLIN 5: Special activities	3
CLIN 6: Performance award fee	1
	100

*Based on obligated amount

Table 5.2 Proportion of expenditures at implementation/activity level

Activity/Implementation Level	% to total expenditures* at activity/implementation level	
Capacity Building		51
Calamianes, Palawan	9	
Danajon Bank, Bohol	10	
Lanuza Bay, Surigao del Sur	11	
Tawi-Tawi Bay, Tawi-Tawi	8	
Provincial/Regional	3	
Travel	9	
Policy		21
IEC/Constituency Building		28
		100

*Based on booked amounts and not actual expenditures. Values are percentage of total booked amount for the activities and implementation levels listed, and do not include labor, fringe and other budget items that also make up total Project cost.

5.4.2. Information management

A management function that sometimes does not get enough attention is management of information within a project. FISH generated tremendous amounts of information in various forms, and to an extent, the essence of the Project was information management. Also, as the Project

matured, the demand for all this information increased many times over. People working effectively within a large and complex project need easy access to information, and as the body of this information grows, the systems to deal with it also need to grow and remain responsive and functional. The information referred to covers a range from simple accounting documents and summaries to a complex array of technical documents generated either internally or from external sources.

FISH addressed its information needs by setting up an information management system that combined appropriate elements of the old CRMP system with new systems and practices, including:

- A standardized accounting and paper routing system that all understood;
- A physical library space that follows letter code by subjects for filing;
- Standard procedures for the use of the library system by Project and non-Project personnel;
- A database for all Project results as stipulated in the results framework that was periodically updated for quarterly and annual reports;
- A database for all Project-related field data from resource assessments, mapping, surveys and other sources for easy access;
- A database for all publications of the Project showing its current inventory and where it had been distributed and to whom to validate requests; and
- A simple filing system for pertinent Project documents.

To keep the team informed, results of the different monitoring events were consolidated in a report and presented at Project-wide staff meetings as well as to Project partners, including the TWG and consultative group. To facilitate data management and tracking of Project implementation, a performance monitoring database system was developed that could also be used by the LGU to monitor and evaluate its own programs.

Even with these measures to assist with information management, flow and retrieval, the system was not perfect since any system can only be as good as the persons using it. Thus periodic training and reminding about the importance of updating the system and keeping consistent records was an ongoing process and was rarely automatic.

5.4.3. Quality control

Tetra Tech as a company requires a system of quality control in all of its endeavors. The existing company system for Quality Assessment and Quality Control was adopted by FISH as standard procedure for all documents and publications produced by the Project. Although tedious at times, it served the Project well in terms of providing a consistent set of criteria, through selected eyes, to make sure that all progress reports, work plans and all major documents and publications were scrutinized for content, accuracy, style, format and overall appearance before they were released. Generally, there were assigned authors, and then documents were passed through reviewers and editors, with all materials of importance checked by the COP and DCOP. In this manner, the release of poor quality information or simple errors was avoided.

CHAPTER 6
The Challenge of Sustainability

A survey conducted in 2009 to assess the impact of Project interventions on fisheries governance at various levels revealed valuable insights on future program sustainability. Key findings of this survey are incorporated in the discussion on local implementation (Chapter 3). This chapter presents a review of these findings (updated with more recent data), highlighting the points of view of the people tasked to continue the work that FISH started. It also examines remaining capacity gaps and puts forward some recommendations for improving sustainability.

6.1. Enabling Conditions for Sustainability

Throughout its implementation, the Project sought to establish appropriate sustainability mechanisms at the municipal, inter-LGU, provincial and national levels of government. The existence of some enabling conditions provides some indication of the sustainability prospects of Project interventions.

6.1.1. Local level

Five enabling conditions to sustain local implementation were identified, namely, 1) regular budget allocated to CRM programs (including – or specifically – fisheries management); 2) management plan adopted and supported by policy; 3) office formally mandated with CRM responsibilities; 4) institutional support systems available and accessible to LGUs; and 5) local champions and constituencies organized and active in the advocacy for sustainable fisheries.

6.1.1.1. CRM or fisheries management plan adopted and supported by policy. As of 2008, all focal area LGUs had officially adopted (generally by municipal ordinance) their respective multi-year management plans. Except that of Calamianes which was fairly focused on fisheries, all plans covered the broader CRM concerns such as habitat management, waste management, coastal tourism, livelihood development, and fisheries management.

6.1.1.2. Regular budget allocation. The average annual budget allocated to CRM by each focal area or expansion LGU increased 93% from Php346,000 in 2004 to more than Php669,000 in 2010. Generally, however, about half of the budget amount was covered by the LGUs 20% development fund, and few of the plans were specifically funded in the LGUs' AIPs. LGUs were clearly implementing at least some of the programs outlined in their plans, which indicated that funding support for CRM activities was taken from other budget items or through the LGUs' general fund sources. This could mean that funding support could be withdrawn quite easily, leaving program sustainability in doubt.

6.1.1.3. Office formally vested with the authority and mandate to carry out or coordinate CRM programs, including (or focused on) fisheries management. In general, CRM programs, including fisheries management, were implemented through an existing office specifically mandated by municipal ordinance or executive order as the primary CRM implementing unit or coordinating office. Most of the 29 LGUs that participated in the 2009 survey maintained such an office, usually as

a section in the MAO or the Mayor's Office, or in the case of the Tawi-Tawi focal area LGUs, under the newly established MAFO.

6.1.1.4. Institutional support systems existing and accessible. The Project identified several possible institutional sources of technical, policy and funding support for LGUs, including NGAs, the province, NGOs and academic institutions. However, most LGUs did not regard the province as a major source of support, except in Bohol, where based on a capacity rating system developed by FISH, LGUs scored over 50% on access to technical services from the province. But even in Bohol, available expertise was limited to CRM planning, MPA establishment and coastal law enforcement. In general, the LGUs said they also got very little support from other institutional sources, including DA-BFAR.

6.1.1.5. Local constituencies organized and active in sustainable fisheries advocacy. Various constituency groups helped promote transparency in decision-making and push fisheries reform in the FISH sites. They included the FARMCs, NGOs, POs and religious sector, as well as "champions" within the LGUs who worked with them. Many of them felt confident about the ability to sustain their advocacy work, but there were also a good number, especially among POs managing Project-supported MPAs, that said they needed further assistance.

6.1.2. Inter-LGU level

The Project promoted inter-LGU cooperation and collaboration to provide a venue for policy and plan coordination and develop a support base for fisheries management from within the LGUs' ranks, while building the foundation for scaling up fisheries management to a larger area. Four sustainability factors were considered: 1) legal basis of the inter-LGU cooperation; 2) inter-LGU planning; 3) budgetary support for inter-LGU programs; and 4) permanent secretariat to coordinate cooperation.

6.1.2.1. Legal basis for inter-LGU cooperation. There was at least 1 inter-LGU arrangement in each focal area that the Project helped to establish or strengthen by defining or refining its legal basis. Generally, an inter-LGU arrangement was established through an inter-LGU MOA, MOU, or covenant that set forth the terms and objectives of cooperation.

6.1.2.2. Inter-LGU management plans. The Calamianes LGUs adopted in 2008 an integrated fisheries management plan, while the LBDA completed in 2006 an improved version of its Environmental Management Plan, aligning its member-LGUs' CRM programs and activities. In 2010, the Leyte LGUs adopted a fisheries management framework plan as well as a marine spatial plan. Other inter-LGU arrangements included coastal law enforcement operational plans and MPA network management plans.

6.1.2.3. Budgetary support for inter-LGU programs. Except for the LBDA plan, all inter-LGU plans were intended primarily for policy and coordination purposes and had no budgetary support from the cooperating LGUs. In the LBDA's case, the annual contribution of each of its 7 member-LGUs was increased from Php50,000 in 2003 to Php150,000 by 2009. The fund was intended primarily for the LBDA secretariat's operating expenses and various program implementation activities. It must be noted that the individual LGUs used part of their municipal

CRM budgets to meet their financial obligations to the LBDA. While this may seem to be a case of transferring money from the left pocket to the right, it did allow the LGUs to leverage their resources and accomplish more for the same amount of money.

6.1.2.4. Permanent secretariat. Except for LBDA which had its own secretariat, the various inter-LGU cooperation arrangements were coordinated by an existing agency at the provincial level and were largely limited to MPA monitoring, law enforcement and IEC. For example, the activities of CLEC in Danajon Bank and the TBFSA in Tawi-Tawi were coordinated by BEMO and the Tawi-Tawi provincial DA-BFAR, respectively. The Project coordinated the various activities leading to the adoption of the Calamianes Integrated Fisheries Management Plan, a function that, as of end-2009, the Coron LGU had started to assume as the focal municipality for inter-LGU collaboration in Calamianes.

6.1.3. Provincial level

In order to harness the important but still largely untapped role of the provincial government as a service provider in CRM and fisheries management, the Project provided limited capacity-building support to different provincial offices with the relevant mandates. Capacity-building generally focused on establishing 3 enabling conditions for sustainability: 1) provincial government's role as CRM service provider clarified, defined and strengthened; 2) provincial staff trained as CRM service providers; and 3) funding support for CRM included in the provincial AIP.

6.1.3.1. Provincial government's role clarified, defined and strengthened. In Bohol, the province through BEMO had a fairly well-defined and active role as a CRM service provider to municipal LGUs even prior to FISH, but this was not the case in the other sites. The Project provided some organizational development support to relevant provincial offices in Palawan (Provincial CRM Office), Surigao del Sur (PFARO) and Tawi-Tawi (TEMO). However, at the time of the survey, these offices had yet to establish a tangible enough presence in the focal area municipalities.

6.1.3.2. Provincial staff trained as CRM service providers. The Project engaged the provincial offices in its interventions at the municipal level, thereby providing them many opportunities to develop some capacity as a technical assistance provider, particularly in resource assessment, CRM planning, marine spatial planning, municipal water delineation, law enforcement, MPA management and IEC.

6.1.3.3. Funding support for CRM included in the provincial AIP. One indication pointing to the provincial governments' interest in assuming a more active role in CRM was the inclusion in their budgets of provisions for CRM program implementation at the municipal level. The amounts ranged from Php300,000 in Surigao del Sur to Php4 million in the FISH expansion area in Surigao del Norte. They were intended mostly to support CRM planning, MFARMCs, MPAs, mangrove management, law enforcement, livelihood development, municipal water delineation and IEC activities, such as environment-themed events designed to promote public awareness of coastal issues.

6.1.4. National level

Three sustainability factors were considered at the national level: 1) policy reform and development, 2) constituency building, and 3) reporting and feedback.

6.1.4.1. Policy reform and development. The Project completed about 30 policy initiatives, 11 of which had been adopted by DA-BFAR at the end of 2009, including 2 FOOs on the adoption and implementation of the CNFIDP and integrated FMU scheme, 2 major policies that set the direction for fisheries development in the Philippines. A number of other important policies were not acted on, however, largely because of limited institutional capacities.

6.1.4.2. Constituency building. Several important allies were engaged in fisheries reform at the national level, the most strategic of which were the NFR and LMP, which represented the NGO/PO and LGU sectors, respectively. The LMP in particular proved to be an effective lobby group for policy initiatives that addressed issues affecting municipal fisheries. In 2008, LMP adopted sustainable fisheries as a programmatic objective through its MOREFISH program, which was developed with FISH assistance.

6.1.4.3. Enforcement reporting and feedback. NALECC and PNP adopted a system of reporting coastal law enforcement issues to national decision-makers and issuing resolutions or directives to relevant agencies that specifically address such issues. This reporting and feedback mechanism makes enforcement agencies like PNP and DA-BFAR more accountable for the actions they take on illegal fishing matters.

6.2. Remaining Gaps

There are 2 key aspects of capacity development where LGUs need assistance in order to effectively carry out and sustain CRM implementation. The first aspect relates to the technical requirements of project implementation, and the second concerns organizational and operational needs. Much of the FISH Project's effort at building local capacity to promote sustainable fisheries focused on developing technical capacities at the activity level, mainly MPA management, coastal law enforcement and IEC. In a number of the Project sites, some degree of competence in specialized technical functions, such as MPA monitoring, fishing vessel admeasurement, and GPS navigation and mapping, has been achieved. In most areas, personnel and resource users were also exposed to IEC interventions and learned to advocate and champion CRM and sustainable fisheries within the LGU.

However, in terms of fisheries management and in particular fishing effort management, lack of technical expertise remains a top concern that must be addressed. The FISH Project experience underscored only too well that fishery law enforcement and MPAs alone cannot solve the overfishing problem – there must also be a systematic effort to more effectively manage overall fishing effort, and this is a critical elements requiring increased attention.

Besides enforcing already existing fishery laws and management measures, LGUs in general still do not have the technical capacity to address overfishing issues and the emerging issues on equity of access to fishery resources evident particularly in Danajon Bank (Chapter 3). Few LGUs have even attempted to undertake fish catch monitoring on a regular basis, much less use fisheries information to analyze fishing trends for the purpose of fishing effort management. Indeed, while much progress has been achieved in capacitating LGUs in coastal law enforcement, MPA management, IEC, and some aspects of CRM planning and coordination, most LGUs still lack the technical capacity to fully

perform their CRM mandates under the LGC and 1998 Fisheries Code.

Overall in the target areas, more work also needs to be done to address organizational and operational constraints, and even in the focal areas where the bulk of capacity building was directed, critical gaps remain. These include numerous institutional issues, such as lack of continuity between political term limits in the implementation of programs requiring sustained effort; poor implementation of CRM and fisheries management plans; weak law enforcement capabilities; inadequate institutional support; and inconsistency and conflicts between plans, programs and legislation within and between local and national governments.

Lack of funding is a perennial concern. While the average annual budget for CRM in the focal areas increased substantially from Php346,000 in 2003 to more than Php669,000 in 2010 (Chapter 3), this amount is still way below the investment needed for sustainable CRM at the municipal level, even one that is focused solely on fishery concerns. Thus, although CRM and fisheries management plans have been adopted across the FISH sites, most programs remain grossly underfunded, and their implementation can consequently be patchy.

Funding deficits could be reduced by leveraging local resources through various inter-LGU cooperation arrangements, but except in Lanuza Bay, such arrangements have been largely limited to policy formulation and coordination. Other sources of funding and technical expertise – the province, NGOs, academe and NGAs – are also not easily accessible and are themselves generally hampered by limited resources and capacity. Overall there is very limited assistance available for improving fisheries governance, particularly in regard to fishing effort management.

While some NGOs have become excellent service providers to catalyze improved CRM, their focus has been mainly on MPAs, community organizing, advocacy, legal services and IEC. Academic institutions involved in research of the socio-environmental aspects of CRM and fisheries can play a vital role by providing sound scientific studies and assessments needed for management decisions, but they too are underutilized. In general, information flow from assisting organizations is unidirectional with feedback mechanisms to government decision-makers lacking.

Provinces can be an important source of support and in fact have already proven to be uniquely suited to foster harmonized local policies and programs through a provincial policy framework, provide technical and information management support services to coastal municipalities and cities, and thus contribute to the sustainability of local programs. With training from FISH, a number of provinces have begun showing increased appreciation of their role as CRM service providers by allocating funds for local CRM implementation. However, even here, there is still only minimal assistance that LGUs can expect whether in terms of funding or technical services. As in municipal and city LGUs, capacities still need to be developed in the provinces, in the context of both the technical and organizational requirements of CRM.

The policy instruments and institutional arrangements now present in the different provinces – from Bohol's BEMO to Tawi-Tawi's TEMO -- are encouraging developments, but they must be

strengthened to become fully operational and truly relevant to the contemporary needs of CRM in their localities. Even Bohol's BEMO, the oldest and most experienced among the provincial offices that provide technical assistance in CRM, is currently confined to a few CRM services, namely, CRM planning, MPA management and coastal law enforcement in a few municipalities.

Higher up the government hierarchy, NGAs with the bulk of CRM-related responsibilities -- DA-BFAR, DENR, DILG (including the PNP), and DOTC (in particular the PCG) – often come up short in implementing policies and services toward supporting local initiatives in CRM. Since the devolution of major CRM responsibilities -- particularly fisheries management – in 1991, national government not only should have realigned and prioritized policies and programs toward the common goal of improving local governments' capacity to manage their own coastal and fishery resources, it was also expected to provide consistent and clear policy guidance, training, and technical and financial assistance to LGUs, as well as monitor and evaluate the condition of coastal resources and progress of local management programs. Instead, considerable inconsistency, overlap, inaction, and conflict continue to exist within and between NGA policies and programs related to CRM.

In particular, DA-BFAR, the country's lead national agency in charge of fisheries, has yet to undertake a capacity development program for LGUs in fisheries management. In recent years, the bureau has taken steps to work more closely with LGUs, but its assistance remains heavily focused on increasing fisheries production, primarily through aquaculture and mariculture. FISH did a tremendous job in assisting the formulation of various policies supporting sustainable fisheries, but only a handful of these policies have been approved and being effectively implemented by DA-BFAR. Consequently, the bureau continues to face serious issues that hamper its ability to balance its mandate for increased production with sustainable use of the nation's fishery resources.

6.3. Recommendations for Sustainability

Many of the answers to current issues are already in the form of policy that needs only to be put in operation, with some refinements, if necessary. In addition, the development and application of a number of sustainability instruments and mechanisms are underway and need only to be further pursued. Below are some recommendations on how to pick up capacity building where FISH left off, so as to provide program continuity and promote the sustainability of interventions at the different levels of management.

6.1.1. Local implementation

The Project's capacity building program was anchored on a participatory planning process framework that defines the broad activities and strategies applicable across the realm of CRM. This framework has been successfully institutionalized to varying degrees in our sites, leading to the adoption by the LGUs of CRM as a basic service. In order to efficiently address the still numerous capacity gaps that continue to persist in local implementation, capacity development must build on this framework by defining the process, specific activities and task sets for each program or best practice.

Several actions can be immediately taken in the FISH sites to advance capacity building and improve local implementation. These include:

1) Improve the LGUs' capacity to coordinate, monitor, review and evaluate program implementation. Monitoring and evaluation is a common weak spot in local implementation that capacity building must continue to work on;
2) Continue to encourage the inclusion of CRM in the LGUs' AIPs to help ensure that funds are available for implementation. The greater challenge, however, is how to ensure that there are regular budget allocations for personnel services, operations and capital outlay to support CRM and fisheries management programs, and furthermore that funds allocated to CRM are actually spent for the purpose that they are intended;
3) Review and evaluate policy implementation, and address capacity gaps as needed. Many policies supporting sustainable fisheries have been passed that are not yet implemented, often because of a lack of political will or enforcement capacity, or simply because of the absence of implementing guidelines;
4) Continue to push for the creation of permanent CRM positions. Most LGU offices designated to undertake CRM in the FISH sites are essentially improvised arrangements usually supported by an executive order issued by the local chief executive. Often, these arrangements are the only viable option given that most LGUs have reached their 45% budget cap on personnel services. But they are rather tenuous, because the offices can be easily dissolved by simple revocation of the executive order;
5) Continue to work with and build an active constituency among community stakeholders to promote program continuity, transparency and accountability in planning and decision-making. Public recognition of local government leaders that support CRM helps promote wider public support and reinforces the LGU's commitment to continue the program after the end of a political term;
6) Build law enforcement programs to promote compliance by supporting activities related to prevention, apprehension and prosecution. The Project attempted to put in place 3 basic ingredients in the local governance system to support fishery law enforcement, namely, budgetary support for procurement and personnel services, competent manpower to undertake enforcement and a way to make the LGU criminally and administratively liable for the non-enforcement of fishery laws. To sustain enforcement, future initiatives must ensure that these ingredients remain in place, while aiming for systemic improvements in law enforcement; and
7) Continue to develop capacity in the different aspects of CRM. Compared to where it started just over a decade ago, the effort to institutionalize CRM as a basic LGU service has progressed far enough to have some tangible impacts. But compared to the full range of CRM concerns that need to be addressed, it has only really just begun. For the most part in the FISH sites, capacity in terms of skills, knowledge, institutions and relationships have been established for MPA management, coastal law enforcement and IEC, but there is still only very limited capacity in fisheries management, particularly fishing effort management.

The single most important sector in the coastal zone is the municipal fisheries sector, and it must remain the focus of future capacity building efforts. Where fisheries management is concerned,

future initiatives must integrate into the process the steps needed to systematically manage fishing effort using the best available information to continuously guide planning, policy-making and enforcement.

FISH tested a participatory process of identifying species that required management and the measures needed to manage them. One deficiency in this approach was that it did not complete the integration of this particular process into the main planning activity that was being undertaken to broadly identify the programs and strategies to address local CRM concerns. Consequently, there was little appreciation of the process itself, because LGUs perceived the activity as a one-off exercise to achieve a specific objective, such as the declaration of a siganid closed season. Nevertheless, with a little adaptation, future projects would do well to use this experience to develop a fisheries management process that is suited to existing capacities and resources at the local level, and then integrate the process into the LGU planning system. The fisheries registration and licensing system that the Project helped install in its focal area LGUs must also be linked to the system to inform planning and management.

One critical area of competency that still needs to be filled is fish catch monitoring. The Project's attempt to install a fish catch monitoring system in its sites did not prosper because LGUs found the methods used to be too rigorous and costly. Despite such setback, the effort to develop an acceptable fish catch monitoring method must continue and LGUs must be persuaded to use it by demonstrating its practical applications, particularly in managing fishing effort.

6.1.2. Institutional support systems

FISH engaged multiple levels of government to build institutional support for local initiatives in CRM and fisheries management and promote program sustainability. The following actions are recommended to further develop these institutional arrangements:

1) Continue to develop inter-LGU arrangements by creating a strong mechanism for coordinating collaborative activities. A permanent secretariat, funded by the LGUs themselves, is ideal but it may not be acceptable to some LGUs for various reasons (personnel tenure, budget, procedures, jurisdiction, etc.). In general, it is best to let the cooperating LGUs decide what coordinating mechanism would work best for them, given their limitations and constraints. Inter-LGU collaboration would also benefit from having a stronger legal basis.
2) Strengthen the role and capacity of the province as a CRM service provider. Projects can tap the interest shown by the different provinces in assisting local CRM programs to fill at least some of the demand for technical assistance from LGUs. But provinces need capacity building themselves, and they too have limited resources. One area where they can strategically assist municipalities would be in the maintenance of fisheries databases – this may be worth exploring.
3) Continue to engage the LMP in policy advocacy and capacity building for CRM. The Project's partnership with LMP led to the establishment of a regular CRM advocacy program under the LMP national secretariat and the institutionalization in the MDC of a

training program for mayors. To promote program continuity, the national secretariat and the MDC – being the main program proponents – must be strengthened so that they can more effectively advocate CRM within LMP and push the LGUs' fisheries management agenda with DA-BFAR.

4) Assist DA-BFAR in carrying out the integrated FMU scheme and CNFIDP. The Project made some headway in overcoming institutional resistance to fisheries reform in getting these policy initiatives approved by bureau officials. But until DA-BFAR begins to take ownership of these initiatives and implement them as priority programmatic actions, the reform process cannot prosper. This may require substantial investments in organizational development. DA-BFAR is not equipped to meet the current demand for technical assistance in fisheries management in the country – it has one small section responsible for fisheries management that is mostly tasked with the regulation of commercial fishing operations. The bureau has to be beefed up, both in terms of human and financial resources, to be able to adequately perform its role as service provider not only to the municipal LGUs but also to the commercial fishing sector. Even more capacity building is needed to bring it up to par with the administrative requirements of EAF. One immediate action that can be taken is to install the fish catch monitoring system that FISH developed in the DA-BFAR information management system.
5) Engage DILG more fully in the capacity development effort. DILG holds 2 key functions that can directly impact LGU adoption of CRM as a basic service: capacity development in governance and monitoring of LGU performance. FISH developed a preliminary benchmarking system for fisheries management that can be developed further through a consultative process for use by DENR, DA-BFAR and DILG in monitoring and evaluating LGU performance in CRM and fisheries management (Appendix 1). To assist LGUs in CRM service delivery and increase their capacity in environmental governance, DILG must broaden its functions to include policy review and technical assistance in environmental and natural resources management, and work toward establishing collaborative relationships in CRM with DENR and DA-BFAR. Also, DILG has authority over the PNP, which performs all police functions over territorial waters and rivers and coastal areas. Currently, the ability of PNP to enforce coastal laws at sea is severely hampered by the lack of trained coastal law enforcement officers and equipment, including patrol boats, required to do the job. Future initiatives can build on the FISH Project's success in institutionalizing within the NALECC a reporting and feedback mechanism that allows national decision-makers to respond quickly to coastal law enforcement issues as they are reported from the ground.

6.1.3. Scaling up management

As capacities are built across all levels of government, there are emerging opportunities and challenges to scale up the gains across the fishing groups of the country. The following recommended actions have been put forward for the Philippine government to consider:

- Adopt and fully implement an ecosystem-based clustering of management areas (FMUs) defined according to their distinct biophysical and ecological characteristics such as resource distribution. The FMUs were formulated based on the 10-year data of DA-BFAR's NSAP.
- Build the capacity of individual LGUs and inter-LGU alliances to collectively manage a defined FMU including among others the provision of timely technical information as basis for management decisions, technical assistance to LGUs and local stakeholders and appropriate infrastructure and equipment to effectively respond to fishery law violations.
- Prioritize support for the improvement of local fisheries management systems at the LGU level. As FISH demonstrated, municipal fishing grounds though mostly overfished remain to be a promising area where proper management can lead to rapid recovery of resources.
- Spearhead an inter-agency initiative to support a local government enforcement program particularly in responding to strategic enforcement concerns such as poaching and intrusion of commercial fishing operations in municipal waters.
- Adopt and implement the CNFIDP.
- Promote poverty alleviation and sustainable fisheries policies and programs (e.g. livelihood support) that provide a balance between enhancing productivity, maintaining environmental and ecosystem integrity and promoting social equity.
- Create and strengthen an inter-agency policy coordination unit to harmonize conflicting policies, plans or priorities among agencies of the national government or between national and local governments.

6.1.4. Contracting method

USAID may want to reconsider the use of performance-based contracting methods for CRM projects like FISH, as it appears to have significantly influenced implementation, and not entirely in a good way. This was already evident in 2006, as noted in the FISH Project Mid-Term Evaluation Report (Arcamo, 2006):

> "The cost-plus-award fee contract that uses performance-based contacting method may not be appropriate in [CRM] projects where results are measured by the change in the state of natural resources... One reason is that CRM is still at its infancy and the causal relationship between the inputs and the generation of the desired change is not yet definitely established. Another reason is the indeterminate number of unknowns in the project's natural, social and institutional setting. The chase for the 10 % target has apparently dictated to a large extent the pace, sequence and depth of implementation. Insufficient depth of implementation may jeopardize the sustainability of the Project's results."

For projects like FISH, in fact, the challenge of sustainability is primarily a capacity-building challenge. Capacity building is inherently process-driven, not directly or easily measurable by any single set of "results," and therefore not a good fit for PBSA.

6.4. Sustainability Prospects

In 2003, when the Project Team received their marching orders to promote sustainable fisheries in the 4 FISH sites, they knew that they would be facing many great challenges. But they also knew that

what they were tasked to do was not impossible. Today, despite the Project's many accomplishments, the question persists, can sustainable fisheries happen? The answer is a definite but qualified "Yes." Sustainable fisheries can certainly happen, but not without more hard work from everyone concerned. Those who are responsible for municipal fisheries in the FISH areas, along with those who are mandated to assist them, are at least in a better place today than 7 years ago, even with a still good distance to go. Their shared experience in implementing the FISH Project will stand them in good stead as they continue their way forward to sustainable fisheries, more surely and more confidently now that they have the wisdom of experience and clarity of hindsight. But even this cannot guarantee success. Given their still very limited practical experience in managing fishing effort, local fisheries managers will continue to need the type of assistance that projects like FISH can offer to bring together all stakeholder groups and concerned constituencies in a concerted effort to move the capacity-building and institutional development process forward.

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APPENDICES

Appendix A. Performance Indicator Tables

(Preliminary results as previously reported in earlier official Project documents)

These performance indicator tables contain preliminary FISH Project results previously reported in earlier official Project documents. They are included here only for record purposes. Results were subsequently adjusted after data editing was completed in 2010 to promote consistency and comparability across monitoring events. Data editing refers to a range of procedures and processes used for detecting and handling errors in data. Examples include micro-editing/macro-editing and input/output editing. Edit types refer to the actual nature of edits applied to data during input or output processing. These include: (1) validation edits - to check the validity of basic identification of classificatory items in unit data; (2) logical edits - ensure that 2 or more data items do not have contradictory values; (3) consistency edits - check to ensure that precise and correct arithmetic relationships exist between 2 or more data items; (4) range edits - identify whether or not a data item value falls inside a determined acceptable range; (5) variance edits - involve looking for suspiciously high variances at the output edit stage. (UNECE, 2000)

The final adjusted FISH Project results are shown in Chapter 2 and Appendix B of this report.

Appendix A.1. FISH Project Result (FPR) at the Strategic Objective Level (Fish Stock Index)

ORGANIZATION/PROGRAM:	USAID PHILIPPINES
STRATEGIC OBJECTIVE:	MANAGEMENT OF PRODUCTIVE LIFE-SUSTAINING NATURAL RESOURCES STRENGTHENED
PROJECT RESULT:	Marine fish stocks increased by 10% (over 2004 baseline levels) in focal areas by the year 2010
APPROVED:	
INDICATOR:	Change in marine fish stocks compared to 2004 baseline levels in 4 focal areas
UNIT OF MEASURE:	Average % change of project results indicators PR1, PR2, and PR3
SOURCE DOCUMENT:	Annual FISH Project Performance Reports; methodology for baseline assessment and subsequent special monitoring events described in the Baseline Assessment Plan
SOURCE ORGANIZATION:	FISH Project team and local academic institutions
INDICATOR DESCRIPTION:	Planned and actual values are cumulative. The FISH project result indicator is calculated as the average of PR1, PR2, and PR3

YEAR	PLANNED	ACTUAL
2004	0	0
2005		
2006	1	1.53*
2007		
2008	5.5	19.4*
2009		
2010	10	

NOTES:

***** Preliminary results, for record purposes only – These values were previously reported in earlier FISH Project documents and subsequently adjusted after data editing was completed in 2010 to promote consistency and comparability across monitoring events. Data editing refers to a range of procedures and processes used for detecting and handling errors in data. Examples include micro-editing/macro-editing and input/output editing. Edit types refer to the actual nature of edits applied to data during input or output processing. These include: (1) validation edits - to check the validity of basic identification of classificatory items in unit data; (2) logical edits - ensure that 2 or more data items do not have contradictory values; (3) consistency edits - check to ensure that

precise and correct arithmetic relationships exist between 2 or more data items; (4) range edits - identify whether or not a data item value falls inside a determined acceptable range; (5) variance edits - involve looking for suspiciously high variances at the output edit stage. (UNECE, 2000) The final values are shown in Chapter 2 and Appendix B of this report.

The timeline and preliminary Area Project Results (APRs) are shown below. The FISH Project Result (FPR) was estimated using the following weighting factors: 860 (Calamianes), 1,227 (Danajon), 1,330 (Lanuza Bay) and 442 (Tawi-Tawi).

2004 - Baseline assessment conducted in 4 focal areas in accordance with Baseline Assessment Plan

2006 – The APR for Calamianes was (–8.40), (-13.15) for Danajon, 9.41 for Lanuza Bay, 37.86 for Tawi-Tawi.

2008 – The APR for Calamianes was (–21.92), 74.18 for Danajon, (-2.79) for Lanuza Bay, 14.43 for Tawi-Tawi.

Appendix A.2. Indicator 1 at the Strategic Objective Level (PR1)

ORGANIZATION/PROGRAM:	USAID PHILIPPINES
STRATEGIC OBJECTIVE:	MANAGEMENT OF PRODUCTIVE LIFE-SUSTAINING NATURAL RESOURCES STRENGTHENED
PROJECT RESULT:	Marine fish stocks increased by 10 % (over 2004 baseline levels) in focal areas by the year 2010
APPROVED:	
INDICATOR (PR1):	Abundance of selected fishery resources in focal areas
UNIT OF MEASURE:	% change in catch per unit effort compared to 2004 baseline based on fishery-independent methods
SOURCE DOCUMENT:	Annual FISH Project Performance Reports; methodology for baseline assessment and subsequent special monitoring events described in the Baseline Assessment Plan
SOURCE ORGANIZATION:	FISH Project team and local academic institutions
INDICATOR DESCRIPTION:	PR1 will be measured through test fishing using methods employing selected fishing gears used in the focal area. The manner that this is being done is explained in the Baseline Assessment Plan and is distinguished by being independent of the actual fishing activities in the area. PR1 is measured as the weighted average of catch per unit effort of fishing gears used during the test fishing with the number of replicates used as the weighting factor.

YEAR	PLANNED (%)	ACTUAL (%)
2004	0*	0*
2005		
2006	0	0.97**
2007		
2008	5	(-9.7)**
2009		
2010	10	

NOTES:

* The preliminary baseline value for PR1 was set at 10.33 kg/gear based on the results of the 2004 independent baseline assessment. Please see Appendix B for the final value.

****** Preliminary results, for record purposes only – These values were previously reported in earlier FISH Project documents and subsequently adjusted after data editing was completed in 2010 to promote consistency and comparability across monitoring events. Data editing refers to a range of procedures and processes used for detecting and handling errors in data. Examples include micro-editing/macro-editing and input/output editing. Edit types refer to the actual nature of edits applied to data during input or output processing. These include: (1) validation edits - to check the validity of basic identification of classificatory items in unit data; (2) logical edits - ensure that 2 or more data items do not have contradictory values; (3) consistency edits - check to ensure that precise and correct arithmetic relationships exist between 2 or more data items; (4) range edits - identify whether or not a data item value falls inside a determined acceptable range; (5) variance edits - involve looking for suspiciously high variances at the output edit stage. (UNECE, 2000) The final values are shown in Chapter 2 and Appendix B of this report.

The timeline and preliminary values are shown below.

2004 - Baseline assessment conducted in 4 focal areas in accordance with Baseline Assessment Plan

2006 - % change in average catch rate compared to 2004 baseline was (–25.34%) for Calamianes, 9.21% for Danajon, 21.22 for Lanuza Bay, (–51.10%) for Tawi-Tawi

2008 - % change in average catch rate compared to 2004 baseline was (–38.41%) for Calamianes, 18.30% for Danajon, (-9.92%) for Lanuza Bay; (–34.90%) for Tawi-Tawi

Appendix A.3. Indicator 2 at the Strategic Objective Level (PR2)

ORGANIZATION/PROGRAM:	USAID PHILIPPINES
STRATEGIC OBJECTIVE:	MANAGEMENT OF PRODUCTIVE LIFE-SUSTAINING NATURAL RESOURCES STRENGTHENED
PROJECT RESULT:	Marine fish stocks increased by 10 % (over 2004 baseline levels) in focal areas by the year 2010
APPROVED:	
INDICATOR (PR2):	Catch rate of selected fisheries in focal areas
UNIT OF MEASURE:	% change in catch per unit effort compared to baseline based on fishery-dependent methods
SOURCE DOCUMENT:	Annual FISH Project Performance Reports; methodology for baseline assessment and subsequent special monitoring events described in the Baseline Assessment Plan
SOURCE ORGANIZATION:	FISH Project team and local academic institutions
INDICATOR DESCRIPTION:	PR2 will be measured through catch- and-effort monitoring of commonly used fishing gears in the focal area. The manner that this is being done is explained in the Baseline Assessment Plan and is distinguished by using common fishing practices in the area of data. PR2 is measured as the change in the catch per unit of effort of various fishing gears used during catch-and-effort monitoring with the number of samples taken as the weighting factor.

YEAR	PLANNED (%)	ACTUAL (%)
2004	0*	0*
2005		
2006	0	2.25**
2007		
2008	5	1.5**
2009		
2010	10	

NOTES:
* The preliminary baseline value for PR2 was set at 16.31 kg/gear based on the results of the 2004 independent baseline assessment. Please see Appendix B for the final value.

****** Preliminary results, for record purposes only – These values were previously reported in earlier FISH Project documents and subsequently adjusted after data editing was completed in 2010 to promote consistency and comparability across monitoring events. Data editing refers to a range of procedures and processes used for detecting and handling errors in data. Examples include micro-editing/macro-editing and input/output editing. Edit types refer to the actual nature of edits applied to data during input or output processing. These include: (1) validation edits - to check the validity of basic identification of classificatory items in unit data; (2) logical edits - ensure that 2 or more data items do not have contradictory values; (3) consistency edits - check to ensure that precise and correct arithmetic relationships exist between 2 or more data items; (4) range edits - identify whether or not a data item value falls inside a determined acceptable range; (5) variance edits - involve looking for suspiciously high variances at the output edit stage. (UNECE, 2000) The final values are shown in Chapter 2 and Appendix B of this report.

The timeline and preliminary values are shown below.

2004 - Baseline assessment conducted in 4 focal areas in accordance with Baseline Assessment Plan

2006 – % change in average catch rate compared to 2004 baseline was (–3.82%) for Calamianes, 4.71% for Danajon, 3.75% for Lanuza Bay and 3.08% for Tawi-Tawi

2008 – % change in average catch rate compared to 2004 baseline was (–20.60%) for Calamianes, 17.78% for Danajon, (-5.62%) for Lanuza Bay and 34.62% for Tawi-Tawi

Appendix A.4. Indicator 3 at the Strategic Objective Level (PR3)

ORGANIZATION/PROGRAM:	USAID PHILIPPINES
STRATEGIC OBJECTIVE:	MANAGEMENT OF PRODUCTIVE LIFE-SUSTAINING NATURAL RESOURCES STRENGTHENED
PROJECT RESULT:	Marine fish stocks increased by 10 % (over 2004 baseline levels) in focal areas by the year 2010
APPROVED:	
INDICATOR (PR3):	Reef fish biomass inside and adjacent to selected MPAs in focal areas
UNIT OF MEASURE:	% change in biomass compared to baseline
SOURCE DOCUMENT:	Annual FISH Project Performance Reports; methodology for baseline assessment and subsequent special monitoring events described in the Baseline Assessment Plan
SOURCE ORGANIZATION:	FISH Project team and local academic institutions
INDICATOR DESCRIPTION:	PR3 is measured through fish visual census inside and adjacent to selected MPAs in the focal area. The manner that this is being done is explained in the Baseline Assessment Plan using standard and accepted protocols. PR3 is the pooled value of fish biomass (in tons/km^2) measured through fish visual census inside and adjacent to MPAs. The weighting factor for PR3 is the product of the potential yield of coral reef ecosystem and the extent of the coral reef in each focal area.

YEAR	PLANNED (%)	ACTUAL (%)
2004	0*	0*
2005		
2006	4	4.78**
2007		
2008	8	66.8**
2009		
2010	12	

NOTES:
* The preliminary baseline value for PR3 was set at 17.13 tons/500m^2 based on the results of the 2004 independent baseline assessment. Please see Appendix B for the final value.

****** Preliminary results, for record purposes only – These values were previously reported in earlier FISH Project documents and subsequently adjusted after data editing was completed in 2010 to promote consistency and comparability across monitoring events. Data editing refers to a range of procedures and processes used for detecting and handling errors in data. Examples include micro-editing/macro-editing and input/output editing. Edit types refer to the actual nature of edits applied to data during input or output processing. These include: (1) validation edits - to check the validity of basic identification of classificatory items in unit data; (2) logical edits - ensure that 2 or more data items do not have contradictory values; (3) consistency edits - check to ensure that precise and correct arithmetic relationships exist between 2 or more data items; (4) range edits - identify whether or not a data item value falls inside a determined acceptable range; (5) variance edits - involve looking for suspiciously high variances at the output edit stage. (UNECE, 2000) The final values are shown in Chapter 2 and Appendix B of this report.

The timeline and preliminary values are shown below.

2004-Baseline assessment conducted in 4 focal areas in accordance with Baseline Assessment Plan

2006 – % change in average biomass compared to 2004 baseline was (–1.48%) for Calamianes, (-46.29%) for Danajon, 7.84% for Lanuza Bay, 64.06% for Tawi-Tawi

2008 - % change in average biomass compared to 2004 baseline was (–10.01%) for Calamianes, 170.26% for Danajon, 19.0% for Lanuza Bay and 16.17% for Tawi-Tawi

Appendix A.5. Indicator 4 at the Strategic Objective Level (PR4)

ORGANIZATION/PROGRAM:	USAID PHILIPPINES
STRATEGIC OBJECTIVE:	PRODUCTIVE, LIFE-SUSTAINING NATURAL RESOURCES PROTECTED THROUGH IMPROVED MANAGEMENT AND ENFORCEMENT
PROJECT RESULT:	Marine fish stocks increased by 10 % (over 2004 baseline levels) in focal areas by the year 2010
APPROVED:	
INDICATOR (PR4):	Reef fish species richness inside and adjacent to selected MPAs in focal areas
UNIT OF MEASURE:	Average % increase in number of species compared to baseline
SOURCE DOCUMENT:	Annual FISH Project Performance Reports; methodology for baseline assessment and subsequent special monitoring events described in the Baseline Assessment Plan
SOURCE ORGANIZATION:	FISH Project team and local academic institutions
INDICATOR DESCRIPTION:	Species richness measured as the number of reef fish species counted along a 50 m long x 10 m wide transect using standard protocols described in the Baseline Assessment Plan. Species richness is a supporting indicator to the overall FISH project result

YEAR	PLANNED (%)	ACTUAL (%)
2004	0*	0*
2005		
2006	2	52.6**
2007		
2008	5	90.9**
2009		
2010	10	

NOTES:
* The preliminary baseline value for PR4 was set at 38.89 species/ 500m^2 based on the results of the 2004 independent baseline assessment. Please see Appendix B for the final value.

****** Preliminary results, for record purposes only – These values were previously reported in earlier FISH Project documents and subsequently adjusted after data editing was completed in 2010 to promote consistency and comparability across monitoring events. Data editing refers to a range of procedures and processes used for detecting and handling errors in data. Examples include micro-editing/macro-editing and input/output editing. Edit types refer to the actual nature of edits applied to data during input or output processing. These include: (1) validation edits - to check the validity of basic identification of classificatory items in unit data; (2) logical edits - ensure that 2 or more data items do not have contradictory values; (3) consistency edits - check to ensure that precise and correct arithmetic relationships exist between 2 or more data items; (4) range edits - identify whether or not a data item value falls inside a determined acceptable range; (5) variance edits - involve looking for suspiciously high variances at the output edit stage. (UNECE, 2000) The final values are shown in Chapter 2 and Appendix B of this report.

The timeline and preliminary values are shown below.

2004-Baseline assessment conducted in the 4 focal areas in accordance with Baseline Assessment Plan

2006 - % change in average number of species compared to 2004 baseline was 36.86% for Calamianes, 100.95% for Danajon, 37.37% for Lanuza Bay, 11.72% for Tawi-Tawi

2008 - % change in average number of species compared to 2004 baseline was 47.02% for Calamianes, 207.28% for Danajon, 23.82% for Lanuza Bay and 16.37% for Tawi-Tawi

Appendix A.6. Indicator 5 at the Strategic Objective Level (PR5)

ORGANIZATION/PROGRAM:	USAID PHILIPPINES
STRATEGIC OBJECTIVE:	MANAGEMENT OF PRODUCTIVE LIFE-SUSTAINING NATURAL RESOURCES STRENGTHENED
PROJECT RESULT:	Marine fish stocks increased by 10 % (over 2004 baseline levels) in focal areas by the year 2010
APPROVED:	
INDICATOR (PR5):	Benthic condition inside selected MPAs in focal areas
UNIT OF MEASURE:	% change of living coral cover compared to baseline
SOURCE DOCUMENT:	Annual FISH Project Performance Reports; methodology for baseline assessment and subsequent special monitoring events described in the Baseline Assessment Plan
SOURCE ORGANIZATION:	FISH Project team and local academic institutions
INDICATOR DESCRIPTION:	Benthic condition measured along 50 m transects using standard point-intercept method described in the Baseline Assessment Plan. Benthic condition is a supporting indicator to the overall FISH project result

YEAR	PLANNED (%)	ACTUAL (%)
2004	0*	0*
2005		
2006	2	5.29
2007		
2008	4	8.6
2009		
2010	10	

NOTES:
* The preliminary baseline value for PR5 was set at 40.14% living coral cover based on the results of the 2004 independent baseline assessment. The final value is shown in Appendix B.

****** Preliminary results, for record purposes only – These values were previously reported in earlier FISH Project documents and subsequently adjusted after data editing was completed in 2010 to promote consistency and comparability across monitoring events. Data editing refers to a range of procedures and processes used for detecting and handling errors in data. Examples include micro-editing/ macro-editing and input/output editing. Edit types refer to the actual nature of edits applied to data during input or output processing. These include: (1) validation edits - to check the validity of basic identification of classificatory items in unit data; (2) logical edits - ensure that 2 or more data items do not have contradictory values; (3) consistency edits - check to ensure that precise and correct arithmetic relationships exist between 2 or more data items; (4) range edits - identify whether or not a data item value falls inside a determined acceptable range; (5) variance edits - involve looking for suspiciously high variances at the output edit stage. (UNECE, 2000) The final values are shown in Chapter 2 and Appendix B of this report.

The timeline and preliminary values are shown below.

2004 - Baseline assessment conducted in 4 focal areas in accordance with Baseline Assessment Plan

2006 – Average % change in living coral compared to 2004 baseline was (-16.87%) for Calamianes, 25.82% for Danajon, 27.19% for Lanuza Bay, 2.66% for Tawi-Tawi

2008 – Average % change in living coral compared to 2004 baseline was 1.11% for Calamianes, 10.23% for Danajon, 7.98% for Lanuza Bay and 11.18% for Tawi-Tawi

Appendix A.7. Intermediate Result 1.1 (IR 1.1)

ORGANIZATION/PROGRAM:	USAID PHILIPPINES
STRATEGIC OBJECTIVE:	MANAGEMENT OF PRODUCTIVE LIFE-SUSTAINING NATURAL RESOURCES STRENGTHENED
INTERMEDIATE RESULT:	National and local capacity increased for fisheries management in 4 target areas
APPROVED:	
INDICATOR (IR1.1):	Municipal fishers and crafts operating in target areas registered/licensed
UNIT OF MEASURE:	Number of LGUs adopting registration / number of LGUs adopting licensing system
SOURCE DOCUMENT:	Local government unit registry
SOURCE ORGANIZATION:	FISH Project team
INDICATOR DESCRIPTION:	Planned and actual values are cumulative. Registration and licensing system involves enactment and implementation of appropriate ordinance by the municipal government.

YEAR	PLANNED	ACTUAL
2004	0/0	0/0
2005	0/0	0/0
2006	4/0	10/0
2007	8/0	10/0
2008	16/0	11/0
2009	22/19	22 / 22
2010	29/22	30 / 30

NOTES:
2004 - Baseline levels established through target area profiling

2005 - Assessments indicate that a number of municipalities have passed registration and licensing ordinances but the rate of utilization of the system is yet to be determined.

2006 – 10 municipalities have formulated/revised ordinances on registration and licensing system: Busuanga, Coron and Culion in Calamianes Islands, Bien Unido, Carlos P. Garcia, Talibon, and Ubay in Danajon area, and Bongao, Panglima Sugala and Simunul in Tawi-Tawi.

2007 - No updated information

2008 – 1 municipality added: Linapacan, Palawan.

2009 – 11 municipalities in Leyte and Surigao del Sur added: Baybay, Hilongos, Hindang, Inopacan and Matalom in Leyte; Cantilan, Carrascal, Cortez, Lanuza, Madrid and Tandag in Surigao del Sur.

2010 – 7 municipalities and 1 city added: Buenavista, Clarin, Inabanga, Getafe, Trinidad, and Tubigon in Bohol; Bato, Leyte; and Maasin City, Southern Leyte.

Appendix A.8. Intermediate Result 1.2 (IR 1.2)

ORGANIZATION/PROGRAM:	USAID PHILIPPINES
STRATEGIC OBJECTIVE:	MANAGEMENT OF PRODUCTIVE LIFE-SUSTAINING NATURAL RESOURCES STRENGTHENED
INTERMEDIATE RESULT:	National and local capacity increased for fisheries management in 4 target areas
APPROVED:	
INDICATOR (IR1.2):	Law enforcers, prosecutors, and judiciary trained or assisted in coastal law enforcement
UNIT OF MEASURE:	Number of coastal law enforcement units established or improved and functional in each target area
SOURCE DOCUMENT:	Annual FISH Project Performance Reports
SOURCE ORGANIZATION:	FISH Project team
INDICATOR DESCRIPTION:	Planned and actual values are cumulative. Indicator tracks number of coastal law enforcement units. A coastal law enforcement unit is a group of individuals constituting a legally established team.

YEAR	PLANNED	ACTUAL
2004	2	9
2005	13	13
2006	16	18
2007	17	18
2008	19	18
2009	22	25
2010	30	31

NOTES:
2004 - Baseline levels established through target area profiling. 9 law enforcement units formed or existing: 1 municipal law enforcement unit in Calamianes (Busuanga); 6 municipal enforcement and action teams (MEATs) in Surigao del Sur (Cantilan, Carrascal, Cortez, Lanuza, Madrid and Tandag); 1 bay-wide enforcement and action team (BEAT) in Lanuza Bay; 1 district level enforcement unit (CLEC2) in Danajon Bank.

2005 – 6 units added: Coron and Culion in Calamianes; Bien Unido, Carlos P. Garcia, Talibon, and Ubay in Danajon area. Further assessment of the MEAT of Cantilan revealed that it fell short of required indicators of functionality.

2006 - 5 units added, 4 at the municipal level and 1 at the provincial level: Kilusang Sagip Kalikasan in Linapacan, Calamianes; the MCLETs of Bongao, Panglima Sugala and Simunul in Tawi-Tawi; and the PCLET in Tawi-Tawi.

2007 - No updated information.

2008 – No updated information.

2009 – 6 municipalities and 1 city in Leyte and Southern Leyte added: Bato, Baybay, Hilongos, Hindang, Inopacan, Matalom and Maasin City.

2010 – 6 municipalities in Bohol added: Buenavista, Clarin, Inabanga, Getafe, Trinidad and Tubigon.

Appendix A.9. Intermediate Result 1.3 (IR 1.3)

ORGANIZATION/PROGRAM:	USAID PHILIPPINES
STRATEGIC OBJECTIVE:	MANAGEMENT OF PRODUCTIVE LIFE-SUSTAINING NATURAL RESOURCES STRENGTHENED
INTERMEDIATE RESULT:	National and local capacity increased for fisheries management in 4 target areas
APPROVED:	
INDICATOR (IR 1.3):	Effort restrictions/rationalization introduced in focal areas
UNIT OF MEASURE:	Number of effort restrictions adopted
SOURCE DOCUMENT:	Annual FISH Project Performance Reports
SOURCE ORGANIZATION:	FISH Project team
INDICATOR DESCRIPTION:	Planned and actual values are cumulative. Effort restrictions include spatial (MPAs), temporal (seasonal closures), and gear-related (prohibitions on highly efficient gears) fishing restrictions

YEAR	PLANNED	ACTUAL
2004	0	0
2005	0	0
2006	4	11
2007	8	31*
2008	25	35
2009	26	44**
2010	29	65

NOTES:
***** As of June 2008, the Project has introduced 34 units of fishing effort restriction/rationalization activities/program. For the extension period, the project targeted 4 additional fishing effort restrictions in expansion municipalities.

** 2 effort restrictions were deprecated, 1 each from the municipalities of Carlos P. Garcia, Bohol and Cortez, Surigao del Sur

2004 - Baseline levels established through target area profiling

2005 - Fishing effort restriction and rationalization program initiated during the period but implementation is expected to happen in the succeeding years.

2006 - 11 effort restrictions added. 1 each in Busuanga, Coron and Linapacan in Calamianes; 1 in Bien Unido, 2 in Carlos P. Garcia, 2 in Talibon and 1 in Ubay, Bohol; and 1 each for Bongao and Simunul in Tawi-Tawi Bay.

2007 – 20 effort restrictions added: 1 in Calamianes (Linapacan); 5 in Bohol (3 in Bien Unido and 2 in Talibon; 12 in Surigao del Sur (1 in Carrascal, 6 in Cortez, 3 in Lanuza, 1 in Madrid and 1 in Tandag); 2 in Tawi-Tawi (1 in Bongao and 1 in Panglima Sugala).

2008 – 4 effort restrictions added: 2 in Bien Unido, Bohol; 1 in Tandag, Surigao del Sur; 1 in Panglima Sugala, Tawi-Tawi.

2009 – 9 effort restrictions added: 2 in Tawi-Tawi (both in Panglima Sugala); 6 in Leyte (1 each in Bato, Baybay, Hilongos, Hindang, Inopacan, and Matalom); 1 in Southern Leyte (Maasin City).

2010 – 23 effort restrictions added: 19 in Bohol (2 in Buenavista, 6 in Clarin, 2 in Inabanga, 2 in Getafe, 3 in Talibon, 1 in Trinidad, 5 in Tubigon); 4 in Surigao del Sur (1 in Cantilan, 3 in Tandag).

Appendix A.10. Intermediate Result 1.4 (IR 1.4)

ORGANIZATION/PROGRAM:	USAID PHILIPPINES
STRATEGIC OBJECTIVE:	MANAGEMENT OF PRODUCTIVE LIFE-SUSTAINING NATURAL RESOURCES STRENGTHENED
INTERMEDIATE RESULT:	National and local capacity increased for fisheries management in 4 target areas
APPROVED:	
INDICATOR (IR 1.4):	Marine protected areas (MPA) established or improved to protect critical habitats, migration routes, and spawning areas and functional in focal areas
UNIT OF MEASURE:	Number and hectares of MPAs established and enforced
SOURCE DOCUMENT:	Annual FISH Project Performance Reports
SOURCE ORGANIZATION:	FISH Project team
INDICATOR DESCRIPTION:	Planned and actual values are cumulative. MPA rating system (defined in Appendix B) will be used as standards to determine functionality of MPA. All MPAs should at least achieve level 2.

YEAR	PLANNED		ACTUAL	
	Number	Hectares	Number	Hectares
2004	8	160	10	475
2005	8	160	8	420
2006	12	240	18	1,500
2007	16	320	27	1,799
2008	24	480	28	1,910
2009	28	560	32	1,913
2010	35	700	49	10,272

NOTES:

2004 - Baseline levels established through target area profiling. 10 MPAs at Level 2, all in Bohol: Bilangbilangan East, Bilangbilangan West, Hingutanan East, Hingutanan West, Liberty, Mandawa, Sagasa, Tuboran, and Maomawan in Bien Unido, and Cataban in Talibon.

2005 - 7 out of 10 MPAs reported in 2004 fail to maintain their Level 2 rating in 2005 after CBRMP support was terminated; 3 maintain Level 2 rating (Bilangbilangan East , Hingutanan West in Bien Unido and Cataban in Talibon). 5 new MPAs achieve Level 2: 2 in Calamianes (Decalve MPA in Bintuan, Coron; Bugur Fish Sanctuary in Libis, Culion); 1 in Bohol (Pong Gamay Marine Sanctuary in Lapinig, CPG); and 2 in Surigao del Sur (Tigao and Capandan Fish Sanctuaries in Cortez)

2006 – 10 Level 2 MPAs added: 4 in Calamianes (Sagrada-Bogtong Marine Reserve and Concepcion Marine Reserve in Busuanga; Siete Pecados Marine Reserve and Looc Marine Reserve in Coron); 3 in Surigao del Sur (General Island MPA and Ayoke Island MPA in Cantilan; Carrascal MPA in Carrascal; 3 in Tawi-Tawi (Lagasan-Pababag MPA in Bongao, Batu-batu-Kulape MPA in Panglima Sugala and Doh-tong MPA in Simunul).

2007 - 9 Level 2 MPAs added: 1 in Bohol (Hingutanan East Fish Sanctuary, Bien Unido); 5 in Surigao del Sur (Adlay Marine Protected Area in Carrascal; Uba Marine Protected Area and Mabahin Fish Sanctuary, Cortez; Mabua Marine Protected Area and Buenavista Marine Protected Area, Tandag); 3 in Tawi-Tawi (Ungus-Ungus Fish Sanctuary, Bongao; Tondon Fish Sanctuary, Panglima Sugala; Tonggusong – Maruwa Fish Sanctuary, Simunul).

2008 – 1 Level 2 MPA added (Lanuza, Surigao del Sur)

2009 – 5 Level 2 MPAs added, all in Tawi-Tawi: Pasiagan Fish Sanctuary and Ipil Fish Sanctuary in Bongao; Liaburan Fish Sanctuary, Buan Fish Sanctuary and Belatan Halo Fish Sanctuary in Panglima Sugala. The Looc Marine Reserve in Coron deprecated through the veto power of the municipal mayor of Coron.

2010 – 17 Level 2 MPAs added: 7 in Bohol (Sagasa Fish Sanctuary and Bien Unido Double Barrier Marine Park in Bien Unido; Asinan-Cabul-an MPA in Clarin; Nocnocan Marine Sanctuary in Talibon; Ubay Marine Sanctuary and Bilangbilangan Marine Sanctuary in Tubigon; Humay-humay Marine Sanctuary in Ubay; 10 in the Leyte expansion area (AR Complex MPA in Bato; San Agustin MPA in Baybay; Naval MPA, Owak MPA and San Juan MPA in Hilongos; Bulacan MPA in Hindang; Conalum MPA in Inopacan; Canigao Marine Sanctuary; Sto. Rosario Fish Sanctuary and Guadalupe-Bilibol Fish Sanctuary).

Appendix A.11. Intermediate Result 1.5 (IR 1.5)

ORGANIZATION/PROGRAM:	USAID PHILIPPINES
STRATEGIC OBJECTIVE:	MANAGEMENT OF PRODUCTIVE LIFE-SUSTAINING NATURAL RESOURCES STRENGTHENED
INTERMEDIATE RESULT:	National and local capacity increased for fisheries management in 4 target areas
APPROVED:	
INDICATOR (IR 1.5):	Local government units adopting/enhancing CRM governance
UNIT OF MEASURE:	Number of municipalities adopting CRM program and hectares of municipal waters under improved management)
SOURCE DOCUMENT:	Annual FISH Project Performance Reports
SOURCE ORGANIZATION:	FISH Project team
INDICATOR DESCRIPTION:	Planned and actual values are cumulative. CRM Level 1 benchmarks are defined in the M&E guidelines for municipal CRM attached as appendix C (DENR-CMMO 2003). The municipal waters under improved management pertains to the area within the 5 kms from the coastline

YEAR	PLANNED		ACTUAL	
	Number	Hectares	Number	Hectares
2004	5	46,912	6	59,642
2005	7	76,243	9	106,805
2006	14	226,313	13	171,833
2007	15	239,096	16	271,571
2008	16	248,182	17	297,588
2009	17		17	297,588
2010	29		30	375,065

NOTES:
2004 - Baseline levels established through target area profiling. Level 1 CRM achieved by 6 LGUs in Surigao del Sur (Carrascal, Cantilan, Madrid, Lanuza, Cortez and Tandag). The municipal CRM/fisheries programs however were based on 1-year CRM/fisheries management action plans.

2005 – 3 Bohol LGUs achieve Level 1 CRM (Carlos P. Garcia, Talibon, Ubay)

2006 – 4 LGUs achieve Level 1 CRM: Bien Unido in Bohol; Bongao, Panglima Sugala, and Simunul in Tawi-Tawi.

2007 – 3 LGUs in Calamianes achieve Level 1 CRM: Busuanga, Culion and Linapacan.

2008 – 1 LGU in Coron achieves Level 1 CRM: Coron, Palawan.

2009 – No updated information.

2010 – 13 LGUs achieve Level CRM: 6 in Bohol (Buenavista, Clarin, Inabanga, Getafe, Trinidad, Tubigon); 6 in Leyte (Bato, Baybay, Hilongos, Hindang, Inopacan, Inopacan); 1 in Southern Leyte (Maasin City)

Appendix A.12. Intermediate Result 1.6 (IR 1.6)

ORGANIZATION/PROGRAM:	USAID PHILIPPINES
STRATEGIC OBJECTIVE:	MANAGEMENT OF PRODUCTIVE LIFE-SUSTAINING NATURAL RESOURCES STRENGTHENED
INTERMEDIATE RESULT:	National and local capacity increased for fisheries management in 4 target areas
APPROVED:	
INDICATOR (IR 1.6):	Inter-LGU and interagency partnerships evidenced by collaborative agreements (MOAs, MOUs, joint activities), policy instruments, fisheries management plans, or other similar mechanisms
UNIT OF MEASURE:	Number of agreements/plans signed or adopted among relevant stakeholders
SOURCE DOCUMENT:	Annual FISH Project Performance Reports
SOURCE ORGANIZATION:	FISH Project team
INDICATOR DESCRIPTION:	Planned and actual values are cumulative. Indicator tracks number of interagency MOA's, ordinances, and plans at local, regional, or national levels signed, adopted, or revised

YEAR	PLANNED	ACTUAL
2004	2	2
2005	2	2
2006	2	3
2007	3	5
2008	8	5
2009	8	10
2010	8	16

NOTES:
2004 - Baseline levels established through target area profiling. 2 inter-LGU collaborative existing: Coastal Law Enforcement Council (CLEC2) in Danajon Bank; Lanuza Bay Development Alliance in Surigal del Sur.

2005 - No additional inter-LGU setup established in 2005.

2006 - *Oplan Mataud Istah* in Tawi-Tawi formed

2007 – 2 collaboration arrangements added, both in Calamianes: Calamian MPA Network, (2) Calamianes Integrated Fisheries Management Plan.

2008 – No updated information.

2009 – 5 collaboration arrangements added: Danajon MPA Network, Tawi-Tawi Social MPA Network, Surigao del Sur MPA Network, Leyte 5th District Integrated MFARMC, CELEBOSOLE

2010 – 6 collaboration arrangements added: 4 in Leyte (marine spatial plan, fisheries management framework plan, municipal water delineation and Oplan Sandagat); 2 in Surigao del Sur (Coastal Law Coordinating Council, municipal water delineation).

Appendix A.13. Intermediate Result 1.7 (IR 1.7)

ORGANIZATION/PROGRAM:	USAID PHILIPPINES
STRATEGIC OBJECTIVE:	MANAGEMENT OF PRODUCTIVE LIFE-SUSTAINING NATURAL RESOURCES STRENGTHENED
INTERMEDIATE RESULT:	National and local capacity increased for fisheries management in 4 target areas
APPROVED:	
INDICATOR (IR 1.7):	RH/population programs implemented or improved in each focal area
UNIT OF MEASURE:	Number of barangays integrating RH/population management
SOURCE DOCUMENT:	Annual FISH Project Performance Reports
SOURCE ORGANIZATION:	FISH Project team
INDICATOR DESCRIPTION:	Planned and actual values are cumulative. Indicator tracks number of barangays with development plans and activities

YEAR	PLANNED	ACTUAL
2004	4	0
2005	12	4
2006	18	10
2007	21	14
2008	21	25
2009	21	25
2010	21	25

NOTES:
2004 - Baseline levels established through target area profiling.

2005 - 4 barangays adopt RH program through their barangay development plan: 2 in Bohol (Guindacpan and Nocnocan in Talibon); 2 in Surigao del Sur (San Pedro and General Island in Cantilan).

2006 - 6 barangays added: 3 in Coron, Calamianes, Palawan (Tagumpay, Bulalacao, Bintuan); 3 in Bongao, Tawi-Tawi (Simandagit, Lagasan, Pababag).

2007 - 4 non-coastal barangays added, all in Cantilan, Surigao del Sur: Bugsukan, Buntalid, Cabangahan, Cabas-an.

2008 – 11 barangays added: 10 in Talibon, Bohol (San Isidro, San Pedro, San Francisco, Bagacay, Tanghaligue, Busalian, Suba, Sag, Cataban, Calituban); 1 in Simunul, Tawi-Tawi (Tonggusong)

2009 – No updated information.

2010 – No updated information.

Appendix A.14. Intermediate Result 2.1 (IR 2.1)

ORGANIZATION/PROGRAM:	USAID PHILIPPINES
STRATEGIC OBJECTIVE:	MANAGEMENT OF PRODUCTIVE LIFE-SUSTAINING NATURAL RESOURCES STRENGTHENED
INTERMEDIATE RESULT:	National policy framework developed supporting sustainable fisheries
APPROVED:	
INDICATOR (2.1):	National fisheries policies supporting sustainable fisheries
UNIT OF MEASURE:	Number of national policy instruments developed, reviewed or revised with FISH Project inputs
SOURCE DOCUMENT:	Annual FISH Project Performance Reports
SOURCE ORGANIZATION:	FISH Project team
INDICATOR DESCRIPTION:	Planned and actual values are cumulative. National policy instruments include national fisheries and related laws; administrative orders, rules and regulations; and plans and action programs of relevant government agencies

YEAR	PLANNED	ACTUAL
2004	0	1
2005	2	5
2006	4	11
2007	7	11
2008	15	21*
2009	17	26
2010	19	30

NOTES:
* One policy instrument particularly the Implementing Rules and Regulations on MMAA 86 was counted twice when the instrument was drafted in 2006 and when it was adopted in 2008, thus, the count of policy instruments in 2008 was reduced by one and reflected in the subsequent years.

2004 - 1 policy formulated and adopted: IRR of EO 305 (devoloving the registration of municipal fishing vessels to LGUs)

2005 – 4 policies added: (1) National Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (NPOA-IUU); (2) The Palawan Live Reef Fish Ordinance of 2005: providing for a sustainable and integrated regulation of live reef fish industry, imposing certain conditions for the catching, trading and shipment of live fish out of the province, providing penalties for violations hereof and for other purposes; (3) Draft Fisheries Administrative Order – Guidelines for the Registration and Licensing of Municipal Capture Fisheries; (4) Draft Fisheries Administrative Order- Guidelines for the Registration and Licensing of Commercial Capture Fisheries.

2006 – 6 policies added: (1) CNFIDP – Municipal and Commercial subsector; (2) CNFIDP – Aquaculture; (3) CNFIDP – Post-Harvest; (4) CNFIDP – Institutional Development; (5) First round of amendatory bills to RA8550; (6) Implementing Rules and Regulations on MMAA 86.

2007 – No updated information.

2008 – 11 policies added: (1) FOO 213 s. 2008: Adopting and Implementing the CNFIDP; (2) FOO 215 s. 2008: Fisheries Management Units; (3) National Plan of Action on Conservation and Management of Sharks and Rays; (4) Proposed FAO on the Guidelines for Implementing the Wildlife Act RA 9147; (5) House Bill 803: Establishment of Marine Protected Areas; (6) DILG Memorandum 2007-37, Enjoining the Leagues to lead the implementation of EO 305; (7) Regional Executive Order No. 16 Establishment of ARMM-MCS Team and its IRR; (8) Proposed Regional Fisheries Administrative Order on Tropical Fish Catching and Trading in ARMM; (9) Proposed Regional Fisheries Administrative Order Commercial Licensing System in ARMM; (10) Proposed Regional Fisheries Administrative Order on Fishpond Lease Agreements in ARMM, and (11) IRR on MMMA 86.

2009 – 5 policies added: (1) RFAO on the ARMM Regional Fisheries Development Plan; (2) RFAO on IFMU in ARMM; (3) FAO on IFMU Danajon Bank (4); FAO on IFMU Calamianes; (5) FAO on IFMU Lanuza.

2010 – 3 proposed ARMM Regional Fisheries Administrative Orders (RFAO) such as Tropical Fish Catching and Trading, Commercial Licensing System and Fishpond Lease Agreements adopted as RFAO 57 s. 2009, RFAO 50 s. 2009 and RFAO 17 s. 2009, respectively. 4 policies added: (1) EO 797: National Action Plan for the CTI on Coral Reefs, Fisheries and Food Security; (2) Proposed FAO Implementing a Commercial Fishing Vessel License (CFVL) Reduction Scheme; (3) Proposed Guidelines on Alternative Local Adjudication Process for Fisheries Issues; and (4) DENR Memo to all Mines and Geosciences Bureau (MGB) Directors Clarifying the Definition of Pebbles/Coral Pebbles.

Appendix A.15. Intermediate Result 2.2 (IR 2.2)

IR2.2 was included in the FISH Project Results Framework as an additional performance indicator for the extension period 2008-2010.

ORGANIZATION/PROGRAM:	USAID PHILIPPINES
STRATEGIC OBJECTIVE:	MANAGEMENT OF PRODUCTIVE LIFE-SUSTAINING NATURAL RESOURCES STRENGTHENED
INTERMEDIATE RESULT:	National policy framework developed supporting sustainable fisheries
APPROVED:	
INDICATOR (2.2):	Replication of fisheries management and governance practices to other LGUs (outside the 4 target areas), agencies, NGOs and other projects through policy advocacy, training and technical assistance
UNIT OF MEASURE:	Number of partner agencies/groups providing assistance and number of LGUs
SOURCE DOCUMENT:	Annual FISH Project Performance Reports
SOURCE ORGANIZATION:	FISH Project team
INDICATOR DESCRIPTION:	Planned and actual values are cumulative. Agencies, NGOs and projects referred herein are those groups or organizations the FISH project assisted via advocacy, training and technical assistance to replicate fisheries management and governance practices to LGUs outside the target areas

YEAR	PLANNED	ACTUAL
2004	0/0	
2005	0/0	
2006	0/0	
2007	0/0	
2008	2/10	4/23
2009	4/20	9/52
2010	6/50	16/54

NOTES:
2008 – Technical assistance on municipal water delineation with the following partners: NAMRIA, NFR, Sentro Alternatibong Lingap Panligal (SALIGAN), Surigao del Norte's PEMO. The following municipalities were covered:

- San Francisco, Pilar, Poro and Tudela all in the province of Cebu.
- Alegria, Bacuag, Burgos, Claver, Del Carmen, Gen. Luna, Malimono, Pilar, Placer, San Benito, San Francisco, San Isidro, Socorro, Surigao City, Taganaan, Dapa, Mainit, Sta. Monica and Gigaquit, all in the province of Surigao del Norte

2009 – 5 organizations/institutions access FISH technical assistance and replicate IEC/training products for use in their respective localities: (1) GTZ/DED, (2) NZAID/CCRMP; (3) Save Nature Society; (4) MDC and (5) U.S. Support to CTI and Philippines CTI National Coordinating Committee which based their First CTI Regional Exchange Program on the FISH Project's ECSMF. Represented at the CTI Exchange Program were participants from the Indonesia, Malaysia, Indonesia, Papua New Guinea, the Philippines,Timor-Leste.

2 ECSMF courses conducted in partnership with LMP for 29 municipalities: (1) Aborlan, Palawan, (2) Caramoan, Camarines Sur, (3) Concepcion, Iloilo, (4) Esperanza, Masbate, (5) Jagna, Bohol, (6) Laoang, Northern Samar, (7) Lawaan, Eastern Samar, (8) Libon, Albay, (9) Loay, Bohol, (10) Palauan, Occidental Mindoro, (11) Pinabacdao, Samar, (12) Sitangkai, Tawi-Tawi, (13) Sto. Domingo, Ilocos Sur, (14) Tandubas, Tawi-Tawi, (15) Tobias Fornier, Antique, (16) Victoria, Northern Samar, (17) Batad, Iloilo, (18) Bongao, Tawi-Tawi , (19) Calbiga, Samar, (20) Carles, Iloilo, (21) Daram, Samar, (22) Gamay, Northern Samar, (23) Oas, Albay, (24) Pambujan, Northern Samar, (25) San Jose, Northern Samar, (26) San Sebastian, Samar, (27) Sofronio Espaniola, Palawan (28) Talalora, Samar and (29) Villareal, Samar.

2010 - 7 organizations and 2 municipal LGUs added: Organizations - (1) Fisheries Development Center (FIDEC) – MPA Establishment and Management, (2) SEA Knights, (3) Ramon Aboitiz Foundation, Inc., (4) Cebu Uniting for Sustainable Water (CUSW), (5) Marine Animal Rescue Network, (6) Ocean Care Foundation and (7) SUMACORE (reprinting of IEC materials); Municipal LGUs: (1) San Remigio, Cebu (IEC on MPA Establishment and Management) and (2) Aloguinsan, Cebu (MPA Establishment and Management).

Appendix A.16. Intermediate Result 3.1 (IR 3.1)

ORGANIZATION/PROGRAM:	USAID PHILIPPINES
STRATEGIC OBJECTIVE:	MANAGEMENT OF PRODUCTIVE LIFE-SUSTAINING NATURAL RESOURCES STRENGTHENED
INTERMEDIATE RESULT:	Constituency of informed, disciplined, and cooperative stakeholders developed and engaged in fisheries management
APPROVED:	
INDICATOR (3.1):	Public-private partnerships supporting fisheries management, social infrastructure, population programs, and socioeconomic development in target areas
UNIT OF MEASURE:	No. of public-private partnerships
SOURCE DOCUMENT:	Annual FISH Project Performance Reports
SOURCE ORGANIZATION:	FISH Project team
INDICATOR ESCRIPTION:	Planned and actual values are cumulative. Public-private partnerships include national and local collaborative agreements, projects, and activities that directly or indirectly support fisheries management between any entities such as the FISH Project, national or local government, private sector, or NGO

YEAR	PLANNED	ACTUAL
2004	0	0
2005	7	6
2006	10	11
2007	14	14
2008	15	18
2009	16	29
2010	16	30

NOTES:
2004 - Baseline levels established through target area profiling

2005 - Private sector partners engaged through SAF; (1) ELAC-Bohol, (2) PSF, (3) Hayuma Foundation, (4) Islahanon Andam Magdumal Nan Kinaiyahan (ISLAMDUNK), (5) Nagkahugpong Managatay Para sa Kalambuan nan Ayoke (NAGKAMAAYO), and (6) Caglayag-Baybay-Embarcadero-Doyos-Seca (CBEDS)

2006 – 5 new partners engaged through SAF: (1) ELAC-Palawan; (2) SCIPG; (3) KSRLA; (4) APREDEC; and (5) Capandan Multi-Purpose Cooperative (CMPC).

2007 – Partnerships forged with 3 mass media agencies providing substantial and continuous free airtime for the Project's documentary "Under Construction: The Making of a Coast-wise Nation": (1) Knowledge Channel; (2) NBN and (3) Living Asia Channel. It is estimated that media value for these broadcasts totaled over Php10 million for the year.

2008 – 4 new partners engaged in Project activities: (1) Catholic Clergy of the Archdiocese of Cebu and Archdiocese of Talibon: (2) Sea Knights, an organization of members of the Catholic Clergy and the scuba diving enthusiasts who support coastal and fisheries management; (3) VSU; (4) SOBA of Leyte.

2009 – Partnerships forged with the following organizations to support the conduct of the 2CCM (financial and in-kind contributions; design, planning and management of Conference): (1) LMP; (2) MDC; (3) WWF; (4) CI; (5) GTZ; (6) MSN; (7) UPMSI; (8) NFR; (9) NZAID/CCRMP; (10) CCEF; and (11) ABU/NHK-Japan Voyage to the Future Project.

2010 -- 1 partner engaged in Project activities (ECCCS)

Appendix A.17. Intermediate Result 3.2 (IR 3.2)

ORGANIZATION/PROGRAM:	USAID PHILIPPINES
STRATEGIC OBJECTIVE:	MANAGEMENT OF PRODUCTIVE LIFE-SUSTAINING NATURAL RESOURCES STRENGTHENED
INTERMEDIATE RESULT:	Constituency of informed, disciplined, and cooperative stakeholders developed and engaged in fisheries management
APPROVED:	
INDICATOR (IR 3.2):	Dissemination and utilization of fisheries management information materials, training modules, policy studies, and project lessons
UNIT OF MEASURE:	Number of information materials produced and training/forums conducted
SOURCE DOCUMENT:	Annual FISH Project Performance Reports; USAID TrainNet database
SOURCE ORGANIZATION:	FISH Project team
INDICATOR ESCRIPTION:	Planned and actual values are cumulative. Indicator tracks the number of different project products and training courses, workshops, and forums conducted at national (at least 1 per year) and local levels (at least 1 per focal area) to inform and build constituencies for sustainable fisheries

YEAR	PLANNED		ACTUAL	
	Information Materials Produced	Training Courses Developed/ Conducted	Information Materials Produced	Training Courses Developed/ Conducted
2004	11	12	18	15
2005	33	32	52	47
2006	45	48	79	89
2007	77	64	120	118
2008	145	172	147	135
2009	165	202	215	168
2010	170	226	241	288*

NOTES:

* Total number of training courses developed and conducted since 2004, including some training courses that were held in previous years but were not counted promptly because of delayed transmission of registration forms from the field.

2004 - Number of material represents co-production arrangements with CRMP and some initial presentation materials for FISH activities. Training activities were mostly in a form of orientation to LGUs and some early fisheries management actions like MPA and Basic Coastal and Fishery Law Enforcement.

2005 - Training activities include the following themes and courses: PCRA, CRM/Fisheries Management Planning, Coastal Law Enforcement, Fish Warden Deputation, MPA Establishment and Management, Species-Specific Management Training, Organizational Development, FARMC Orientation, Basic IEC and Social Marketing.

2006 - Cross visits/study tours comprise a major activity during the year, along with community level coastal law enforcement, organizational development/teambuilding of the people's organizations, fisheries registration and licensing, and species-specific management. IEC activities revolve around P3DM workshops and community-based mural art paintings; special events (MPA launching/sea camps) in observance of the Ocean Month (May), Environment Month (June) and Fish Conservation Week (October) as well as the popularization of technical information.

2007 - 24 IEC materials, 17 IEC activities and 29 trainings added. **IEC materials:** (1) 3D model of Danajon Bank; (2) Talibon on the Coastal and Marine Environment; Fisheries and Portraits of "Life in Danajon Bank" exhibit panel; (3) Miniature Models of Fishing Gear; (4) Save Danajon Bank Exhibit guide; (5) Why Protect Mangroves; (6) Why Protect Coral reefs; (7) Why Protect Seagrasses; (8) Danajon Bank Map and "BoomBoom Bautista" poster; (9) Video on illegal fishing and the theme of stewardship as a key social concern of the Catholic Church;

(10) Ang Kagasangan: Angay Ampingan ug panalipdan, (11) Reprint of CRMP poster "Human Impacts on the Marine and Coastal Environments; (12) Translation of fatwa to Sama and Tausug; (13) Airing of the DVD documentaries on Living Asia Channel, an Asia-wide cable television channel; (14) "Nucleus" flash movie; (15) "Dream Seas" Flash movie; (16) "Shell Shock" Flash movie; (17) Fish Off Flash movie; (18) Fish Factory Flash movie; (19) EO 533; (20) Guide illustrating the external manifestations of dynamited fish and fish caught with cyanide; (21) Ilonggo version of the comics on overfishing and MPA poster; (22) Maintenance and update of the project's www. oneocean,org website; (23) ARMM Fisheries Code Implementing Guidelines; and (24) Radio jingle "Isda"and full song, Pangarap ng Karagatan by Tribu Calamian. **IEC activities**: (1) Mural painting in Bien Unido and Talibon; (2) Calamianes Cross Visit to MPAs; (3) Consultation workshop regarding storylines and contents of Talibon Interpretive Center exhibit, "Save Danajon Bank"; (4) Rebroadcast of video documentaries "Under Construction in Knowledge Channel and National Broadcasting Network; (5) Coverage, production and broadcast of BFAR-7's Fish Conservation week activities; (6) MFARMC Coron; (7) LBDA Coordination Meeting; (8) MFARMC-MAFC; (9) Launching/Inauguration of Talibon Interpretive Center; (10) Orientation on FISH as 1st Agriculture Month Celebration; (11) Exhibit/ guestings in schools/parade undertaken in observance of Ocean Month in May and Environment Month in June; (12) Film Showings, coastal clean-up and "Tugtugan para sa Kalikasan in observance of Ocean Month; (13) Launching of Tangay 'Y and Laud Calamian and visit of US Ambassador Kenney in observance of Ocean Month; (14) Coastal Clean-up and radio plugs; (15) Presentation to His Eminence Cardinal Ricardo Vidal and to over 200 members of the clergy of the Archdiocese of Cebu on the importance of coastal and marine resources; (16) Broadcast of "Under Construction" in "Living Asia Channel; (17) "Fishes Feed Us" Project in partnership with New York City-based Arts and Science Collaboration, Inc (ASCI). **Training activities:** (1) Data Collection for the LGU Baseline Catch Monitoring in Danajon Bank; (2) Calamianes Cross Visit; (3) MPA Planning Writeshop for Doh-Tong, Lagasan-Pababag, Batu-Batu Kulape MPAs; (4) Community Level MPA Management Planning; (5) Training in Municipal Fishing Crafts Admeasurement and Registration; (6) Coordinating Conference on Oplan Maomaoan; (7) Joint Consultation Meeting Humay-Humay Fisherfolk Association and barangay officials; (8) Municipal CRM Planning; (9) Task Force Kalikupan Assessment Planning; (10) Presentation of Management Plan for Balisugan MPA; (11) MCLET Wide Annual Assessment and Planning Workshop; (12) Training in Municipal fishing crafts ad measurement and registration; (13) Interpretive Training Workshop; (14) Organizational Meeting Tangay 'Y Ang Laud Calamian; (15) Training on Registration and Licensing; (16) MPA Public Consultation re proposed San Miguel MPA; (17) Special Enforcement and Action Team (SEAT) Orientation and Organizational Meeting for Adlay and San Pedro MPAs; (18) Training on MPA Monitoring; (19) Workshop on Establishment of MPA Network; (20) Workshop on MPA Network; (21) Training on MPA Monitoring; (22) SEAT Orientation and Organizational Meeting for Capandan and Uba MPAs; (23) Workshop for the Establishment of Lanuza Bay MPA Network; (24) Training Course on MPA Monitoring for Community and MPA Management; (25) MPA Network Workshop; (26) Monitoring Training for MPA Management Committee; (27) Workshop for the Establishment of Danajon Bank MPA Network; (28) Workshop on MPA Monitoring; and (29) Workshop on the Formulation of Fish Sanctuary.

2008 – 15 IEC materials, 12 IEC activities and 17 trainings added. **IEC materials:** (1) Why Protect Mangroves in Cebuano (Nganong Angay Panalipdan ang Kabakhawan); (2) Marine Protected Area (MPA) or Sanctuary: An Effective Tool for Fisheries Management; (3) Ang MPA o Santwaryong Dagat: Usa ka Malampusong Pamaagi sa Pagpalambo sa Kadagatan; (4) MOREFish: Prmoting Suatainable Fisheries through Responsible Fishing Practices; (5) MOREFish: Masaganang Pangisdaan, Sagot sa Kahirapan, Karagatan Alaagaan; (6) Operational Guidelines for the Inter-Agency Regional Monitoring, Control and Surveillance Team and Task Forces in the ARMM; (7) "Sanctuary" Flash Animation Movie; (8) "Priceless" Flash Animation Movie; (9) "Fished Out" Flash Animation Movie; (10) "Samuel Sutil" Flash Animation Movie; (11) Radio-TV Plugs re Cardinal Vidal, Vice Gov. Herrera, Fr. Chito Lozada; (12) Local Government Guide to Registration of Municipal Fishing Boats 3GT and below; (13) Audio-Visual Presentation of MoreFish Program; (14) Tarpaulin Banners on Calamianes MPAs; (15) Tarpaulin Banners on "To Catch More We Need to Fish Les". **IEC activities:** (1) Participation in LMP National Convention in November 2007; (2) Radio Production Workshop for Surigao del Sur; (3) Follow up to Strategic Planning Workshop for Talibon Interpretive Center; (4) Production and Airing Weekly of Radio Program "Ang Dagat, Kinabuhi" A FISH Project Radio Forum with AFPRDCI; (5) Orientation on CRM and Fisheries Management Issues and Problems in Central Visayas for the Association of Major Religious Superiors in Cebu; (6) Maintenance and Update of Website, wwwoneocean.org; (7) Follow up Activity re Mural Painting in Ubay, Bohol; (8) "Duaw, Sangyaw, Serbisyo" IEC Caravan and Medical Mission in the Island of Malingin, Calituban, and Maomaoan; (9) Sea Camp for the Laud y Calamian (I Love the Ocean) Members; (10) FATWA IEC Planning/Radio Interviews with Local Radio Stations; (11) Launching of MOREFish Program at the LMP Luzon and Visayas Island Conferences and Field Visit of Mayors to Talibon Interpretive Center and Project Site; (12) Piyesta ng Karagatan in Observance of Ocean Month. **Training activities:** (1) Strategic Action Planning Workshop for Talibon Interpretive Center; (2) Cross-visit Tawi-Tawi MPA Managers and PNP with BFAR ARMM to Cebu, Bohol, and Negros; (3) Fish Examiners' Training Workshop for SET/Bantay Sanctuary (4) MPA Enforcement Training Workshop for Sanctuary Enforcement Team (SET)/Bantay Sanctuary in Simunul; (5) MPA Enforcement Training Workshop for SET/Bantay Sanctuary in Panglima Sugala; (6) MPA Enforcement Training

Workshop for SET/Bantay Sanctuary in Bongao; (7) LBDA – LGUs Coastal and Fisheries Management Writeshops; (8) Basic Coastal Law Enforcement Training; (9) Provincial Annual CLEC Assessment and Planning Workshop; (10) Danajon Bank Fishing Ground Consultation, (11) Seminar Workshop on Community Theater; (12) Monitoring and Evaluation Workshop; (13) MPA Set Training; (14) SEA Camp; (15) Surigao del Sur Province – Wide Coastal and Fishery Law Enforcement Training ; (16) Provincial Fisheries and Aquatic Resource Office of Surigao del Sur Assessment Workshop; (17) Calamianes Fisheries Summit.

2009 - 20 IEC materials, 38 IEC activities and 33 trainings added. **IEC materials:** (1) 2009 wall calendar of the MOREFISH Program of the LMP and FISH Project; (2) 2009 FISH Project Calendar; (3) MPA billboards for Talibon, Bien Unido and Carlos P. Garcia; (4) Telling our Story series – 14 stories on the Bohol FISH Project experience; (5) Weekly radio program "Ang Dagat Kinabuhi" over 2 radio stations in Tandag and Cantilan, Surigao del Sur; (6) Weekly radio program "Kabunianan A Dagat" in TawiTawi; (7) Weekly radio program "Kahibalo ka Bay" in partnershership with VSU and SOBA; (8) Maintenance and update of website, www.oneocean.org; (9) Collation of reference materials on EBFM for inclusion in ECSMF Training kit; (10) Call for the Sea to Change Comics; (11) Where have all the fishes gone Comics; (12) No ifs, no buts, we must manage fishing capacity; (13) 3-panel FISH Project exhibit "We must manage fishing capacity"; (14) 5-minute AVP on LMP Report Card; (15) 2CCM banners/ streamers/ program/handouts and; (16) Various newspaper radio/TV articles on the 2CCM'; (17) Developing a Framework for Economic Analysis of CRM Investments: The Case of Ubay, Bohol; (18) Fish Ruler; (19) CDs on FISH Project documents/publications for distribution at 2CCM; (20) CDs on CRMP IEC materials for distribution at 2CCM. **IEC activities:** (1) MOREFISH Mayors Champion Building Workshop; (2) LMP National Directorate Meeting; (3) Participation in LMP General Assembly in November, 2008; (4) First dive expedition to assess potential dive sites in Danajon Bank; (5) Presentation of the Policy and Enforcement Advisor on "Non-Satellite Technology: The Philippine Experience" under at the plenary session on "Using Technology as an Intelligence Tool" in Trondheim, Norway; (6) Orientation workshop on the preparation of promotional materials for Calamianes MPAs; (7) National Stock Assessment (NSAP) BFAR National Office Final Review; (8) NSAP Review of Final Report for Mindanao cluster; (9) Sharing of FISH Project experiences at Conservation International (CI) Reef Triangle Initiative round table discussions; (10) Exhibit on Pagbabago ng Klima; Hamon sa Likas Kayang Pangisdaan"; (11) Presentation of Fisheries Management Advisor on Ecosystems-Based Management for Danajon Bank at USAID sponsored discussions series on "Governance of Marine Ecosystem-Based Management: A Comparative Analysis at Woodrow Wilson Center Washington D.C., USA; (12) Study tour to Palawan by Bohol FISH Project Partners; (13) Strategic Planning on ecological evangelization for the Order of the Agustinians; (14) LMP National Directorate Meeting adopting 2nd CCM agenda and presentation of FMUs; (15) Various discussions/working meetings with Save Tanon Strait Movement and the consortium of LGUs/NGOs supporting the Visayan Sea Squadron; (16) 2nd Dive Expedition to do video documentary of potential dive sites in Bien Unido; (17) NSAP Results Presentation with NAFC; (18) NSAP meeting at BFAR with NFR, NAFC, NFRDI; FISH Project; (19) NSAP Finalization Review for Regions 1,2,3; (20) Story development workshop for TawiTawi; (20) Story development workshop for Inabanga; (21) Launching of Voyage to the Future Project in Danajon Bank; (22) 3rd Dive Expedition for Bien Unido dive sites; (23) Orientation on FISH Project to Partido Development Administration in Camarines Sur; (24) Evaluation/Assessment of impacts of Special Activity Fund (SAF) on grantees and beneficiaries; (25) Orientation on sustainable fisheries to LGUs of Libon, Albay and municipal fisheries summit; (26) Technical Consultation workshop on Visayan Sea's stock assessment results; (27) Calamianes Sea Camp for fisherfolk for the Month of the Ocean; (27) "Ten by 2010: A fisheries management initiative in Danajon Bank Philippines" - presentation by the Fisheries Management Advisor at the International Marine Conservation Congress, Washington, D.C., USA; (28) Presentation by the Policy and Enforcement Advisor on "Philippine experience on community-based fishery law enforcement" at First Monitoring, Control and Surveillance Workshop to Combat Illegal, Unreported and unregulated fishing in Central America at El Salvador; (29) Duaw Sangyaw ni Sto. Nino for the islands of Bien Unido; (30) Various organizational and planning meetings for the Second Conference of Coastal Municipalities; (31) Conduct of 2CCM; (32) FISH Project was presentor and co-convenor at 2CCM concurrent workshop on Food Security and Poverty Alleviation; (33) FISH Project was convenor of 2CCM concurrent workshop on Enforcing Coastal and Fishery Laws; (34) FISH Project was presentor and convenor at 2CCM workshop on Sustainable Financing for fisheries management; (35) Lectures by Deputy chief of party, fisheries management advisor, IEC advisor and policy and coastal law enforcement advisor at the First Coral Reef Triangle Exchange Program; (36) Post 2CCM evaluation meeting with LMP and partners; (37) NSAP Annual Planning Meeting and Workshop; (38) IEC and Medical Mission at Carlos P. Garcia, Bohol. **Training activities**: (1) Orientation workshop on preparation of annual evaluation reports; (2) 5-day Orientation on Fisheries Management, organizational assessment and team-building workshop for the PEMO of Surigao del Sur; (3) Delineation of Siargao Islands and Bucas Grande municipalities; (4) Capacity-building for FARMC in Culion; (5) Trainors Training on Participatory Coastal Resource Assessment; (6) Lifeguard Training for MPA guards in Calamianes; (7) Fish Examiners Training for Leyte, Surigao del Sur, Surigao del Norte, and Camiguin participants; (8) Municipal Waters Delineation Workshop in Leyte and Southern Leyte; (9) Province-wide Coastal Law Enforcement Assessment and Planning; (10) Study Tour to Palawan by Bohol FISH Project partners; (11)

Workshop on the Harmonization and Consolidation of Commented CFARM Ordinance of 7 component LGUs; (12) Basic Coastal Law Enforcement Training; (13) Orientation workshop on the principles of marine spatial planning and identification of fisheries use zones in Lanuza Bay; (14) First ECSMF; (15) Cross-visit of TawiTawi LGUs and partners to MPAs in Bohol and Negros Oriental; (16) Writeshop finalizing Lanuza Bay's environment and fisheries management plan; (17) Presentation of results on scoping of Mariculture sites; (18) Orientation on Principles of Marine Spatial Planning and identification of fisheries and other use zones in TawiTawi Bay; (19) Training on Special Enforcement Team; (20) Post Review of Fish Examiners Training; (21) Training on Fish Sanctuary Management and Establishment; (22) Basic Coastal Law Enforcement training for the law enforcement teams for Leyte and Southern Leyte municipalities; (23) Training course on Monitoring and Assessment of Municipal Fisheries for Application in Lanuza Bay, Surigao del Sur; (24) Orientation workshop on Cost-Benefit Analysis Framework of Coastal and Fisheries Management; (25) Presentation and review of results workshop of marine spatial planning in Calamianes; (26) Second ECSMF; (27) Coral Triangle Initiative (CTI) Exchange program "Enhancing local government and stakeholder capacity for ecosystem-based fisheries management"; (28) Coastal Law Enforcement Training for Surigao del Norte; (29) Workshop on the Formulation of the fish sanctuary management plan in TawiTawi; (30) Orientation workshop on Catch Monitoring and Impounding of Gears in Bohol, (31) Workshop on Biophysical Monitoring and Assessment of the MPA in Surigao del Sur; (32) Participatory Coastal and Fisheries Resource Assessment in Hindang, Leyte; (33) MPA Assessment and MPA Planning Workshop for Leyte municipalities.

2010 - 17 IEC materials, 11 IEC activities and 27 trainings added. **IEC materials:** (1) Book: Directory of CRM Learning Destinations 2nd Edition, (2) Book: Coral Reef Monitoring Guide, 2nd edition, (3) Photo comics: Sea Guardians (English), (4) Photo comics: Tanod Dagat (Pilipino), (5) Tawi-Tawi Photo Exhibit: "Towards a Sustainable Future: Protecting TawiTawi's Marine Resources and Maritime Heritage", (6) Telling Our Story Series: Calamianes, (7) 5-min video documentary on Stewardship-for use in Sinulog activities, (8) Assorted print materials/ tarpaulin posters for use in Sinulog activities, (9) Hinagpis ng Dagat video documentary, (10) Hinagpis ng Dagat advocacy ad – overfishing, (11) Hinagpis ng Dagat advocacy ad – marine sanctuary, (12) Photo comics – Bantay Dagat in Cebuano, (13) CD compilation of publications/information materials on fisheries management, (14) Panglima Sugala exhibit: Panglima Sugala, Moving Ahead in Coastal and Fisheries Management In Tausug and English), (15) Sourcebook on Managing Philippine Municipal Fisheries, (15) End of Project Report (Popular version for use in closing conference), (17) Closing conference exhibit. **IEC activities:** (1) Mass for the Environment during Cebu's Sinulog's festivities, (2) Forum on the environmental agenda of political candidates, (3) Environmental Forum for Media, (4) World Water Day Forum, (5) Exhibit in observance of Fish Conservation Week in Calamianes, (6) Special events in Danajon Bank in observance of Fish Conservation Week in Bohol, (7) Ecological Evangelization activities in observance of the Sinulog Festivities, (8) Earth Day Celebration and Oplan Day Break Operation in Bantayan Island, (9) Coral Reef Protection meeting (10) BFAR LMP Interface Session, (11) FISH Project closing conference – "Sustainable Municipal Fisheries: Gains and Continuing Challenges in Local Governance. **Training activities:** (1) Exploring EBFM Establishment in ARMM, (2) Calamianes Marine Protected Area Network Workshop, (3) OPLAN Sandagat Planning workshop, (4) Write shop on End of Project Report, (5) Review of Lagasan-Pababag MPA Management Plan, (6) Review of Ungus-Ungus Fish Sanctuary Management Plan, (7) Review of Batu-Batu Kulape MPA Management and Tondon Fish Sanctuary Management Plan, (8) Oplan Sandagat Team Action Planning Workshop, (9) Briefing for the Comprehensive Regional Development Plan, (10) Workshop for the Formulation of the Municipal Coastal and Fisheries Management Plan, (11) Marine Spatial Planning Workshop, (12) NSAP Writeshop for Regions 9, 12 and ARMM, (13) PCRA Training in Araceli, Palawan, (14) FGD on Alternative Adjudication Process, (15) OPLAN Sandagat Planning Workshop, (16) Trainors Training on MPA Establishment and Management in Aloguinsan, Cebu, (17) Writeshop on the Preparation of FISH Project Completion, (18) Fisheries Data Management Workshop, (19) Seminar/Workshop on Plotting and Use of GPS in Maritime Law Enforcement, (20) Workshop on Marine Mammal Stranding and Cetacean Response, (21) I love the Ocean Movement Workshop for Archdiocese of Cebu Youth Leaders, (22) Fisheries and Law Enforcement Monitoring Training for Partners, (23) Fisheries Management Framework Planning Workshop and Database management training in Bohol, (24) Fisheries Management Framework Planning Workshop for Tawi-Tawi, (25) Danajon Bank inter-LGU CRM Planning workshop, (26) Writeshop for the Formulation of Implementing Rules and Regulations of the Comprehensive Fisheries and Aquatic Resources Management Ordinance (CFARM) of LBDA – LGUs, (27) Fisheries Management Framework Planning for LGUs of Leyte and Southern Leyte.

Appendix B. Performance Indicator Tables

(Final official results)

These performance indicator tables contain the final official FISH Project results. Results were adjusted after data editing was completed in 2010 to promote consistency and comparability across monitoring events. Data editing refers to a range of procedures and processes used for detecting and handling errors in data. Examples include micro-editing/macro-editing and input/output editing. Edit types refer to the actual nature of edits applied to data during input or output processing. These include: (1) validation edits - to check the validity of basic identification of classificatory items in unit data; (2) logical edits - ensure that 2 or more data items do not have contradictory values; (3) consistency edits - check to ensure that precise and correct arithmetic relationships exist between 2 or more data items; (4) range edits - identify whether or not a data item value falls inside a determined acceptable range; (5) variance edits - involve looking for suspiciously high variances at the output edit stage. (UNECE, 2000)

For record purposes, preliminary results previously reported in earlier FISH Project documents are also included in this completion report (see Appendix A).

Appendix B.1. FISH Project Result (FPR) at the Strategic Objective Level (Fish Stock Index)

ORGANIZATION/PROGRAM:	USAID PHILIPPINES
STRATEGIC OBJECTIVE:	MANAGEMENT OF PRODUCTIVE LIFE-SUSTAINING NATURAL RESOURCES STRENGTHENED
PROJECT RESULT:	Marine fish stocks increased by 10 % (over 2004 baseline levels) in focal areas by the year 2010
APPROVED:	
INDICATOR:	Change in marine fish stocks compared to 2004 baseline levels in 4 focal areas
UNIT OF MEASURE:	Average % change of project results indicators PR1, PR2, and PR3
SOURCE DOCUMENT:	Annual FISH Project Performance Reports; methodology for baseline assessment and subsequent special monitoring events described in the Baseline Assessment Plan
SOURCE ORGANIZATION:	FISH Project team and local academic institutions
INDICATOR DESCRIPTION:	Planned and actual values are cumulative. The FISH project result indicator is calculated as the average of PR1, PR2, and PR3

YEAR	PLANNED	ACTUAL
2004	0	0
2005		
2006	1	9.66*
2007		
2008	5.5	2.98*
2009		
2010	10	12.79

NOTES:

* Final adjusted results – These values were estimated after data editing was completed in 2010 to promote consistency and comparability across monitoring events. Data editing refers to a range of procedures and processes used for detecting and handling errors in data. Examples include micro-editing/macro-editing and input/output editing. Edit types refer to the actual nature of edits applied to data during input or output processing. These include: (1) validation edits - to check the validity of basic identification of classificatory items in unit data; (2) logical edits - ensure that 2 or more data items do not have contradictory values; (3) consistency edits - check to ensure that precise and correct arithmetic relationships exist between 2 or more data items; (4) range edits - identify whether or not a data item value falls inside a determined acceptable range; (5) variance

edits - involve looking for suspiciously high variances at the output edit stage. (UNECE, 2000) The preliminary results previously reported in earlier Project documents are shown Appendix A.

The timeline and final adjusted values for each site are shown below. The FISH Project Result (FPR) was estimated based on these Area Project Results (APRs) using the following weighting factors: 860 (Calamianes), 1,227 (Danajon), 1,330 (Lanuza Bay) and 442 (Tawi-Tawi).

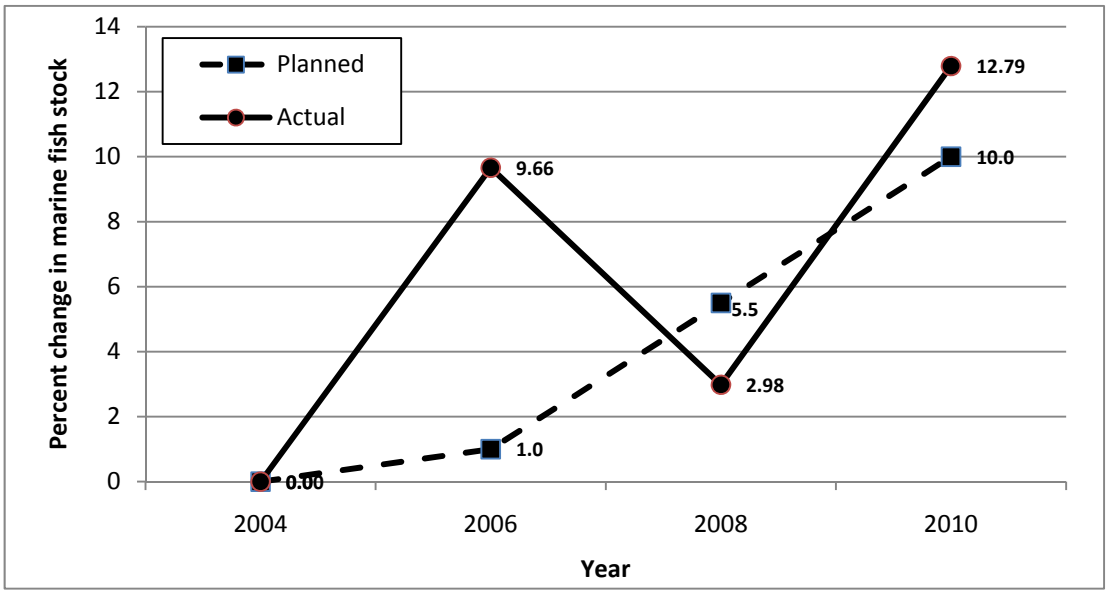
2004 - Baseline assessment conducted in 4 focal areas in accordance with Baseline Assessment Plan

2006 - The APR for Calamianes was 3.12, 5.88 for Danajon, 12.75 for Lanuza Bay, 23.63 for Tawi-Tawi.

2008 – The APR for Calamianes was (–7.73), 17.49 for Danajon, (-5.29) for Lanuza Bay, 8.41 for Tawi-Tawi.

2010 – The APR for Calamianes was (–1.93) for Calamianes, 5.64 for Danajon, 17.72 for Lanuza Bay, 46.44 for Tawi-Tawi.

FPR: Estimates of changes in fish stocks versus targets (2004-2010)



Appendix B.2. Indicator 1 at the Strategic Objective Level (PR1)

ORGANIZATION/PROGRAM:	USAID PHILIPPINES
STRATEGIC OBJECTIVE:	MANAGEMENT OF PRODUCTIVE LIFE-SUSTAINING NATURAL RESOURCES STRENGTHENED
PROJECT RESULT:	Marine fish stocks increased by 10 % (over 2004 baseline levels) in focal areas by the year 2010
APPROVED:	
INDICATOR (PR1):	Abundance of selected fisheries resources in focal areas
UNIT OF MEASURE:	% change in catch per unit effort compared to 2004 baseline based on fishery-independent methods
SOURCE DOCUMENT:	Annual FISH Project Performance Reports; methodology for baseline assessment and subsequent special monitoring events described in the Baseline Assessment Plan
SOURCE ORGANIZATION:	FISH Project team and local academic institutions
INDICATOR DESCRIPTION:	PR1 will be measured through test fishing using methods employing selected fishing gears used in the focal area. The manner that this is being done is explained in the Baseline Assessment Plan and is distinguished by being independent of the actual fishing activities in the area. PR1 is measured as the weighted average of catch per unit effort of fishing gears used during the test fishing with the number of replicates used as the weighting factor.

YEAR	PLANNED (%)	ACTUAL (%)
2004	0*	0*
2005		
2006	0	15.91**
2007		
2008	5	(-1.26)**
2009		
2010	10	19.88

NOTES:

* Based on the results of the 2004 independent baseline assessment, the adjusted baseline value used for the estimation of PR1 was 2.51 kg/hour of operation of 1 gear unit (bottom-set gillnet, bottom-set longline or fish trap), and 0.47 ton/area swept by 1 trawl. Please see Appendix A for the preliminary value.

****** Final adjusted results – These values were estimated after data editing was completed in 2010 to promote consistency and comparability across monitoring events. Data editing refers to a range of procedures and processes used for detecting and handling errors in data. Examples include micro-editing/macro-editing and input/output editing. Edit types refer to the actual nature of edits applied to data during input or output processing. These include: (1) validation edits - to check the validity of basic identification of classificatory items in unit data; (2) logical edits - ensure that 2 or more data items do not have contradictory values; (3) consistency edits - check to ensure that precise and correct arithmetic relationships exist between 2 or more data items; (4) range edits - identify whether or not a data item value falls inside a determined acceptable range; (5) variance edits - involve looking for suspiciously high variances at the output edit stage. (UNECE, 2000) The preliminary results previously reported in earlier Project documents are shown Appendix A.

The timeline and adjusted values for each Project site are shown below:

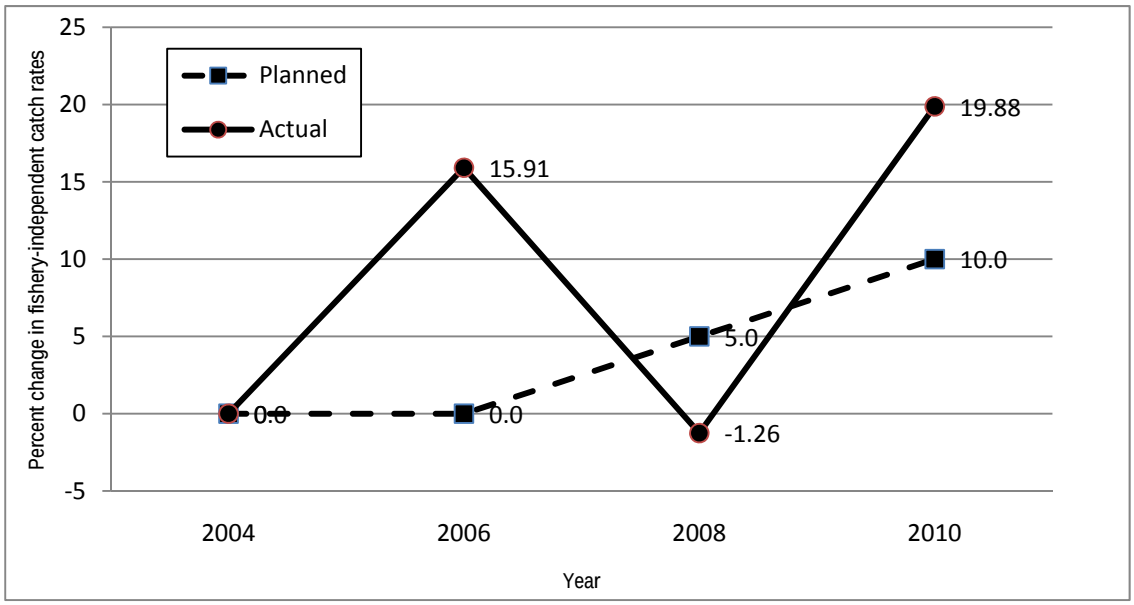
2004 - Baseline assessment conducted in 4 focal areas in accordance with Baseline Assessment Plan

2006 - % change in average catch rate compared to 2004 baseline was 24.19% for Calamianes, 13.47% for Danajon, 20.14 for Lanuza Bay, (–18.22%) for Tawi-Tawi

2008 - % change in average catch rate compared to 2004 baseline was 11.72% for Calamianes, 6.48% for Danajon, (-12.69%) for Lanuza Bay, (–14.68%) for Tawi-Tawi

2010 - % change in average catch rate compared to 2004 baseline was 14.27% for Calamianes, 9.42% for Danajon, 34.64% for Lanuza Bay, 7.09% for Tawi-Tawi

PR 1: Overall changes in fish abundance versus targets in the focal areas (2004-2010)



Appendix B.3. Indicator 2 at the Strategic Objective Level (PR2)

ORGANIZATION/PROGRAM:	USAID PHILIPPINES
STRATEGIC OBJECTIVE:	MANAGEMENT OF PRODUCTIVE LIFE-SUSTAINING NATURAL RESOURCES STRENGTHENED
PROJECT RESULT:	Marine fish stocks increased by 10 % (over 2004 baseline levels) in focal areas by the year 2010
APPROVED:	
INDICATOR (PR2):	Catch rate of selected fisheries in focal areas
UNIT OF MEASURE:	% change in catch rates compared to baseline based on fishery-dependent methods
SOURCE DOCUMENT:	Annual FISH Project Performance Reports; methodology for baseline assessment and subsequent special monitoring events described in the Baseline Assessment Plan
SOURCE ORGANIZATION:	FISH Project team and local academic institutions
INDICATOR DESCRIPTION:	PR2 will be measured through catch- and-effort monitoring of commonly used fishing gears in the focal area. The manner that this is being done is explained in the Baseline Assessment Plan and is distinguished by using common fishing practices in the area of data. PR2 is measured as the change in the catch per unit of effort of various fishing gears used during catch-and-effort monitoring with the number of samples taken as the weighting factor.

YEAR	PLANNED (%)	ACTUAL (%)
2004	0*	0*
2005		
2006	0	2.78**
2007		
2008	5	(-2.2)**
2009		
2010	10	(-0.40)

NOTES:
* Based on the results of the 2004 independent baseline assessment, the baseline average catch rate of the various gear included in the estimation of PR2 was 28.45 kg/day of operation of 1 gear unit. Please see Appendix A for the preliminary value.

****** Final adjusted results – These values were estimated after data editing was completed in 2010 to promote consistency and comparability across monitoring events. Data editing refers to a range of procedures and processes used for detecting and handling errors in data. Examples include micro-editing/ macro-editing and input/output editing. Edit types refer to the actual nature of edits applied to data during input or output processing. These include: (1) validation edits - to check the validity of basic identification of classificatory items in unit data; (2) logical edits - ensure that 2 or more data items do not have contradictory values; (3) consistency edits - check to ensure that precise and correct arithmetic relationships exist between 2 or more data items; (4) range edits - identify whether or not a data item value falls inside a determined acceptable range; (5) variance edits - involve looking for suspiciously high variances at the output edit stage. (UNECE, 2000) The preliminary results previously reported in earlier Project documents are shown Appendix A.

The timeline and final adjusted values for each site are shown below.

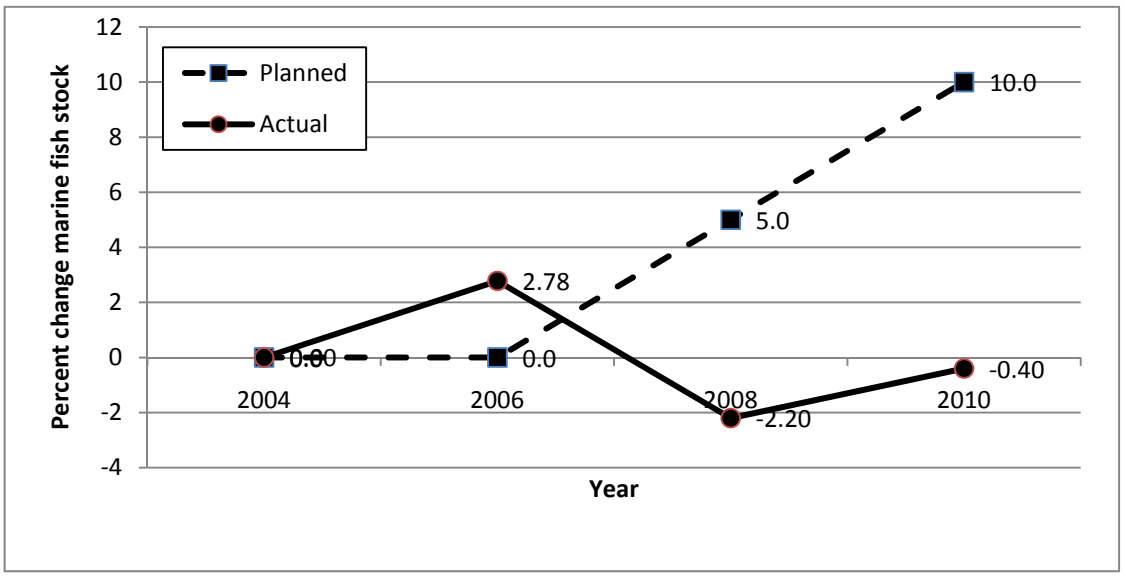
2004 - Baseline assessment conducted in 4 focal areas in accordance with Baseline Assessment Plan

2006 – % change in average catch rate compared to 2004 baseline was (-4.64%) for Calamianes, 1.94% for Danajon, 6.37% for Lanuza Bay, 10.35% for Tawi-Tawi

2008 – % change in average catch rate compared to 2004 baseline was (-13.52% for Calamianes), 16.71% for Danajon, (-10.46%) for Lanuza Bay, (-4.35%) for Tawi-Tawi

2010 – % change in average catch rate compared to 2004 baseline was 5.31% for Calamianes, (-2.10%) for Danajon, 5.66% for Lanuza Bay, (-38.79%) for Tawi-Tawi

PR 2: Overall changes in fish catch rates versus targets in the focal areas (2004-2010)



Appendix B.4. Indicator 3 at Strategic Objective Level (PR3)

ORGANIZATION/PROGRAM:	USAID PHILIPPINES
STRATEGIC OBJECTIVE:	MANAGEMENT OF PRODUCTIVE LIFE-SUSTAINING NATURAL RESOURCES STRENGTHENED
PROJECT RESULT:	Marine fish stocks increased by 10 % (over 2004 baseline levels) in focal areas by the year 2010
APPROVED:	
INDICATOR (PR3):	Reef fish biomass inside and adjacent to selected MPAs in focal areas
UNIT OF MEASURE:	% change in biomass compared to baseline
SOURCE DOCUMENT:	Annual FISH Project Performance Reports; methodology for baseline assessment and subsequent special monitoring events described in the Baseline Assessment Plan
SOURCE ORGANIZATION:	FISH Project team and local academic institutions
INDICATOR DESCRIPTION:	PR3 is measured through fish visual census inside and adjacent to selected MPAs in the focal area. The manner that this is being done is explained in the Baseline Assessment Plan using standard and accepted protocols. PR3 is the pooled value of fish biomass (in tons/km^2) measured through fish visual census inside and adjacent to MPAs. The weighting factor for PR3 is the product of the potential yield of coral reef ecosystem and the extent of the coral reef in each focal area.

YEAR	PLANNED (%)	ACTUAL (%)	
		MPAs with 2004 baseline	MPAs with 2006 baseline
2004	0*	0*	
2005			
2006	4	13.85**	0*
2007			
2008	8	14.70**	(-20.43)***
2009			
2010	12	29.21	(-11.67)***

NOTES:

* The adjusted baseline value used for the estimation of PR3 was 16.62 tons/km^2 for the 12 original MPAs based on the 2004 baseline assessment, and 19.16% for the 11 "new" MPAs based on the 2006 assessment. Please see Appendix A for the preliminary value.

For the Danajon Bank MPAs, the PR3, PR4 and PR5 values were estimated using the 2006 assessment results as baseline. This adjustment was made to reduce variability and uncertainty arising from differences between the survey methodologies used by Silliman University Marine Laboratory, which conducted the assessment in Danajon Bank in 2004, and UPVFI, which conducted subsequent assessments in the area (and all MPA assessments in the other Project sites). Such adjustment was based on the assumption that changes in biophysical conditions in and around the Danajon Bank MPAs between 2004 and 2006 were (generally) small enough to be considered insignificant (i.e., $\% \Delta \approx 0$) so that the 2006 values could be assigned to 2004 as the baseline values.

****** Final adjusted results – These values were estimated after data editing was completed in 2010 to promote consistency and comparability across monitoring events. Data editing refers to a range of procedures and processes used for detecting and handling errors in data. Examples include micro-editing/macro-editing and input/output editing. Edit types refer to the actual nature of edits applied to data during input or output processing. These include: (1) validation edits - to check the validity of basic identification of classificatory items in unit data; (2) logical edits - ensure that 2 or more data items do not have contradictory values; (3) consistency edits - check to ensure that precise and correct arithmetic relationships exist between 2 or more data items; (4) range edits - identify whether or not a data item value falls inside a determined acceptable range; (5) variance edits - involve looking for suspiciously high variances at the output edit stage. (UNECE, 2000) The preliminary results previously reported in earlier Project documents are shown Appendix A.

The timeline and final adjusted values for each site are shown below.

***PR3 values in the 11 new MPAs were estimated for monitoring purposes but not factored into the computation of the FPR; in the previous reports, results from these new MPAs were combined with those from the original MPAs and included in the FPR estimation. Please see Appendix A for the preliminary values.

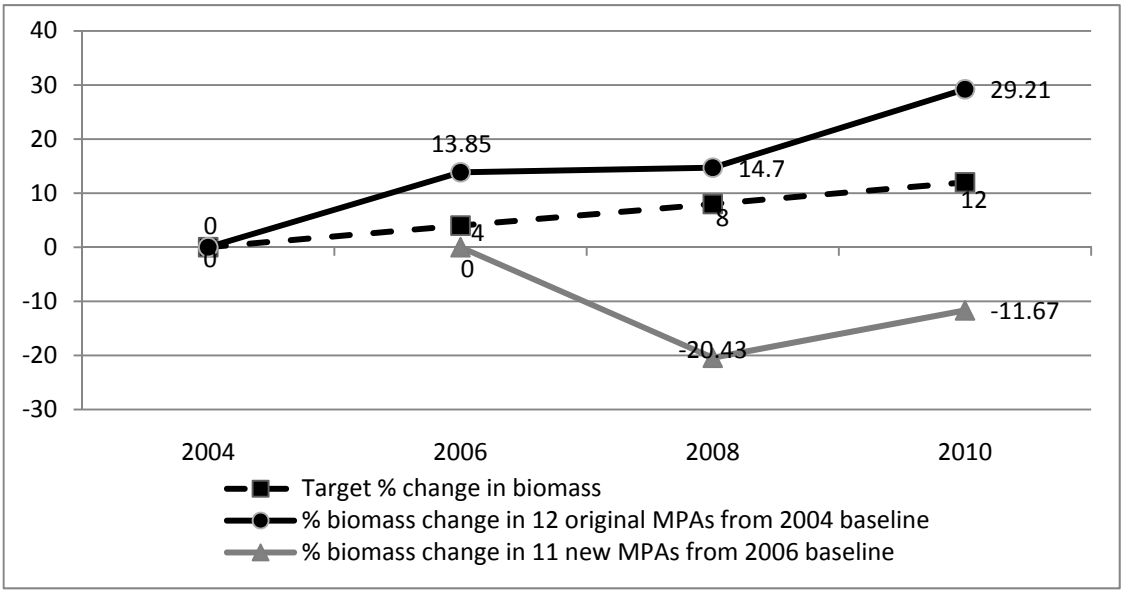
2004-Baseline assessment conducted in 4 focal areas in accordance with Baseline Assessment Plan.

2006 – For the 12 original MPAs, % change in average biomass compared to 2004 baseline was (–2.11%) for Calamianes, 0.0% for Danajon, 21.25% for Lanuza Bay, 34.97% for Tawi-Tawi

2008 – For the 12 original MPAs, % change in average biomass compared to 2004 baseline was (-14.80%) for Calamianes, 24.80% for Danajon, 19.0% for Lanuza Bay, 16.42% for Tawi-Tawi. For the 11 new MPAs, % change in biomass compared to the 2006 baseline was (-18.70%) for Calamianes, (-10.09%) for Danajon, 7.15% for Lanuza Bay, (-45.59%) for Tawi-Tawi

2010 – For the 12 original MPAs, % change in average biomass compared to 2004 baseline was (-27.65%) for Calamianes, 12.15% for Danajon, 28.67% for Lanuza Bay, 80.66% for Tawi-Tawi. For the 11 new MPAs, % change in biomass compared to the 2006 baseline was (–11.67%) for Calamianes, (-39.25%) for Danajon, (-17.97%) for Lanuza Bay, (-1.07%) for Tawi-Tawi

PR 3: Weighted percentage change in biomass inside and adjacent to selected MPAs in the focal areas (2004-2010)



Appendix B.5. Indicator 4 at Strategic Objective Level (PR4)

ORGANIZATION/PROGRAM:	USAID PHILIPPINES
STRATEGIC OBJECTIVE:	PRODUCTIVE, LIFE-SUSTAINING NATURAL RESOURCES PROTECTED THROUGH IMPROVED MANAGEMENT AND ENFORCEMENT
PROJECT RESULT:	Marine fish stocks increased by 10 % (over 2004 baseline levels) in focal areas by the year 2010
APPROVED:	
INDICATOR (PR4):	Reef fish species richness inside and adjacent to selected MPAs in focal areas
UNIT OF MEASURE:	Average % increase in number of species compared to baseline
SOURCE DOCUMENT:	Annual FISH Project Performance Reports; methodology for baseline assessment and subsequent special monitoring events described in the Baseline Assessment Plan
SOURCE ORGANIZATION:	FISH Project team and local academic institutions
INDICATOR DESCRIPTION:	Species richness measured as the number of reef fish species counted along a 50 m long x 10 m wide transect using standard protocols described in the Baseline Assessment Plan. Species richness is a supporting indicator to the overall FISH project result

YEAR	PLANNED (%)	ACTUAL (%)	
		MPAs with 2004 baseline	MPAs with 2006 baseline
2004	0*	0*	
2005			
2006	2	15.67**	0
2007			
2008	5	21.19**	(-1.14)***
2009			
2010	10	17.20	(-2.41)

NOTES:

* The final adjusted baseline value used for the estimation of for PR4 was 39.78 species/500m^2 for the 12 original MPAs based on the results of the 2004 independent baseline assessment, and 54.15 species/500m^2 for the 11 "new" MPAs based on the 2006 assessment. Please see Appendix A for the preliminary values.

For the Danajon Bank MPAs, the PR3, PR4 and PR5 values were estimated using the 2006 assessment results as baseline. This adjustment was made to reduce variability and uncertainty arising from differences between the survey methodologies used by Silliman University Marine Laboratory, which conducted the assessment in Danajon Bank in 2004, and UPVFI, which conducted subsequent assessments in the area (and all MPA assessments in the other Project sites). Such adjustment was based on the assumption that changes in biophysical conditions in and around the Danajon Bank MPAs between 2004 and 2006 were (generally) small enough to be considered insignificant (i.e., $\% \Delta \approx 0$) so that the 2006 values could be assigned to 2004 as the baseline values.

****** Final adjusted results – These values were estimated after data editing was completed in 2010 to promote consistency and comparability across monitoring events. Data editing refers to a range of procedures and processes used for detecting and handling errors in data. Examples include micro-editing/macro-editing and input/output editing. Edit types refer to the actual nature of edits applied to data during input or output processing. These include: (1) validation edits - to check the validity of basic identification of classificatory items in unit data; (2) logical edits - ensure that 2 or more data items do not have contradictory values; (3) consistency edits - check to ensure that precise and correct arithmetic relationships exist between 2 or more data items; (4) range edits - identify whether or not a data item value falls inside a determined acceptable range; (5) variance edits - involve looking for suspiciously high variances at the output edit stage. (UNECE, 2000) The preliminary results previously reported in earlier Project documents are shown Appendix A.

The timeline and final adjusted values for each site are shown below.

***In the previous reports, results from the 11 new MPAs were combined with those from the original MPAs. Please see Appendix A for the preliminary values.

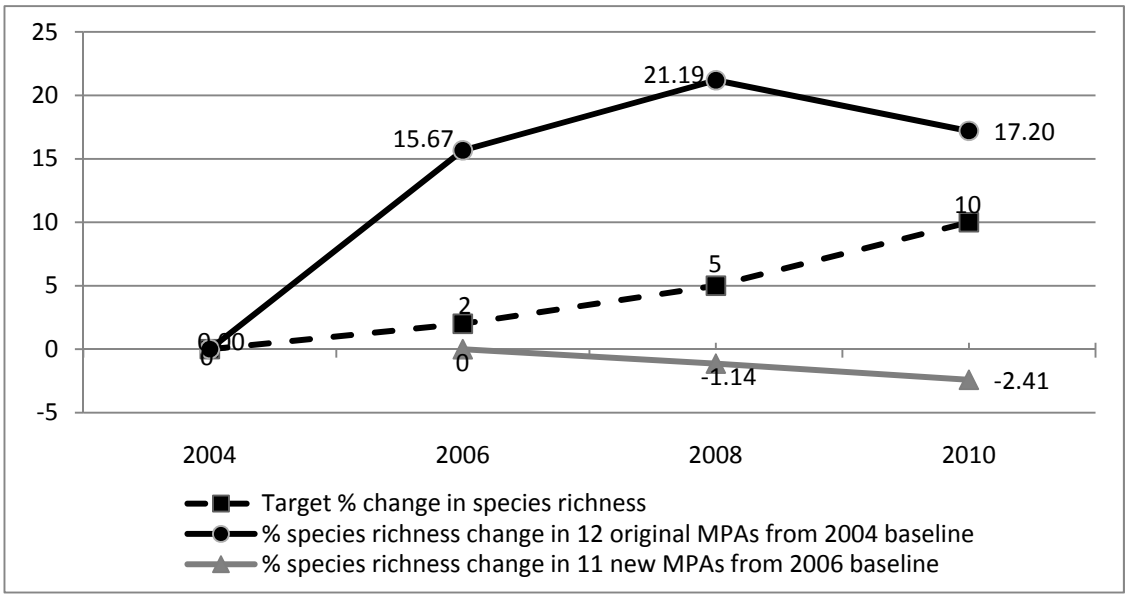
2004 – Baseline assessment conducted in 4 focal areas in accordance with Baseline Assessment Plan

2006 – For the 12 original MPAs, % change in average number of species compared to 2004 baseline was 36.58% for Calamianes, 0% for Danajon, 36.81% for Lanuza Bay, 11.72% for Tawi-Tawi.

2008 – For the 12 original MPAs, % change in average number of species compared to 2004 baseline was 37.63% for Calamianes, 7.16% for Danajon, 26.69% for Lanuza Bay, 25.09% for Tawi-Tawi. For the 11 new MPAs, average % change in number of species compared to 2006 baseline was 5.76% for Calamianes, 3.43% for Danajon, (-15.70%) for Lanuza Bay, 4.17% for Tawi-Tawi.

2010 – For the 12 original MPAs, % change in average number of species compared to 2004 baseline was 39.45% for Calamianes, (-6.67%) for Danajon, 46.57% for Lanuza Bay, 17.88% for Tawi-Tawi. For the 11 new MPAs, average % change in number of species compared to 2006 baseline was 9.62% for Calamianes, (-10.19%) for Danajon, (-10.91%) for Lanuza Bay, 3.38% for Tawi-Tawi.

PR 4: Weighted percentage change in species richness inside and adjacent to selected MPAs in the focal areas (2004-2008)



Appendix B.6. Indicator 5 at Strategic Objective Level (PR5)

ORGANIZATION/PROGRAM:	USAID PHILIPPINES
STRATEGIC OBJECTIVE:	MANAGEMENT OF PRODUCTIVE LIFE-SUSTAINING NATURAL RESOURCES STRENGTHENED
PROJECT RESULT:	Marine fish stocks increased by 10 % (over 2004 baseline levels) in focal areas by the year 2010
APPROVED:	
INDICATOR (PR5):	Benthic condition inside selected MPAs in focal areas
UNIT OF MEASURE:	% change of living coral cover compared to baseline
SOURCE DOCUMENT:	Annual FISH Project Performance Reports; methodology for baseline assessment and subsequent special monitoring events described in the Baseline Assessment Plan
SOURCE ORGANIZATION:	FISH Project team and local academic institutions
INDICATOR DESCRIPTION:	Benthic condition measured along 50 m transects using standard point-intercept method described in the Baseline Assessment Plan. Benthic condition is a supporting indicator to the overall FISH project result

YEAR	PLANNED (%)	ACTUAL (%)	
		MPAs with 2004 baseline	MPAs with 2006 baseline
2004	0*	0*	
2005			
2006	2	(-10.24)**	0
2007			
2008	4	(-10.23)**	(-3.53)***
2009			
2010	10	(-1.84)	(-0.73)

NOTES:

* The final adjusted baseline value used for the estimation of for PR5 was 42.70% living coral cover for the 12 original MPAs based on the results of the 2004 independent baseline assessment, and 37.94% for the 11 "new" MPAs based on the 2006 assessment. For the Danajon Bank MPAs, the PR3, PR4 and PR5 values were estimated using the 2006 assessment results as baseline. This adjustment was made to reduce variability and uncertainty arising from differences between the survey methodologies used by Silliman University Marine Laboratory, which conducted the assessment in Danajon Bank in 2004, and UPVFI, which conducted subsequent assessments in the area (and all MPA assessments in the other Project sites). Such adjustment was based on the assumption that changes in biophysical conditions in and around the Danajon Bank MPAs between 2004 and 2006 were (generally) small enough to be considered insignificant (i.e., $\% \Delta \approx 0$) so that the 2006 values could be assigned to 2004 as the baseline values.

Please see Appendix A for the preliminary values.

****** Final adjusted results – These values were estimated after data editing was completed in 2010 to promote consistency and comparability across monitoring events. Data editing refers to a range of procedures and processes used for detecting and handling errors in data. Examples include micro-editing/macro-editing and input/output editing. Edit types refer to the actual nature of edits applied to data during input or output processing. These include: (1) validation edits - to check the validity of basic identification of classificatory items in unit data; (2) logical edits - ensure that 2 or more data items do not have contradictory values; (3) consistency edits - check to ensure that precise and correct arithmetic relationships exist between 2 or more data items; (4) range edits - identify whether or not a data item value falls inside a determined acceptable range; (5) variance edits - involve looking for suspiciously high variances at the output edit stage. (UNECE, 2000) The preliminary results previously reported in earlier Project documents are shown Appendix A.

The timeline and final adjusted values for each site are shown below.

***In the previous reports, results from the 11 new MPAs were combined with those from the original MPAs. Please see Appendix A for the preliminary values.

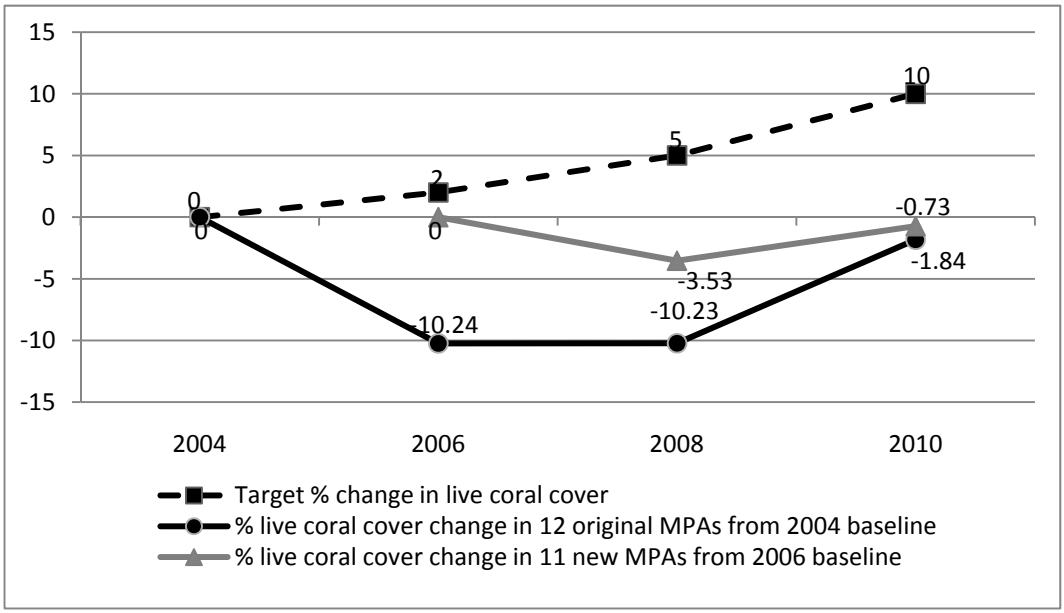
2004 - Baseline assessment conducted in 4 focal areas in accordance with Baseline Assessment Plan

2006 – For the 12 original MPAs, % change in living coral compared to 2004 baseline were (-16.87%) for Calamianes, 0% for Danajon, 16.78% for Lanuza Bay, (-30.32%) for Tawi-Tawi.

2008 – For the 12 original MPAs, % change in living coral compared to 2004 baseline were (-2.77)% for Calamianes, (-11.10%) for Danajon, 55.45% for Lanuza Bay, (-43.52)% for Tawi-Tawi. For the 11 new MPAs, average % change in living coral cover compared to 2006 baseline was (-30.10%) for Calamianes, (-5.42%) for Danajon, (-4.86%) for Lanuza Bay, (-16.49%) for Tawi-Tawi.

2010 – For the 12 original MPAs, % change in living coral compared to 2004 baseline were 9.05% for Calamianes, 6.01% for Danajon, 72.46% for Lanuza Bay, (-50.76)% for Tawi-Tawi. For the 11 new MPAs, average % change in living coral cover compared to 2006 baseline was (-3.65%) for Calamianes, (-1.33%) for Danajon, (-5.35%) for Lanuza Bay, (-28.83%) for Tawi-Tawi.

PR 5: Weighted percentage change in live coral cover inside and adjacent to selected MPAs in the focal areas (2004-2010)



Appendix B.7. Intermediate Result 1.1 (IR 1.1)

ORGANIZATION/PROGRAM:	USAID PHILIPPINES
STRATEGIC OBJECTIVE:	MANAGEMENT OF PRODUCTIVE LIFE-SUSTAINING NATURAL RESOURCES STRENGTHENED
INTERMEDIATE RESULT:	National and local capacity increased for fisheries management in 4 target areas
APPROVED:	
INDICATOR (IR1.1):	Municipal fishers and crafts operating in target areas registered/licensed
UNIT OF MEASURE:	Number of LGUs adopting registration / number of LGUs adopting licensing system
SOURCE DOCUMENT:	Local government unit registry
SOURCE ORGANIZATION:	FISH Project team
INDICATOR DESCRIPTION:	Planned and actual values are cumulative. Registration and licensing system involves enactment and implementation of appropriate ordinance by the municipal government.

YEAR	PLANNED	ACTUAL
2004	0/0	0/0
2005	0/0	0/0
2006	4/0	10/0
2007	8/0	10/0
2008	16/0	11/0
2009	22/19	22 / 22
2010	29/22	30 / 30

NOTES:

2004 - Baseline levels established through target area profiling

2005 - Assessments indicate that a number of municipalities have passed registration and licensing ordinances but the rate of utilization of the system is yet to be determined.

2006 – 10 municipalities have formulated/revised ordinances on registration and licensing system: Busuanga, Coron and Culion in Calamianes Islands, Bien Unido, Carlos P. Garcia, Talibon, and Ubay in Danajon area, and Bongao, Panglima Sugala and Simunul in Tawi-Tawi.

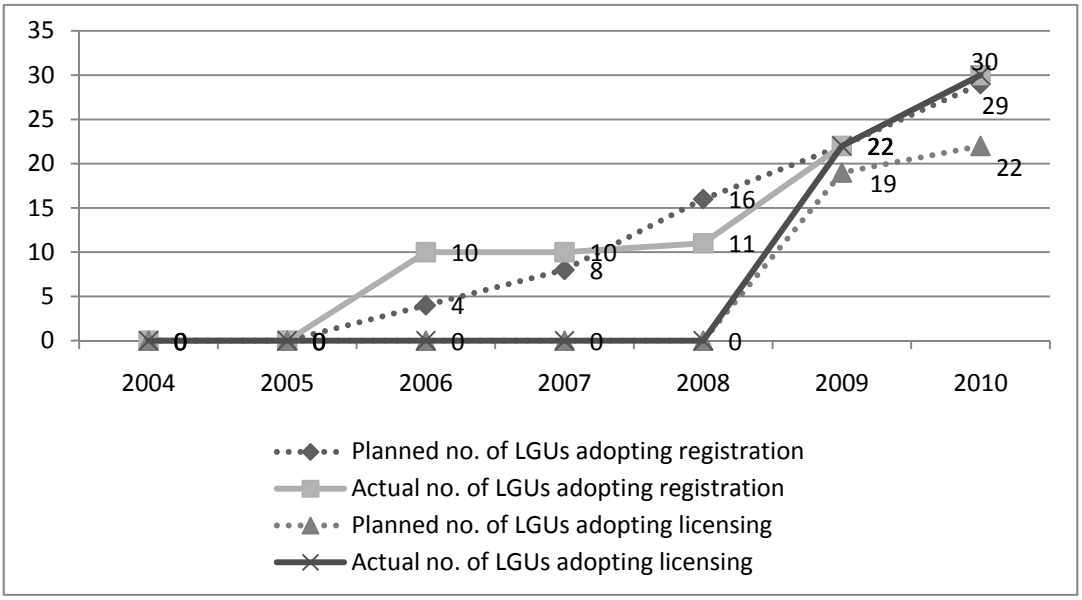
2007 - No updated information

2008 – 1 municipality added: Linapacan, Palawan.

2009 – 11 municipalities in Leyte and Surigao del Sur added: Baybay, Hilongos, Hindang, Inopacan and Matalom in Leyte; Cantilan, Carrascal, Cortez, Lanuza, Madrid and Tandag in Surigao del Sur.

2010 – 7 municipalities and 1 city added: Buenavista, Clarin, Inabanga, Getafe, Trinidad, and Tubigon in Bohol; Bato, Leyte; and Maasin City, Southern Leyte.

IR 1.1: No. of LGUs adopting fisheries registration and licensing programs in target areas (2004-2010)



Appendix B.8. Intermediate Result 1.2 (IR 1.2)

ORGANIZATION/PROGRAM:	USAID PHILIPPINES
STRATEGIC OBJECTIVE:	MANAGEMENT OF PRODUCTIVE LIFE-SUSTAINING NATURAL RESOURCES STRENGTHENED
INTERMEDIATE RESULT:	National and local capacity increased for fisheries management in 4 target areas
APPROVED:	
INDICATOR (IR1.2):	Law enforcers, prosecutors, and judiciary trained or assisted in coastal law enforcement
UNIT OF MEASURE:	Number of coastal law enforcement units established or improved and functional in each target area
SOURCE DOCUMENT:	Annual FISH Project Performance Reports
SOURCE ORGANIZATION:	FISH Project team
INDICATOR DESCRIPTION:	Planned and actual values are cumulative. Indicator tracks number of coastal law enforcement units. A coastal law enforcement unit is a group of individuals constituting a legally established team.

YEAR	PLANNED	ACTUAL
2004	2	9
2005	13	13
2006	16	18
2007	17	18
2008	19	18
2009	22	25
2010	30	31

NOTES:

2004 - Baseline levels established through target area profiling. 9 law enforcement units formed or existing: 1 municipal law enforcement unit in Calamianes (Busuanga); 6 municipal enforcement and action teams (MEATs) in Surigao del Sur (Cantilan, Carrascal, Cortez, Lanuza, Madrid and Tandag); 1 bay-wide enforcement and action team (BEAT) in Lanuza Bay; 1 district level enforcement unit (CLEC2) in Danajon Bank.

2005 – 6 units added: Coron and Culion in Calamianes; Bien Unido, Carlos P. Garcia, Talibon, and Ubay in Danajon area. Further assessment of the MEAT of Cantilan revealed that it fell short of required indicators of functionality.

2006 - 5 units added, 4 at the municipal level and 1 at the provincial level: Kilusang Sagip Kalikasan in Linapacan, Calamianes; the MCLETs of Bongao, Panglima Sugala and Simunul in Tawi-Tawi; and the PCLET in Tawi-Tawi.

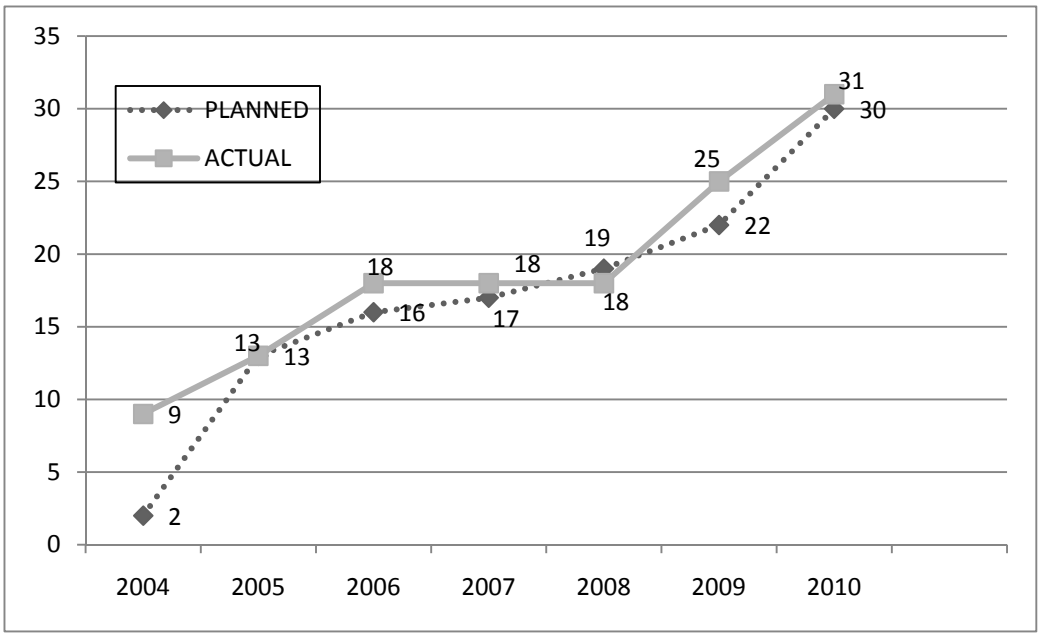
2007 - No updated information.

2008 – No updated information.

2009 – 6 municipalities and 1 city in Leyte and Southern Leyte added: Bato, Baybay, Hilongos, Hindang, Inopacan, Matalom and Maasin City.

2010 – 6 municipalities in Bohol added: Buenavista, Clarin, Inabanga, Getafe, Trinidad and Tubigon.

IR 1.2: No. of law enforcement units established and functional in target areas (2004-2010)



Appendix B.9. Intermediate Result 1.3 (IR 1.3)

ORGANIZATION/PROGRAM:	USAID PHILIPPINES
STRATEGIC OBJECTIVE:	MANAGEMENT OF PRODUCTIVE LIFE-SUSTAINING NATURAL RESOURCES STRENGTHENED
INTERMEDIATE RESULT:	National and local capacity increased for fisheries management in 4 target areas
APPROVED:	
INDICATOR (IR 1.3):	Effort restrictions/rationalization introduced in focal areas
UNIT OF MEASURE:	Number of effort restrictions adopted
SOURCE DOCUMENT:	Annual FISH Project Performance Reports
SOURCE ORGANIZATION:	FISH Project team
INDICATOR DESCRIPTION:	Planned and actual values are cumulative. Effort restrictions include spatial (MPAs), temporal (seasonal closures), and gear-related (prohibitions on highly efficient gears) fishing restrictions

YEAR	PLANNED	ACTUAL
2004	0	0
2005	0	0
2006	4	11
2007	8	31*
2008	25	35
2009	26	42
2010	29	65

NOTES:
***** As of June 2008, the Project has introduced 34 units of fishing effort restriction/rationalization activities/program. For the extension period, the project targeted 4 additional fishing effort restrictions in expansion municipalities.

2004 - Baseline levels established through target area profiling

2005 - Fishing effort restriction and rationalization program initiated during the period but implementation is expected to happen in the succeeding years.

2006 - 11 effort restrictions added. 1 each in Busuanga, Coron and Linapacan in Calamianes; 1 in Bien Unido, 2 in Carlos P. Garcia, 2 in Talibon and 1 in Ubay, Bohol; and 1 each for Bongao and Simunul in Tawi-Tawi Bay.

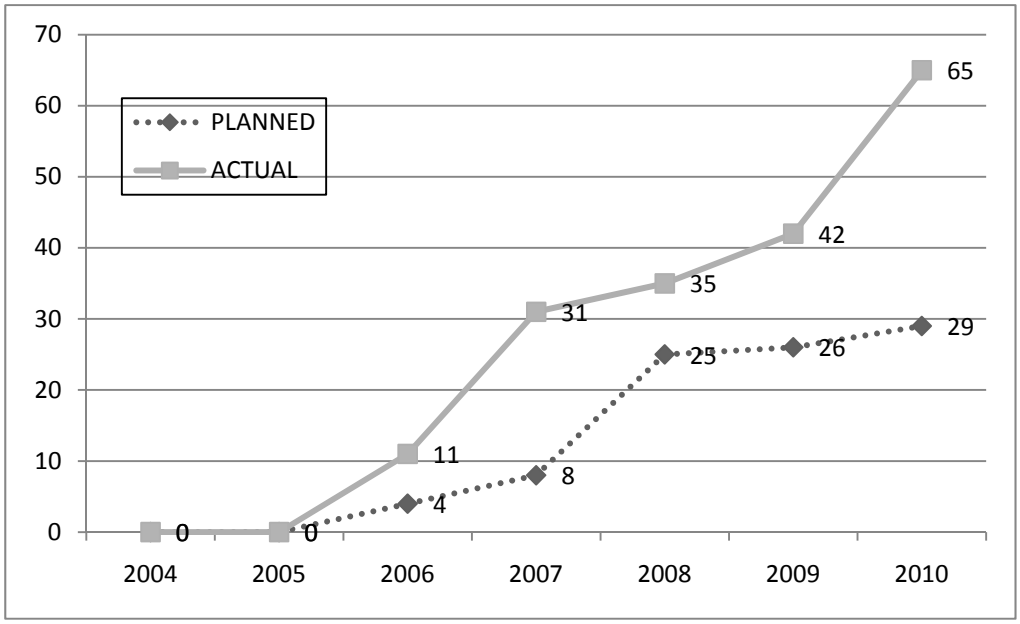
2007 – 20 effort restrictions added: 1 in Calamianes (Linapacan); 5 in Bohol (3 in Bien Unido and 2 in Talibon; 12 in Surigao del Sur (1 in Carrascal, 6 in Cortez, 3 in Lanuza, 1 in Madrid and 1 in Tandag); 2 in Tawi-Tawi (1 in Bongao and 1 in Panglima Sugala).

2008 – 4 effort restrictions added: 2 in Bien Unido, Bohol; 1 in Tandag, Surigao del Sur; 1 in Panglima Sugala, Tawi-Tawi.

2009 – 9 effort restrictions added: 2 in Tawi-Tawi (both in Panglima Sugala); 6 in Leyte (1 each in Bato, Baybay, Hilongos, Hindang, Inopacan, and Matalom); 1 in Southern Leyte (Maasin City).

2010 – 23 effort restrictions added: 19 in Bohol (2 in Buenavista, 6 in Clarin, 2 in Inabanga, 2 in Getafe, 3 in Talibon, 1 in Trinidad, 5 in Tubigon); 4 in Surigao del Sur (1 in Cantilan, 3 in Tandag).

IR 1.3: No. of fishing restrictions introduced in target areas (2004-2010)



Appendix B.10. Intermediate Result 1.4 (IR 1.4)

ORGANIZATION/PROGRAM:	USAID PHILIPPINES
STRATEGIC OBJECTIVE:	MANAGEMENT OF PRODUCTIVE LIFE-SUSTAINING NATURAL RESOURCES STRENGTHENED
INTERMEDIATE RESULT:	National and local capacity increased for fisheries management in 4 target areas
APPROVED:	
INDICATOR (IR 1.4):	Marine protected areas (MPA) established or improved to protect critical habitats, migration routes, and spawning areas and functional in focal areas
UNIT OF MEASURE:	Number and hectares of MPAs established and enforced
SOURCE DOCUMENT:	Annual FISH Project Performance Reports
SOURCE ORGANIZATION:	FISH Project team
INDICATOR DESCRIPTION:	Planned and actual values are cumulative. MPA rating system (defined in Appendix B) will be used as standards to determine functionality of MPA. All MPAs should at least achieve level 2.

YEAR	PLANNED		ACTUAL	
	Number	Hectares	Number	Hectares
2004	8	160	10	475
2005	8	160	8	420
2006	12	240	18	1,500
2007	16	320	27	1,799
2008	24	480	28	1,910
2009	28	560	32	1,913
2010	35	700	49	10,272

NOTES:
2004 - Baseline levels established through target area profiling. 10 MPAs at Level 2, all in Bohol: Bilangbilangan East, Bilangbilangan West, Hingutanan East, Hingutanan West, Liberty, Mandawa, Sagasa, Tuboran, and Maomawan in Bien Unido, and Cataban in Talibon.

2005 - 7 out of 10 MPAs reported in 2004 fail to maintain their Level 2 rating in 2005 after CBRMP support was terminated; 3 maintain Level 2 rating (Bilangbilangan East , Hingutanan West in Bien Unido and Cataban in Talibon). 5 new MPAs achieve Level 2: 2 in Calamianes (Decalve MPA in Bintuan, Coron; Bugur Fish Sanctuary in Libis, Culion); 1 in Bohol (Pong Gamay Marine Sanctuary in Lapinig, CPG); and 2 in Surigao del Sur (Tigao and Capandan Fish Sanctuaries in Cortez)

2006 – 10 Level 2 MPAs added: 4 in Calamianes (Sagrada-Bogtong Marine Reserve and Concepcion Marine Reserve in Busuanga; Siete Pecados Marine Reserve and Looc Marine Reserve in Coron); 3 in Surigao del Sur (General Island MPA and Ayoke Island MPA in Cantilan; Carrascal MPA in Carrascal; 3 in Tawi-Tawi (Lagasan-Pababag MPA in Bongao, Batu-batu-Kulape MPA in Panglima Sugala and Doh-tong MPA in Simunul).

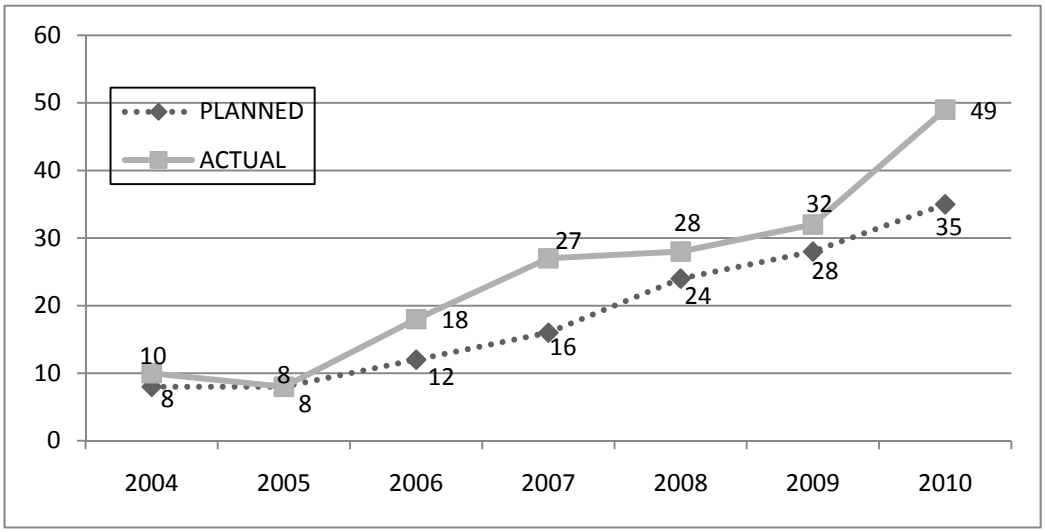
2007 - 9 Level 2 MPAs added: 1 in Bohol (Hingutanan East Fish Sanctuary, Bien Unido); 5 in Surigao del Sur (Adlay Marine Protected Area in Carrascal; Uba Marine Protected Area and Mabahin Fish Sanctuary, Cortez; Mabua Marine Protected Area and Buenavista Marine Protected Area, Tandag); 3 in Tawi-Tawi (Ungus-Ungus Fish Sanctuary, Bongao; Tondon Fish Sanctuary, Panglima Sugala; Tonggusong – Maruwa Fish Sanctuary, Simunul).

2008 – 1 Level 2 MPA added (Lanuza, Surigao del Sur)

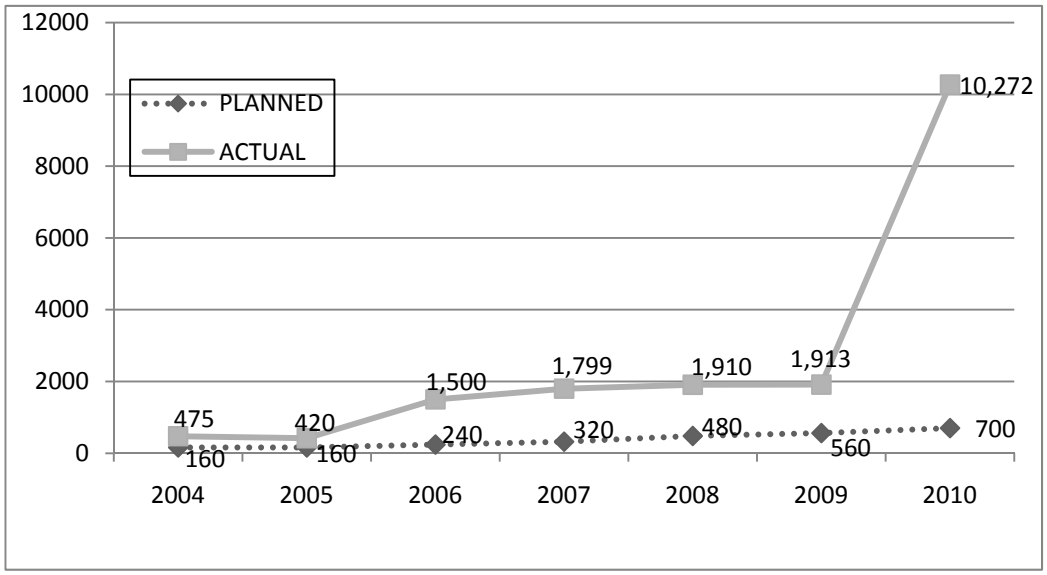
2009 – 5 Level 2 MPAs added, all in Tawi-Tawi: Pasiagan Fish Sanctuary and Ipil Fish Sanctuary in Bongao; Liaburan Fish Sanctuary, Buan Fish Sanctuary and Belatan Halo Fish Sanctuary in Panglima Sugala. The Looc Marine Reserve in Coron deprecated through the veto power of the municipal mayor of Coron.

2010 – 17 Level 2 MPAs added: 7 in Bohol (Sagasa Fish Sanctuary and Bien Unido Double Barrier Marine Park in Bien Unido; Asinan-Cabul-an MPA in Clarin; Nocnocan Marine Sanctuary in Talibon; Ubay Marine Sanctuary and Bilangbilangan Marine Sanctuary in Tubigon; Humay-humay Marine Sanctuary in Ubay; 10 in the Leyte expansion area (AR Complex MPA in Bato; San Agustin MPA in Baybay; Naval MPA, Owak MPA and San Juan MPA in Hilongos; Bulacan MPA in Hindang; Conalum MPA in Inopacan; Canigao Marine Sanctuary; Sto. Rosario Fish Sanctuary and Guadalupe-Bilibol Fish Sanctuary).

IR 1.4.1: No. of MPAs enforced in target areas (2004-2010)



IR 1.4.2: Area (hectares) of MPAs enforced in target areas (2004-2010)



Appendix B.11. Intermediate Result 1.5 (IR 1.5)

ORGANIZATION/PROGRAM:	USAID PHILIPPINES
STRATEGIC OBJECTIVE:	MANAGEMENT OF PRODUCTIVE LIFE-SUSTAINING NATURAL RESOURCES STRENGTHENED
INTERMEDIATE RESULT:	National and local capacity increased for fisheries management in 4 target areas
APPROVED:	
INDICATOR (IR 1.5):	Local government units adopting/enhancing CRM governance
UNIT OF MEASURE:	Number of municipalities adopting CRM program and hectares of municipal waters under improved management)
SOURCE DOCUMENT:	Annual FISH Project Performance Reports
SOURCE ORGANIZATION:	FISH Project team
INDICATOR DESCRIPTION:	Planned and actual values are cumulative. CRM Level 1 benchmarks are defined in the M&E guidelines for municipal CRM attached as appendix C (DENR-CMMO 2003). The municipal waters under improved management pertains to the area within the 5 kms from the coastline

YEAR	PLANNED		ACTUAL	
	Number	Hectares	Number	Hectares
2004	5	46,912	6	59,642
2005	7	76,243	9	106,805
2006	14	226,313	13	171,833
2007	15	239,096	16	271,571
2008	16	248,182	17	297,588
2009	17		17	297,588
2010	29		30	375,065

NOTES:
2004 - Baseline levels established through target area profiling. Level 1 CRM achieved by 6 LGUs in Surigao del Sur (Carrascal, Cantilan, Madrid, Lanuza, Cortez and Tandag). The municipal CRM/fisheries programs however were based on 1-year CRM/fisheries management action plans.

2005 – 3 Bohol LGUs achieve Level 1 CRM (Carlos P. Garcia, Talibon, Ubay)

2006 – 4 LGUs achieve Level 1 CRM: Bien Unido in Bohol; Bongao, Panglima Sugala, and Simunul in Tawi-Tawi.

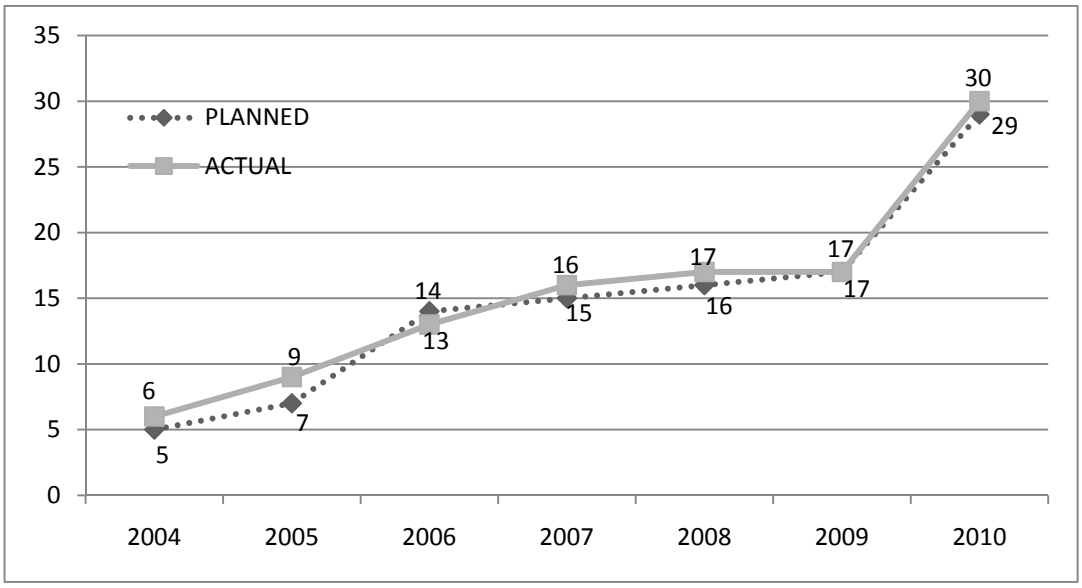
2007 – 3 LGUs in Calamianes achieve Level 1 CRM: Busuanga, Culion and Linapacan.

2008 – 1 LGU in Coron achieves Level 1 CRM: Coron, Palawan.

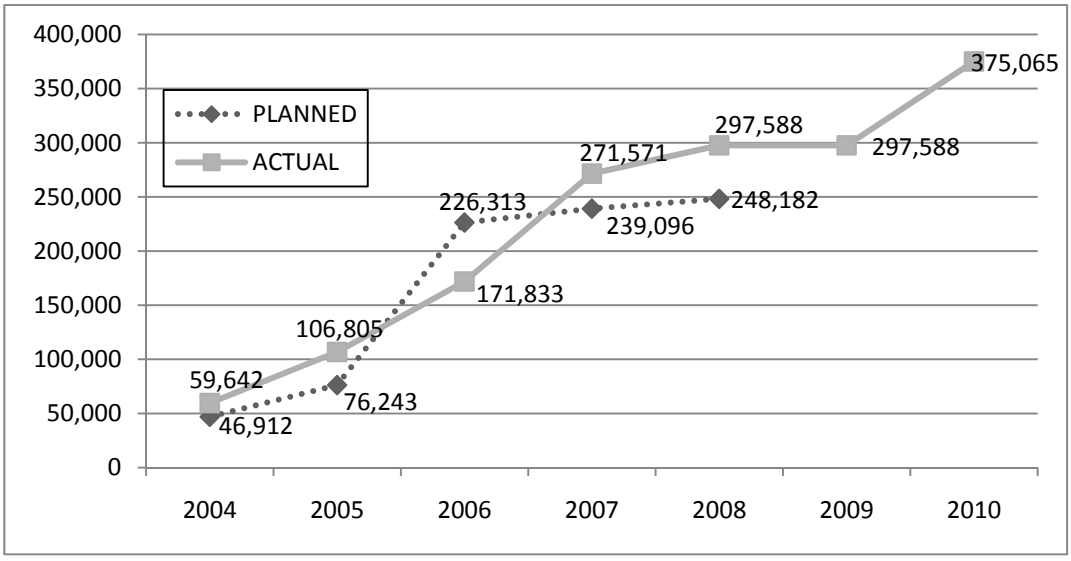
2009 – No updated information.

2010 – 13 LGUs achieve Level CRM: 6 in Bohol (Buenavista, Clarin, Inabanga, Getafe, Trinidad, Tubigon); 6 in Leyte (Bato, Baybay, Hilongos, Hindang, Inopacan, Inopacan); 1 in Southern Leyte (Maasin City)

IR 1.5.1: No. of LGUs achieving level 1 CRM (2004-2010)



IR 1.5.2: Area (hectares) of municipal waters up to 5kms from shoreline under improved management (2004-2010)



Appendix B.12. Intermediate Result 1.6 (IR 1.6)

ORGANIZATION/PROGRAM:	USAID PHILIPPINES
STRATEGIC OBJECTIVE:	MANAGEMENT OF PRODUCTIVE LIFE-SUSTAINING NATURAL RESOURCES STRENGTHENED
INTERMEDIATE RESULT:	National and local capacity increased for fisheries management in 4 target areas
APPROVED:	
INDICATOR (IR 1.6):	Inter-LGU and interagency partnerships evidenced by collaborative agreements (MOAs, MOUs, joint activities), policy instruments, fisheries management plans, or other similar mechanisms
UNIT OF MEASURE:	Number of agreements/plans signed or adopted among relevant stakeholders
SOURCE DOCUMENT:	Annual FISH Project Performance Reports
SOURCE ORGANIZATION:	FISH Project team
INDICATOR DESCRIPTION:	Planned and actual values are cumulative. Indicator tracks number of interagency MOA's, ordinances, and plans at local, regional, or national levels signed, adopted, or revised

YEAR	PLANNED	ACTUAL
2004	2	2
2005	2	2
2006	2	3
2007	3	5
2008	8	5
2009	8	10
2010	8	16

NOTES:
2004 - Baseline levels established through target area profiling. 2 inter-LGU collaborative existing: Coastal Law Enforcement Council (CLEC2) in Danajon Bank; Lanuza Bay Development Alliance in Surigal del Sur.

2005 - No additional inter-LGU setup established in 2005.

2006 - *Oplan Mataud Istah* in Tawi-Tawi formed

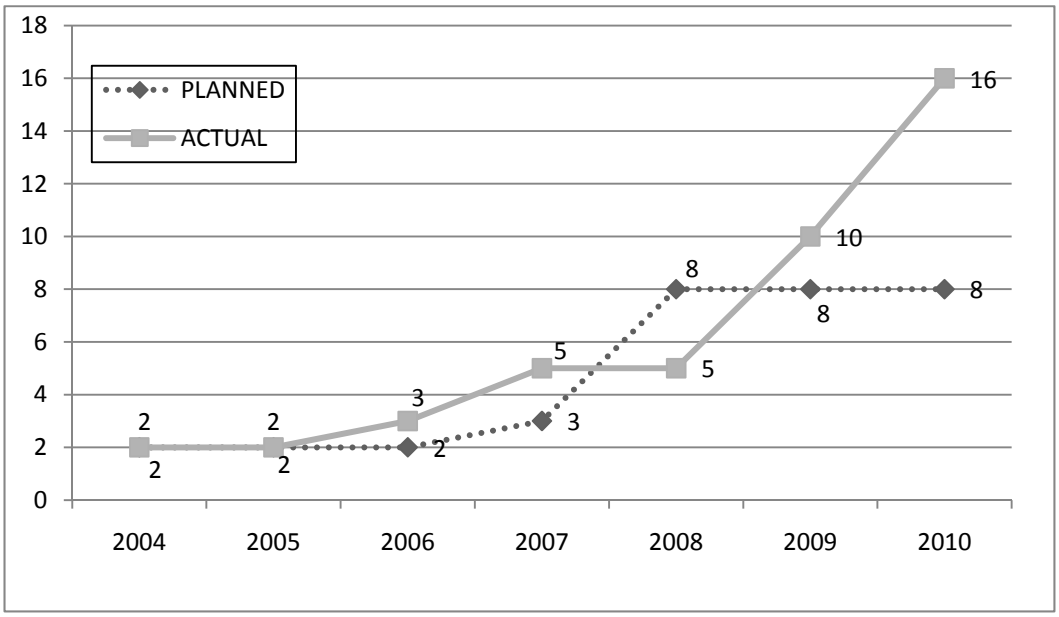
2007 – 2 collaboration arrangements added, both in Calamianes: Calamian MPA Network, (2) Calamianes Integrated Fisheries Management Plan.

2008 – No updated information.

2009 – 5 collaboration arrangements added: Danajon MPA Network, Tawi-Tawi Social MPA Network, Surigao del Sur MPA Network, Leyte 5th District Integrated MFARMC, CELEBOSOLE

2010 – 6 collaboration arrangements added: 4 in Leyte (marine spatial plan, fisheries management framework plan, municipal water delineation and Oplan Sandagat); 2 in Surigao del Sur (Coastal Law Coordinating Council, municipal water delineation).

IR 1.6: No. of inter-LGU/inter-agency collaborative agreements/plans signed or adopted (2004-2010)



Appendix B.13. Intermediate Result 1.7 (IR 1.7)

ORGANIZATION/PROGRAM:	USAID PHILIPPINES
STRATEGIC OBJECTIVE:	MANAGEMENT OF PRODUCTIVE LIFE-SUSTAINING NATURAL RESOURCES STRENGTHENED
INTERMEDIATE RESULT:	National and local capacity increased for fisheries management in 4 target areas
APPROVED:	
INDICATOR (IR 1.7):	RH /population programs implemented or improved in each focal area
UNIT OF MEASURE:	Number of barangays integrating RH/population management
SOURCE DOCUMENT:	Annual FISH Project Performance Reports
SOURCE ORGANIZATION:	FISH Project team
INDICATOR DESCRIPTION:	Planned and actual values are cumulative. Indicator tracks number of barangays with development plans and activities

YEAR	PLANNED	ACTUAL
2004	4	0
2005	12	4
2006	18	10
2007	21	14
2008	21	25
2009	21	25
2010	21	25

NOTES:
2004 - Baseline levels established through target area profiling.

2005 - 4 barangays adopt RH program through their barangay development plan: 2 in Bohol (Guindacpan and Nocnocan in Talibon); 2 in Surigao del Sur (San Pedro and General Island in Cantilan).

2006 - 6 barangays added: 3 in Coron, Calamianes, Palawan (Tagumpay, Bulalacao, Bintuan); 3 in Bongao, Tawi-Tawi (Simandagit, Lagasan, Pababag).

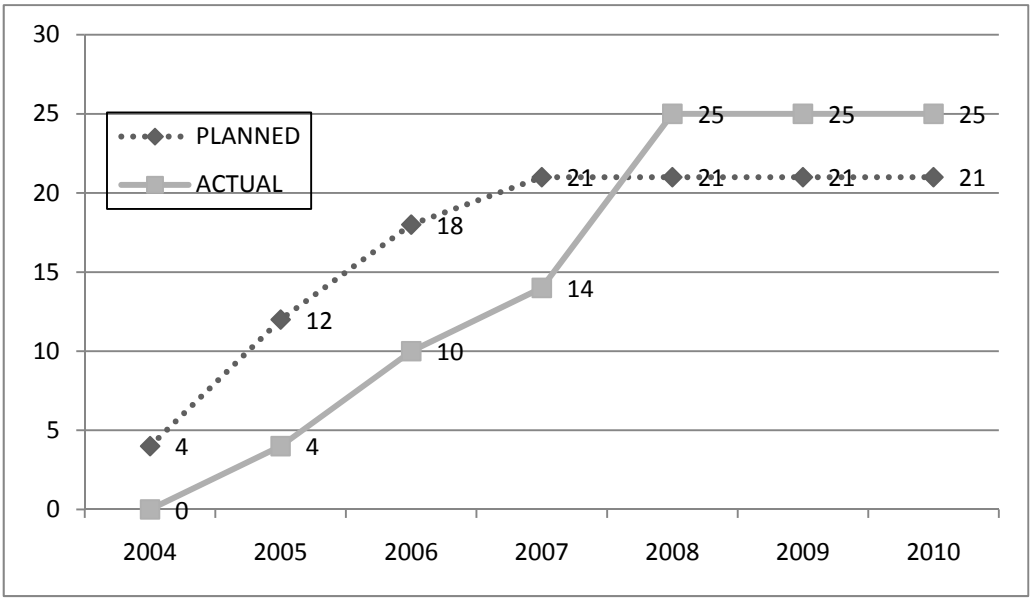
2007 - 4 non-coastal barangays added, all in Cantilan, Surigao del Sur: Bugsukan, Buntalid, Cabangahan, Cabas-an.

2008 – 11 barangays added: 10 in Talibon, Bohol (San Isidro, San Pedro, San Francisco, Bagacay, Tanghaligue, Busalian, Suba, Sag, Cataban, Calituban); 1 in Simunul, Tawi-Tawi (Tonggusong)

2009 – No updated information.

2010 – No updated information.

IR 1.7: No. of barangays integrating reproductive health into their development plans (2004-2008*)



* Technical assistance in connection with reproductive health was concluded in 2007, and the last monitoring done for this indicator was completed in 2008

Appendix B.14. Intermediate Result 2.1 (IR 2.1)

ORGANIZATION/PROGRAM:	USAID PHILIPPINES
STRATEGIC OBJECTIVE:	MANAGEMENT OF PRODUCTIVE LIFE-SUSTAINING NATURAL RESOURCES STRENGTHENED
INTERMEDIATE RESULT:	National policy framework developed supporting sustainable fisheries
APPROVED:	
INDICATOR (2.1):	National fisheries policies supporting sustainable fisheries
UNIT OF MEASURE:	Number of national policy instruments developed, reviewed or revised with FISH Project inputs
SOURCE DOCUMENT:	Annual FISH Project Performance Reports
SOURCE ORGANIZATION:	FISH Project team
INDICATOR DESCRIPTION:	Planned and actual values are cumulative. National policy instruments include national fisheries and related laws; administrative orders, rules and regulations; and plans and action programs of relevant government agencies

YEAR	PLANNED	ACTUAL
2004	0	1
2005	2	5
2006	4	11
2007	7	11
2008	15	21
2009	17	26
2010	19	30

NOTES:
2004 - 1 policy formulated and adopted: IRR of EO 305 (devoloving the registration of municipal fishing vessels to LGUs)

2005 – 4 policies added: (1) National Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (NPOA-IUU); (2) The Palawan Live Reef Fish Ordinance of 2005: providing for a sustainable and integrated regulation of live reef fish industry, imposing certain conditions for the catching, trading and shipment of live fish out of the province, providing penalties for violations hereof and for other purposes; (3) Draft Fisheries Administrative Order – Guidelines for the Registration and Licensing of Municipal Capture Fisheries; (4) Draft Fisheries Administrative Order- Guidelines for the Registration and Licensing of Commercial Capture Fisheries.

2006 – 6 policies added: (1) CNFIDP – Municipal and Commercial subsector; (2) CNFIDP – Aquaculture; (3) CNFIDP – Post-Harvest; (4) CNFIDP – Institutional Development; (5) First round of amendatory bills to RA8550; (6) Implementing Rules and Regulations on MMAA 86.

2007 – No updated information.

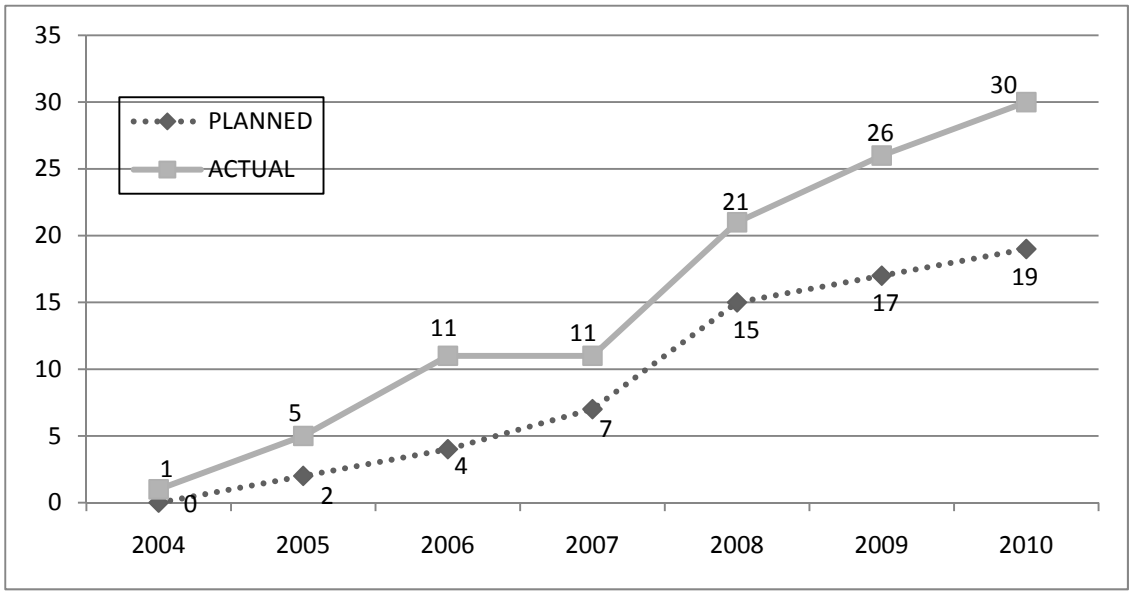
2008 – 11 policies added: (1) FOO 213 s. 2008: Adopting and Implementing the CNFIDP; (2) FOO 215 s. 2008: Fisheries Management Units; (3) National Plan of Action on Conservation and Management of Sharks and Rays; (4) Proposed FAO on the Guidelines for Implementing the Wildlife Act RA 9147; (5) House Bill 803: Establishment of Marine Protected Areas; (6) DILG Memorandum 2007-37, Enjoining the Leagues to lead the implementation of EO 305; (7) Regional Executive Order No. 16 Establishment of ARMM-MCS Team and its IRR; (8) Proposed Regional Fisheries Administrative Order on Tropical Fish Catching and Trading in ARMM; (9) Proposed Regional Fisheries Administrative Order Commercial Licensing System in ARMM; (10) Proposed Regional Fisheries Administrative Order on Fishpond Lease Agreements in ARMM.

2009 – 5 policies added: (1) RFAO on the ARMM Regional Fisheries Development Plan; (2) RFAO on IFMU in ARMM; (3) FAO on IFMU Danajon Bank (4); FAO on IFMU Calamianes; (5) FAO on IFMU Lanuza.

2010 – 3 proposed ARMM Regional Fisheries Administrative Orders (RFAO) such as Tropical Fish Catching and Trading, Commercial Licensing System and Fishpond Lease Agreements adopted as RFAO 57 s. 2009, RFAO 50 s. 2009 and RFAO 17 s. 2009, respectively. 4 policies added: (1) EO 797: National Action Plan for the CTI on Coral Reefs, Fisheries and Food Security; (2) Proposed FAO Implementing a Commercial Fishing Vessel

License (CFVL) Reduction Scheme; (3) Proposed Guidelines on Alternative Local Adjudication Process for Fisheries Issues; and (4) DENR Memo to all Mines and Geosciences Bureau (MGB) Directors Clarifying the Definition of Pebbles/Coral Pebbles.

IR 2.1: No. of national policy instruments developed, reviewed and revised with FISH Project inputs (2004-2010)



Appendix B.15. Intermediate Result 2.2 (IR 2.2)

IR2.2 was included in the FISH Project Results Framework as an additional performance indicator for the extension period 2008-2010.

ORGANIZATION/PROGRAM:	USAID PHILIPPINES
STRATEGIC OBJECTIVE:	MANAGEMENT OF PRODUCTIVE LIFE-SUSTAINING NATURAL RESOURCES STRENGTHENED
INTERMEDIATE RESULT:	National policy framework developed supporting sustainable fisheries
APPROVED:	
INDICATOR (2.2):	Replication of fisheries management and governance practices to other LGUs (outside the 4 target areas), agencies, NGOs and other projects through policy advocacy, training and technical assistance
UNIT OF MEASURE:	Number of partner agencies/groups providing assistance and number of LGUs
SOURCE DOCUMENT:	Annual FISH Project Performance Reports
SOURCE ORGANIZATION:	FISH Project team
INDICATOR DESCRIPTION:	Planned and actual values are cumulative. Agencies, NGOs and projects referred herein are those groups or organizations the FISH project assisted via advocacy, training and technical assistance to replicate fisheries management and governance practices to LGUs outside the target areas

YEAR	PLANNED	ACTUAL
2004	0/0	
2005	0/0	
2006	0/0	
2007	0/0	
2008	2/10	4/23
2009	4/20	9/52
2010	6/50	16/54

NOTES:
2008 – Technical assistance on municipal water delineation with the following partners: NAMRIA, NFR, Sentro Alternatibong Lingap Panligal (SALIGAN), Surigao del Norte's PEMO. The following municipalities were covered:

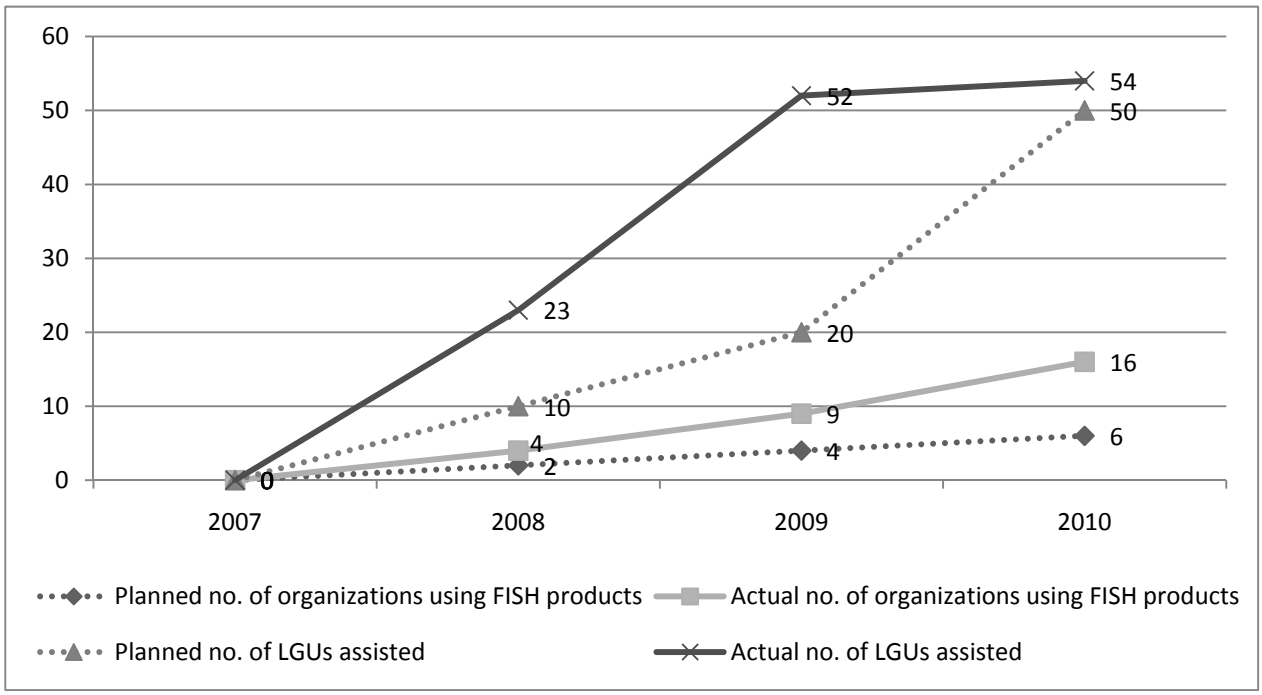
- San Francisco, Pilar, Poro and Tudela all in the province of Cebu.
- Alegria, Bacuag, Burgos, Claver, Del Carmen, Gen. Luna, Malimono, Pilar, Placer, San Benito, San Francisco, San Isidro, Socorro, Surigao City, Taganaan, Dapa, Mainit, Sta. Monica and Gigaquit all in the province of Surigao del Norte

2009 – 5 organizations/institutions access FISH technical assistance and replicate IEC/training products for use in their respective localities: (1) GTZ/DED, (2) NZAID/CCRMP; (3) Save Nature Society; (4) MDC and (5) U.S. Support to CTI and Philippines CTI National Coordinating Committee which based their First CTI Regional Exchange Program on the FISH Project's ECSMF. Represented at the CTI Exchange Program were participants from the Indonesia, Malaysia, Indonesia, Papua New Guinea, the Philippines,Timor-Leste.

2 ECSMF courses conducted in partnership with LMP for 29 municipalities: (1) Aborlan, Palawan, (2) Caramoan, Camarines Sur, (3) Concepcion, Iloilo, (4) Esperanza, Masbate, (5) Jagna, Bohol, (6) Laoang, Northern Samar, (7) Lawaan, Eastern Samar, (8) Libon, Albay, (9) Loay, Bohol, (10) Palauan, Occidental Mindoro, (11) Pinabacdao, Samar, (12) Sitangkai, Tawi-Tawi, (13) Sto. Domingo, Ilocos Sur, (14) Tandubas, Tawi-Tawi, (15) Tobias Fornier, Antique, (16) Victoria, Northern Samar, (17) Batad, Iloilo, (18) Bongao, Tawi-Tawi , (19) Calbiga, Samar, (20) Carles, Iloilo, (21) Daram, Samar, (22) Gamay, Northern Samar, (23) Oas, Albay, (24) Pambujan, Northern Samar, (25) San Jose, Northern Samar, (26) San Sebastian, Samar, (27) Sofronio Espaniola, Palawan (28) Talalora, Samar and (29) Villareal, Samar.

2010 - 7 organizations and 2 municipal LGUs added: Organizations - (1) Fisheries Development Center (FIDEC) – MPA Establishment and Management, (2) SEA Knights, (3) Ramon Aboitiz Foundation, Inc., (4) Cebu Uniting for Sustainable Water (CUSW), (5) Marine Animal Rescue Network, (6) Ocean Care Foundation and (7) SUMACORE (reprinting of IEC materials); Municipal LGUs: (1) San Remigio, Cebu (IEC on MPA Establishment and Management) and (2) Aloguinsan, Cebu (MPA Establishment and Management).

IR 2.2: No. of partner-organizations providing assistance and no. of LGUs they assisted using FISH tools and products (2004-2010)



Appendix B.16. Intermediate Result 3.1 (IR 3.1)

ORGANIZATION/PROGRAM:	USAID PHILIPPINES
STRATEGIC OBJECTIVE:	MANAGEMENT OF PRODUCTIVE LIFE-SUSTAINING NATURAL RESOURCES STRENGTHENED
INTERMEDIATE RESULT:	Constituency of informed, disciplined, and cooperative stakeholders developed and engaged in fisheries management
APPROVED:	
INDICATOR (3.1):	Public-private partnerships supporting fisheries management, social infrastructure, population programs, and socioeconomic development in target areas
UNIT OF MEASURE:	No. of public-private partnerships
SOURCE DOCUMENT:	Annual FISH Project Performance Reports
SOURCE ORGANIZATION:	FISH Project team
INDICATOR ESCRIPTION:	Planned and actual values are cumulative. Public-private partnerships include national and local collaborative agreements, projects, and activities that directly or indirectly support fisheries management between any entities such as the FISH Project, national or local government, private sector, or NGO

YEAR	PLANNED	ACTUAL
2004	0	0
2005	7	6
2006	10	11
2007	14	14
2008	15	18
2009	16	29
2010	16	30

NOTES:
2004 - Baseline levels established through target area profiling

2005 - Private sector partners engaged through SAF; (1) ELAC-Bohol, (2) PSF, (3) Hayuma Foundation, (4) Islahanon Andam Magdumal Nan Kinaiyahan (ISLAMDUNK), (5) Nagkahugpong Managatay Para sa Kalambuan nan Ayoke (NAGKAMAAYO), and (6) Caglayag-Baybay-Embarcadero-Doyos-Seca (CBEDS)

2006 – 5 new partners engaged through SAF: (1) ELAC-Palawan; (2) SCIPG; (3) KSRLA; (4) APREDEC; and (5) Capandan Multi-Purpose Cooperative (CMPC).

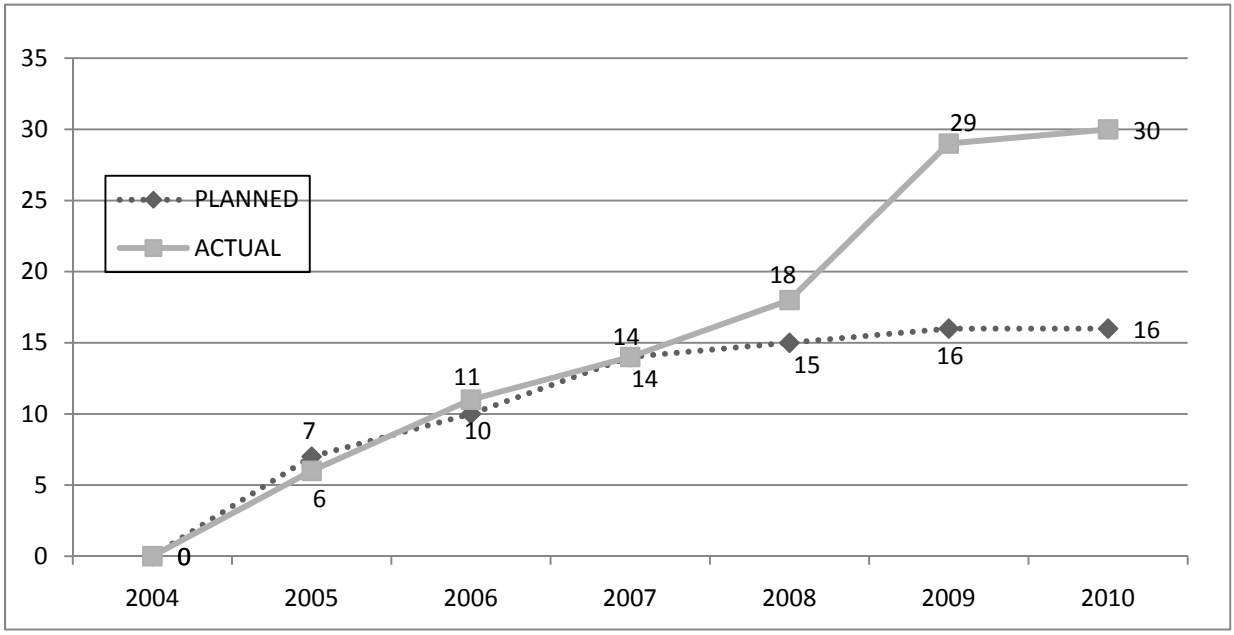
2007 – Partnerships forged with 3 mass media agencies providing substantial and continuous free airtime for the Project's documentary "Under Construction: The Making of a Coast-wise Nation": (1) Knowledge Channel; (2) NBN and (3) Living Asia Channel. It is estimated that media value for these broadcasts totaled over Php10 million for the year.

2008 – 4 new partners engaged in Project activities: (1) Catholic Clergy of the Archdiocese of Cebu and Archdiocese of Talibon: (2) Sea Knights, an organization of members of the Catholic Clergy and the scuba diving enthusiasts who support coastal and fisheries management; (3) VSU; (4) SOBA of Leyte.

2009 – Partnerships forged with the following organizations to support the conduct of the 2CCM (financial and in-kind contributions; design, planning and management of Conference): (1) LMP; (2) MDC; (3) WWF; (4) CI; (5) GTZ; (6) MSN; (7) UPMSI; (8) NFR; (9) NZAID/CCRMP; (10) CCEF; and (11) ABU/NHK-Japan Voyage to the Future Project.

2010 -- 1 partner engaged in Project activities (ECCCS)

IR 3.1: No. of public-private partnerships supporting fisheries management (2004-2010)



Appendix B.17. Results for Intermediate Result 3.2 (IR 3.2)

ORGANIZATION/PROGRAM:	USAID PHILIPPINES
STRATEGIC OBJECTIVE:	MANAGEMENT OF PRODUCTIVE LIFE-SUSTAINING NATURAL RESOURCES STRENGTHENED
INTERMEDIATE RESULT:	Constituency of informed, disciplined, and cooperative stakeholders developed and engaged in fisheries management
APPROVED:	
INDICATOR (IR 3.2):	Dissemination and utilization of fisheries management information materials, training modules, policy studies, and project lessons
UNIT OF MEASURE:	Number of information materials produced and training/forums conducted
SOURCE DOCUMENT:	Annual FISH Project Performance Reports; USAID TrainNet database
SOURCE ORGANIZATION:	FISH Project team
INDICATOR ESCRIPTION:	Planned and actual values are cumulative. Indicator tracks the number of different project products and training courses, workshops, and forums conducted at national (at least 1 per year) and local levels (at least 1 per focal area) to inform and build constituencies for sustainable fisheries

YEAR	PLANNED		ACTUAL	
	Information Materials Produced	Training Courses Developed/ Conducted	Information Materials Produced	Training Courses Developed/ Conducted
2004	11	12	18	15
2005	33	32	52	47
2006	45	48	79	89
2007	77	64	120	118
2008	145	172	147	135
2009	165	202	215	168
2010	170	226	241	288*

NOTES:

* Total number of training courses developed and conducted since 2004, including some training courses that were held in previous years but were not counted promptly because of delayed transmission of registration forms from the field.

2004 - Number of material represents co-production arrangements with CRMP and some initial presentation materials for FISH activities. Training activities were mostly in a form of orientation to LGUs and some early fisheries management actions like MPA and Basic Coastal and Fishery Law Enforcement.

2005 - Training activities include the following themes and courses: PCRA, CRM/Fisheries Management Planning, Coastal Law Enforcement, Fish Warden Deputation, MPA Establishment and Management, Species-Specific Management Training, Organizational Development, FARMC Orientation, Basic IEC and Social Marketing.

2006 - Cross visits/study tours comprise a major activity during the year, along with community level coastal law enforcement, organizational development/teambuilding of the people's organizations, fisheries registration and licensing, and species-specific management. IEC activities revolve around P3DM workshops and community-based mural art paintings; special events (MPA launching/sea camps) in observance of the Ocean Month (May), Environment Month (June) and Fish Conservation Week (October) as well as the popularization of technical information.

2007 - 24 IEC materials, 17 IEC activities and 29 trainings added. **IEC materials:** (1) 3D model of Danajon Bank; (2) Talibon on the Coastal and Marine Environment; Fisheries and Portraits of "Life in Danajon Bank" exhibit panel; (3) Miniature Models of Fishing Gear; (4) Save Danajon Bank Exhibit guide; (5) Why Protect Mangroves; (6) Why Protect Coral reefs; (7) Why Protect Seagrasses; (8) Danajon Bank Map and "BoomBoom Bautista" poster; (9) Video on illegal fishing and the theme of stewardship as a key social concern of the Catholic Church;

(10) Ang Kagasangan: Angay Ampingan ug panalipdan, (11) Reprint of CRMP poster "Human Impacts on the Marine and Coastal Environments; (12) Translation of fatwa to Sama and Tausug; (13) Airing of the DVD documentaries on Living Asia Channel, an Asia-wide cable television channel; (14) "Nucleus" flash movie; (15) "Dream Seas" Flash movie; (16) "Shell Shock" Flash movie; (17) Fish Off Flash movie; (18) Fish Factory Flash movie; (19) EO 533; (20) Guide illustrating the external manifestations of dynamited fish and fish caught with cyanide; (21) Ilonggo version of the comics on overfishing and MPA poster; (22) Maintenance and update of the project's www. oneocean,org website; (23) ARMM Fisheries Code Implementing Guidelines; and (24) Radio jingle "Isda"and full song, Pangarap ng Karagatan by Tribu Calamian. **IEC activities**: (1) Mural painting in Bien Unido and Talibon; (2) Calamianes Cross Visit to MPAs; (3) Consultation workshop regarding storylines and contents of Talibon Interpretive Center exhibit, "Save Danajon Bank"; (4) Rebroadcast of video documentaries "Under Construction in Knowledge Channel and National Broadcasting Network; (5) Coverage, production and broadcast of BFAR-7's Fish Conservation week activities; (6) MFARMC Coron; (7) LBDA Coordination Meeting; (8) MFARMC-MAFC; (9) Launching/Inauguration of Talibon Interpretive Center; (10) Orientation on FISH as 1st Agriculture Month Celebration; (11) Exhibit/ guestings in schools/parade undertaken in observance of Ocean Month in May and Environment Month in June; (12) Film Showings, coastal clean-up and "Tugtugan para sa Kalikasan in observance of Ocean Month; (13) Launching of Tangay 'Y and Laud Calamian and visit of US Ambassador Kenney in observance of Ocean Month; (14) Coastal Clean-up and radio plugs; (15) Presentation to His Eminence Cardinal Ricardo Vidal and to over 200 members of the clergy of the Archdiocese of Cebu on the importance of coastal and marine resources; (16) Broadcast of "Under Construction" in "Living Asia Channel; (17) "Fishes Feed Us" Project in partnership with New York City-based Arts and Science Collaboration, Inc (ASCI). **Training activities:** (1) Data Collection for the LGU Baseline Catch Monitoring in Danajon Bank; (2) Calamianes Cross Visit; (3) MPA Planning Writeshop for Doh-Tong, Lagasan-Pababag, Batu-Batu Kulape MPAs; (4) Community Level MPA Management Planning; (5) Training in Municipal Fishing Crafts Admeasurement and Registration; (6) Coordinating Conference on Oplan Maomaoan; (7) Joint Consultation Meeting Humay-Humay Fisherfolk Association and barangay officials; (8) Municipal CRM Planning; (9) Task Force Kalikupan Assessment Planning; (10) Presentation of Management Plan for Balisugan MPA; (11) MCLET Wide Annual Assessment and Planning Workshop; (12) Training in Municipal fishing crafts ad measurement and registration; (13) Interpretive Training Workshop; (14) Organizational Meeting Tangay 'Y Ang Laud Calamian; (15) Training on Registration and Licensing; (16) MPA Public Consultation re proposed San Miguel MPA; (17) Special Enforcement and Action Team (SEAT) Orientation and Organizational Meeting for Adlay and San Pedro MPAs; (18) Training on MPA Monitoring; (19) Workshop on Establishment of MPA Network; (20) Workshop on MPA Network; (21) Training on MPA Monitoring; (22) SEAT Orientation and Organizational Meeting for Capandan and Uba MPAs; (23) Workshop for the Establishment of Lanuza Bay MPA Network; (24) Training Course on MPA Monitoring for Community and MPA Management; (25) MPA Network Workshop; (26) Monitoring Training for MPA Management Committee; (27) Workshop for the Establishment of Danajon Bank MPA Network; (28) Workshop on MPA Monitoring; and (29) Workshop on the Formulation of Fish Sanctuary.

2008 – 15 IEC materials, 12 IEC activities and 17 trainings added. **IEC materials:** (1) Why Protect Mangroves in Cebuano (Nganong Angay Panalipdan ang Kabakhawan); (2) Marine Protected Area (MPA) or Sanctuary: An Effective Tool for Fisheries Management; (3) Ang MPA o Santwaryong Dagat: Usa ka Malampusong Pamaagi sa Pagpalambo sa Kadagatan; (4) MOREFish: Prmoting Suatainable Fisheries through Responsible Fishing Practices; (5) MOREFish: Masaganang Pangisdaan, Sagot sa Kahirapan, Karagatan Alaagaan; (6) Operational Guidelines for the Inter-Agency Regional Monitoring, Control and Surveillance Team and Task Forces in the ARMM; (7) "Sanctuary" Flash Animation Movie; (8) "Priceless" Flash Animation Movie; (9) "Fished Out" Flash Animation Movie; (10) "Samuel Sutil" Flash Animation Movie; (11) Radio-TV Plugs re Cardinal Vidal, Vice Gov. Herrera, Fr. Chito Lozada; (12) Local Government Guide to Registration of Municipal Fishing Boats 3GT and below; (13) Audio-Visual Presentation of MoreFish Program; (14) Tarpaulin Banners on Calamianes MPAs; (15) Tarpaulin Banners on "To Catch More We Need to Fish Les". **IEC activities:** (1) Participation in LMP National Convention in November 2007; (2) Radio Production Workshop for Surigao del Sur; (3) Follow up to Strategic Planning Workshop for Talibon Interpretive Center; (4) Production and Airing Weekly of Radio Program "Ang Dagat, Kinabuhi" A FISH Project Radio Forum with AFPRDCI; (5) Orientation on CRM and Fisheries Management Issues and Problems in Central Visayas for the Association of Major Religious Superiors in Cebu; (6) Maintenance and Update of Website, wwwoneocean.org; (7) Follow up Activity re Mural Painting in Ubay, Bohol; (8) "Duaw, Sangyaw, Serbisyo" IEC Caravan and Medical Mission in the Island of Malingin, Calituban, and Maomaoan; (9) Sea Camp for the Laud y Calamian (I Love the Ocean) Members; (10) FATWA IEC Planning/Radio Interviews with Local Radio Stations; (11) Launching of MOREFish Program at the LMP Luzon and Visayas Island Conferences and Field Visit of Mayors to Talibon Interpretive Center and Project Site; (12) Piyesta ng Karagatan in Observance of Ocean Month. **Training activities:** (1) Strategic Action Planning Workshop for Talibon Interpretive Center; (2) Cross-visit Tawi-Tawi MPA Managers and PNP with BFAR ARMM to Cebu, Bohol, and Negros; (3) Fish Examiners' Training Workshop for SET/Bantay Sanctuary (4) MPA Enforcement Training Workshop for Sanctuary Enforcement Team (SET)/Bantay Sanctuary in Simunul; (5) MPA Enforcement Training Workshop for SET/Bantay Sanctuary in Panglima Sugala; (6) MPA Enforcement Training

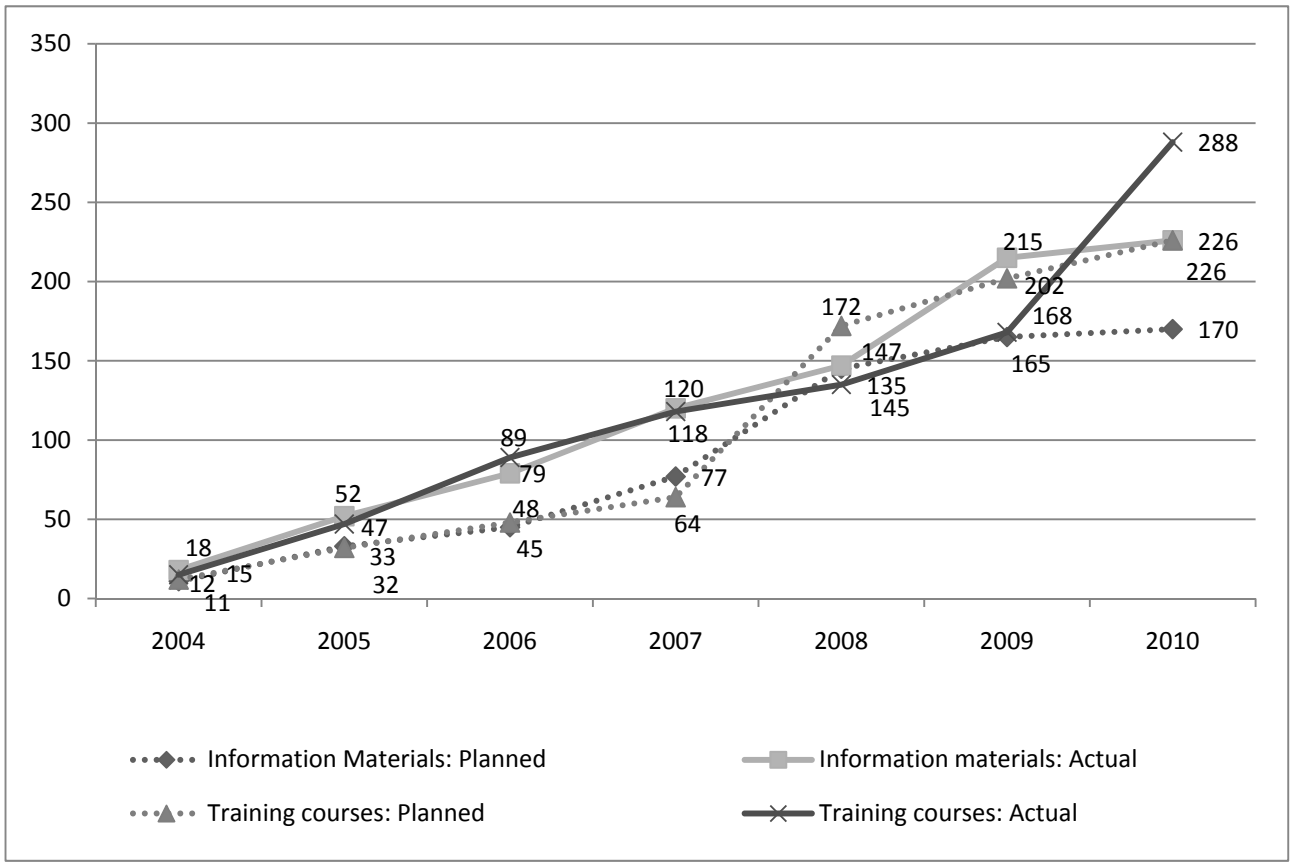
Workshop for SET/Bantay Sanctuary in Bongao; (7) LBDA – LGUs Coastal and Fisheries Management Writeshops; (8) Basic Coastal Law Enforcement Training; (9) Provincial Annual CLEC Assessment and Planning Workshop; (10) Danajon Bank Fishing Ground Consultation, (11) Seminar Workshop on Community Theater; (12) Monitoring and Evaluation Workshop; (13) MPA Set Training; (14) SEA Camp; (15) Surigao del Sur Province – Wide Coastal and Fishery Law Enforcement Training ; (16) Provincial Fisheries and Aquatic Resource Office of Surigao del Sur Assessment Workshop; (17) Calamianes Fisheries Summit.

2009 - 20 IEC materials, 38 IEC activities and 33 trainings added. **IEC materials:** (1) 2009 wall calendar of the MOREFISH Program of the LMP and FISH Project; (2) 2009 FISH Project Calendar; (3) MPA billboards for Talibon, Bien Unido and Carlos P. Garcia; (4) Telling our Story series – 14 stories on the Bohol FISH Project experience; (5) Weekly radio program "Ang Dagat Kinabuhi" over 2 radio stations in Tandag and Cantilan, Surigao del Sur; (6) Weekly radio program "Kabunianan A Dagat" in TawiTawi; (7) Weekly radio program "Kahibalo ka Bay" in partnershership with VSU and SOBA; (8) Maintenance and update of website, www.oneocean.org; (9) Collation of reference materials on EBFM for inclusion in ECSMF Training kit; (10) Call for the Sea to Change Comics; (11) Where have all the fishes gone Comics; (12) No ifs, no buts, we must manage fishing capacity; (13) 3-panel FISH Project exhibit "We must manage fishing capacity"; (14) 5-minute AVP on LMP Report Card; (15) 2CCM banners/ streamers/ program/handouts and; (16) Various newspaper radio/TV articles on the 2CCM'; (17) Developing a Framework for Economic Analysis of CRM Investments: The Case of Ubay, Bohol; (18) Fish Ruler; (19) CDs on FISH Project documents/publications for distribution at 2CCM; (20) CDs on CRMP IEC materials for distribution at 2CCM. **IEC activities:** (1) MOREFISH Mayors Champion Building Workshop; (2) LMP National Directorate Meeting; (3) Participation in LMP General Assembly in November, 2008; (4) First dive expedition to assess potential dive sites in Danajon Bank; (5) Presentation of the Policy and Enforcement Advisor on "Non-Satellite Technology: The Philippine Experience" under at the plenary session on "Using Technology as an Intelligence Tool" in Trondheim, Norway; (6) Orientation workshop on the preparation of promotional materials for Calamianes MPAs; (7) National Stock Assessment (NSAP) BFAR National Office Final Review; (8) NSAP Review of Final Report for Mindanao cluster; (9) Sharing of FISH Project experiences at Conservation International (CI) Reef Triangle Initiative round table discussions; (10) Exhibit on Pagbabago ng Klima; Hamon sa Likas Kayang Pangisdaan"; (11) Presentation of Fisheries Management Advisor on Ecosystems-Based Management for Danajon Bank at USAID sponsored discussions series on "Governance of Marine Ecosystem-Based Management: A Comparative Analysis at Woodrow Wilson Center Washington D.C., USA; (12) Study tour to Palawan by Bohol FISH Project Partners; (13) Strategic Planning on ecological evangelization for the Order of the Agustinians; (14) LMP National Directorate Meeting adopting 2nd CCM agenda and presentation of FMUs; (15) Various discussions/working meetings with Save Tanon Strait Movement and the consortium of LGUs/NGOs supporting the Visayan Sea Squadron; (16) 2nd Dive Expedition to do video documentary of potential dive sites in Bien Unido; (17) NSAP Results Presentation with NAFC; (18) NSAP meeting at BFAR with NFR, NAFC, NFRDI; FISH Project; (19) NSAP Finalization Review for Regions 1,2,3; (20) Story development workshop for TawiTawi; (20) Story development workshop for Inabanga; (21) Launching of Voyage to the Future Project in Danajon Bank; (22) 3rd Dive Expedition for Bien Unido dive sites; (23) Orientation on FISH Project to Partido Development Administration in Camarines Sur; (24) Evaluation/Assessment of impacts of Special Activity Fund (SAF) on grantees and beneficiaries; (25) Orientation on sustainable fisheries to LGUs of Libon, Albay and municipal fisheries summit; (26) Technical Consultation workshop on Visayan Sea's stock assessment results; (27) Calamianes Sea Camp for fisherfolk for the Month of the Ocean; (27) "Ten by 2010: A fisheries management initiative in Danajon Bank Philippines" - presentation by the Fisheries Management Advisor at the International Marine Conservation Congress, Washington, D.C., USA; (28) Presentation by the Policy and Enforcement Advisor on "Philippine experience on community-based fishery law enforcement" at First Monitoring, Control and Surveillance Workshop to Combat Illegal, Unreported and unregulated fishing in Central America at El Salvador; (29) Duaw Sangyaw ni Sto. Nino for the islands of Bien Unido; (30) Various organizational and planning meetings for the Second Conference of Coastal Municipalities; (31) Conduct of 2CCM; (32) FISH Project was presentor and co-convenor at 2CCM concurrent workshop on Food Security and Poverty Alleviation; (33) FISH Project was convenor of 2CCM concurrent workshop on Enforcing Coastal and Fishery Laws; (34) FISH Project was presentor and convenor at 2CCM workshop on Sustainable Financing for fisheries management; (35) Lectures by Deputy chief of party, fisheries management advisor, IEC advisor and policy and coastal law enforcement advisor at the First Coral Reef Triangle Exchange Program; (36) Post 2CCM evaluation meeting with LMP and partners; (37) NSAP Annual Planning Meeting and Workshop; (38) IEC and Medical Mission at Carlos P. Garcia, Bohol. **Training activities**: (1) Orientation workshop on preparation of annual evaluation reports; (2) 5-day Orientation on Fisheries Management, organizational assessment and team-building workshop for the PEMO of Surigao del Sur; (3) Delineation of Siargao Islands and Bucas Grande municipalities; (4) Capacity-building for FARMC in Culion; (5) Trainors Training on Participatory Coastal Resource Assessment; (6) Lifeguard Training for MPA guards in Calamianes; (7) Fish Examiners Training for Leyte, Surigao del Sur, Surigao del Norte, and Camiguin participants; (8) Municipal Waters Delineation Workshop in Leyte and Southern Leyte; (9) Province-wide Coastal Law Enforcement Assessment and Planning; (10) Study Tour to Palawan by Bohol FISH Project partners; (11)

Workshop on the Harmonization and Consolidation of Commented CFARM Ordinance of 7 component LGUs; (12) Basic Coastal Law Enforcement Training; (13) Orientation workshop on the principles of marine spatial planning and identification of fisheries use zones in Lanuza Bay; (14) First ECSMF; (15) Cross-visit of TawiTawi LGUs and partners to MPAs in Bohol and Negros Oriental; (16) Writeshop finalizing Lanuza Bay's environment and fisheries management plan; (17) Presentation of results on scoping of Mariculture sites; (18) Orientation on Principles of Marine Spatial Planning and identification of fisheries and other use zones in TawiTawi Bay; (19) Training on Special Enforcement Team; (20) Post Review of Fish Examiners Training; (21) Training on Fish Sanctuary Management and Establishment; (22) Basic Coastal Law Enforcement training for the law enforcement teams for Leyte and Southern Leyte municipalities; (23) Training course on Monitoring and Assessment of Municipal Fisheries for Application in Lanuza Bay, Surigao del Sur; (24) Orientation workshop on Cost-Benefit Analysis Framework of Coastal and Fisheries Management; (25) Presentation and review of results workshop of marine spatial planning in Calamianes; (26) Second ECSMF; (27) Coral Triangle Initiative (CTI) Exchange program "Enhancing local government and stakeholder capacity for ecosystem-based fisheries management"; (28) Coastal Law Enforcement Training for Surigao del Norte; (29) Workshop on the Formulation of the fish sanctuary management plan in TawiTawi; (30) Orientation workshop on Catch Monitoring and Impounding of Gears in Bohol, (31) Workshop on Biophysical Monitoring and Assessment of the MPA in Surigao del Sur; (32) Participatory Coastal and Fisheries Resource Assessment in Hindang, Leyte; (33) MPA Assessment and MPA Planning Workshop for Leyte municipalities.

2010 - 17 IEC materials, 11 IEC activities and 27 trainings added. **IEC materials:** (1) Book: Directory of CRM Learning Destinations 2nd Edition, (2) Book: Coral Reef Monitoring Guide, 2nd edition, (3) Photo comics: Sea Guardians (English), (4) Photo comics: Tanod Dagat (Pilipino), (5) Tawi-Tawi Photo Exhibit: "Towards a Sustainable Future: Protecting TawiTawi's Marine Resources and Maritime Heritage", (6) Telling Our Story Series: Calamianes, (7) 5-min video documentary on Stewardship-for use in Sinulog activities, (8) Assorted print materials/ tarpaulin posters for use in Sinulog activities, (9) Hinagpis ng Dagat video documentary, (10) Hinagpis ng Dagat advocacy ad – overfishing, (11) Hinagpis ng Dagat advocacy ad – marine sanctuary, (12) Photo comics – Bantay Dagat in Cebuano, (13) CD compilation of publications/information materials on fisheries management, (14) Panglima Sugala exhibit: Panglima Sugala, Moving Ahead in Coastal and Fisheries Management In Tausug and English), (15) Sourcebook on Managing Philippine Municipal Fisheries, (15) End of Project Report (Popular version for use in closing conference), (17) Closing conference exhibit. **IEC activities:** (1) Mass for the Environment during Cebu's Sinulog's festivities, (2) Forum on the environmental agenda of political candidates, (3) Environmental Forum for Media, (4) World Water Day Forum, (5) Exhibit in observance of Fish Conservation Week in Calamianes, (6) Special events in Danajon Bank in observance of Fish Conservation Week in Bohol, (7) Ecological Evangelization activities in observance of the Sinulog Festivities, (8) Earth Day Celebration and Oplan Day Break Operation in Bantayan Island, (9) Coral Reef Protection meeting (10) BFAR LMP Interface Session, (11) FISH Project closing conference – "Sustainable Municipal Fisheries: Gains and Continuing Challenges in Local Governance. **Training activities:** (1) Exploring EBFM Establishment in ARMM, (2) Calamianes Marine Protected Area Network Workshop, (3) OPLAN Sandagat Planning workshop, (4) Write shop on End of Project Report, (5) Review of Lagasan-Pababag MPA Management Plan, (6) Review of Ungus-Ungus Fish Sanctuary Management Plan, (7) Review of Batu-Batu Kulape MPA Management and Tondon Fish Sanctuary Management Plan, (8) Oplan Sandagat Team Action Planning Workshop, (9) Briefing for the Comprehensive Regional Development Plan, (10) Workshop for the Formulation of the Municipal Coastal and Fisheries Management Plan, (11) Marine Spatial Planning Workshop, (12) NSAP Writeshop for Regions 9, 12 and ARMM, (13) PCRA Training in Araceli, Palawan, (14) FGD on Alternative Adjudication Process, (15) OPLAN Sandagat Planning Workshop, (16) Trainors Training on MPA Establishment and Management in Aloguinsan, Cebu, (17) Writeshop on the Preparation of FISH Project Completion, (18) Fisheries Data Management Workshop, (19) Seminar/Workshop on Plotting and Use of GPS in Maritime Law Enforcement, (20) Workshop on Marine Mammal Stranding and Cetacean Response, (21) I love the Ocean Movement Workshop for Archdiocese of Cebu Youth Leaders, (22) Fisheries and Law Enforcement Monitoring Training for Partners, (23) Fisheries Management Framework Planning Workshop and Database management training in Bohol, (24) Fisheries Management Framework Planning Workshop for Tawi-Tawi, (25) Danajon Bank inter-LGU CRM Planning workshop, (26) Writeshop for the Formulation of Implementing Rules and Regulations of the Comprehensive Fisheries and Aquatic Resources Management Ordinance (CFARM) of LBDA – LGUs, (27) Fisheries Management Framework Planning for LGUs of Leyte and Southern Leyte.

IR 3.2: No. of fisheries management information materials distributed and trainings/forums conducted (2004-2010)



Appendix C. Results of Local Implementation (IR1) by Area of Coverage

Focal Area Municipality/Inter-LGU Collaboration	Total No. of Barangays	Area of Municipal Waters (sq km)	Area of Mun. Waters 5km from Shoreline (ha)	Total Population (2000)	Local Fisheries Management Implementation (IR1)						
					1.1	1.2	1.3	1.4	1.5	1.6	1.7
Calamianes Island											
Busuanga	*14*	2,089	31,021	*16,287*	✓	✓	1	2	✓		
Coron	*23*	3,250	26,017	*32,243*	✓	✓	1	2	✓		3
Culion	*11*	1,426	25,667	*14,302*	✓	✓	1	1	✓		
Linapacan	*10*	3,384	43,050	9,198	✓	✓	1		✓		
Calamianes Island Inter-LGU Collaboration										2	
Subtotal	***58***	***10,149***	***125,755***	***72,030***	***4***	***4***	***4***	***5***	***4***	***2***	***3***
Danajon Bank											
Bien Unido	*15*	462	24,356	*22,176*	✓	✓	6	5	✓		
Carlos P. Garcia	*23*	449	19,683	*20,744*	✓	✓	2	1	✓		
Talibon	*25*	525	22,966	*54,147*	✓	✓	4	2	✓		12
Ubay	*44*	202	4,514	*59,827*	✓	✓	1	1	✓		
Buenavista	*35*	65	2,334	25,960	✓	✓	1	1	✓		
Clarin	*24*	60	2,304	*18,040*	✓	✓	6		✓		
Getafe	*24*	203	7,489	26,826	✓	✓	3		✓		
Inabanga	*50*	189	6,441	40,714	✓	✓	2		✓		
Trinidad	*20*	-	-	26,683	✓		1		✓		
Tubigon	*34*	382	6,604	40,385	✓	✓	5	2	✓		
Danajon Bank Inter-LGU Collaboration										*2*	
Subtotal	***294***	***2,537***	***96,691***	***335,502***	***10***	***10***	***31***	***12***	***10***	***2***	***12***
Lanuza Bay, Surigao del Sur											
Cantilan	*16*	453	16,902	*26,553*	✓	✓	1	2	✓		6
Carrascal	*14*	104	9,766	*13,157*	✓	✓	1	2	✓		
Cortes	*12*	534	16,451	*14,825*	✓	✓	6	4	✓		
Lanuza	*13*	106	7,870	*16,057*	✓	✓	3	1	✓		
Madrid	*14*	11	2,288	*14,066*	✓	✓	1		✓		
Tandag	*21*	244	6,365	*44,327*	✓	✓	4	2	✓		
Barobo	*21*	265		34,558							
Bayabas	*7*	178		7,706							
Bislig	*24*	99		97,860							
Cagwait	*11*	190		18,577							
Hinatuan	*24*	705		36,170							
Lianga	*13*	79		25,014							
Lingig	*18*	812		26,487							
Marihatag	*12*	315		16,394							
San Agustin	*13*	197		14,845							
Tago	*24*	66		29,721							
Surigao del Sur Inter-LGU Collaboration										*4*	
Subtotal	***257***	***4,358***	***59,642***	***436,317***	***6***	***6***	***16***	***11***	***6***	***4***	***6***

Focal Area Municipality/Inter-LGU Collaboration	Total No. of Barangays	Area of Municipal Waters (sq km)	Area of Mun. Waters 5km from Shoreline (ha)	Total Population (2000)	Local Fisheries Management Implementation (IR1)						
					1.1	1.2	1.3	1.4	1.5	1.6	1.7
Tawi-Tawi											
Bongao	*35*	565	9,086	*58,174*	✓	✓	2	4	✓		***3***
Panglima Sugala	*17*	701	18,803	*33,315*	✓	✓	4	5	✓		
Simunul	*15*	704	12,783	*31,962*	✓	✓	1	2	✓		1
Languyan	20	1,658		42,040							
Mapun	15	1,566		22,011							
Sapa-Sapa	23	712		26,242							
Sitangkai	25	2,548		52,772							
South Ubian	31	1,769		27,301							
Tandubas	20	410		24,900							
Turtle Islands	2	1,665		3,600							
Tawi-Tawi Inter-LGU Collaboration						✓				2	
Subtotal	***203***	***12,298***	***40,672***	***322,317***	***3***	***4***	***7***	***11***	***3***	***2***	***4***
Leyte/So. Leyte											
Bato	*32*	332	685	32,974	✓	✓	1	1	✓		
Baybay	*92*	338	17,099	95,630	✓	✓	1	1	✓		
Hilongos	*51*	109	7,131	51,462	✓	✓	1	3	✓		
Hindang	*20*	180	2,720	18,493	✓	✓	1	1	✓		
Inopacan	*20*	345	5,762	18,680	✓	✓	1	1	✓		
Matalom	*30*	111	6,206	30,216	✓	✓	1	1	✓		
Maasin	*70*	265	12,702	71,163	✓	✓	1	2	✓		
Leyte/So. Leyte Inter-LGU Collaboration										6	
Subtotal	***315***	***1,680***	***52,305***	***318,618***	***7***	***7***	***7***	***10***	***7***	***6***	***0***
Total	**1,127**	**31,022**	**375,065**	**1,484,784**	**30**	**31**	**65**	**49**	**30**	**16**	**25**

NOTES:

Focal area municipalities are shown in *italics*.

Indicators:

- IR 1.1 Municipal fishers and crafts operating in target areas registered and licensed
- IR 1.2 Coastal law units established and operational
- IR 1.3 Fishing effort restrictions introduced
- IR 1.4 Marine protected areas/Fish sanctuary established and functional
- IR 1.5 Local government units adopting CRM
- IR 1.6 Inter-LGU/inter-agency collaborative agreements/plans adopted
- IR 1.7 Reproductive health program implemented

Appendix D. MPAs/Fish Sanctuaries within the FISH Project Coverage

Municipality / City	Barangay	Name of Marine Protected Area/Fish Sanctuary	Year legally established	Size (hectare)
Calamianes Island				
Coron				
	Bintuan	Decalve Marine Sanctuary *	2004	64.60
	Tagumpay	Siete Pecados Marine Park *	2004	21.40
	Tagumpay	Balisungan Marine Protected Area	2007	542.00
	Guadalupe/Bintuan	Minugbay-Malbato-Tagpi MPA	2008	123.00
Culion				
	Libis	Bugur-Sand Island Marine Protected Area *	2005	96.50
		Quaming Marine Reserve	2006	14.00
Busuanga				
	Concepcion	Concepcion Marine Reserve *	2006	229.00
	Sagrada-Bogtong	Sagrada-Bogtong Marine Reserve *	2006	393.00
Linapacan				
	San Miguel	San Miguel Marine Protected Area	2007	17.00
Subtotal				*1500.50*
Danajon Bank				
Bien Unido				
	Bilangbilangan East	Bilangbilangan East Marine Sanctuary *	2000	44.80
	Bilangbilangan West	Bilangbilangan West Marine Sanctuary	2002	72.00
	Hingutanan East	Hingutanan East Marine Sanctuary *	2000	21.70
	Hingutanan West	Hingutanan West Fish Sanctuary *	2002	71.80
	Pinamgo	Pinamgo Fish Sanctuary	2000	37.80
	Mandawa	Mandawa Fish Sanctuary	2002	59.00
	Sagasa	Sagasa Fish Sanctuary *	2002	27.00
	Tuboran	Tuboran Fish Sanctuary	2002	12.00
	Maomawan	Maomawan Fish Sanctuary	2002	128.00
	Malingin	Malinging Marine Sanctuary	2000	114.90
	Poblacion	Poblacion Marine Sanctuary	2005	69.80
	Liberty	Liberty Fish Sanctuary	2000	19.00
		Bien Unido Double Barrier Marine Park*	2009	7,600.00
Carlos P. Garcia				
	Butan	Bantigue Island Marine Sanctuary	2005	18.90
	Lapinig	Pong Gamay Marine Sanctuary *	2005	75.90
	Saguise	Sidlakan Marine Sanctuary	2004	13.00
	Saguise	Bantiguian Marine Sanctuary	2006	10.80
	Popoo	Popoo Marine Sanctuary	2006	13.60
	Baud	Baud Marine Sanctuary	2005	21.70
	Aguining	Aguining Marine Sanctuary	2006	51.14

Municipality / City	Barangay	Name of Marine Protected Area/Fish Sanctuary	Year legally established	Size (hectare)
	Basiao	Basiao Marine Sanctuary	2006	29.00
	Campamanog	Campamanog Marine Sanctuary	2006	9.77
	Canmangao	Canmangao Marine Sanctuary	2006	5.35
	Popoo	Datag Marine Sanctuary	2006	14.00
	Gaus	Gaus 1 Marine Sanctuary	2006	14.00
	Gaus	Gaus 2 Marine Sanctuary	2006	4.00
	Tugas	Tugas Marine Sanctuary	2006	10.35
	Kabangkalan	Kabangkalan Marine Sanctuary	2006	3.00
	Tilmobo	Tilmobo Marine Sanctuary	2006	2.17
Talibon				
	Cataban	Cataban Marine Sanctuary *	1996	19.00
	Tanghaligue	Tanghaligue Fish Sanctuary	2000	20.00
	Santo Niño	Santo Niño Fish Sanctuary	1996	18.00
	San Francisco	San Francisco Fish Sanctuary	1996	10.00
	Busalian	Busalian Fish Sanctuary	2008	50.00
	Guindacpan	Guindacpan Fish Sanctuary	2005	46.00
	Calitoban	Calitoban Fish Sanctuary	1995	50.00
	Nocnocan	Nocnocan Marine Sanctuary*	2004	10.00
	Sag	Sag Marine Sanctuary	2004	33.50
Ubay				
	Humayhumay	Humay-humay Marine Sanctuary*	2006	71.00
	Sinandigan	Sinandigan Marine Sanctuary	2004	51.68
Buenavista	Asinan, Cabul-an	Asinan and Cabul-an Marine Protected Area*	2001	155.00
Tubigon				
	Ubay	Ubay Marine Sanctuary*	2006	27.50
	Bilangbilangan	Bilangbilangan Marine Sanctuary*	1999	10.50
Subtotal				*9,146.66*
Surigao del Sur				
Cantilan				
	General Island	General Island Marine Protected Area *	2005	31.00
	General Island	Ayoke Marine Protected Area *	2005	25.00
	San Pedro	San Pedro Marine Protected Area	2005	30.00
Carrascal				
	Caglayag	Carrascal Marine Protected Area *	2005	70.00
	Adlay	Adlay Marine Protected Area *	2006	84.00
Cortes				
	Burgos	Burgos Fish Sanctuary	2000	75.50
	Balibadon	Balibadon Fish Sanctuary	2003	24.80
	Tigao	Tigao Fish Sanctuary *	1996	55.30
	Capandan	Capandan Fish Sanctuary *	2003	21.50
	Poblacion	Poblacion Fish Sanctuary	1996	55.30
	Tag-anongan	Tag-anongan Fish Sanctuary	2003	24.70

Municipality / City	Barangay	Name of Marine Protected Area/Fish Sanctuary	Year legally established	Size (hectare)
	Uba	Uba Marine Protected Area *	2005	25.00
	Mabahin	Mabahin Fish Sanctuary *	1999	42.40
Lanuza				
	Nurcia/Sibahay	Lanuza Marine Park and Sanctuary*	2002	111.00
Tandag				
	Mabua	Mabua Marine Protected Area*	2006	28.00
	Buenavista	Buenavista Marine Protected Area*	2006	27.00
	Bongtud	Mancagangi Island Protected Area	1996	20.72
Subtotal				*751.22*
Tawi-Tawi				
Bongao				
	Lagasan/Pababag	Lagasan/Pababag Fish Sanctuary *	2005	8.47
	Ungus-Ungus	Ungus-Ungus Fish Santuary *	2005	13.13
	Pasiagan	Pasiagan Fish Santuary *	2009	10.55
	Ipil	Ipil Fish Santuary *	2009	27.41
Panglima Sugala				
	Tondon	Tondon Fish Sanctuary *	2007	43.90
	Kulape/Batu-Batu	Kulape-Batu-Batu Fish Sanctuary *	2006	48.03
	Liaburan	Liaburan Fish Sanctuary *	2009	19.30
	Buan	Buan Fish Sanctuary *	2009	23.38
	Belatan Halo	Belatan Halo Fish Sanctuary*	2009	20.17
Simunul				
	Tanggusong	Tanggusong-Maruwa Fish Sanctuary *	2007	8.2
	Doh Tong	Doh Tong Fish Sanctuary *	2005	44.52
Subtotal				*267.06*
Leyte/So. Leyte				
Bato	Tinago	AR Complex Marine Protected Area*	2005	20.00
Baybay	San Agustin	San Agustin Marine Protected Area*	1999	288.00
Hilongos				
	Naval	Naval Mangrove Protected Area*	2010	35.00
	Owak	Owak Mangrove Protected Area*	2010	21.00
	San Juan	San Juan Mangrove Protected Area*	2010	5.00
Hindang	Bulacan	Bulacan Marine Protected Area*	2010	10.00
Inopacan	Conalum	Conalum Marine Protected Area*	2010	26.00
Matalom	Canigao	Canigao Marine Sanctuary*	2010	20.00
Maasin				
	Sto. Rosario	Sto. Rosario Fish Sanctuary*	2001	23.49
	Guadalupe	Guadalupe-Bilibol Fish Sanctuary*	1995	9.00
Subtotal				*457.49*
Total				**12,122.93**

* Obtained Level 2 or higher level of implementation as of 2010 based on MPA benchmarking system (White, 2004) (Table 1.4, page 17)

Appendix E. Collaborating Institutions and Organizations
(Consolidated list from 2004-2010 FISH Project annual reports)

NATIONAL GOVERNMENT AGENCIES

Center for Maritime and Ocean Affairs (MOAC) – Department of Foreign Affairs (DFA)
Civil Service Commission (CSC)
Commission on Higher Education (CHED)
Criminal Investigation and Detection Group (CIDG)
Department of Agrarian Reform (DAR)
Department of Agriculture-Bureau of Fisheries and Aquatic Resources (DA-BFAR)
Department of Agriculture-Bureau of Fisheries and Aquatic Resources (DA-BFAR) Regional Fisheries Training Center, Carmen, Cebu
Department of Agriculture-Bureau of Fisheries and Aquatic Resources (DA-BFAR) Regional Fisheries Training Center, Puerto Princesa City
Department of Education (DepEd)
Department of Environment and Natural Resources (DENR)
Department of Health (DOH) / Integrated Provincial Health Office (IPHO)
Department of Labor and Employment (DOLE)
Department of Science and Technology (DOST)
Department of Social Work and Development (DSWD)
Department of the Interior and Local Government (DILG)
Department of Tourism (DOT)
Department of Trade and Industry (DTI)
Department of Trade and Industry (DTI) - Board of Investments (BOI)
Department of Transportation and Communication (DOTC)
House of Representatives – Committee on Aquaculture and Fisheries
Land Bank, Quedancor
Maritime Industry Authority (MARINA)
Mindanao Economic Development Council (MEDCO)
National Anti-Poverty Commission (NAPC)
National Commission on Culture and the Arts (NCCA)
National Economic and Development Authority (NEDA)
National Fisheries and Aquatic Resources Management Council (NFARMC)
National Food Research and Development Institute (NFRDI)
National Mapping and Resource Information Authority (NAMRIA)
National Museum
National Telecommunications Commission (NTC)
Office of the Congressman 1st, 2nd, and 3rd Districts of Bohol
Office of Representative Heherson Alvarez
Philippine Army
Philippine Atmospheric, Geological, Astronomical Services Administation (PAGASA)
Philippine Coast Guard (PCG)
Philippine Council for Aquatic and Marine Research (PCAMRD)
Philippine Fisheries Development Authority (PFDA)
Philippine Information Agency (PIA)
Philippine Marines
Philippine National Police (PNP) Maritime Group
Philippine Navy (PN)
Philippine Ports Authority (PPA)
Presidential Management Staff

LOCAL GOVERNMENT UNITS

Municipalities
Abuyog, Province of Leyte
Albur, Bohol
Alcantara, Romblon
Alcoy, Cebu
Alguinsan, Cebu
Alicia, Zamboanga Sibugay
Anda, Bohol
Aparri, Cagayan
Aroroy, Masbate
Baao, Camarines Sur
Baclayon, Bohol
Balabagan, Lanao del Sur
Banton, Romblon
Barbuza, Antique
Barobo, Surigao del Sur
Bato, Leyte
Bayabas, Surigao del Sur
Baybay City, Leyte
Belison, Antique
Bien Unido, Bohol
Bislig City, Surigao del Sur
Bongao, Tawi-Tawi
Buenavista, Agusan del Norte
Buenavista, Bohol
Bugasong, Antique
Busuanga, Palawan
Cabatuan, Iloilo
Cagwait, Surigao del Sur
Calabanga, Camarines Sur
Calape, Bohol
Calbiga. Eastern Samar
Canavid, Eastern Samar
Candijay, Bohol
Cantilan, Surigao del Sur
Carmen, Surigao del Sur
Carrascal, Surigao del Sur
Casidiocan, Romblon
Clarin, Bohol
Claver, Surigao del Sur
Compostela, Cebu
Concepcion, Iloilo
Cordova, Cebu
Coron, Palawan
Cortes, Bohol
Cortes, Surigao del Sur
Culion, Palawan
Daet, Camarines Norte
Dagupan City, Pangasinan
Dasol, Pangasinan
Dauin, Negros Oriental
Barotac Viejo, Iloilo
Dauis, Bohol
Dimasalang, Masbate
Dimiao, Bohol
Duero, Bohol
Dumaguete City, Negros Oriental
Esperanza, Masbate
Garcia Hernandez, Bohol
Getafe, Bohol
Guindulman, Bohol

Gumaca, Quezon
Hilongos, Leyte
Hinatuan, Surigao del Sur
Hindang, Leyte
Iligan Bay LGUs, Misamis Oriental
Inabanga, Bohol
Inopacan, Leyte
Ipil, Zamboanga Sibugay
Jagna, Bohol
Kabasalan, Zamboanga Sibugay
Kapatagan, Lanao del Sur
Lagangilang, Abra
Lal-lo, Cagayan
Languyan, Tawi-Tawi
Lanuza, Surigao del Sur
Laoang, Northern Samar
Laua-an, Antique
Libon, Albay
Lila, Bohol
Linapacan, Palawan
Lingig, Surigao del Sur
Llanera, Nueva Ecija
Llanga, Surigao del Sur
Loay, Bohol
Loon, Bohol
Lopez, Quezon
Maasin City, Leyte
Mabini, Bohol
Maconacon, Isabela
Madrid, Surigao del Sur
Magallanes, Agusan del Norte
Magdiwang, Romblon
Mandaon, Masbate
Manukan, Zamboanga del Norte
Maribojoc, Bohol
Marihatag, Surigao del Sur
Maripipi, Biliran
Masbate City, Masbate
Matalom, Leyte
Mauban, Quezon,
Mercedes, Camarines Norte
Mercedes, Eastern Samar
Mobo, Masbate
Monreal, Masbate
Nabas, Aklan
Narvacan, Ilocos Sur
Nueva Valencia, Guimaras
Palauig, Zambales
Pandan, Catanduanes
Panglao, Bohol
Panglima Sugala, Tawi-Tawi
Parang, Maguindanao
Patnongon, Antique
Pilar, Surigao del Norte
Pinili, Ilocos Norte
Pitogo, Quezon
Pontevedra, Capiz
Pres. C.P. Garcia, Bohol
Sagñay, Camarines Sur
San Agustin, Surigao del Sur
San Dionisio, Iloilo
San Francisco, Camotes, Cebu
San Jacinto, Masbate
San Julian, Eastern Samar
San Pascual, Masbate
San Remigio, Cebu
San Teodoro, Oriental Mindoro
San Vicente, Northern Samar
Santa Cruz, Occidental Mindoro
Santa Margarita, Samar
Santa Maria, Ilocos Sur
Santo Niño. Cagayan
Sapa-Sapa, Tawi-Tawi
Sapian, Capiz
Sebaste, Antique
Simunul, Tawi-Tawi
Sindangan, Zamboanga del Norte
Sipalay City, Negros Occidental
Sitangkai, Tawi-Tawi
South Ubian, Tawi-Tawi
Tabuelan, Cebu
Tagbilaran City, Bohol
Tago, Surigao del Sur
Talibon, Bohol
Talisay City, Cebu
Tandag, Surigao del Sur
Tandubas, Tawi-Tawi
Tibiao, Antique
Tiwi, Albay
Trinidad, Bohol
Tubigon, Bohol
Tuburan, Cebu
Ubay, Bohol
Umisan, Quezon
Valencia, Bohol
Virac, Catanduanes

Barangay

Barangay Maruwa, Simunul, Tawi-Tawi
Belatan Halo, Panglima Sugala, Tawi-Tawi
Buan, Panglima Sugala, Tawi-Tawi
Doh Tong, Simunul, Tawi-Tawi
Ipil, Bongao, Tawi-Tawi
Lagasan, Bongao, Tawi-Tawi
Lahug, Cebu City
Liaburan, Panglima Sugala, Tawi-Tawi
Pasiagan, Bongao, Tawi-Tawi
Tagumpay, Coron, Palawan
Tondon, Panglima Sugala, Tawi-Tawi
Tonggusong, Simunul, Tawi-Tawi
Ungus-Ungus, Bongao, Tawi-Tawi

Province

Bohol Environment Management Office (BEMO)
Bohol Investment and Promotion Center (BIPC)
Bohol Tourism Office
Bureau of Public Information – ARMM Regional Office
Coastal Law Enforcement Council of the 1st District of Bohol (CLEC 1)
Coastal Law Enforcement Council of the 2nd District of Bohol (CLEC 2)
Office of Development Assistance (ODA-ARMM)
Palawan Council for Sustainable Development Staff (PCSDS)
Province of Bohol
Province of Cebu
Province of Leyte
Province of Masbate
Province of Palawan
Province of Surigao del Sur
Province of Tawi-Tawi
Provincial Agriculture Office (PAO) – Cebu, Bohol, Palawan, Surigal del Sur, Leyte, Southern Leyte and Tawi-Tawi
Provincial Attorney's Office -- Bohol
Provincial Community Affairs Office (PCAO) – Bohol
Provincial Fisheries and Aquatic Resource Office (PFARO) -- Bohol, Palawan, Surigao del Sur, and ARMM Office
Provincial Planning and Development Office (PPDO) – Cebu, Bohol, Palawan, Surigao del Sur, Leyte, Southern Leyte and Tawi-Tawi
Provincial Planning and Development Office -Cebu, Bohol, Palawan, Surigao del Sur, and ARMM
Regional Economic and Development PlanningBoard (REDPB), ARMM
Regional Planning and Development Office (RPDO), ARMM
Sangguniang Panlalawigan -- Bohol, Palawan, Surigao del Sur, and Tawi-Tawi
Sub-committee on Resource Management and Rural

Development, Sangguniang Panlalawigan, Leyte

National
League of Municipalities (LMP)
Mayors Development Center (MDC)

NON-GOVERNMENTAL ORGANIZATIONS/ PRIVATE SECTOR

A Yunchengco Foundation
AA Export
Aboitizland, Inc.
Adlay Fisherfolks Multi-Purpose Cooperative (AFMPC), Surigao del Sur
Advocates for Policy Reform and Development of Caraga, Inc. (APREDEC)
Alliance of Philippine Federation of Fishing Associations, Inc. (APFFAI)
Alliance of Tuna Handliners
Andres Soriano Foundation, Inc.
Archdiocese of Cebu
ARMEG, INC., Tawi-Tawi
Art and Science Collaborations, Inc.
Balibadon Multi-Purpose Cooperative
Balisungan Minorities Multipurpose Cooperative Inc., Palawan
Banacon Fishermen's Association Nagkahiusang Mananagat sa Tigao (NAMATI), Cortes, Surigao del Sur
Banate Bay Resource Management Council (BBRMC)
BANGON
Bangus Association of the Philippines
Bank of the Philippines Island (BPI)
Bantigue Island Fisherfolk Organization, Bohol
Barangay Uba Fishermen's Association of Cortes, Surigao del Sur(BUFA-CSS) Incorporated
Baybay Multi Purpose Cooperative (BAYMUCO), Surigao del Sur
Bohol Chamber of Commerce
Bohol Integrated Development Foundation (BIDEF)
Bohol Local Development Foundation (BLDF)
Bohol Marine Triangle – Padayon (BMT)
Bohol Tour Operators
Bophil Enterprises-Watergate Hotel, Bohol
Buenavista Fisherfolks Association (BUFISA) Incorporated, Tandag, Surigao del Sur
Busuanga Employees Multipurpose Cooperative (BEMCO) Inc., Palawan
Caglayag-Baybay-Embarcadero-Doyos-Saca Fisherfolks Multi-Purpose Cooperative (CBEDS-FMPC), Surigao del Sur
Calamianes Live Fish Operators Association (CLOA)
Capandan Multi Purpose Cooperative (CMPC), Surigao del Sur
CARCANMADCARCAL Bay Watch Foundation
CarCanMadCarLanCorTan NAMANAKA MPA Network, Surigao del Sur
Cebu Permaculture Initiatives, Inc.
Cebu Uniting for Sustainable Water (CUSW)
Center for Environmental Resource and Development (CERD)
Chamber of Fisheries and Aquatic Resources (CFAR)
Chevron Foundation, Inc.
Club Paradise Resort
Commission on Youth (COY)
Consuelo Foundation
Coron Association of Tourism Establishments (CATE)
Council of Courts Office – Shariah
Creative Associates International, Inc.
Cruz Aquaculture Corporation (CAC)
Cullion Foundation, Palawan
Danajon Bank MPA Network, Bohol
Dating Bayan Foundation Inc. (DBFI)
East Asia Fishing
El Nido Foundation, Inc.
Environmental Legal Assistance Center (ELAC)
Fisheries and Aquaculture Board of the Philippines/Nutri-Systems International
Fisheries Development Center
Foundation for the Philippine Environment (FPE)
Frabelle Fishing Corporation
Free Trade Inc.
GREEN Mindanao Association Incorporated (GMAI)
Guindacpan Fisherfolk Organization (PAMAGI), Bohol
Haribon Foundation, Inc.
Hayuma Foundation, Inc.
HIKARI Pearl Farm
Humay-humay Fisherfolk Organization, Bohol
Integrated Bar of the Philippines (IBP) – Surigao del Sur Chapter
International Network of Alternative Financial Institutions-Philippines (NAFI-Philippines)
Islahanon Andam Magdumala nan Kinaiyahansa (ISLAMDUNK), Surigao del Sur
Kadagatan Ampingan Pagmata Katawhan (KAAMPAKA) Multi-purpose Cooperative Burgos, Surigao del Sur
Kapunongan sa Lanuzanhon Mananagat (KALMA) – Bunga, Cagmino, Surigao del Sur
Kiddies Bakeshop-Ubay Branch, Bohol
Kilusan ng Mangingisda
Kilusang Sagip-Dagat-Palawan
Lanuza Bantayan Gayud Inc. (LABAG)
Lanuza Bay Development Alliance (LBDA), Surigao del Sur
Mabahin Woodcraft Multi-Purpose Cooperative (MWMPC), Tandag, Surigao del Sur
Mabua Fisherfolks Association (MAFA) Incorporated, Tandag, Surigao del Sur
MacMayer Printers
MCPI Corporation
Mercado Farms
Mirant Foundation, Inc.
MPA Managers Association, LBDA
Muslim Upliftment Foundation of Tawi-Tawi (MUFTI)
Nagkahiusang Mananagat Alang sa Kalambuan nan

Ayoke (NAGMAKAAYO), Surigao del Sur
Nagkahiusang Mananagat sa Tigao (NAMATI), Cortes, Surigao del Sur
NGOs for Fisheries Reform (NFR)
Nocnocan Fisherfolk Organization, Bohol
Northern Iloilo Alliance for Coastal Development (NIACDEV)
Northern Mindanao Community Initiative Resource Management Project (NMCREMP)
Ocean Care Advocates, Inc
Order of Saint Augustine Province of Santo Nino Parish Church
Orient Integrated Development Consultants Inc. (OIDCI)
Pagtabangan BASULTA (Basilan, Sulu, Tawi-Tawi)
Palawan Shell Station
PAMANA KA sa Pilipinas
Participatory, Research, Organization of Communities and Education towards Struggle for Self-Reliance (PROCESS) - Bohol, Inc.
PATH Foundation
Peace and Equity Foundation
Philippine Business for Social Progress (PBSP) – Bohol
Philippine Legislators Committee on Population and Development Foundation Inc.
Philippine Tilapia Inc.
PhilShrimp
Pollution Control Officers of Region 7 (PCAPI-7)
Population Center Foundation
Pow Productions, Inc.
PROCESS Bohol Foundation, Inc.
Project Seahorse Foundation
Ramon Aboitiz Foundation Inc.
Resources, Environment and Economics Center for Studies (REECS)
Rotary Club of Bohol, Tawi-Tawi, Calamianes, and Surigao del Sur
Save Ormoc Bay Association (SOBA), Leyte
Sea Knights, Inc.
Seachamp Export International Corporation
Seaweed Industry Association of the Philippines
SOTUNEFISCO
Strategic Development Cooperation (SDC-Asia)
STRATOS
SUMACO Pearl Farm Corporation Kawil Amianan
Supreme Council for Islamic Preaching and Guidance (Majlisul A'la Lil Wa'ji Wal Irshad), Tawi-Tawi
Surigao Integrated Resource Corporation – CTP Construction and Mining Corporation (SIRC-CTPCMC)
Surigao Sur Organization For Human Development, Inc. (SSOFHDEV)
Tabang Mindanao
Talibon Credit Cooperative (TALCRECO), Bohol
Talibon Pension House, Bohol
Talisay Fish Wardens Association, Cebu
Tambuyog Development Center
Tangay Y ang Laud Calamian (Friends of the Sea-Calamianes), Palawan
Task Force Kalikupan, Bohol
Tawi-Tawi Chamber of Commerce and Industry, Inc.
Tawi-Tawi Divers Club
TMFRDI, Tawi-Tawi
Tribu Calamianen
Tristar Paints Center and Construction Supply
Ubay Municipal Employees Multi-Purpose Cooperative, Bohol
Union Bank of the Philippines Corporate Philanthropy Division
University of San Carlos Water Resource Center
Volens and Saragpunta (Alliance of Tagbanua Communities)
Voyage to the Future 2009/NHK
Water District of Bongao, Tawi-Tawi
Zubu Systems, Inc.

INTERNATIONAL ORGANIZATIONS/ OTHER DONOR PROJECTS

Alliance for Mindanao Off-Grid Renewable Energy (AMORE)
Coastal Conservation and Education Foundation, Inc. (CCEF)
Conservation International (CI)
Cooperative for Assistance and Relief Everywhere (CARE)
DAR-IFAD Northern Mindanao Community Initiative Resource Management Project (NMCREMP)
Eco Governance Project (EcoGov)
Feed The Children Philippines (FTCP)
Food and Agriculture Organization of the United Nations (FAO)
German Development Services (GDS/DED)
Goheung County of the Republic of Korea
Growth with Equity in Mindanao Program (GEM)
Helvetas Philippines
JBIC-PCSD-SEMP NP
Local Government Support Program-ARMM-Canadian International Development Agency (LGSP-ARMM-CIDA)
Marine Aquarium Council
Marine Aquarium Market Transformation Initiative (MAMTI)
Mindanao Rural for Development Program (MRDP)
Partnerships in Environmental Management for the Seas of East Asia (PEMSEA)
Project AWARE
RARE Conservation
ReefCheck
SCOTIA Project
Southeast Asian Fisheries Development Center (SEAFDEC)
Sustainable Management for Coastal Resources (SUMACORE)
TAG Project
The Prince's Charities International and Sustainability Units,London
The WorldFish Center
United Nations Development Program (UNDP) Regional Office
US Environment Protection Agency
US Peace Corps

Visayan Sea Coastal Resource Management Project
Voluntary Service Overseas (VSO)
Wild-Aid Thailand
World Wildlife Fund (WWF)
WorldFish Center

ACADEMIC INSTITUTIONS

Aquining Elementary School, Carlos P. Garcia, Bohol
Blessed Trinity College
Bohol Institute of Technology – Talibon Campus
Bohol Island State University (BISU), Candijay Campus, (formerly CVSCAFT, Cogtong Candijay), Bohol
Burgos National High School, Surigao del Sur
Caglayag Elementary School, Surigao del Sur
Cangawa National High School, Buenavista, Bohol
Collegio del Santo Niño
Cortes Academy High School, Surigao del Sur
Dahican Elementary School, Surigao del Sur
Felixberto Verano National High School, Surigao del Sur
General Island Elementary School, Surigao del Sur
Hingotanan East Elementary School, Bien Unido, Bohol
Holy Name University
Mindanao State University (MSU) – Tawi-Tawi
Palawan State University (Coron, Busuanga & Culion Campus), Palawan
San Jose National High School
Silliman University Marine Laboratory
Southwestern University (SWU)
St Theresa's College of Tandag, Surigao Del Sur
St. Michaels College, Surigao del Sur
St. Theresas College – Tandag, Surigao del Sur
Surigao del Sur State Polytechnic College (SSSPC) – Lianga, Tandag and Cantilan Campus
University of Cebu Law Center
University of Connecticut (Avery Point Campus) – Dr. Robert Pomeroy
University of the Philippines – Marine Science Institute (UP-MSI)
University of the Philippines in the Visayas (UPV)
University of Washington School of Marine Affairs
Visayas State University (VSU)
Western Philippines University (Busuanga and Culion Campus), Palawan

MEDIA

ABS-CBN / ANC News Channel
ABS-CBN Foundation's Sineskwela
British Broadcasting Corporation
Catholic Television News Channel (CTNC)
Cebu Daily News (CDN)
Channel 13
Destinations Media, Inc.
DXGB FM Tandag
DXGD Radio Station
DXGY
DXJR
DXJS
DYAB
DYDJ (Ubay)
DYHP
DYLA
DYRD
DYSS
DYTR
DZBT
DZJS (Radyo ng Bayan-Tandag)
GMA 7 - Cebu
GMA 7- Kapuso Mo, Jessica Soho
Kapisanan ng mga Brodkaster sa Pilipinas (KBP)
Living Asia Channel
Manila Broadcasting Corporation
National Broadcasting Network (NBN)
Nova Productions International
Philippine Center for Investigative Journalism
Philippine Daily Inquirer
Probe Productions, Inc.
Radyo Natin-Coron
Radio ng Bayan
Radio Philippine Network (RPN) 9
Sunday Post DYTR
Sun-Star Cebu
The Freeman
The Knowledge Channel, Inc.

Appendix F. FISH Project IEC Products and Other Documentation

AUDIO (MP3)

1. **Isda** – an advocacy song on fish conservation in Calamian (Palawan) dialect, produced by the Tribu Calamianen Cultural Group for the FISH Project. *Download link:* http://oneocean.org/download/db_files/isdafull.mp3. (Also produced as a jingle, with the same title (*Download link:* http://oneocean.org/download/db_files/01IsdaJingle.mp3)
2. **Panawagan ng Karagatan** – an advocacy song on marine conservation in Tagalog, produced by the Tribu Calamianen Cultural Group for the FISH Project. *Download link:* http://oneocean.org/download/db_files/01PanawaganngKaragatan.mp3

BOOKS

DA-BFAR (Department of Agriculture-Bureau of Fisheries and Aquatic Resources). 2004. **In turbulent seas: The status of Philippine marine fisheries.** Provides a comprehensive snapshot of the current status of marine fisheries in the Philippines. Coastal Resource Management Project of the Department of Environment and Natural Resources, Cebu City, Philippines, 378 p. *Download link:* http://oneocean.org/download/db_files/fshprofl.pdf

Deguit, E.T., R.P. Smith, W.P. Jatulan and A.T. White. 2004. **Participatory coastal resource assessment training guide.** Coastal Resource Management Project of the Department of Environment and Natural Resources, Cebu City, Philippines. 134 p. *Download link:* http://oneocean.org/download/db_files/pcra_training_guide.pdf

Department of Agriculture-Bureau of Fisheries and Aquatic Resources (DA-BFAR). 2010. **Managing Municipal Fisheries in the Philippines: Context, Framework, Concepts and Principles.** A sourcebook for municipal marine capture fisheries managers in the Philippines. Fisheries Improved for Sustainable Harvest (FISH) Project, Cebu City, Philippines. *Download link:* http://oneocean.org/download/db_files/201010MunicipalFisheriesMgtSourcebook.pdf

Environmental Legal Assistance Center. 2008. **Mending Nets: A Handbook on the Prosecution of Fishery and Coastal Law Violations. 2nd Edition.** A reference for prosecutors, judges, law enforcers and government officials to help ensure proper handling of coastal law violations. The Environmental Legal Assistance Center, Cebu City, Philippines. 192 p. *Download link:* http://oneocean.org/download/db_files/mending_nets2nd_ed.pdf

Fisheries Improved for Sustainable Harvest Project (FISH Project), World Wide Fund-Philippines (WWF-Philippines), and Conservation International-Philippines (CI-Philippines). 2009. **Directory of CRM Learning Destinations in the Philippines. 2nd Edition.** A directory listing of about 100 LGUs with ongoing CRM activities/programs. League of Municipalities of the Philippines (LMP), Fisheries Improved for Sustainable Harvest (FISH) Project of the Department of Agriculture-Bureau of Fisheries and Aquatic Resources, World Wide Fund for Nature-Philippines (WWF-Philippines), and Conservation International-Philippines (CI-Philippines)**.** Cebu City, Philippines. *Download link:* http://oneocean.org/download/db_files/directory_of_crm_destinations2Ed.pdf

Fisheries Improved for Sustainable Harvest Project (FISH Project). 2006. **Go Easy on the Sea**. Easy-to-read reference on different overfishing issues, causes and possible solutions. Fisheries Improved for Sustainable Harvest (FISH) Project of the Department of Agriculture-Bureau of

Fisheries and Aquatic Resources, Cebu City, Philippines. 60p. http://oneocean.org/download/db_files/go_easy_on_the_sea.pdf

Fisheries Improved for Sustainable Harvest Project (FISH Project). 2010. **7 Years & 4 Seas: Our Quest for Sustainable Fisheries.** A special end-of-project report to partners on the implementation of the Fisheries Improved for Sustainable Harvest (FISH) Project in Coron Bay, Danajon Bank, Lanuza Bay and Tawi-Tawi Bay, Philippines, 2003-2010. Fisheries Improved for Sustainable Harvest (FISH) Project of the Department of Agriculture-Bureau of Fisheries and Aquatic Resources, Cebu City, Philippines. 252p. *Download link:* http://oneocean.org/download/db_files/201010FISHProjectCompletionReport.pdf

Fisheries Improved for Sustainable Harvest Project (FISH Project). 2010. **Telling Our Story**. A collection of success stories from FISH Project sites. Fisheries Improved for Sustainable Harvest (FISH) Project of the Department of Agriculture-Bureau of Fisheries and Aquatic Resources, Cebu City, Philippines. 88p. *Download link:* http://oneocean.org/download/db_files/201010-2005-10FISHProjectTellingOurStory.pdf

Fisheries Improved for Sustainable Harvest Project (FISH Project). 2010. **Under Construction: The Making of a Coast-wise Nation**. A publication produced as a collateral material for a video series with the same title that chronicles the Philippine experience in coastal resource management and the lessons it has generated. Fisheries Improved for Sustainable Harvest (FISH) Project of the Department of Agriculture-Bureau of Fisheries and Aquatic Resources, Cebu City, Philippines. 32p. *Download link:* http://oneocean.org/download/db_files/under_construction.pdf

Uychiaoco, A.J., S.J. Green, M.T. dela Cruz, P.A. Gaite, H.O. Arceo, P.M. Aliño, and A.T. White. 2010. **Coral Reef Monitoring for Management. 2nd English Edition**. A guide for communities and field-level staff who are involved in project implementation on how to do low-cost, less technical surveys to evaluate the effectiveness of their coastal management efforts. University of the Philippines Marine Science Institute, United Nations. Development Programme Global Environment Facility-Small Grants Program, Guiuan Development Foundation, Inc., Voluntary Service Overseas, University of the Philippines Center for Integration and Development Studies, Coastal Resource Management Project, Philippine Environmental Project 2, and Fisheries Resource Management Project. 122 p. *Download link:* http://oneocean.org/download/db_files/201001CoralReefMonitoringHandbook2ed.pdf

The FISH Project, after consulting with the book's authors, also granted permission for various organizations to publish the 1st edition in the following language editions:

Bahasa. *Download link:* http://oneocean.org/download/db_files/coral_reef_monitoringbahasa.pdf

Cambodian. *Download link:* http://oneocean.org/download/db_files/coral_reef_monitoringcambodian.pdf

Chinese. *Download link:* http://oneocean.org/download/db_files/coral_reef_monitoringchinese.pdf

Thai. *Download link:* http://oneocean.org/download/db_files/coral_reef_monitoringthai.pdf

White, A.T., P.M. Aliño and A.T. Meneses. 2006. **Creating and managing marine protected areas in the Philippines.** Fisheries Improved for Sustainable Harvest Project, Coastal Conservation and Education Foundation, Inc. and University of the Philippines Marine Science Institute, Cebu City, Philippines. 186p. http://oneocean.org/download/db_files/creating_and_managing_mpas.pdf

CD/DVD

1. **CD compilation of FISH Project information products and other references**
2. **FISH Project e-Library** -- FISH Project documentation September 2003-September 2010; a compilation of various FISH Project products accessible from an interactive menu based on the FISH Project Results Framework.
3. **Hinagpis Ng Dagat** *(Sigh of the Sea)* – DVD format of a documentary with the same title, which was co-produced by the FISH Project with the ABS-CBN New Channel
4. **Infomations on CD** – CD format of FISH on the Net, the informational Flash animation series produced by the FISH Project and featured at http://oneocean.org
5. **Information Resources for Managing Municipal Marine Capture Fisheries in the Philippines**: Compilation of fisheries management references from various sources produced as a companion CD for the FISH Project publication *Managing Municipal Marine Capture Fisheries in the Philippines: Context, Framework, Concepts & Principles*
6. **Participatory Coastal Resource Management training materials on CD** – produced as a collateral material for the FISH Project publication *Participatory coastal resource assessment training guide (Deguit, et al)*
7. **Under Construction: The Making of a Coast-wise Nation** – DVD format of a documentary series with the same title, which was produced by the FISH Project in 2004 and aired on several national TV channels (RPN, NBN, Knowledge Channel) and one regional cable network (Living Asia). See more details under VIDEOs below.

COASTAL RESOURCE/FISHERIES MANAGEMENT PLANS

1. **Calamianes Integrated Fisheries Management Plan** – a framework plan for inter-LGU collaboration in the Calamianes Group of Islands to consolidate and integrate local government policies and actions toward a common fisheries management goal.
2. **Comprehensive National Fisheries Industry Development Plan** -- provides the holistic and strategic framework to manage the fishery resources of the Philippines. *Download link (2006 consultation draft):* http://oneocean.org/download/db_files/cnfidp-oct2005 draft.pdf

COMIC BOOKS

1. *Bakit Naglaho Ang Buhay Sa Dagat?* (Where have all the fishes gone?) – a story that explains the causes and impacts of overfishing, originally published in Tagalog by the Coastal Resource Management Project (CRMP) and produced in the following language editions by the FISH Project:
    a. **Angey Kulang Na Kaulluman Ma Tahik** (Sama [Tawi-Tawi]). *Download link:* http://oneocean.org/download/db_files/overfishing_comics_sama.pdf
    b. **Maytah Kulang Na In Kinabuhian Ha Dagat** (Tausug [Tawi-Tawi]). *Download link:* http://oneocean.org/download/db_files/overfishing_comics_tausug.pdf
    c. **Nganong Nangahanaw ang Kinabuhi sa Dagat** (Cebuano). *Download link:* http://oneocean.org/download/db_files/201001AngKabakhawan.pdf
2. *Hudyat Ng Dagat Sa Pagbabago* (Call of the sea to change) – a story about an illegal fisher's transformation into an advocate of marine conservation, originally published in Tagalog by

the Coastal Resource Management Project (CRMP) and produced in the following language editions by the FISH Project:

   a. **Bandah Sin Dagat Ha Tungod Pagbabahgo** (Tausug [Tawi-Tawi]). *Download link:* http://oneocean.org/download/db_files/illegal_fishing_comics_tausug.pdf
   b. **Pahingmangno sa Kadagatan alang sa Pagbag-o** (Cebuano). *Download link:* http://oneocean.org/download/db_files/illegal_fishing_comics_bisaya.pdf
   c. **Sinyal leh Tahik Para Ma Kahapan** (Sama [Tawi-Tawi]). *Download link:* http://oneocean.org/download/db_files/illegal_fishing_comics_sama.pdf

3. **Sea Guardians** -- a photo-comic book consisting of six stories about homegrown champions of the sea and their advocacy (English edition). *Download link:* http://oneocean.org/download/db_files/Photo-comicsSeaGuardians.pdf. Also published in the following language editions:
   a. **Bantay Dagat** (Cebuano). *Download link:* http://www.oneocean.org/download/db_files/Photo-comicsBantayDagat.pdf
   b. **Tanod Dagat** (Tagalog). *Download link:* http://oneocean.org/download/db_files/Photo-comicsTanodDagat.pdf

PAMPHLETS / BROCHURES / FLYERS

1. **FISH Project brochure** – presents the FISH Project's framework, objectives and strategies.
2. **Marine Protected Area or Sanctuary: An effective tool for fisheries management** – explains the importance of marine protected areas or sanctuaries as a tool to conserve, protect and manage our fishery resources. Also published in Cebuano:
   a. **Ang MPA or Fish Sanctuary: Bililhong pamaagi sa pagpalambo sa pangisdaan**
3. **Why Protect Coral Reefs?** – explains the importance of coral reefs. *Download link:* http://oneocean.org/download/db_files/201001WhyProtectCoralReefs.pdf. Also published in Cebuano:
   a. **Ang Kagasangan: Atong Ampingan ug Panalipdan**. *Download link:* http://oneocean.org/download/db_files/201001AngKagasangan.pdf
4. **Why Protect Mangroves?** – explains the importance of mangroves. *Download link:* http://oneocean.org/download/db_files/201001WhyProtectMangroves.pdf. Also published in Cebuano:
   a. **Nganong atong panalipdan ang kabakhawan?** *Download link* http://oneocean.org/download/db_files/201001AngKabakhawan.pdf
5. **Why Protect Seagrass Beds?** – explains the importance of seagrass beds. *Download link:* http://oneocean.org/download/db_files/201001WhyProtectSeagrassBeds.pdf

PARTNERSHIP DOCUMENTS

1. **Memorandum of Agreement between the Department of Agriculture, Department of the Interior and Local Government and United States Agency for International Development** for the implementation of the Fisheries Improved for Sustainable Harvest Project, 2005. (Reference No. SILG05-003555)

2. **Memorandum of Agreement with the DA-BFAR Regional Fisheries Training Center (RFTC)-Carmen** for the production of miniature fishing gear models as part of the development of permanent exhibits for the Talibon Fisheries and Coastal Resource Management Interpretive Center in Danajon Bank, Bohol, 2006.
3. **Special Activities Fund [SAF] Fixed Obligation Grant Agreement**
    a. APRDCI [APREDEC], 2006
    b. CBEDS, 2005
    c. CMPC, 2006
    d. ELAC-Bohol, 2005
    e. ELAC-Palawan, 2005
    f. Hayuma Foundation, 2005
    g. ISLAMDUNK, 2005
    h. KSRLA, 2006
    i. NAGMAKAAYO, 2005
    j. Project Seahorse Foundation, 2005
    k. SCIPG, 2005
    l. TMRDFI, 2006
4. FISH Project. **Special Activities Fund [SAF] Guidelines**. Fisheries Improved for Sustainable Harvest (FISH) Project, Pasig City, Philippines.

PERFORMANCE REPORTS

1. FISH Project. 2010. **7 Years & 4 Seas: Our Quest for Sustainable Fisheries.** A special end-of-project report to partners on the implementation of the Fisheries Improved for Sustainable Harvest (FISH) Project in Coron Bay, Danajon Bank, Lanuza Bay and Tawi-Tawi Bay, Philippines, 2003-2010. Fisheries Improved for Sustainable Harvest (FISH) Project of the Department of Agriculture-Bureau of Fisheries and Aquatic Resources, Cebu City, Philippines. 252p. *Download link:* http://oneocean.org/download/db_files/201010FISHProjectCompletionReport.pdf
2. FISH Project. **Annual Reports 2004-2010**. Fisheries Improved for Sustainable Harvest (FISH) Project, Cebu City, Philippines
3. FISH Project. **Completion Report, September 2003-September 2010.** Fisheries Improved for Sustainable Harvest (FISH) Project, Cebu City, Philippines
4. FISH Project. **Quarterly Reports 2003-2010**. Fisheries Improved for Sustainable Harvest (FISH) Project, Cebu City, Philippines

POLICY AND POLICY-RELATED DOCUMENTS

1. Batongbacal, J.L. 2010. **Legal Aspects and a Proposed Strategy for the Establishment of an Ecosystem Approach to Fisheries (EAF) Management in the Philippines.** Fisheries Improved for Sustainable Harvest (FISH) Project, Cebu, Philippines. *Web source:* http://oneocean.org/overseas/201004/legal_aspects_and_proposed_strategy.html

2. **Coral Triangle Initiative Leaders' Declaration on Coral Reefs, Fisheries and Food Security**
3. **Comprehensive National Fisheries Industry Development Plan**. DA-BFAR. Provides the holistic and strategic framework to manage the fishery resources of the Philippines. 2006. *Download link (consultation draft)*: http://oneocean.org/download/db_files/cnfidp-oct2005 draft.pdf
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6. Draft Fisheries Administrative Order - **Rules and regulations on the registration and licensing of commercial fishing vessels, fisherfolk, fish workers and gear**
7. **Draft Fisheries Administrative Order establishing the foundation for an ecosystem approach to fisheries management [EAF]**
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9. **Executive Order No. 797 adopting the Coral Triangle Initiative National Plan of Action**
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POSTERS

1. "**A well-managed MPA promotes habitat recovery and restores fish productivity**" Benefits of a well-managed marine protected area (MPA. *Download link:* http://oneocean.org/download/db_files/well_managed_mpa_eng.pdf
   Also produced in Cebuano:
   a. "**Ang maayong pagdumala sa atong MPA makatabang sa atong kadagatan**"
2. "**Does your MPA meet the following?**" Criteria for a successful marine protected area. *Download link:* http://oneocean.org/download/db_files/does_your_mpa_eng.pdf
   Also published in other language versions:
   a. "**Naabot ba ng inyong MPA ang mga sumusunod**?" (Tagalog). *Download link:* http://oneocean.org/download/db_files/MPA_meet_tag_poster.pdf
   b. "**Natuman ba sa inyong santwaryo ang mga mosunod?**" (Cebuano). *Download link:* http://oneocean.org/download/db_files/does_your_mpa_ceb.pdf
3. "**Go easy on the sea**." Measures to prevent overfishing and marine resource destruction. *Download link:* http://oneocean.org/download/db_files/go_easy_poster_eng.pdf
4. "**Makiisa laban sa ilegal na pangingisda (**Join the fight against illegal fishing.)" (Tagalog). Depicts some common fishery law violations and urges the public to report illegal fishing to authorities. *Download link:* http://oneocean.org/download/db_files/stop_illegal_fishing_poster_tagalog.pdf
   Also published in other language versions:
   a. "**Lumamud kita ha pag lang sin langgal sarah.**" (Tausug) *Download link:* http://oneocean.org/download/db_files/stop_illegal_fishing_poster_tausug.pdf
   b. "**Makighi-usa sa pagsanta sa ilegal nga panagat.**" (Cebuano) *Download link:* http://oneocean.org/download/db_files/stop_ceb.pdf
   c. "**Palamud kita ngalangan ma pagdeyng ya langgal sarah**" (Sama) *Download link:* http://oneocean.org/download/db_files/stop_illegal_fishing_poster_sama.pdf
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PROFILES

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3. **Danajon Bank Double Barrier Reef: A Unique Resource in Peril.** Fisheries Improved for Sustainable Project (FISH) Project, Cebu City, Philippines. 16p. *Download link:* http://oneocean.org/download/db_files/201001DanajonBankMiniProfile.pdf

4. **FISH Project Target Area Profiles.** 2004. (Internal draft). Fisheries Improved for Sustainable Harvest (FISH) Project, Cebu City, Philippines. 31 pages.

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6. **Tawi-Tawi, Sulu archipelago: A call for pro-active fisheries management.** Fisheries Improved for Sustainable Harvest (FISH) Project. 12p.

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PROJECT MONITORING DOCUMENTS

1. **FISH Project Baseline Assessment Plan** (2004). Fisheries Improved for Sustainable Harvest (FISH) Project. Pasig City, Philippines

2. **Baseline Assessment Report** (2005). Fisheries Improved for Sustainable Harvest (FISH) Project. Pasig City, Philippines

3. Marine protected area (MPA) baseline and monitoring reports

    a. **Calamianes MPA Baseline Assessment Report (2004) and Monitoring Reports (2006 and 2008)**. University of the Philippines in the Visayas Foundation, Inc., Miagao, Iloilo.

    b. **Danajon Bank MPA Baseline Assessment Report (2004) and Monitoring Reports (2006 and 2008)**. University of the Philippines in the Visayas Foundation, Inc., Miagao, Iloilo.

    c. **Lanuza Bay MPA Baseline Assessment Report (2004) and Monitoring Reports (2006 and 2008)**. University of the Philippines in the Visayas Foundation, Inc., Miagao, Iloilo.

    d. **Tawi-Tawi MPA Baseline Assessment Report (2004) and Monitoring Reports (2006 and 2008)**. University of the Philippines in the Visayas Foundation, Inc., Miagao, Iloilo.

4. **Performance Milestones and Award Fee Payment Schedule 2008-10** – Extension Period (September 22, 2003-September 21, 2010). Fisheries Improved for Sustainable Harvest (FISH) Project, Cebu City, Philippines

5. **Performance Monitoring Plan** (2006). Fisheries Improved for Sustainable Harvest (FISH) Project, Cebu City, Philippines
6. **Procedure for determining FISH Project Results (PRs and FPR).** 2004. Fisheries Improved for Sustainable Harvest (FISH) Project, Cebu City, Philippines

RELIGIOUS DOCTRINES

Fatwa on marine environmental protection

English / Arabic. *Download link:* http://oneocean.org/download/db_files/fatwa.pdf

Sama

Tausug

RESEARCH PAPERS AND JOURNAL ARTICLES BY FISH PROJECT STAFF AND CONSULTANTS

Armada, N., A.T. White, and P. Christie. 2009. **Managing Fisheries Resources in Danajon Bank, Bohol, Philippines: An Ecosystem-Based Approach.** Case study on ecosystem-based management focused on the Danajon Bank, Bohol, Philippines. *Coastal Management, 37:308-330, 2009. Download link:* http://oneocean.org/download/db_files/Armadaetal.CMJ09.pdf

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Villanoy, C.L., O.C. Cabrera, M.M. Magno-Canto, M.C. Martin, E.E. Salamante and K.M. Silvano. 2006. **Hydrodynamic and dispersal modeling in FISH Project focal areas.** Study on the

potential dispersal patterns of larvae of fish in selected FISH Project sites, used in selecting locations of MPAs and MPA networks. 2006. Fisheries Improved for Sustainable Harvest (FISH) Project. *Download link:* http://oneocean.org/download/db_files/hydrodynamic_modeling-FISHProject.pdf

White, A.T., E. Deguit, W. Jatulan, and R. Eisma-Osorio. 2006. **Integrated Coastal Management in Philippine Local Governance: Evolution and Benefits.** *Coastal Management, 34:287-302, 2006*. Taylor & Francis. *Download link:* http://oneocean.org/download/db_files/White%20et%20al.2006.ICM%20governance.pdf

STICKERS

1. **MOREFISH (Movement for Sustainable Fisheries)**
2. **Save Our Fisheries** (English).
   Other language versions:
   a. **Ayaran ta bi pagdengan** (Sama)
   b. **Ayaran ta niyu in pag istaan** (Tausug)
   c. **Dautang binuhatan sa kadagatan ang mag-antos ang katawhan** (Cebuano)

TRAINING AIDS

1. **Fisheries Management Training Aids and References**
2. **Information, Education and Communication and Community Mobilization** slideshow
3. **Participatory Coastal Resource Assessment** slideshow
4. **Participatory Coastal Resource Assessment Training Guide** (Deguit, et al, 2004)
5. **Participatory Municipal Fisheries Management Planning** slideshow
6. **Basic Coastal Law Enforcement** slideshow
7. **Coastal Law Enforcement Assessment** slideshow
8. **Coral Reef Monitoring for Management** Training Guide (Uychiaoco, et al)
9. **Coral Triangle Regional Exchange on Fisheries Philippines** slideshows
10. **Creating and Managing Marine Protected Areas** Training Guide (White, et al)
11. **Executive Course on Sustainable Fisheries Management** slideshow
12. **MPA Management Planning** slideshow

VIDEO

The following productions by FISH Project were aired on various channels, including ANC, NBN, RPN, Knowledge Channel and Living Asia.

1. **Hinagpis Ng Dagat** *(Sigh of the Sea)* -- Produced by the ABS-CBN News Channel with support from the FISH Project, this documentary reports on the burning issues facing Philippine fisheries, current measures to address such issues, and the viewpoints and recommendations of various stakeholders and key players of the fisheries sector. It also includes a special feature on Lagasan Village in Bongao, Tawi-Tawi, where the success of a

marine protected area has become a source of pride and uniting force for a community learning the ways of marine stewardship amid deeply entrenched traditions of destructive fishing. The story is told in Filipino with English subtitles and consists of 3 parts:

a. ***Krisis sa Pangisdaan (The Fisheries Crisis)*** -- State of Philippine fisheries and major issues facing the sector

b. ***Hangarin sa Sustinableng Pangisdaan (Quest for Sustainable Fisheries)*** -- Ongoing efforts and what stakeholders say should be done to address fisheries issues

c. ***Isang Magandang Simulain (A Good Beginning)*** -- The story of a village in Tawi-Tawi, Philippines to protect their marine sanctuary.

Link: http://oneocean.org/video/HinagpisNgDagat/part1.html

2. "**Infomations**" -- a collection of 10 informational Flash animations or "infomations" carrying fisheries management and related themes.

a. **Dream Seas** (Release date: 25 July 2006) -- In sleep, a fisherman gets a glimpse of two futures, each the exact opposite of the other. He wakes up and takes a small step toward living the dream, by averting the nightmare. *Link:* http://oneocean.org/flash/the_philippine_coastal_situation/01-dream_seas.html

b. **Equity** (Release date: 22 July 2008) -- The equitable distribution of resources is a vital ingredient for sustainable fisheries. *Link:* http://oneocean.org/flash/equity/10-equity.html

c. **Fish FACTory** (Release date: 24 April 2007) -- A "fish factory" owner struggles – in vain – to cope with rising demand for fish by increasing his "factory's" production capacity. He soon learns an incontrovertible fact: as a biological resource, fish has biological limits that cannot be overcome by even the most powerful machine. But his realization comes too late: he has pushed the resource beyond its limits. He has killed his business. *Link:* http://oneocean.org/flash/equity/10-equity.html

d. **Fished Out** (Release date: 22 October 2007) -- Entire populations of fish species are being overfished to the brink of extinction, making fish for food more expensive and less and less available. *Link:* http://oneocean.org/flash/fished_out/07-fishedout.html

e. **Fish/Off** (Release date: 30 January 2007) -- Fashioned after "Face/Off", the John Woo thriller starring Nicholas Cage and John Travolta, this movie is a satiric take on the lengths that Man would go to hunt down the last fish on Earth: "In order to catch *it*, he must become *it*." *Link:* http://oneocean.org/flash/fisheries%20crisis/04-fish-off.html

f. **Nucleus** (Release date: 26 April 2006) -- Thanks to its geologic origin, the Philippines holds perhaps the highest concentration of limited-range marine shore endemics in the world. This rich gene pool is irreplaceable. Experts say losing it would be the marine-scale equivalent of mass extinctions in endangered Brazilian rainforests. *Link:* http://oneocean.org/flash/philippine_biodiversity/01-diversity.html

g. **Priceless** (Release date: 18 January 2008) -- Inspired by the MasterCard Priceless Series, this movie hopes to drive home a message that, despite ever ominous signs, is still largely ignored: no amount of money will equal the priceless ecosystem services we stand to lose from our abuse of the environment. *Link:* http://oneocean.org/flash/priceless/08-priceless.html

h. **Sanctuary** (Release date: 15 April 2008) -- A wise turtle reveals her safe haven in the sea. *Link:* http://oneocean.org/flash/sanctuary/09-sanctuary.html Also available in ***Tagalog***. *Link:* http://oneocean.org/flash/sanctuary/09-sanctuary-tagalog.swf

i. **Samuel Sutil** *(Disobedient Samuel)* (Release date: 23 July2007) -- Meet the quintessential unrepentant illegal fisher. *Link:* http://oneocean.org/flash/samuel/06-samuel.html

j. **Shell Shock** (Release date: 24 October 2006) -- Shell buyers beware! Seashells are not mere ornaments. Very often, they are endangered species that perform vital functions in the marine ecosystem, fished live and deliberately for the curio trade to the brink of extinction. *Link:* http://oneocean.org/flash/reefs_and_curio_trade/01-shell_shock.html

4. **Sustainable fisheries advocacy ads** -- Produced by the ABS CBN News Channel (ANC) with support from the FISH Project, this advocacy ad series tackles the following subjects:

   a. **Biodiversity conservation**

   b. **Habitat protection**

   c. **Impacts of illegal fishing on municipal fisheries**

   d. **Poverty in the fishing sector**

   Link: http://oneocean.org/video/HinagpisNgDagat/advocacy-ad1.html

5. **Under Construction: The Making of a Coast-wise Nation** -- The Philippines, one of the world's hottest biodiversity hotspots, is a natural major player in the global effort to reverse environmental decline. As an archipelago, the country offers particularly valuable lessons in coastal resource management. In 9 segments (see list and descriptions below), this documentary provides an eye-opening glimpse of the practices and attitudes in coastal resource use and management in the Philippines as they evolved over time, and a testimony to the country's groundbreaking efforts to recast itself as a 'coast-wise nation'.

   a. **Evolution**. Changes in practices and attitudes in the last half century shaped coastal resource use and management in the Philippines. Today, the country is pushing hard to control the direction of change in favor of sustainable use and development.

   b. **Modeling the Way**. The road to sustainable development in the Philippines is paved with the country's rich and still growing experience in coastal resource management and governance. This chapter includes seven case studies that represent some of the most important lessons from such experience.

      i. ***On Common Ground***. The people of Banacon Island in Getafe, Bohol shared a common aspiration when they started what is now Asia's biggest man-made mangrove forest: to maximize the economic benefits they could get from the sea.

      ii. ***The Better Alternative***. Hingotanan Island in Bien Unido. Bohol, once a haven of dynamite fishers, is now a thriving community of seaweed farmers.

      iii. ***The Community Factor***. Although initially resistant to 'giving up' their fishing ground to a marine sanctuary, the small island community of Apo in Dauin, Negros Oriental is the model that inspired the adoption of community-based resource management approaches in the Philippines.

      iv. ***On The Threshold***. The Philippine government's move toward decentralization in the 1990s created new challenges in coastal

resource governance -- and a rare opportunity to catalyze coastal management to a threshold of sustainability.

v. ***Networking Works***. Lack of resources and an increasing demand for coastal law enforcement services spurred the provincial government of Bohol to develop a scheme that allows local governments, national government agencies and other concerned sectors to effectively work together to combat illegal fishing.

vi. ***If You Build It..***. The municipality of Cordova in Cebu does not have to spend for the upkeep of the Gilutongan Island Marine Sanctuary -- a user fee system has allowed the sanctuary to pay for itself, and contribute to the development of the entire island.

vii. ***Becoming***. The city of Masbate is investing in non-formal education to build a society steeped in environmental ethics, practicing responsible resource use, and embracing environmental stewardship as a way of life.

c. **Getting There**. Despite the gains, what lies ahead remains daunting. There is much left to do to ensure that this road, still under construction, will take the Philippines where it needs to go in coastal management and stewardship of its coastal resources.

Link: http://oneocean.org/video/UnderConstruction/underconstruction.html

WEBSITE

In 2005, OneOcean.org, which hosted the USAID/DENR Coastal Resource Management Project (CRMP), was re-launched as the FISH Project website, with the following sections added to explain the framework, objectives and strategies of FISH Project:

1. The Philippine Fisheries Situation. *Link:* http://www.oneocean.org/fish/the_philippine_fisheries_situation.html
2. The Project. *View:* http://www.oneocean.org/fish/the_project.html
3. Ecosystem Approach to Fisheries Management *Link:* http://www.oneocean.org/fish/ecosystems_approach_to_fisheries_management.html
4. Fisheries Management Mechanisms Adapted for Success. *Link:* http://www.oneocean.org/fish/fisheries_management_mechanisms.html

OverSeas, OneOcean.org's webzine (http://oneocean.org/overseas/) and *Download* page (http://oneocean.org/download/) were updated quarterly with new articles and products developed by FISH Project.

The following new sections were also developed:

1. **FISH on the Net** "**Infomations**" section -- a collection of 10 informational Flash animations or "infomations" carrying fisheries management and related themes. (details under VIDEOS above)
2. **Video** section **–** features video streams of FISH Project productions (details under VIDEOS above)
3. **Fishes Feed Us Blog** -- This blog served as a venue for youth in New York City (NYC) and youth living in the Indo-Pacific Region to discuss the global fish crisis as part of a global public awareness project called "Fishes Feed Us," initiated by Art & Science Collaborations, Inc. The purpose of the blog was to make what the NYC youth learned in school about our ocean's dire condition, more real and urgent, while giving the Indo-Pacific youth, who see the

fish crisis up close, a world stage for their voices. From this blog 10 monologues were chosen to be spoken by New York City 5th graders in the premiere "Fishes Feed Us" performance on June 5, 2007 on the United Nations Plaza in New York, as part of World Environment Day. The blogging session lasted for three weeks from April 23 to May 14, 2007, when 6 youth bloggers from Indo-Pacific and 5 youth bloggers from NYC exchanged views about the fish crisis, telling their stories from the "fishes' perspective" as well as from their own viewpoints. All posts were screened for scientific accuracy before public viewing. *Link:* http://oneocean.org/fishblog/wp-content/themes/sky3c/about.php

WORK PLANS

1. **FISH Project Annual Work Plans (Years 1-3)**. Fisheries Improved for Sustainable Harvest (FISH) Project, Pasig City, Philippines
2. **Life of Project Work Plan 2003-2010**. Fisheries Improved for Sustainable Harvest (FISH) Project, Pasig City, Philippines
3. **Life of Project Work Plan 2008-2010** – Detailed plan for extension period. Fisheries Improved for Sustainable Harvest (FISH) Project, Pasig City, Philippines

Appendix G. FISH Project Training Courses for Coastal and Fisheries Management

FISH Project successfully implemented several training courses in collaboration with the Department of Agriculture - Bureau of Fisheries and Aquatic Resources, other government agencies, non-governmental organizations and projects. These included:

Basic Coastal Law Enforcement
Basic Fisheries Management
Coastal Law Enforcement Assessment
Coral Triangle Regional Exchange on Fisheries Philippines
Executive Course on Sustainable Fisheries Management
Information, Education and Communication and Community Mobilization
Integrated Coastal Management and Fisheries Management Planning
Marine Protected Area (MPA) Establishment and Management
Participatory Coastal Resource Assessment

Basic Coastal and Fishery Law Enforcement. This 5-day course consists of 24 sessions covering topics related to the enforcement of coastal and fishery laws in municipal waters, including: fisheries management principles, principles of coastal and fishery law enforcement, roles of coastal and fishery law enforcers, basic admiralty and seamanship, concepts of operations planning, concepts of intelligence planning, etc.

This course seeks to strengthen the enforcement of coastal laws involving deputized fish wardens, local government officials, police officers and other law enforcement units. It encourages the participation of the community in the enforcement process where such participation is sanctioned by law.

Training Objectives:

- Introduce the participants to coastal and fisheries management issues and the need for coastal and fishery law enforcement
- Describe the existing institutional and legal system for coastal and fishery law enforcement in the Philippines
- Appreciate the role of law enforcement in coastal and fisheries management;
- Describe the role of leaders and public participation in coastal and fishery law enforcement
- Explain the principles of coastal and fishery law enforcement
- Understand environmental, fisheries and aquatic resource laws as applied in local situation;
- Describe the operations planning process and basic law enforcement procedures
- Design appropriate local institutional networks to implement coastal and fishery law enforcement plans

Basic Principles in Fisheries Management. This 2-part lecture presentation serves as an orientation to fisheries resource management. Participants are introduced to the underlying principles and general objectives of fisheries resource management, the concept of overfishing, its types and causes. The lectures also cover basic fisheries assessment tools and examples of their application in several fishing grounds throughout the country.

Training Objectives:

- Promote participants' appreciation of the physical and biological characteristics of fishery resources
- Make participants realize the current state and problems of Philippine fisheries resources and the urgency of addressing these problems

- Increase participants' understanding of overfishing and the effects of the different types of overfishing on the fisheries resource
- Explain the various contributory factors to overfishing
- Describe the basic assessment tools in fisheries management

Coastal Law Enforcement Assessment. This 3-day course consists of 9 sessions covering topics related to the identification of coastal and fishery law enforcement issues and local efforts to address them, including: issues mapping and analysis, institutional arrangements, and training coastal law enforcers. It also includes and assets inventory workshop to determine existing and necessary capacities to address the issues.

Training Objectives:

- Identify the various national government agencies as well as groups and organizations at the local level mandated to enforce coastal and fisheries laws
- Identify and map out the violation of issues happening in the municipality
- Identify violators or vessels known to have committed these violations
- Analyze factors that contribute to the violation of coastal and fishery laws
- Explain the skills and expertise needed to develop a good coastal and fishery law enforcement team at the LGU level.
- Explain the LGU's mandate and responsibility to enforce coastal and fishery laws
- Facilitate organization of coastal law enforcement team
- Analyze skills and knowledge gaps, determine where capacity building is most needed and identify possible sources of technical assistance
- Assess existing capacities available locally for coastal and fishery law enforcement
- Identify resources needed to support local enforcement activities

Coral Triangle Regional Exchange on Fisheries Philippines 2009 *(Enhancing local government and stakeholder capacity for ecosystem-based fisheries management)***.** This is a special training program developed for the Coral Triangle Regional Exchange on Fisheries in 2009 to promote sharing of information and knowledge among the six Coral Triangle Initiative (CTI) member-countries. The program consisted of 18 sessions, covering a wide range of topics including fisheries management, sustainable financing for coastal and fisheries management programs being implemented by LGUs, coastal law enforcement, judicial issues affecting fisheries management, climate change, prosecution of fisheries cases, marine protected areas, biodiversity, and others.

Executive Course on Sustainable Municipal Fisheries. Implemented through the Mayors Development Center, this 3-day training program was developed for local chief executives and other key local officials. It consists of 12 sessions, covering topics such as the importance of fisheries management, coastal resource valuation, issues related to municipal fisheries, habitat protection through marine protected areas, fishery registration and licensing, coastal and fishery law enforcement in municipal waters, etc.

Training Objectives:

- Learn about the principles and framework of ecosystem-based fisheries management.
- Acquire a better appreciation of the economic, social, environmental and ecological value of their coastal environment and fisheries resources.
- Obtain a deeper understanding of the range of benefits (socio-economic, environmental, food security, revenue generation) that will accrue to local governments when coastal and fisheries resources are managed.
- Obtain a deeper understanding of the various fisheries management options and their applications to sustainable resource use;
- Acquire first-hand lessons and insights from successful fisheries management

programs and mayor to mayor interactions.
- Commit to initiating/enhancing a sustainable municipal fisheries management program in their respective localities

Information, Education and Communication and Community Mobilization. This training covers 9 main topics, including the transformational process, IEC planning, facilitation and technology of participation, conflict resolution, building consensus and preventing conflicts, IEC framework for fisheries management, role of IEC in coastal law enforcement, IEC strategies for marine protected ares, and planning and managing communication to support organizational goals.

Training Objectives:

- Orient and train participants in basic IEC and community mobilization techniques
- Demonstrate the planning process for IEC and managing communication to support organizational goals
- Facilitate the integration of IEC in the LGU's coastal and fisheries management program

Integrated Coastal and Fisheries Management Planning. This course aims to enhance the participants' awareness of coastal and fisheries management issues and appreciation of the integrated coastal management approach to address these challenges. It highlights the importance of strategic planning for coastal management to municipal-level resource managers and users.

Training Objectives:

- Introduce the participants to the economic, social and biological importance of coastal resources
- Describe the existing institutional system of coastal resource management in the Philippines
- Describe the role of leaders and public participation in coastal management
- Explain the importance of integrated coastal management for the Philippines in general, and for the participants' area in particular
- Describe the strategic planning process and its relevance to coastal management
- Design appropriate local institutional networks to implement coastal management plans
- Define the unit of coastal management, as well as enumerate the goods and services derived from the coastal area
- Relate the coastal environmental issues of the municipality with the need for a coastal management plan
- Explain coastal management planning as a strategy
- Answer basic questions on the concept of integrated coastal and fisheries management and identify the major characteristics
- Enumerate various coastal management options
- Facilitate the development of a municipal coastal and fisheries management plan

Marine Protected Area (MPA) Establishment and Management. This training course is designed to equip participants (LGU technical staff and local communities) with fundamental skills in establishing and managing a community-based marine protected area. Specifically, the participants, at the end of the course will:

Training Objectives

- Enhance their knowledge and skills on the processes involved (i.e. resource mapping, baseline data collection, management plan formulation, monitoring and evaluation) in establishing and managing a community-based marine protected areas;
- Strengthen capabilities of technical staff in facilitating MPA establishment and management processes (i.e. site identification, planning, ordinance formulation and monitoring and evaluation) with local communities;

- Demonstrate the process of formulating a MPA management plan using existing documented information and results of community consultation activities

Participatory Coastal Resource Assessment. This course is designed primarily for use by municipal-level trainers involved in community development for sustainable coastal resource use. It has two main purposes: first, to assist local resource managers in maximizing the contribution they can make to initial coastal resource assessment and project monitoring and evaluation; and second, to initiate dialogue and input from local community resource users in a relevant and meaningful fashion for planning purposes.

The output of this course will enable resource managers to work with local coastal resource users to generate valuable information for coastal management planning and implementation. This will be done simultaneously while improving community participation and local empowerment.

Training Objectives:

- Illustrate the coastal resource management process
- Enumerate the many benefits of a participatory coastal resource assessment
- Identify the various stakeholders in a coastal community
- Show the linkages between and among resources, people and sustainable coastal management and development
- Apply the various PCRA techniques: (a) interview, (b) transect, (c) habitat assessment
- Compile a preliminary coastal area profile based on PCRA results
- Develop a PCRA map of the local coastal management area

Appendix H. Project Staff

The Fisheries Improved for Sustainable Harvest (FISH) Project - Philippines was a seven-year (2003-2010) technical assistance project of the Department of Agriculture-Bureau of Fisheries and Aquatic Resources, funded by the United States Agency for International Development. It operated in four sites (Calamianes Group of Islands in Palawan; Danajon Bank in Central Visayas; Lanuza Bay in Surigao del Sur on the Philippines' eastern seaboard and Tawi-Tawi in the Sulu archipelago. Implementing partners were the Department of Agriculture-Bureau of Fisheries and Aquatic Resources, Department of the Interior and Local Government, local government units, non-governmental organizations, academe, private sectors, and people's organizations.

PROJECT MANAGEMENT AND TECHNICAL SUPPORT
Tetra Tech EM Inc.

PROJECT STAFF

A. Organizations

	SERVICES
Adlay Fisherfolks Multi-Purpose Cooperative (AFMPC)	Strengthening the Management of Adlay Marine Protected Area/Marine Sanctuary, Surigao del Sur
Advocates for Policy Reforms and Development of Caraga, Inc. (APREDEC)	Strengthening Delivery Mechanism for Fisheries Management in Surigao del Sur
Balisungan Minorities Multipurpose Cooperative, Inc. (BMMPCI)	Strengthening the Management of the Balisungan Marine Protected Area (Calamianes)
Barangay Buenavista Fisherfolks Association (BUFISA)	Strengthening the management of the Buenavista Protected Area (Surigao del Sur)
Barangay Mabua Fisherfolks Association (MAFA)	Strengthening the management of the Mabua Protected Area (Surigao del Sur)
Barangay Uba Fishermen's Association (BUFA)	Strengthening the Management of Uba Marine Protected Area (Surigao del Sur)
Busuanga Employees Multipurpose Cooperative Inc. (BEMPCI)	Strengthening the Management of the Concepcion and Sagrada-Bogtong Marine Reserves (Calamianes)
Capandan Multi-Purpose Cooperative	Strengthening the management of the Capandan Marine Protected Area (Surigao del Sur)
DevGov Associates, Inc.	Policy study on "Funding Municipal Waters: LGUs' Incentive or Disincentive for Investing in Municipal Coastal and Fisheries Management Programs"
Environmental Legal Assistance Center (ELAC)	Fishery resource improvement through people's participation in law enforcement system in Calamianes
Environmental Legal Assistance Center (ELAC)	Review and revision of "Mending Nets"
Southeast Asian Fisheries Development Centre (SEAFDEC)	Evaluation of possible sites, suitable culture species and systems in FISH Project's focal areas
Talibon Credit Cooperative (TALCRECO)	Intensification of Management Aptitude in Marine Protected Areas (Danajon Bank, Bohol)
U. P. in the Visayas Foundation, Inc. (UPVFI)	Monitoring and baseline assessment of marine protected areas in FISH Project's focal areas

B. Individual Consultants

	SERVICES
Anda, Gerthie M.	Technical assistance as Legal Specialist
Armada, Nygiel B.	Senior Fisheries Management Specialist
Bacalso, Regina M.	Junior Fisheries Biologist
Balisacan, Caridad	Assistance as artist for various exhibits in Bohol
Barut, Noel	Technical assistance as Stock Assessment Specialist for NSAP
Basali, Abdullajid	Technical Assistant – Tawi-Tawi
Batongbacal, Jay	Technical Assistance as Policy Development Specialist
Cafugauan, Howard	Policy Research Associate
Caño, Narciso	Technical assistance as Data Enumerator
Casiano, Jessa	Junior Fisheries Biologist
Crusio, Rosemarie	Technical assistance as Fisheries Data Encoder
Cruz, Ramon S.	Fisheries monitoring for Calamianes and Tawi-Tawi
Dizon, Conrado	Technical assistance as NSAP Assistant for fisheries assessment
Floren, Jessie O.	GIS Specialist
Fragillano, Joselito N.	Fisheries monitoring for Danajon Bank and Surigao del Sur
Francisco, Benjamin	Technical assistance as Mariculture Specialist
Gaitan, Chrismarie	Assistance as Encoder
Garcia, Sabino	Technical assistance as Data Enumerator
Gasalatan, Mario	Technical assistance as Social Mobilization Specialist
Guidote, Marlito N.	Senior Policy and Coastal Law Enforcement Specialist
Jatulan, William P.	Deputy Chief of Party
Jatulan, Ysolde C.	Computer Graphics Artist
Lim, Ariel	Technical assistance for flash movie animations of “Fish on the Net”
Lim, Astrid	Technical assistance as Training and Information Specialist
Maglinte Joeffrey	Technical assistance as Technical Coordinator
Martinez, Rafael T.	GIS Programmer
Martinez, Rommel	Technical assistance as Governance and Training Specialist
Mercado, Elmer	Technical assistance as Advocacy Specialist for the MoreFish program
Pantaleon, Victor	Technical assistance as Technical Coordinator in Surigao del Sur
Pestaño-Smith, Rebecca	Technical assistance as Senior IEC/Advocacy Specialist
Rabina, Menillo	Technical assistance as Community Organizer
Rosales, Rina	Technical assistance Resource Economist
Secuya, Modesto	Technical assistance for oneocean.org maintenance and “Fishes Feed Us” blog

	SERVICES
Sia, Asuncion E.	IEC Specialist
Silvestre, Geronimo T.	Chief of Party
Tajonera, Ian	Technical assistance as Junior Fisheries Biologist
Tinapay, Leslie S.	Layout Artist
Villanoy, Cesar	Technical assistance as Oceanographer

C. Tetra Tech EM Inc.

	SERVICES
Avenido, Maylyn C.	Community Organizer - Bohol
Baluyot, Niño	IT Specialist – Manila Office
Cabungcal, Romeo	Site Manager - Calamianes
Cerence, Katerina R.	Administrative Assistant
Cruz dela, Suzette	Administrative Support – Manila Office
Dalusong, Christina D.	Community Organizer - Calamianes
Dionisio, Sherlie	Project accountant – Manila Office
Felix, Aileen	Community Organizer – Tawi-Tawi
Felix, John	Community Organizer – Tawi-Tawi
Fontamillas, Ernie	Community Organizer – Calamianes
Gatus, Joey	Project Coordinator – Danajon Bank/Leyte side
Harun, Nur N.	Site Manager – Tawi-Tawi
Hilario, Vicencio	Driver/Messenger
Gulayan, Aniceta	Site Manager – Bohol
Irilis, Roger	Community Organizer – Tawi-Tawi
Llavan, Marivel J.	Community Organizer – Calamianes
Maraguinot, Gil	Community Organizer - Bohol
Melendez, Ma. Noella Q.	Administration & Subcontracts Manager
Ochea, Godofredo	Administrative Support
Omega, Ralph L.	Document Control/Librarian
Orevillo, Victor	Community Organizer – Bohol
Ortega, Glocel P.	Accountant
Pojas, Rodrigo V.	Driver/Messenger
Retubado, Ardale M.	Receptionist/Word Processor
Vargas, Albert	Policy Research Assistant

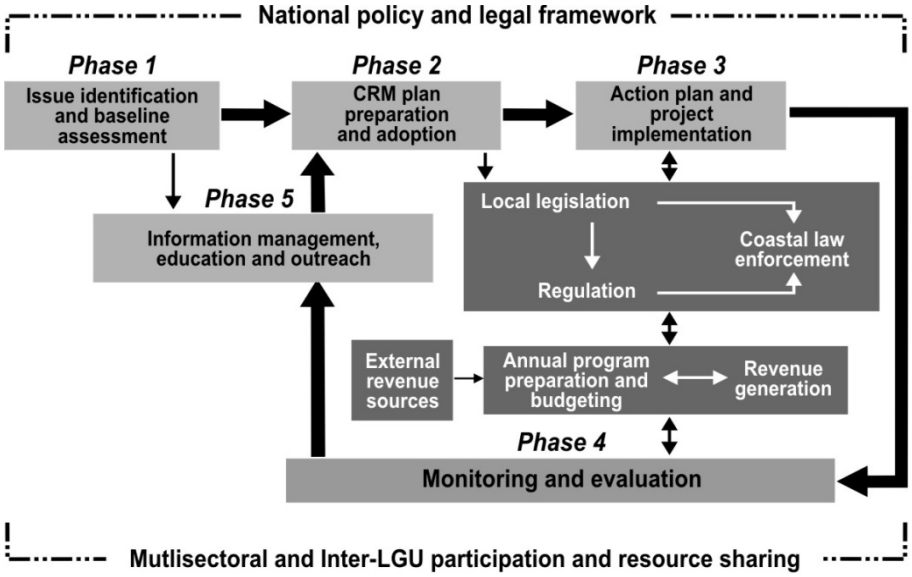
Appendix I. Proposed template for the development of a municipal fisheries management benchmarking system in the Philippines

Background

The devolution of fisheries management (FM) started in 1991 with the enactment of the Local Government Code (LGC) and was reinforced by the Philippine Fisheries Code (FC) of 1998. These laws laid the basis for local government units (LGUs) to exercise jurisdiction over coastal resources and municipal waters, and vested in them the primary responsibility for coastal resource management (CRM). Several externally assisted projects have since focused on building the capacity of LGUs to deliver their CRM mandate. Among these was the Coastal Resource Management Project (CRMP), a technical assistance project of the Department of Environment and Natural Resources (DENR) supported by the United States Agency for International Development (USAID). Implemented over 9 years (1996-2004), CRMP made significant headway in mainstreaming coastal issues on the Philippine national agenda and promoting CRM as a basic LGU service.

As part of its institutional development initiative, CRMP worked with DENR and other stakeholder groups to develop a framework for LGUs to track and measure their performance in CRM program implementation. This framework has been adopted by the DENR for its CRM certification program, which CRMP also helped to developed. It defines key benchmarks of performance (Appendix J) that LGUs can use to determine their progress in CRM, corresponding mainly to their progress in implementing the CRM planning process (Fig. A.1) and in adopting a set of best practices, including FM, marine protected areas (MPAs), mangrove management, coastal law enforcement, and solid waste management, among others. To be fully effective, however, the framework needs to be further developed by defining appropriate benchmarks and indicators for each of the CRM best practices.

Fig. A.1. CRM planning process adapted for LGUs in the Philippines (DENR, et al, 2001)



So far, a set of benchmarks and indicators has been developed for MPAs through the initiative of the NGO Coastal Conservation and Education Foundation (CCEF). To contribute to the effort, the Fisheries Improved for Sustainable Harvest (FISH) Project of the Department of Agriculture-Bureau of Fisheries and Aquatic Resources (DA-BFAR), Department of the Interior and Local Government (DILG) and USAID prepared this template that DA-BFAR, DENR, DILG and other concerned groups (different local government leagues and stakeholder communities) can use to develop in a participatory and consultative process a set of benchmarks, reference points and indicators that LGUs can use to monitor and evaluate their performance in FM.

This template is based on the following frameworks:

1) The four orders of coastal governance outcomes that group together the sequences of institutional, behavioral and social/environmental changes, where each level of changes is regarded as a building block for achieving the desired results and can lead to more sustainable forms of coastal development (Olsen, 2003);

2) The CRM planning cycle, which consists of baseline assessment, plan preparation and adoption, program implementation or enforcement, and monitoring and evaluation (M&E) of results and impacts.

3) Two-tier benchmarking to track progress at the institutional and implementation/enforcement levels, as follows:

    a. Benchmarks at the institutional level: Enabling mechanisms to institute FM, and

    b. Benchmarks at the implementation/enforcement level: Management practices consisting of growth, control and maintenance mechanisms for FM.

Objectives

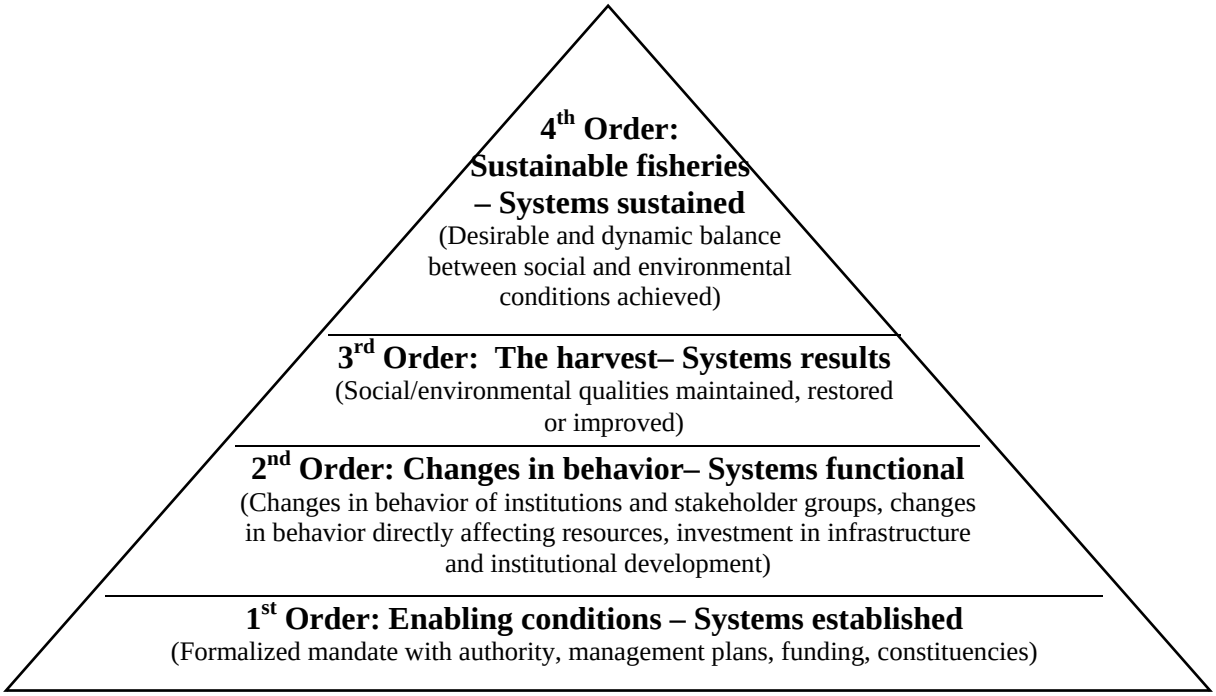
The primary purpose of this FM benchmarking template is to provide a framework that can be used to develop a standardized set of benchmarks, reference points and indicators for municipal FM in the Philippines, preferably through a consultative and participatory process involving concerned NGAs such as DA-BFAR, DILG and DENR, and representatives from the local government leagues and stakeholder communities. While such standardized benchmarks and indicators are not yet available, the benchmarking system described here can also be used for the following purposes:

1. Familiarize LGUs with some essential elements and enabling mechanisms for establishing an FM program
2. Provide LGUs with guideposts in FM program implementation
3. Provide LGUs with an M&E protocol to assess program performance, progress and outcomes

FM benchmarking framework

This FM benchmarking system is based on the four orders of coastal governance outcomes described by Olsen (2003). (Fig. A.2).

Fig. A.2: Orders of coastal governance outcomes (Olsen, 2003): Graphical interpretation of the building blocks for sustained municipal FM using the 5-level hierarchy of needs model developed by Maslow (1943)



The 1st Order requires the existence of enabling conditions that set the stage for the implementation of FM interventions, primarily a formalized mandate with the appropriate implementation arrangements, management plan or policies, resources, management systems, and constituencies. The 1st Order is adopted as Level 1 in the benchmarking system and referred to as "Systems established".

The 2nd Order is characterized by changes in behavior that promote social and environmental improvements. When applied to FM benchmarking, behavioral change should be manifested by an observable degree of institutional and stakeholder capacity and resolve to implement, enforce and sustain management, as well as ongoing plan and program implementation. The 2nd Order is referred to as Level 2 or "Functional system" in the FM benchmarking system.

The 3rd Order is achieved when the desired results of a functioning system become evident. In FM, it may be characterized by indications of the maintenance, restoration or improvement of key environmental and social conditions. It is applied to FM as Level 3 or "Systems results," referring primarily to the biophysical, socio-economic and revenue improvements achieved through the LGU's FM initiatives.

The 4th Order is marked by the realization of sustainable development, a state where a desirable and dynamic balance is achieved between social and environmental conditions. In the graphical presentation shown in Fig. A.2 that depicts the 4 orders of coastal governance outcomes as 4 blocks forming a pyramid, the 4th Order sits atop the pyramid. Each block in the pyramid is built upon the one below it and therefore cannot exist unless the lower block

has been set in place. The first 3 orders are necessary foundations to achieve the 4th Order. Conversely, if any of the lower level fails, the 4th Order will stand on shaky ground and could crumble. In FM, the 4th Order – Sustainable fisheries -- is the final and topmost benchmark, and it is characterized by fisheries that produce consistent outputs (socio-economic and biophysical) over an indefinite period without damaging the resource base.

The FM benchmarking system is set up in a manner that follows a project management continuum. Level 1 is generally achieved when plans and programs are adopted, legitimized and established, and the management system, including an M&E system that tracks key performance indicators, becomes functional. Level 2 is the implementation and enforcement stage. Level 3 comes about when the desired results or impacts are achieved, as shown by findings from M&E activities.

The table of FM benchmarks below shows this continuum, the clusters of programs under each FM mechanism and a detailed description of each level.

FM benchmarks

Benchmark and rationale	Benchmark description
Basic requirements (Enabling mechanisms)	
Fisheries profiling, baseline assessment and M&E protocols	**Level 1:** Baseline assessment conducted and profile developed as basis for the identification of FM issues and the development of M&E indicators ➢ Fisheries profiling and baseline assessment conducted ➢ Status of fisheries established, issues and opportunities determined and appropriate management practices and mechanisms identified ➢ Key indicators for biophysical, socioeconomic and governance aspects developed as part of the M&E plan **Level 2:** M&E conducted to assess and analyze the biophysical, socioeconomic and governance results of FM implementation ➢ M&E database developed and functional to track key biophysical, socio-economic and governance indicators ➢ M&E plan/protocols developed, approved and funded to assess changes in biophysical, socioeconomic and governance targets ➢ M&E data collection conducted, data stored in the database and results analyzed and fed back to stakeholders, partners and LGU leadership/authorities **Level 3:** M&E regularly conducted demonstrating overall positive improvement in biophysical, socioeconomic and governance aspects of FM ➢ Regular M&E conducted based on the plan/protocol and results compared to baseline information ➢ M&E results showing overall improvement in biophysical, socioeconomic and governance indicators (e.g. improvement of conditions of key coastal habitats, biomass within and adjacent to the MPAs, fish catch of selected gear used or target species caught by selected group of fishers, and income of small-scale fishers; reduction of illegal fishing; increased use of friendly gear; increase in LGU revenues from fisheries)

Benchmark and rationale	Benchmark description
Basic requirements (Enabling mechanisms)	
FM plan and budget	**Level 1:** FM plan adopted and incorporated into the AIP ➢ Programs, projects and activities laid out in the FM plan responsive to the issues identified in fisheries profiling and baseline assessment ➢ FM plan adopted by the LGU through an ordinance and incorporated into the municipal development plan or municipal CRM plan ➢ At least 30% of FM programs, projects and activities funded in the LGU's AIP **Level 2:** FM plan implemented and programs regularly funded through AIP and other sources ➢ FM plan reviewed, adjusted and/or updated based on results of regular M&E and other sources of information ➢ At least 70% of FM programs, projects and activities implemented with allocation from AIP and other funding sources **Level 3:** FM plan updated and/or revised based on M&E results and continuously funded through AIP and other sources ➢ FM plan reviewed, adjusted and/or updated based on the results of the regular M&E and other sources of information ➢ 100% of FM programs, projects and activities implemented with allocation from AIP and other funding sources
FM office	**Level 1:** FM office established with corresponding mandate and staff trained ➢ FM office organized and staffed and/or integrated into appropriate office (e.g. MAO, MENRO, CRM Office, Office of the Mayor) and vested the mandate to implement and coordinate FM activities ➢ FM office provided human and financial resources to initiate implementation and coordination activities **Level 2:** FM office implementing and coordinating delivery of programs and services to coastal communities ➢ FM office investing in training and development and institutional strengthening to be able to effectively implement programs and deliver services ➢ FM office actively developing linkages with institutional partners and other government agencies to support its FM program implementation ➢ FM office bringing in support programs and services leveraged from institutional partners and other government agencies **Level 3:** FM office sustaining/maintaining implementation and coordination for effective delivery of programs and services ➢ FM office demonstrating innovative and proactive approaches in tapping opportunities to effectively sustain the delivery of programs and services to coastal communities ➢ FM office maintaining strong internal and external linkages

Benchmark and rationale	Benchmark description
Basic requirements (Enabling mechanisms)	
Fisheries registration and licensing	**Level 1:** Fisheries registration and licensing system established ➢ Inventory of fishers, fishing boats and fishing gear conducted ➢ Fisheries registration and licensing ordinance adopted and implementation procedures established ➢ Registration and licensing of fishers, fishing boats and fishing gear initiated with 50% compliance ➢ Fisheries registration and licensing database developed **Level 2:** Fisheries registration and licensing system implemented and enforced ➢ Fisheries registration and licensing database functional and registration and licensing data stored and analyzed ➢ At least 75% compliance with fisheries registration and licensing achieved ➢ Configuration of appropriate/sustainable fishing effort initiated **Level 3:** Fisheries registration and licensing system implementation sustained and database information utilized to determine fishing effort configuration and other regulations ➢ Registration and licensing information used to improve or revise plans and policies to contribute to the improvement of biophysical, socio-economic or governance indicators ➢ Database fully functional and information used to determine effort configuration ➢ At least 90% compliance with fisheries registration and licensing achieved
Fisheries law enforcement	**Level 1:** Fisheries law enforcement program established ➢ Fisheries law enforcement team composed of deputized and trained personnel established with specific mandate and funding allocation for initial activities **Level 2:** Fisheries enforcement operations regularly conducted ➢ Operations plan developed and executed, fisheries law enforcement team regularly trained, and necessary enforcement assets procured **Level 3:** Fisheries enforcement operations sustained to address prevailing issues ➢ Coordination mechanism established with agencies having fisheries law enforcement mandates ➢ Illegal activities in coastal areas and municipal waters reduced or stopped

Benchmark and rationale	Benchmark description
Basic requirements (Enabling mechanisms)	
Municipal water delineation	**Level 1:** Delineation of municipal water boundaries initiated ➢ Coastal terminal points (CTPs) agreed and preliminary maps and technical description of municipal water boundaries determined **Level 2:** Municipal water boundaries adopted ➢ Municipal water delineation ordinance enacted ➢ NAMRIA-certified municipal water map procured **Level 3:** Municipal water boundaries utilized as basis for LGU jurisdiction and protection of small fishers' preferential-use rights ➢ Municipal water boundaries used for FM, i.e. resource use allocation, licensing and permitting of fishers, fishery enforcement, etc. ➢ Small fishers enjoying preferential use of municipal waters
Fisheries use zoning	**Level 1:** Fisheries use zoning planned and initiated ➢ Existing and potential municipal water uses identified, conflicting uses identified and resolved, proposed fisheries use zoning map developed and regulatory mechanisms formulated **Level 2:** Fisheries use zones harmonized, adopted and implemented ➢ Fisheries use zoning ordinance enacted and management/enforcement arrangement defined ➢ Fisheries use zoning policies implemented and enforced with funding support from LGU and other sources ➢ Compliance monitoring activities regularly conducted **Level 3:** Fisheries use zones sustained ➢ Enforcement of fisheries use zoning policies sustained with funding support from LGU and other sources ➢ Compliance with rules and regulations stipulated in the fisheries use zoning ordinance improved
Acceptance of CSO participation in FM	**Level 1:** Local constituencies (CSOs) for FM organized and established ➢ FM-related organizations (e.g. FARMCs, CSOs) formed and active in supporting FM activities **Level 2:** Local constituencies for FM actively participating in program implementation activities ➢ FM-related organizations contributing to local policy formulation, plan review, program implementation and monitoring and evaluation **Level 3:** Local constituencies' involvement in FM sustained ➢ FM-related organizations actively pushing for accountability when authorities fail to sustain FM program implementation

Benchmark and rationale	Benchmark description
Management practices (Growth, control and maintenance mechanisms)	
Marine Protected Area (MPA)	**Level 1:** MPA established ➢ MPA site identified, baseline conditions established, management plan and ordinance adopted, MPA boundaries delineated, management body and enforcement team trained and organized and monitoring indicators established **Level 2:** MPA management plan and policies implemented, enforced and monitored regularly ➢ Enforcement protocol operational, guard house and other enforcement infrastructure established, and assets utilized for enforcement ➢ Management body and enforcement team conducting regular implementation and enforcement activities with funding support from LGU and other sources ➢ Biophysical, socioeconomic and compliance monitoring activities conducted **Level 3:** MPA management sustained with positive impacts ➢ Management body and enforcement team sustaining implementation and enforcement activities with funding support from LGU and other sources ➢ Biophysical and socioeconomic status improved compared to baseline ➢ Compliance with MPA rules and regulations improved
MPA Network	**Level 1:** MPA networking arrangements adopted ➢ Components of MPA network identified, management plan adopted, implementation/coordination arrangement established, and enforcement and monitoring protocols agreed **Level 2:** MPA networks implemented, enforced and monitored ➢ MPA network management plan implemented with funding support from LGU and other sources ➢ Coordination meeting with MPA network management body regularly conducted and issues arising from enforcement/monitoring activities and results discussed **Level 3:** MPA networks sustained with positive impacts ➢ Implementation of MPA network management plan sustained with funding support from LGU and other sources ➢ Biophysical and socioeconomic conditions of the components of the MPA network improved ➢ Compliance with MPA network policies improved

Benchmark and rationale	Benchmark description
Management practices (Growth, control and maintenance mechanisms)	
Mangrove Management Area	**Level 1:** Mangrove management areas established ➢ Mangrove management site identified and delineated, baseline conditions established, management agreement forged with concerned stakeholders, management plan approved, management body organized and monitoring indicators established **Level 2:** Mangrove management plans and policies implemented, enforced and monitored ➢ Management body conducting regular implementation and enforcement activities with funding support from LGU and other sources ➢ Biophysical, socioeconomic and compliance monitoring activities conducted **Level 3:** Mangrove management areas sustained with positive impacts ➢ Management body sustaining implementation and enforcement activities with funding support from LGU and other sources ➢ Biophysical and socio-economic status improved compared to baseline ➢ Compliance with rules and regulations stipulated in the management agreement improved
Fishing gear management	**Level 1:** Fishing gear management system established ➢ Fishing gear to be managed identified and prioritized, baseline conditions established, management plan and ordinance adopted, management and enforcement arrangement established and monitoring indicators established **Level 2:** Gear management system enforced and monitored ➢ Management body conducting regular enforcement activities with funding support from LGU and other sources ➢ Biophysical, socioeconomic and compliance monitoring activities conducted **Level 3:** Gear management system sustained with positive impacts ➢ Management body sustaining enforcement activities with funding support from LGU and other sources ➢ Biophysical and socioeconomic status improved compared to baseline ➢ Compliance with rules and regulations stipulated in the management plan and ordinance improved ➢ M&E results utilized to improve, revise management plan, regulations and procedures

Benchmark and rationale	Benchmark description
Management practices (Growth, control and maintenance mechanisms)	
Species specific management	**Level 1:** Species-specific management system established ➢ Fishery resources to be managed identified and prioritized, baseline conditions established, management plan and ordinance adopted, management and enforcement arrangement established and monitoring indicators identified. **Level 2:** Species-specific management system enforced and monitored ➢ Management body conducting regular enforcement activities with funding support from LGU and other sources ➢ Biophysical, socioeconomic and compliance monitoring activities conducted **Level 3:** Species-specific management system sustained with positive impacts ➢ Management body sustaining enforcement activities with funding support from LGU and other sources ➢ Biophysical and socioeconomic conditions improved compared to baseline ➢ Compliance with rules and regulations stipulated in the management plan and ordinance improved ➢ M&E results utilized to improve and revise management plan, regulations and procedures
Revenue generation for FM	**Level 1:** Revenue generation system on FM established ➢ Potential revenue-generating coastal and fishery management programs assessed and identified, baseline assessment conducted or existing data analyzed, specific-revenue ordinance enacted, revenue-collection program established with clear purpose and implementation arrangements **Level 2:** Revenue-generating measures effectively implemented and enforced ➢ Revenue collection program implemented and compliance monitoring activities conducted ➢ Revenues collected monitored, and program implementation evaluated and modified/adjusted if necessary **Level 3:** Revenue-generating measures sustained and showing positive impacts ➢ Implementation of revenue-collection program and revenue-generating measures sustained ➢ Revenues from the implementation of coastal and FM programs increased compared to baseline ➢ Revenues invested in FM programs

Benchmark and rationale	Benchmark description
Management practices (Growth, control and maintenance mechanisms)	
Multi-institutional collaboration for FM	**Level 1:** Multi-institutional collaboration for FM established ➢ Potential partners from LGUs, NGAs, NGOs, academe, private sector and funding institutions identified ➢ MOAs and other instruments adopted through municipal legislative action or signed by collaborating partners; planning, implementation coordination and monitoring arrangements established **Level 2:** Multi-institutional collaboration effectively implemented to support FM programs and services ➢ Multi-institutional FM program activities coordinated, implemented, enforced and monitored **Level 3:** Multi-institutional collaboration sustained and showing positive impacts ➢ Multi-institutional FM program implementation sustained with measurable positive impacts to collaborating LGUs and coastal communities ➢ Multi-institutional collaborative mechanisms improved contributing to effective management of coastal and fishery resources

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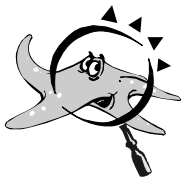
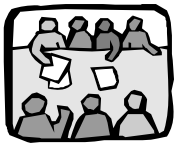
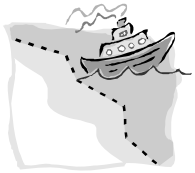
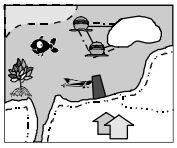
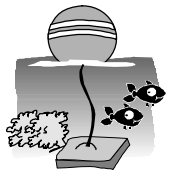
Appendix J. Municipality/City Benchmarks for the 3 levels of CRM

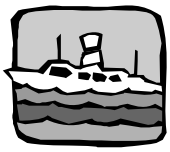
BENCHMARK AND RATIONALE	BENCHMARK DESCRIPTION
BASIC REQUIREMENTS  **Coastal resource assessment** ***Resource assessment is necessary to describe the status of habitats and fisheries and the socioeconomic condition of coastal communities in the municipality/city. The results of coastal resource assessment are used to plan short and long-term interventions and monitor changes in socioenvironmental conditions.***	**Level 1: Coastal environmental profile developed** ✓ Coastal environmental profile developed through secondary data compilation and baseline assessment (e.g., PCRA, rapid assessment, scientific surveys) of coastal resources and socioeconomic and environmental conditions in coastal areas Condition of fisheries, coastal habitats, and other resources and their uses assessed ✓ General socioeconomic condition of the municipality/city described ✓ Coastal database and information system established **Level 2: Monitoring plan developed and implemented for assessing socioenvironmental conditions** ✓ Monitoring plan for assessing biophysical and socioeconomic conditions developed to assess changes resulting from CRM plan implementation ✓ Biophysical and socioeconomic assessments conducted on a regular basis for at least 2 years ✓ Linkages with NGAs, NGOs, and academic institutions involved in monitoring developed to assess conditions and use data for decision-making ✓ Key indicators identified and highlighted in the monitoring plan ✓ Coastal database/information management system established and operational **Level 3: Socioenvironmental conditions assessed in accordance with monitoring plan** ✓ Biophysical and socioeconomic assessments conducted on a regular basis for at least 5 years ✓ Data analysis conducted and compared to baseline conditions ✓ Coastal database and information management system updated regularly
 Multi-year CRM plan ***The multi-year CRM plan provides overall framework and direction in managing the coastal resources of the municipality/city. A multi-year plan sets the short and long-term strategies, and consolidates programs, targets, and priorities of local governments in addressing coastal issues through participatory processes and public consultation.***	**Level 1: Multi-year CRM plan drafted** ✓ Draft multi-year CRM plan prepared through stakeholder consultations which may include: description of the area, maps, management goals and objectives, strategies and actions, institutional and legal framework, timeline and funding requirements, and M&E system ✓ Coastal environmental profile used as basis for planning **Level 2: Multi-year CRM plan finalized and adopted** ✓ Multi-year CRM plan finalized and adopted after public hearings and with supporting municipal/city resolution/ordinance **Level 3: Adopted multi-year CRM plan reviewed annually and revised as needed** ✓ Annual review of CRM plan conducted ✓ Results of M&E of CRM plan implementation and other program reviews considered as inputs to revision ✓ Multi-year land and water use plans reconciled and made consistent

BENCHMARK AND RATIONALE	BENCHMARK DESCRIPTION
 Annual CRM programming and budgeting ***Annual and appropriate levels of investment are needed to sustain local CRM plans and programs. Municipal/city CRM unit or office with trained staff and operating budget is also needed to sustain efforts in implementation.***	**Level 1: Annual budget allocated for CRM** ✓ Annual municipal/city budget allocated for CRM and other sources of funding leveraged or secured in support of the CRM plan **Level 2: Financial and human resources assigned to CRM activities** ✓ Annual budget allocated and human resources assigned to CRM activities ✓ CRM budget allocated annually for at least 2 years, supplemented by other sources of funding for implementation, as needed ✓ Trained CRM staff assigned to municipality/city with operating budget **Level 3: Annual programming and budget sufficient to implement the plan** ✓ Annual programming and budget allocated for at least 5 years ✓ CRM unit established under MAO or CRM office with staff and budget
 **CRM-related organizations** ***The success of CRM activities can be attributed to well-organized communities in the form of POs, FARMC, or TWGs. Through community organizing, people are empowered to be partners of LGUs in implementing CRM plans and programs.***	**Level 1: CRM-related organizations formed and active** ✓ M/CFARMC and at least 1 other CRM-related organization (e.g., TWG, Bantay Dagat, PO) formed and are active as evidenced by regular meetings (at least quarterly), trainings conducted, and activities accomplished **Level 2: CRM-related organizations active and effective** ✓ M/CFARMC and at least 1 other CRM-related organization contributing to local policy formulation, CRM plan review, and implementation **Level 3: CRM-related organizations effective and supported financially through municipal/city budget or revenue-generating mechanisms** ✓ Active and effective M/CFARMC and at least 1 other CRM-related organization sustained and supported with funding from various sources
 Shoreline/foreshore management ***Infrastructure and other development activities in shoreline and foreshore areas often result in adverse impacts on coastal habitats and fisheries. Setback rules, regulation, and monitoring of existing and intended development activities, and measures to mitigate their impacts should be carefully planned and effectively implemented***	**Level 1: Shoreline/foreshore management measures planned** ✓ Existing shoreline and coastal land use reviewed ✓ Strategies to protect shoreline and foreshore areas from destructive development identified (e.g., setback requirements, zoning, mangrove reforestation, or other shoreline/foreshore management measures) ✓ Programs planned to protect shoreline and foreshore areas (e.g., mangrove reforestation, ordinances drafted providing for protection of shoreline and foreshore areas) ✓ Shoreline and foreshore management measures incorporated into CRM or land-use plan **Level 2: Shoreline/foreshore management measures adopted with implementing guidelines** ✓ Shoreline/foreshore management measures adopted through local ordinance and implemented through local business and building permits ✓ Shoreline management measures (e.g., setback requirements, zoning, mangrove reforestation, or other shoreline/foreshore management measures) implemented to minimize negative impacts of development in coastal areas **Level 3: Shoreline/foreshore management effective with regular monitoring and enforcement** ✓ Regulation, monitoring, and enforcement of shoreline/foreshore use in accordance with existing ordinances, permits, and plans ✓ Illegal construction in shoreline setbacks and foreshore areas minimized

BENCHMARK AND RATIONALE	BENCHMARK DESCRIPTION
BEST PRACTICES  **Municipal water delineation** ***The delineation of municipal waters defines the geographic extent of the municipality's/city's jurisdiction for taxation or revenue generation, law enforcement responsibilities, resource allocation, and general management powers. A municipality/ city with delineated municipal waters can ensure the protection of the rights of its resident small fishers in the preferential use of their territorial waters.***	**Level 1: Municipal water boundary delineated in accordance with prescribed guidelines** ✓ Preliminary maps and technical description of municipal water boundaries determined in accordance with prescribed guidelines ✓ Inter-LGU discussions and workshops held to identify potential boundary issues in accordance with prescribed guidelines **Level 2: Municipal water boundaries adopted** ✓ Local ordinance enacted to establish municipal water boundaries after public review and consultation and certification by NAMRIA **Level 3: Municipal water boundaries utilized as basis for LGU jurisdiction and protection of small fishers' preferential-use rights** ✓ Municipal water boundaries used for CRM and other activities (e.g., zoning, law enforcement, regulation, taxation, etc.) ✓ Small fishers enjoying preferential use of municipal waters ✓ Monitoring, control, and surveillance of activities conducted to stop illegal activities and destructive practices in municipal waters
 **Coastal zoning** ***Coastal zoning minimizes resource-use conflicts in coastal areas. Different use zones or areas are set aside for protection, rehabilitation, multiple-use purposes, and other types of human activities. Management of each zone is guided by regulatory mechanisms. Integrating the water use zones into the land use plan of municipality/city would ensure rational and wise utilization of the area.***	**Level 1: Coastal zoning planned and initiated** ✓ Existing water and land uses identified ✓ Existing and potential areas of conflicts identified ✓ Existing zoning plans reviewed **Level 2: Coastal zoning harmonized, adopted, and implemented** ✓ Land and water use plans reconciled and harmonized ✓ Development activities in coastal areas monitored and undertaken in accordance with coastal zoning requirements **Level 3: Coastal zoning effective and sustained** ✓ Coastal zoning requirements reviewed regularly ✓ Resource use conflicts minimized ✓ Regular monitoring for compliance
 Fisheries management ***Fisheries management is an integral component of CRM. Regulatory and other management measures to limit access to fisheries resources are essential in the regeneration of***	**Level 1: Fisheries management measures planned and initiated** ✓ Regulatory mechanisms planned and initiated to limit access to and pressure on fishery resources, and may include licensing, limitations on number of fishers, closed seasons, gear restrictions, limitations on size of fish caught, color coding of boats, and other catch restrictions **Level 2: Fisheries management measures implemented** ✓ Municipal fishers registered and licensed ✓ Regulatory mechanisms for fisheries management adopted through local legislation and enforced for at least 2 years ✓ Monitoring plan for municipal fisheries developed and implemented

BENCHMARK AND RATIONALE	BENCHMARK DESCRIPTION
depleted fish stocks. Fisheries management aims to improve fisheries productivity, equity in the use of and access to resource base and ecosystem integrity.	**Level 3: Fisheries management measures sustained with positive impacts** ✓ Regulatory mechanisms sustained for at least 5 years ✓ Number of municipal fishers regulated and limited ✓ Improved compliance with fisheries regulations ✓ Increased catch per unit effort
 **Marine protected areas** ***MPAs, such as reserves, sanctuaries, and parks provide protection and conservation of critical habitats and reef-associated fisheries. A well-planned and managed MPA leads to marine biodiversity conservation and increased fisheries production. Revenues can also be generated from tourism and other activities in MPAs.***	**Level 1: MPAs planned or established** ✓ Participatory processes involving coastal stakeholders in assessment and planning initiated for the establishment of at least one MPA (e.g., coral reefs, seagrass beds, other important coastal habitats) ✓ Social acceptance for site selection sought ✓ Site selection with baseline assessment conducted ✓ Management measures or plan drafted ✓ Ordinance enacted or revised for establishment and management of an MPA **Level 2: MPAs managed and enforced** ✓ MPA management sustained for at least 2 years ✓ Management body and plan finalized, adopted, and accepted by community ✓ Marker buoys and signs installed ✓ Biophysical and socioeconomic conditions monitored **Level 3: MPA management sustained with positive impacts** ✓ Management activities sustained for at least 5 years ✓ Biophysical improvement measured ✓ Socioeconomic benefits accruing to LGU and community through revenue-generating mechanisms, increased fish catch, or enhanced sense of community pride ✓ Compliance with MPA rules and regulations
 Mangrove management ***Mangrove ecosystems are extremely productive and supply resources, such as wood, fish, and crustaceans as well as other ecological and economic benefits for coastal municipalities/cities. Mangrove forests, managed through a Community-based Forest Management Agreement or other management measures, will contribute to the regeneration of depleted fisheries resources and provide mangrove-friendly economic activities for coastal communities.***	**Level 1: Mangrove management measures planned or established** ✓ Baseline assessment and inventory of mangrove areas conducted ✓ Community-based forest management agreements, mangrove planting, protection, or other management and rehabilitation measures planned or established **Level 2: Mangrove areas managed and protected.** ✓ Community-based mangrove management agreements awarded or other management and rehabilitation measures established and sustained for at least 2 years **Level 3: Mangrove areas sustained with positive impacts** ✓ Economic benefits derived from mangrove management options ✓ Mangrove areas rehabilitated and maintained ✓ Mangrove management measures sustained for at least 5 years

BENCHMARK AND RATIONALE	BENCHMARK DESCRIPTION
 Solid waste management ***Solid waste management, through segregation, volume reduction, and waste minimization, is necessary to ensure cleanliness in the coastal environment, particularly shoreline and foreshore areas. Proper management and disposal of solid waste minimize negative impacts to coastal resources and protect people from diseases.***	**Level 1: Solid waste management system planned and initiated** ✓ National and local laws on solid waste management reviewed, public orientation sessions conducted ✓ Solid waste management board established ✓ Waste segregation, minimization, collection, and disposal systems planned and initiated ✓ IEC conducted **Level 2: Solid waste management system operational** ✓ Solid waste management board active ✓ Waste segregation, minimization, collection, and disposal systems operational ✓ Inappropriate waste disposal sites in coastal areas identified with plans for mitigation and new site selection ✓ Waste disposal sites designated to minimize impact on coastal areas **Level 3: Solid waste management system effective and sustained with positive impacts** ✓ Waste segregation, minimization, collection, and disposal systems effective and monitored with measured reduction in waste generated and disposed ✓ Solid waste disposed in coastal areas minimized ✓ Compliance with solid waste management regulations
 Upland/watershed management ***Rehabilitation and protection of uplands and watershed areas and implementation of sustainable upland farming practices are important to minimize erosion that causes shoreline destruction and siltation of coastal habitats.***	**Level 1: Upland/watershed management program planned and initiated** ✓ Upland/watershed management issues affecting the coastal zone identified, including upland sources of siltation and other pollution carried by streams and rivers from deforestation, and domestic, industrial, and agricultural pollution ✓ Baseline conditions established ✓ Watershed management plan drafted through multisectoral consultations, public hearings, and if necessary, inter-LGU collaboration (such as in cases where the watershed system spans several LGUs) **Level 2: Upland/watershed management program adopted and implemented** ✓ Upland/watershed management plan adopted through local legislation (or through inter-LGU agreements, if necessary) after public hearings ✓ Reforestation projects implemented ✓ Pollution minimization and prevention programs adopted by industries ✓ Pesticide reduction program adopted by farmers ✓ Solid waste management system in place ✓ Water quality monitoring program implemented in rivers and coastal waters through multisectoral, inter-LGU, and interagency collaboration **Level 3: Upland/watershed management program effective and sustained with positive impacts** ✓ Measurable improvements in forest cover pollution reduction and quality of river and coastal waters
 Coastal environment-friendly enterprise development	**Level 1: Coastal environment-friendly enterprises that promote conservation and sustainable use of coastal resources planned and initiated** ✓ Fisherfolk/coastal communities targeted for employment in nonfishing livelihoods or low-impact mariculture. (Note: The following enterprises are not coastal environment-friendly: use of *payaws*, fish corrals, artificial reefs, and highly efficient fishing technologies; distribution of efficient fishing gear to small fishers; polluting activities.)

BENCHMARK AND RATIONALE	BENCHMARK DESCRIPTION
Coastal environment-friendly enterprises are implemented to augment income of the fishers while limiting their access to the sea. They also encourage stakeholder participation in different rehabilitation and conservation activities in the municipality/city.	**Level 2: Coastal environment-friendly enterprises successful and expanding** ✓ Livelihood and enterprise development programs employing fisherfolk/ coastal communities in nonfishing livelihoods or low-impact mariculture that promotes conservation and sustainable use of coastal resources **Level 3: Coastal environment-friendly enterprises providing measurable socioeconomic and biophysical benefits** ✓ Livelihood and enterprise development programs resulting in measurable socioeconomic benefits to fisherfolk/coastal communities and biophysical improvements in the condition of coastal resources
 Local legislation ***Local legislation, in the form of ordinances provide the local executive branch with necessary mandate, powers, and functions to properly manage coastal habitats and fisheries. Local legislation, together with national laws, provides the legal basis for regulations to protect coastal resources and enable coastal law enforcement.***	**Level 1: Local legislation reviewed** ✓ Local CRM-related legislation reviewed and revised consistent with national policies and laws ✓ Local ordinances proposed or drafted in support of multi-year CRM plan and specific regulatory and management measures ✓ Public hearings and community consultations conducted **Level 2: Local legislation enacted and implemented supportive of CRM plan** ✓ CRM-related local legislation enacted supporting CRM plan and regulatory and management measures ✓ Information campaign on local and national legislation conducted **Level 3: Local legislation promoting the common good** ✓ Legislation achieving its specified objectives ✓ Widespread knowledge of and compliance with local legislation among stakeholders ✓ Local legislation reviewed and revised as necessary to improve effectiveness and relevance
 **Coastal law enforcement** ***CRM cannot succeed without effective law enforcement. Coastal law enforcement units at the municipal/city levels must be formed and functional to promote voluntary compliance with national and local laws and regulations. Municipalities/ cities have the primary mandate to enforce fisheries and other CRM-related laws within their territories.***	**Level 1: Coastal law enforcement units formed and trained** ✓ Coastal law enforcement units formed and trained, composed of the Philippine National Police, with assistance from Bantay Dagat and deputized fish wardens **Level 2: Coastal law enforcement units operational** ✓ Operation plan developed and budget allocated for efficient conduct of coastal law enforcement ✓ Coastal law enforcement units equipped and conducting land and sea-based operations ✓ Apprehensions, cases filed, and convictions related to violations of coastal laws recorded ✓ Coastal law enforcement sustained for at least 2 years **Level 3: Coastal law enforcement units effective** ✓ Illegal activities in coastal areas and municipal waters minimized or stopped ✓ Regular training of coastal law enforcement units and monitoring of their activities ✓ Effective coordination mechanism established with other agencies with coastal law enforcement mandates ✓ Coastal law enforcement sustained for at least 5 years

BENCHMARK AND RATIONALE	BENCHMARK DESCRIPTION
 Revenue generation ***Municipalities/cities are responsible for generating revenue to support the continued implementation of CRM plans and programs. Revenues can be generated internally and externally through taxes, fines, fees for coastal resource use, grants and donations, and loans and other credit-financing schemes.***	**Level 1: Revenue-generating strategies for coastal resource uses developed and initiated** ✓ User fees and other revenue-generating mechanisms identified through barangay consultations and public hearings for various coastal resource uses and investments based on CRM plan and coastal zoning ✓ Revenue allocation to CRM and community projects identified **Level 2: Revenue-generating strategies for coastal resource uses finalized and adopted through public hearings** ✓ Revenue-generating mechanisms finalized and adopted through public hearings as a municipal ordinance or other means ✓ Revenue collection system established and implemented **Level 3: Revenue-generating strategies supporting CRM projects and programs** ✓ Revenue-generating mechanisms supporting CRM and community projects and programs
 Multi-institutional collaboration for CRM ***Although municipalities and cities are primarily responsible for CRM, they need to coordinate with other LGUs, NGAs, NGOs, academe, and other institutions involved in CRM. Through multi-institutional collaboration, municipalities and cities can tap technical and financial assistance and plan and implement effective CRM activities***	**Level 1: Multi-institutional collaboration planned and initiated** ✓ Potential collaborators from LGUs, NGAs, NGOs, academe, private sector, and funding institutions identified ✓ MOAs drafted defining inter-LGU collaboration in coastal law enforcement or other CRM-related activities; institutional roles and responsibilities and modes of collaboration and resource-sharing to provide technical and financial assistance, including training, M&E, livelihood, skills development, IEC support, and others **Level 2: Multi-institutional arrangements for collaboration formalized and strengthened** ✓ MOAs or other instruments adopted by municipal resolution or signed by collaborators ✓ Collaborative activities implemented **Level 3: Multi-institutional collaboration effective** ✓ CRM-related activities jointly implemented with measured success. ✓ Resource sharing mechanisms effective ✓ Terms and conditions specified in MOAs or other instruments reviewed and revised as necessary

IEC: information, education, and communication
LGUs: local government units
MAO: Municipal Agriculture Office
M/CFARMC: Municipal/City Fisheries and Aquatic Resource Management Council
M&E: monitoring and evaluation
MOA: memorandum of agreement
MPAs: marine protected areas
NAMRIA: National Mapping and Resource Information Authority
NGAs: national government agencies
NGOs: non-governmental organizations
POs: people's organizations
TWGs: technical working groups

Source: DENR-CMMO (Department of Environment and Natural Resources — Coastal and Marine Management Office). 2003. Monitoring and evaluating municipal/city plans and programs for coastal resource management. Coastal Resource Management Project of Department of Environment and Natural Resources, Cebu City, Philippines. 93p.

Appendix K. Memorandum of Agreement between DA-BFAR, DILG and USAID on the implementation of the FISH Project

MEMORANDUM OF AGREEMENT
among the
DEPARTMENT OF AGRICULTURE,
DEPARTMENT OF INTERIOR AND LOCAL GOVERNMENT,
and the
UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT
For the Implementation of the
Fisheries lmproved For Sustainable Harvests (FISH) Project

KNOW ALL MEN BY THESE PRESENTS:

This MEMORANDUM OF AGREEMENT (MOA) is entered into by and among:

The Department of Agriculture, with office address at Elliptical Road, Diliman, Quezon City, herein represented by its Secretary, Honorable Arthur C. Yap, and hereinafter referred to as DA;

The Department of the Interior and Local Government, with office address at A. Francisco Gold Condominium II, EDSA corner Mapagmahal St., Diliman, Quezon City, herein represented by its Secretary, Honorable Angelo T. Reyes, and hereinafter referred to as DILG; and

The United States Agency for International Development, with office address at 8/F, PNB Financial Center, Roxas Boulevard, Pasay City, herein represented by its Mission Director, Michael J. Yates, and hereinafter referred to as USAID.

WITNESSETH:

WHEREAS, USAID and the National Economic and Development Authority (NEDA) of the Government of the Republic of the Philippines (GRP) entered into the Strategic Objective Agreement dated August 22, 2001 for the Protection of Productive and Life-Sustaining Natural Resources through Improved Environmental Management and Enforcement (the "USAID-NEDA SOAG") and the Memorandum of Understanding dated May 30, 2002 for the Protection of Productive and Life-Sustaining Natural Resources (USAID-NEDA MOU);

WHEREAS, the FISH Project supports USAID Philippines' Strategic Objective of Protecting Productive and Life-Sustaining Natural Resources through Improved Environmental Management and Enforcement;

WHEREAS, the DA, through its Bureau of Fisheries and Aquatic Resources (DA-BFAR), is the primary government agency responsible for ensuring the sustainable use of ma,rine and

fisheries resources, and is likewise mandated to work with the Department of the Interior and Local Government (DILG) and to assist local government units (LGUs) in managing these resources within their respective jurisdictions pursuant to Republic Act No. 8550, otherwise known as the Philippine Fisheries Code of 1998;

WHEREAS, the marine fisheries sector is seriously threatened by rampant, destructive and indiscriminate extraction practices, and the DA, through BFAR, and USAID are interested in collaborating to address these threats together and in coordination with select local government units (LGUs), through the FISH Project;

WHEREAS, DA and DILG endorse the FISH Project and fully support its activities; and

WHEREAS, DA, DILG, and USAID (the "Parties") desire to enter into this MOA for the purpose of setting forth their roles and responsibilities for the implementation of the FISH Project.

NOW, THEREFORE, for and in consideration of the foregoing premises, the Parties do hereby mutually agree as follows:

1. THE FISH PROJECT

The FISH Project aims to conserve biological diversity in at least four biologicallya nd economically important marine ecosystems in the Philippines, by addressing illegal extraction practices and other threats to the marine and fisheries sector. The planned strategy of the FISH Project involves assistance to national and local stakeholders, including but not limited to, DA-BFAR and selected LGUs, in improving their capabilities to manage fisheries resources.

Success mav be measured bv the increase in fish stocks and imoroved maintenance of the selected coastal resources.

USAID has approved the FISH Project for the Philippines for a period of seven years with anticipated USAID funding of $12.35 million. Such USAID assistance for the FISH Project, however, is subject to the future availability of Congress appropriated and Agency allocated funds for this purpose.

Through the FISH Project, USAID will support fisheries sector management activities of the DA-BFAR, other GRP agencies, and non-GRP entities such as the Fisheries and Aquatic Resources Management Councils (FARMCs), and concerned individuals. Among other activities, the FISH Project will seek to enhance the technical capacity of DA-BFAR for service delivery consistent with its legal mandate. The exact nature of USAID assistance will be determined and prioritized through joint DA-BFAR and USAID assessment of the institutional capacities of DA-BFAR, other concerned GRP agencies, and non-GRP entities, such as the FARMCs and other relevant entities. FISH Project assistance for DA-BFAR may include but is not limited to the following:

- strengthening enforcement of fishery and coastal resources management laws;

- supporting the development of livelihood opportunities; improving fisheries related policies; promoting awareness and support for fisheries management;
- designing and implementing national coastal and marine fisheries management framework in target areas; and strengthening working relationships with the private sector.

USAID assistance under the FISH Project will be provided through non-GRP organizations and individuals funded by USAID in support of the fisheries sector management activities of GRP and non-GRP entities and individuals. In addition to this MOA with DA and DILG, USAID plans to establish an agreement with each assisted entity on the results that USAID's assistance will achieve and on the work plan for USAID's assistance. USAID assistance for the FISH Project is subject to the availability of funds for this purpose.

II. IMPLEMENTATION ARRANGEMENTS

The responsibilities of DA, USAID, and DILG in the implementation of the FISH Project are set forth below.

A. DA

DA shall:

1. Through DA-BFAR, serve as both a partner implementing agency and project beneficiary, and provide available technical support staff as needed for effective project implementation and to ensure sustainability of project results;
2. Through DA-BFAR, identify and prioritize project assistance required to fulfill its lawful mandate, identify and prioritize national and local policy issues and international instruments on sustainable management of marine fisheries requiring project attention, participate in the development of the performance monitoring plan of the project, and endeavor to replicate and institutionalize successful project results;
3. Provide resources to facilitate the effective and timely execution of project activities subject to availability of funds from the Department of Budget and Management (DBM) allocated for this purpose. Resources shall include costs borne on an in-kind basis, such as necessary or appropriate costs for DA-BFAR staff for FISH Project-related activities;
4. Subject to USAID's prior consultation with, and approval in writing by DA-BFAR Director, provide assistance necessary to have all commodities, supplies, materials, equipment, vehicles and other goods financed by USAID and imported or procured outside the Philippines needed incarrying out the Project exempted from the payment of all customs duties, fees and other taxes imposed under Philippine law, and
5. Subject to USAID's prior consultation with and concurrence by DA-BFAR, support visa application of expatriate consultants needed to implement FISH Project activities and other related travel documents by actively coordinating and favorably communicating with appropriate GRP officials.

B. USAID

USAID shall:

1. In consultation with DA-BFAR, enter into agreements with technical assistance contractor(s) or grantee/s) for the implementation of the FlSH Project, subject to availability of funds and to consultation with DA-BFAR on scopes of work and program descriptions;
2. Provide technical guidance, directly or through its technical assistance contractor(s) or grantee(s), to support implementation of the FlSH Project consistent with Project work plans, and facilitate collaboration among donors and with other USAlD projects;
3. Assist DA-BFAR and select LGUs in, promoting awareness and support for fisheries management; designing and implementing community-based management of marine fisheries resources in target areas and integrating population and environment concerns; and
4. Monitor progress and evaluate project implementation jointly with DA-BFAR to achieve desired project results and ensure satisfactory performance of the non-governmental implementing entity or entities in providing technical assistance to DA-BFAR and LGUs in mutually agreed upon areas, including capacity building for service delivery and responsiveness, assistance in facilitating adoption of relevant provisions of regional and international fisheries action agenda, and in identifying priority areas for technical assistance and training; and
5. Consult with DA-BFAR regarding the importation of any commodities, materials, equipment, vehicles, and other goods by USAlD implementing organizations carrying out the FlSH Project, as provided in Section ll A(4) hereof.

C. DILG

The DILG shall:

1. Participate in the CG and TWG meetings, and provide policy-level advice and guidance in the implementation of the FISH Project;
2. Issue necessary circulars encouraging LGUs to fully support the implementation of the FlSH Project; and
3. Support the implementation of the FISH Project in the regions specifically in relation to other policies such as the Philippines Fisheries Code and the Agriculture and Fisheries Modernization Act.

lll. PROJECT MANAGEMENT AND DIRECTION

The following mechanisms shall provide strategic and operational levels of direction to the implementation of the FlSH Project:

A. Consultative Group - The Parties will establish a FlSH Project Consultative Group (CG) which shall meet at least once a year to review direction and provide guidance to the project. The CG will be composed of representatives from the USAID, DA-BFAR, and DILG. The CG members may also invite, as appropriate, other representatives from relevant government agencies, nongovernmental organizations and select LGUs. DA-BFAR and USAlD shall co-chair the CG, provide overall policy direction and guidance to ensure that project activities are necessary and appropriate in scope, review project work plans and other status or progress reports, and help identify and carry out actions to support overall project implementation

B. Technical Working Group - A FISH Project Technical Working Group (TWG) will also be formed to serve as the Project implementation team to develop overall project work plans and support-day-to-day implementation. The TWG will be composed of USAID, DA-BFAR and DILG as permanent members. The Parties will mutually agree on other appropriate members of the TWG and will each designate their representatives to attend meetings which will be held quarterly or more frequently as needed for guidance and for assessing progress and accomplishments. Other implementation matters will be mutually agreed upon by the Parties at TWG meetings.

IV. FINAL PROVISIONS

It is the intention of the Parties, subject to availability of their respective funding for this purpose, to carry out, in good faith, their roles and responsibilities as described in this MOA. The Parties hereto may, upon mutual consent, amend, alter, or modify this MOA by any instrument duly signed by all of the Parties. The Parties shall develop a detailed implementation protocol through, by way of example and not limitation, a workshop conducted for the purpose, in support of the FISH Project implementation.

This MOA is to be interpreted harmoniously with the USAID-NEDA SOAG and the USAID-NEDA MOU, and nothing in this MOA is intended to amend or modify those agreements or any other agreements, including USAID's agreements with USAID implementing organizations.

This MOA shall remain in effect until September 30, 2010, unless terminated by any Party hereof upon prior written notice to the other Parties. After this date, this MOA may be extended upon written agreement by all Parties.

IN WITNESS WHEREOF, the Parties have hereunto entered into this MOA and affixed their signatures. The effective date of this MOU shall be the last date on which all Parties hereto have signed.

(Sgd.) ARTURO C. YAP
Secretary, Department of Agriculture
November 2, 2004

(Sgd.) ANGELO T. REYES
Secretary, Department of the Interior and Local Government
January 27, 2005

(Sgd.) MICHAEL J. YATES
Mission Director, United States Agency for International Development
March 1, 2005

Witnesses

(Sgd.) CESAR M. DRILON
Undersecretary for Livestock and Fisheries, Department of Agriculture

(Sgd.) EDUARDO R. SOLIMAN JR.
Undersecretary for Local Government, Department of the Interior and Local Government

(Sgd.) MALCOLM I. SARMIENTO JR.
Director, Bureau of Fisheries and Aquatic Resources, Department of Agriculture

(Sgd.) DANIEL C. MOORE
Chief, Office of Energy and Environment, US Agency for International Development

Implemented by the Department of Agriculture-
Bureau of Fisheries and Aquatic Resources and
supported by the United States Agency for International
Development