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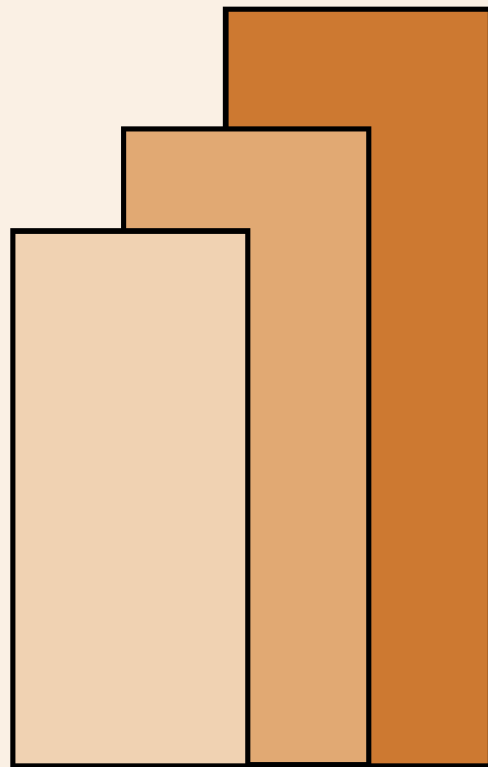
Danilo C. Israel

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Review of Methods for Assessing Community-Based Coastal Resources Management in the Philippines

by

Danilo C. Israel

Community-Based Coastal Resources Management (CBCRM) activities in the Philippines have phenomenally increased over the years while studies that assess their performance were few. This paper reviewed the literature dealing on the evaluation of CBCRM and the methods they applied with the end view of generating useful information for the possible development of a common methodology for future work.

The paper found that most of the studies evaluating CBCRM dealt only on individual projects or project sites. They either used simple descriptive statistics comparing actual performance against pre-set objectives or more quantitative methods, particularly the Baseline-Independent Technique and the Institutional Analysis Approach. The limited number of studies at present suggests that CBCRM is under-assessed as a management method. A reason is that methodologies for the purpose are not yet fully developed and familiar to researchers. This renders methodology development a priority research concern.

The study further found that at the level of individual projects, many CBCRM activities have been successful in the pursuit of at least some of their activities. This implies the great potential of the approach for helping solve the various problems in coastal fisheries. That CBCRM has limited coverage nationally, involves only a small proportion of the population, and generally disregards the interests of other sectors like commercial fishers means that much can be done to improve on the approach and make it a true vehicle of coastal fisheries development.

Keywords: Community-Based Coastal Resources Management, Methods for Evaluating CBCRM, Co-management, Community-Based Co-Management, CBCRM Programs and Projects, Fisheries Resource Management Project, Coastal Resource Management Project

Review of Methods for Assessing Community-Based Coastal Resources Management in the Philippines

by

Danilo C. Israel*

I. Introduction

The Local Government Code of 1991 and the Philippine Fisheries Code of 1998 granted local government units (LGUs) more powers to manage municipal fisheries and coastal resources. Furthermore, they provided for the greater participation of fishermen, other stakeholders, and the community in general in coastal resources management. As a result, the development of approaches for the management of municipal fisheries and coastal resources that are more participatory and multi-sectoral in nature has been enhanced. This was particularly reflected by the phenomenal growth of Community-Based Coastal Resources Management (CBCRM) programs and projects in the past decade (Pomeroy and Carlos 1996).

While CBCRM programs and projects already abound, however, the long-standing problems in the municipal fisheries and coastal areas remain. In general, low productivity, deteriorating poverty, and worsening resource depletion and environmental degradation continue to hound municipal fishing communities (e.g. Israel 1999, Pomeroy and Carlos 1996). It is evident that although the implementation of CBCRM activities has been a significant positive step for fisheries resource management, much remains to be done to make the long-term goal of a highly productive, socially-equitable, and environmentally-sustainable municipal fisheries a reality.

II. Rationale, Objectives and Organization

The problems in the municipal fisheries sector and coastal areas necessitate the continuous search for effective innovations and improvement in coastal resources management. This undertaking is further made imperative by another important law, the Agriculture and Fisheries Modernization Act (AFMA) of 1998 that specifically targets the fisheries sector, together with crop and

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livestock agriculture, as a key growth and management concern in the entire economy.

In the case of CBCRM in particular, the site-specific nature of the implemented programs and projects employing the management approach may render a review and judgment of its effectiveness at the national level inappropriate at present. Although growing, the practice of CBCRM is still more of an exception rather than the norm in the coastal areas. Nevertheless, a serious evaluation of CBCRM at the level of the individual programs or projects is worthwhile for the following reasons. First, it will pinpoint weaknesses and flaws in the current activities that need fine-tuning and refinement. Second, it will generate data and information useful for the improved planning and implementation of similar CBCRM activities in the future. Third, since CBCRM activities may be sources of management-related information not specific to the approach alone, an evaluation of programs, projects and sites will provide new knowledge useful for the management and development of the fisheries sector as a whole.

Given the usefulness of assessing individual CBCRM activities, this paper reviewed the available literature that has been conducted on the subject. A cursory look showed that only a few studies evaluated individual CBCRM programs or projects. These works were either conducted independently by researchers and institutions or funded by CBCRM donor agencies. Specifically, this paper reviewed the evaluation methods applied in these works with the end purpose of generating background theoretical and empirical data and information that can be used for the development of a common methodology for future assessment.

The third section of this paper discussed the definition of CBCRM and related management approaches. The fourth section reviewed the major CBCRM activities implemented in the Philippines over the years. The fifth and sixth sections discussed the past works evaluating CBCRM programs and CBCRM and CBCRM-type projects. The seventh section discussed in detail the potential methodologies for the evaluation of CBCRM. The final section of the paper provided the conclusions.

III. Definition of CBCRM

Basically, CBCRM is a management concept that attempts to demonstrate that a people-oriented and holistic approach to coastal resources management can lead to better results than the form of management dominated mainly by the government. Formally, it is defined as “a process by which residents of a coastal community are provided the opportunity and responsibility to manage their own resources; define their needs, goals and aspirations; and make decisions and take actions affecting their well-being” (Pomeroy and Carlos 1996). According to

Sajise (1995), the approach is inherently evolutionary, participatory and locale-specific and considers the technical, socio-cultural, economic, political and environmental factors impinging upon the community. Rivera (1997) furthermore pointed out that CBCRM is a politically negotiated process of making decisions on the ownership, control and overall policy directions of coastal natural resources.

The way it is practiced in the Philippines, much of CBCRM can be considered as closely similar to co-management (Pomeroy 1998, Pomeroy and Williams 1994). Co-management is a management concept that is defined as “the sharing of responsibility between the government, fishermen, local community, non-governmental organizations (NGOs) and other stakeholders in the management of the fishery.” In the sense that CBCRM does not mean the complete exclusion of the government but only the significant upgrading of community involvement in the management process, CBCRM and co-management are indeed closely related management approaches by definition.

Although similar, CBCRM and co-management nevertheless differ in some ways. A major distinction is that while the former is mainly people-centered and community-focused, the latter concentrates not only on these issues but also on the partnership arrangement between the government, the individual resource users, other stakeholders, and the local community (Pomeroy 1998). Furthermore, while the government often plays a minor role in CBCRM, it has a major and active role in co-management.

When CBCRM is an integral part of co-management, a new management approach is formed, the so-called community-based co-management (Pomeroy 1998). This hybrid is characterized as also people-oriented, community-oriented, resource-based and founded on the partnership of the local governments on one hand and the fishermen, other stakeholders and the community on the other.

It should be emphasized that both the development of CBCRM and co-management is not a simple but rather a very complex process. These management systems are costly and time-consuming to implement (Pomeroy and Williams 1994). Initiating and institutionalizing them is a long and tedious undertaking that requires several stages of different activities and interventions over a long period of time.

IV. Major CBCRM Programs and Projects in the Philippines

Pomeroy and Carlos (1996) defined a CBCRM program as “an intermediate-term statement that breaks down a comprehensive long-range plan

into a set of different single-use sub-plans.” It is developmental in nature, tactical rather than strategic, and may range from 3 to 5 years to achieve results. A project is defined as “a specific, complex and time-bound set of tasks or activities performed by a team of different specialists to achieve a given objective according to a defined budget and timetable.” An individual project is site-specific, lasts for months to a few years, and can have one or more units or sites.

There has been no attempt to list all CBCRM programs and projects in the Philippines since the approach was first applied. Such an effort would have been difficult to conduct and constrained by some problems. Particularly, identifying fully the numerous community-based fisheries management activities that have been conducted over time and subsequently establishing those that are actually a CBCRM program or project by definition will be difficult. Also, since many of the community-based coastal management activities over the years have been small-scale in nature and conducted locally without any participation at the national level, proper identification of CBCRM activities is further rendered problematic.

The FRMP (2001a), however, made a listing of recent major coastal resource management and related initiatives in the Philippines, most of which have CBCRM-type components (Table 1). There were 24 such undertakings conducted in different areas since 1993. Some ended during the second half of the last decade while others will terminate in the first half of the current decade. Some of the initiatives have regional coverage while others concentrated on specific provinces, communities or important areas such as islands, seas, bays, gulfs, sounds and marshlands. It should be noted that the FRMP list does not include the Fisheries Sector Program (FSP) that was also a major coastal resource management initiative in the early nineties.

In peso terms, the Coastal Environmental Information System - Eastern Visayas, Fisheries Resource Management Project, and the Community-Based Resources Management Project had the largest budgetary allocations (Table 2). Those with the least budget allocations were the Marine and Coastal Erosion/Degradation and Geohazard Studies, Community-Based Coastal Resource Management - Eastern Samar, and the Submarine Geology and Mineral Resources Off the Coast of Surigao del Norte of the Philippines. The activities were either funded by loan from an international funding institution with counterpart government funds, grant from an international donor institution with counterpart government funds, solely by the national government, solely by LGUs, or by a bilateral agreement program. Some of the costs of the initiatives were originally expressed in dollars and these were converted to pesos for the current purpose using the prevailing exchange rates at the time the initiatives commenced operations.

Table 1. Recent Major Coastal Resource Management and Related Initiatives in the Philippines, by Duration and Project Sites

Initiative	Duration	Project Sites
Fisheries Resource Management Project (FRMP)	1998-2003	Fisheries Sector Program Bays: Calauag Bay, Tayabas Bay, San Miguel Bay, Ragay Gulf, Lagonoy Gulf, Sarangani Bay, Carigara Bay, San Pedro Bay, Ormoc Bay, Sogod Bay, Panguil Bay FRMP Bays: Lingayen Gulf, Sapien Bay, Honda Bay, Puerto Princesa Bay, Butuan Bay, Gingoog Bay, Davao Gulf
Community-Based Resources Management (CBRM) Project	1998-2003	Regions: 5,7, 8, and 13
Natural Resources Management Program (NRMP) - II, Coastal Resource Management Project	1996-2001	Regions 4, 7, and 11 Davao del Sur, Saranggani, Negros Occidental, Bohol, Cebu and Palawan
Natural Resources Management Program - Municipal Coastal Environment Initiative (NRMP-MCEI)	1998-2002	Cebu, Negros Oriental, Bohol, Davao del Sur, Sarangani, South Cotabato, Batangas, Palawan, Tawi-Tawi (CRM Expansion Areas)
National Integrated Protected Areas Programme (NIPAP)	1995-2000	(only those related to fisheries are entered) El Nido Marine Reserve, Coron Island, Palawan; Malampaya Sound, Palawan; Sibuyan Island, Romblon
The Prevention and Management of Marine Pollution in East Asian Seas	1994-1998	Batangas Bay
GEF/UNDP/IMO* Regional Programme on Partnerships in Environmental Management for the Seas of East Asia (PEMSEA): Demonstration Sites in the Philippines. A. Regional Integrated Coastal Management (ICM) Demonstration Site	1995-2004	Batangas Bay
GEF/UNDP/IMO Regional Programme on Partnerships in Environmental Management for the Seas of East Asia (PEMSEA): Demonstration Sites in the Philippines. B. Pollution Hot Spots Demonstration Site	1999-2004	Manila Bay
GEF/UNDP/IMO Regional Programme on Partnerships in Environmental Management for the Seas of East Asia (PEMSEA): Demonstration Sites in the Philippines. C. ICM Parallel Demonstration Site	1999-2004	Bataan
Conservation of Priority Protected Area Projects	1994-2001	(only those related to fisheries are entered) Batanes Landscape and Seascape, Apo Reef Marine Natural Park, Agusan Marsh Wildlife Sanctuary, Turtle Island

Table 1. Continued

Initiative	Duration	Project Sites
Study and Mapping and Land Cover Assessment of Mangrove Areas	1998-2000	Regions 1 to 12
Aurora Integrated Area Development Project (AIADP) Phase II. Watershed and Coastal Resources Protection and Management Component	1995-2000	Nine (9) Watersheds: Amro, Talaytay, Dipaculao, Bazal, San Luis, Diablo-Ingit-Zabali-Malayay, Dingalan, Pinamacan, Calabgan in Aaurora Province
Coastal Environment Program (CEP)	1993-onwards	Regions 1 to 12, NCR, CARAGA
Natural Resources Management Program - Industrial Initiatives for a Sustainable Environment (NRMP-IISE)	1998-2002	Cebu, Negros Oriental, Bohol, Davao del Sur, Sarangani, South Cotabato, Batangas, Palawan, Tawi-Tawi (CRM Expansion Areas)
Southern Mindanao Integrated Coastal Zone Management Project	1999-2005	DENR Municipality of Malalag, Davao del Sur
Coastal Environmental Information System (CEIS)- Eastern Visayas	1999-2002	Eastern Visayas; Northern Samar, Western Samar, Eastern Samar, Biliran, Leyte and Southern Leyte
Integrated Visayan Sea Coastal Resources and Fisheries Management Program (VisSea)	1999-2004	Coastal Communities along the Visayan Sea; for the province of Iloilo: Carles, Balasan, Estancia, Batad, San Dionisio, Concepcion, and Ajuy; for Negros Occidental: Cadiz City and Escalante; for Cebu: Bantayan, Santa Fe, Madridejos, Medellin, and Daanbantayan; and for Masbate: Balud, Milagros, Cawayan, Placer, and Esperanza
Integrated Coastal Zone Development- Silago Bay	2000-2009	Coastal Municipalities of Anahawan, Hinunagan, Hinundayan, Silago (Southern Leyte Province)
Community-Based Coastal Resource Management- Eastern Samar	2000-2003	Eastern Samar
Fisheries Management and Conservation Project for the Sulu Sulawesi	1999-2002	Sulu and Sulawesi Seas (Philippines, Indonesia, and Malaysia)
Submarine Geology and Mineral Resources Off the Coast of Surigao del Norte of the Philippines	1998-2000	Nearshore and Offshore Areas of Surigao del Norte, Mindanao, Philippines
Marine and Coastal Erosion/ Degradation and Geohazard Studies	1998-2000	Nationwide
Establishment of National Geological Monuments	1998-2000	Region 1- Ilocos Norte Sand Dunes and Hundred Islands, Pangasinan
Visayas Coastal Resource Management Initiatives	1992-2002	Eastern Samar, Bohol, Cebu (Province), Negros Oriental, Aklan

Source: FRMP (2001a)

*GEF/UNDP/IMO-Global Environment Facility/United Nations Development Program/International Maritime Organization

Many of the recent major coastal resource management and related initiatives dealt on coastal/marine/fisheries/watershed/natural resources/ mangrove resources management as primary objectives. A few of the activities, however, were into income diversification, capacity building, geographic information systems or research and development as objectives (Table 3).

Table 2. Recent Major Coastal Resource Management and Related Initiatives in the Philippines, by Funding Agency, Total Project Cost & Type of Funding

Initiative	Funding Agency	Total Project Cost* (Million Pesos)	Type of Funding
Fisheries Resource Management Project (FRMP)	Asian Development Bank (ADB), Japan Bank for International Cooperation (JBIC)	3,564	Loan
Community-Based Resources Management (CBRM) Project	World Bank (WB)	2,700	Loan
Natural Resources Management Program (NRMP) - II, Coastal Resource Management Project	US Agency for International Development (USAID)	619	Grant
Natural Resources Management Program - Municipal Coastal Environment Initiative (NRMP-MCEI)	US Agency for International Development	336	Grant
National Integrated Protected Areas Programme (NIPAP)	European Union (EU)	394	Grant
The Prevention and Management of Marine Pollution in East Asian Seas	Global Environment Facility (GEF) United Nations Development Program (UNDP)/ and participating governments	222	Grant
GEF/UNDP/IMO Regional Programme on Partnerships in Environmental Management for the Seas of East Asia (PEMSEA): Demonstration Sites in the Philippines. A. Regional Integrated Coastal Management (ICM) Demonstration Site	Global Environment Facility/ United Nations Development Program / International Maritime Organization (IMO) and Participating Countries	23	Grant
GEF/UNDP/IMO Regional Programme on Partnerships in Environmental Management for the Seas of East Asia (PEMSEA): Demonstration Sites in the Philippines. B. Pollution Hot Spots Demonstration Site	Global Environment Facility/ United Nations Development Program / International Maritime Organization and Participating Countries	37	Grant
GEF/UNDP/IMO Regional Programme on Partnerships in Environmental Management for the Seas of East Asia (PEMSEA): Demonstration Sites in the Philippines. C. ICM Parallel Demonstration Site	Provincial Government of Bataan and Bataan Coastal Care Foundation'	-	LGU
Conservation of Priority Protected Area Projects	World Bank	572	Grant
Study and Mapping and Land Cover Assessment of Mangrove Areas	Japan International Cooperation Agency (JICA)	32	Grant
Aurora Integrated Area Development Project (AIADP) Phase II. Watershed and Coastal Resources Protection and Management Component	European Community	41	Grant
Coastal Environment Program (CEP)	Government of the Philippines (GOP)	-	GOP
Natural Resources Management Program - Industrial Initiatives for a Sustainable Environment (NRMP-IISE)	US Agency for International Development	376	Grant
Southern Mindanao Integrated Coastal Zone Management Project	Japan Bank for International Cooperation	1,000	Loan
Coastal Environmental Information System (CEIS), Eastern Visayas	Department of Science and Technology (DOST), University of the Philippines in the Visayas (UPV), German Development Service (GDS)	3,700	Grant
Integrated Visayan Sea Coastal Resources and Fisheries Management Program (VisSea)		56	Grant
Integrated Coastal Zone Development- Silago Bay	Diutsche Gesellschaft fuer Technische Zusammenarbeit (GTZ)	280	Grant
Community-Based Coastal Resource Management- Eastern Samar	Foundation for the Philippine Environment	2	Grant
Fisheries Management and Conservation Project for the Sulu Sulawesi	Packard Foundation and World Wildlife Fund - US	16	Grant

Table 2. Continued

Initiative	Funding Agency	Total Project Cost* (Million Pesos)	Type of Funding
Submarine Geology and Mineral Resources Off the Coast of Surigao del Norte of the Philippines	Korea International Cooperation Agency (KOICA)	12	Bilateral Agreement Programme
Marine and Coastal Erosion/ Degradation and Geohazard Studies	Mines and Geosciences Bureau Central Office and Regional Offices	2	Government
Establishment of National Geological Monuments	Mines and Geosciences Bureau and other Cooperating Agencies	-	Government
Visayas Coastal Resource Management Initiatives	Deutscher Entwicklungs-Deinst (DED)	-	-

Source: FRMP (2001a)

Note: - means no data available.

* Some project cost were expressed in dollars. These were converted to pesos using the prevailing exchange rate at the time the initiatives started

Table 3. Recent Major Coastal Resource Management and Related Initiatives in the Philippines, by Project Type

Type of Initiative	Number of Initiatives	Percent to Total Initiatives
Coastal/Marine/Fisheries/Watershed/ Natural Resources/Mangrove Resource Management	21	87.50
Income Diversification	3	12.50
Capacity Building	3	12.50
Geographic Information System	1	4.17
Research and Development	1	4.17

Source: FRMP (2001a)

Many of the target beneficiaries of recent major coastal resource management and related initiatives were coastal communities in general (Table 4). The other mentioned beneficiaries were local government units, municipal fisherfolks, national government agencies, business sector entities, non-governmental organizations, international organizations, upland farmers and some others.

Pomeroy and Carlos (1996) reviewed the CBCRM programs and projects conducted in the Philippines from 1984 to 1994. A total of 15 programs with 68 project units and 28 projects with 36 project units in the different regions were covered in the review (Tables 5 and 6). The authors mentioned that although the number is large, it actually represented only a fraction of the total CBCRM programs and projects in the country.

In review, Pomeroy and Carlos found that a majority of the CBCRM activities were large national-level undertakings mainly initiated by government organizations. However, there were also a good number of community-level projects undertaken by NGO's and academic and research organizations.

Regionally, Southern Tagalog (Region IV) in the main island of Luzon had the most number of CBCRM projects while the entire island of Mindanao, which is comprised of several regions, had the least number. Resource protection and conservation, resource assessment and monitoring and resource rehabilitation ranked first as objectives of the programs and projects (Table 7). The least-ranked objectives mentioned were integrated area development planning, research and extension, institutional capability development, and policy development advocacy.

Table 4. Recent Major Coastal Resource Management and Related Initiatives in the Philippines, by Target Beneficiaries

Target Beneficiaries	Number of Initiatives	Percent to Total Initiatives
Coastal Communities	14	58.33
LGU's	6	25.00
Municipal Fisherfolks	4	16.67
Business Organizations/Private Sector	3	12.50
International Organization	2	8.33
NGA's	2	8.33
NGO's	2	8.33
Upland Farmers	2	8.33
Educational Institutions	1	4.17
Indigenous Cultural Communities	1	4.17
Policy Makers	1	4.17
Research & Development Organization	1	4.17
Tenorial Migrants	1	4.17

Source : FRMP (2001a)

Table 5. List of CBCRM Programs in the Philippines, by Number of Project Units, 1984-1994.

Program Title	No. of Project Units
Barangay Integrated Development Approach to Nutrition Improvement Program (BIDANI)	1
Coastal Environment Program (CEP)	14
Coral Reef Conservation and Management Program (CRCMP)	24
Coastal Rehabilitation and Development Program (CRDP)	1
Fisherfolk/Fisheries Program (FFP)	1
Fisheries Sector Program - Coastal Resources Management (FSP-CRM)	12
Integrated Artificial Reef City Program (IARCP)	1
Integrated Coastal Resources Management Through Community, Private and Government Participation (ICRMP)	1
Marginal Fisher-Farmer Development Program (MFFDP)	1
Marine Resource Management Program (MRMP)	1
National Integrated Protected Areas - Coastal Resource Management (NIPAS-CRM)	5
Sustainable Fishery Development Program (SFDP)	3
Small Island Environmental Rehabilitation and Livelihood Program (SIERLP)	1
Santiago Island Community-Based Integrated Fisheries Resources Management Program (SICBFRM)	1
Tarabangan Integrated Community Development Program (TICDP)	1
Total	68

Source: Carlos and Pomeroy (1996)

Table 6. List of CBCRM Projects in the Philippines, by Number of Project Units, 1984-1994

Project Title	No. of Project Units
Bagonbanua Marine Resources Replenishment Project (BMRPP)	1
Community-Based Coastal Resources Management Project (CBCRM)	1
Community-Based Coastal Resources Management Project -	1
Mindoro Sustainable Development Project (CBCRM/MSDP)	
Community-Based Coastal Resources Management - Honda Bay	1
Resource Management Project (CBCRM/HBRMP)	
Community-Based Coastal Zone Management of Bolinao (CBCZM)	1
Cogtong Bay Mangrove Project (CBMMP)	1
Community-Based Mangrove Reforestation Project (CBMRP)	1
Coastal Community-Based Management Project (CCMP)	1
Coastal Resources Management Project (CRMP)	1
Central Visayas Regional Project (CVRP-1)	5
Ecological Critical Area Network - Coastal Area Management Program	1
(ECAN-CAMP)	
El Nido Marine Protection Project (ENMPP)	1
Environment and Resource Management Project - Bais Bay Basin	1
(ERMP-BBB)	
Fishery Integrated Resource Management for Economic Development	2
Project (FIRMED)	
Integrated Coastal Resources Management Project (ICRMP)	1
Integrated Seafarming and Sea-ranching Project - Community Fishery	1
Resources Management (ISSP-CFRM)	
Lingayen Gulf Coastal Area Management Project (LG-CAMP)	1
Local Government Cooperation for the Coastal Resource Management	1
of Altavas, Batan and New Washington (LGC-CRM)	
Maqueda Bay Samar Integrated Area Development Project (MBSIADP)	1
Marine Conservation and Development Project (MCDP)	3
Mangrove Conservation Project (MCP)	1
Organized Campaign for Environmental Actions and Networking Project	1
(OCEANS)	
Resource Management Council (RMC)	1
Resource Management Project (RMP)	1
Sustainable Coastal Area Development Project (SCAD)	2
Sombrero Island Marine Park Project (SIMPP)	1
San Salvador Island Marine Conservation Project (SSIMCP)	1
Tripartite Partnership in Marine and Aquatic Resources Management	1
and Rural Development (TRIMARRD)	
Total	36

Source: Carlos and Pomeroy (1996)

Table 7. CBCRM Program and Project Objectives, Philippines, 1984-1994

Objective / Classification	Total Programs and Projects	Rank
Resource Protection and Conservation	82	1
Resource Assessment and Monitoring	69	2
Resource Rehabilitation	64	3
Alternative Livelihood Opportunities and Poverty Alleviation	58	4
Increased Fish Production	55	5
Sustainable Resource Management	50	6
Education, Training and Skills Development	49	7
Promotion & Development of CBCRM	38	8
Improving Equity in Access and Use of Resources	31	9
Strengthening Community Values on Cooperativism	26	10
Policy Development and Advocacy	24	11
Institutional Capability Development	22	12
Research and Extension	20	13
Integrated Area Development Planning	19	14

Source: Carlos and Pomeroy (1996)

V. Studies Across CBCRM Programs and Projects

Aside from reviewing CBCRM programs and projects, Pomeroy and Carlos (1996) conducted an evaluation of CBCRM as a fisheries resource management approach. The tools used were mainly descriptive statistics based on secondary data and information gathered from interviews with key informants. The authors stated that critical lessons were learned about the implementation of CBCRM programs and projects in the country. Specifically, they argued that the requirements for the proper design and successful implementation of CBCRM activities should include careful planning and preparation, sufficient funding and logistical provisions, strong governmental and inter-organizational support, effective monitoring and evaluation, and appropriate staffing. The authors emphasized that if one or more of these important features are missing, a particular CBCRM program or project is doomed to fail.

Pomeroy and Carlos put forward several recommendations for the future conduct of CBCRM activities. They asserted that researchers should analyze more closely the cost-and-benefit aspects of various CBCRM activities and quantitatively evaluate the actual impact of programs and projects. They further proposed that the skills of CBCRM practitioners be improved through more training and that programs and projects be closely monitored and documented so that the experiences gained by their practitioners can be widely shared with others.

Institutionally, Pomeroy and Carlos suggested that the national government should contribute more in fisheries resources management efforts by coming up with a unified national legislative and policy framework for the fisheries sector and CBCRM. They argued that CBCRM organizations should replicate successful activities in new areas that have few CBCRM activities, such as Mindanao. In addition, they proposed that organizations must continue to provide technical support to local institutions engaged in CBCRM and forge partnerships and collaborative arrangements with them.

The Pomeroy and Carlos study was significant as first attempt to analyze CBCRM activities at the nationwide scale. As an evaluation effort, however, it was only a desk study that did not deeply quantitatively assess the effectiveness of individual programs and projects in the pursuance of their objectives. Partly to address these limitations, a succeeding work was conducted (Pomeroy et al. 1996, 1997), was conducted. The objective of this study was to evaluate the implementation, impacts and performance of selected CBCRM projects and identify general principles and propositions that facilitate their successful implementation. It differed from the earlier effort in that it conducted some quantitative assessment of CBCRM projects in selected areas.

The evaluation methodology employed by Pomeroy et al. was the Baseline-Independent Technique for the assessment of CBCRM projects. In

brief, this technique recognized that the baseline information on the conditions prior to the implementation of CBCRM, which is a standard requirement for assessment, is difficult to acquire. Because of this, it bypasses the gathering of baseline information and instead considers in the analysis only the variables whose required data can be directly collected at present. In particular, these variables are those that influence project success, or independent variables, and the variables that measure project success, or dependent variables. The relationships between the dependent and independent variables are then measured based on standard statistical methods. (The baseline-dependent technique will be discussed in more detail below.)

Pomeroy et al. applied the baseline-independent technique in nine selected CBCRM study sites in the Central Visayas region and the province of Palawan. Within the sites, samples of households representing CBCRM project participants and non-project participants were chosen from whom primary data were gathered through a survey conducted by trained enumerators. In addition, primary data were collected through interviews with key informants as well as secondary data from the various local and national institutional and other sources.

Pomeroy et al. found that despite the lack of sustainability of most of the material interventions of the CBCRM projects studied, the beneficiaries, particularly the fishermen, generally perceived them as a success. The authors argued that this was because the beneficiaries felt a sense of empowerment, had generated more useful information with which to make decisions and improve their life, had more skills, and felt more integrated into the economic mainstream as a result of their involvement and the implementation of the CBCRM projects in their areas.

Pomeroy et al. also found that the early and continuous participation of the beneficiaries in project planning and implementation was related to their positive evaluation of the impacts of the CBCRM projects studied. As caveat, they warned that the positive evaluations could be nothing but false praise provided by beneficiaries and the respondents who hope that these will increase the possibility that a new project that will be implemented in their areas. This point emphasized a major limitation of the baseline-independent technique of impact assessment.

Aside from the studies already mentioned, few other works looked into CBCRM programs and projects. Uychiaoco et al. (1998) used primary and secondary data gathered through interviews, site visits and brainstorming sessions and from published case studies to descriptively review CBCRM projects. The study found that, in general, CBCRM projects were largely focused on local communities and on the objectives of resource protection and management. The authors asserted that only a small proportion of the national

population and the population in localities actually actively participated in CBCRM.

Elazequi et al. (1999) also cited the bias of CBCRM in favor of coastal communities that Uychiaoco et al. mentioned. This study, which reviewed fishery resource management experiences in selected sites, mentioned that coastal resources management in the country heavily favored small-scale fisherfolk and relegating commercial fishers to lower importance. It argued that if commercial fishers are not properly represented in the decision-making, conflicts between the two sectors are bound to happen. Therefore, there is the need to re-examine CBCRM approaches to address the interests of both the small-scale and commercial fishers.

In retrospect, only a handful of studies have been done which looked into the implementation of CBCRM across programs and projects. The works of Pomeroy and Carlos (1996) and Pomeroy et al. (1997) are potential starting points in the development of a new methodology for analyzing CBCRM programs and projects. In particular, the baseline-dependent technique could be studied further for future works evaluating CBCRM.

VI. Evaluation Studies of Individual Co-Management and CBCRM Projects

6.1 The IFM-ICLARM Fisheries Co-Management Project

Several studies have been conducted which looked into the performance of individual co-management and CBCRM projects in the Philippines. Some were done under the five-year Worldwide Collaborative Project on Fisheries Co-Management, jointly undertaken since 1994 by the Institute for Fisheries Management (IFM) at the North Sea Center (NCS) in Denmark and the International Center for Living Aquatic Resources Management (ICLARM) based in the Philippines. The latest of these was Mulekom and Tria (1999) that looked into the community-based co-management system in the municipality of Orion, Bataan. This study employed the institutional analysis approach, a framework that draws concepts from economics, political science, anthropology, biology and law. Basically, the approach requires the collection of information on the contextual variables defining the key characteristics of the resource under consideration. Then, it measures the outcomes resulting from co-management efforts according to performance criteria. The relationships between the contextual variables and the outcomes of co-management are then determined based on descriptive and statistical analysis. The institutional analysis approach concludes with the descriptions of the major factors deemed necessary to establish equitable, efficient and sustainable co-management institutions (this approach will also be discussed in more detail in a section below).

Mulekom and Tria used primary data gathered from a survey of 75 fishing households and interviews with key public and private sector informants. Furthermore, it utilized the results of an extensive baseline research conducted earlier by a cooperating institution, the Philippine Rural Reconstruction Movement (PRRM), and ongoing monitoring activities of the Orion co-management project. The study found that in general, the majority of fishers positively assessed the co-management system in Orion, Bataan, including those who did not participate in it. This perceived performance of the system was considered highly encouraging given the short length of time the system was in place, the scale on which it is implemented, and the relatively small management area compared to the total fishing ground of the municipality. Mulekom and Tria further found that majority of the fishers recognized considerable improvement in equity, efficiency and sustainability in almost all non-tangible aspects of the co-management system although not in the tangible improvements, such as improved catch and income. Despite the lack of tangible improvements, the support and continuous participation remain widespread among fishers implying that they must have derived sufficient incentives from the co-management system.

Based on their findings, Mulekom and Tria asserted that community-based co-management has great potential as a management approach for sustainable fisheries, even in highly over-fished and degraded areas. They suggested that among the most important ingredients to the success of the implementation of a co-management system were institutional capacity development among fishers, conflict resolution mechanisms among fishers and the community, non-tangible incentives for sustaining participation, integration of co-management development and non-fishing livelihood development and long-term approaches in the facilitation of co-management system development.

Another study done under the IFM-ICLARM project was Katon et al. (1998), which assessed the mangrove rehabilitation and coastal resources management project in Congtong Bay, Bohol. This work also utilized the institutional analysis approach to determine the impact of a co-management activity. The primary data used came from a survey of 108 fishing households and interviews with key public and private sector informants and secondary data from published sources. The study reported that fishers in general perceived statistically significant improvements in almost all of the indicators of performance. Specifically, improvements were seen in the areas of information exchange on both mangrove management and fisheries management, knowledge of mangroves, compliance to mangrove rules and control over mangroves. In addition, the co-management project was perceived as having helped in developing in village residents the sense of empowerment, the confidence to take collective action and the sense of the principle of control and accountability.

Katon et al. also listed several conditions essential for the success of a co-management project, some of which were already mentioned by Mulekom and Tria (1999). These were the recognition of a resource crisis or resource management problem, extent of dependence of coastal resources, capability building, trust between partners, involvement of resource users in law enforcement efforts, provision and enforcement of legitimate property rights, continuing support from the local leadership, existence of enabling legislation for devolution, and shared vision and commitment to sustainable resources management.

Still another study under the IFM-ICLARM project was Katon et al. (1997), which again used the institutional analysis approach, this time in assessing the marine conservation co-management project in San Salvador, an island village in Masinloc, Zambales. This study utilized primary data gathered through a survey of 42 fishing households and interviews with key public and private sector informants and secondary data from published articles. It found that fishers in general perceived statistically significant increases in their well-being due to the co-management project, in terms of all indicators relating to equity, efficiency and sustainability. The results on equity impact in particular was interesting in that both project cooperators and non-cooperators suggested perceived positive changes that were not significant different. This suggested that the co-management activity in San Salvador had a stronger welcome impact on fishers and the resource base than the projects in Orion, Bataan and Cogtong Bay, Bohol. Based on their findings, Katon et al. listed the conditions essential for the success of a co-management project that were similar to those mentioned in other studies.

The institutional analysis approach was again employed by Baticados and Agbayani (1997) under the IFM-ICLARM Project. This work looked into the co-management project of the Southeast Asian Fisheries Development Center, Aquaculture Department (SEAFDEC AQD) in Malalison Island, Culasi, Antique. Primary data gathered through a survey of 42 fishing households and interviews with key public and private sector informants and secondary data and information from published articles and various other sources were utilized. As in the case of the earlier studies on co-management employing the institutional analysis approach, Baticados and Agbayani found that fishers, in general, perceived statistically significant improvements in all performance indicators of co-management. In addition, both project cooperators and non-cooperators were found to have benefited from the project although there was a significant difference to their perceived changes in access rights. The study also mentioned conditions for the success of co-management that were similar to those already cited by the other studies.

The earliest work under the IFM-ICLARM Project to utilize the institutional analysis approach was Pido et al. (1996). It investigated the performance of three emerging co-management systems in the province of Palawan. This study found

that to become fully operational, newly developing co-management systems must meet certain conditions. These are development interventions such as the provision of infrastructure and post-harvest facilities; further research, particularly on subjects where information is lacking like the level of fishing effort and supplemental/alternative livelihood activities; and activities to operationally define the organizational and institutional arrangements.

6.2 Review of the CBCRM Component of FSP

A review of the CBCRM activities undertaken under FSP was conducted by PRIMEX and ANZDEC (1996) as part of the overall review of the program. FSP was a foreign loan funded program implemented during the first half of the 1990s. Its objective was to attain sustainable fisheries management through a package of policy and institutional reforms and strategic interventions for the purpose of rationalizing the utilization of fisheries resources. One of its six components was community-based coastal resources management designed to promote resource enhancement and income diversification in the coastal areas it covered.

PRIMEX AND ANZDEC used descriptive statistics to evaluate the CBCRM component of FSP. Targets were compared to actual accomplishments to determine the level of success of the component. There was no effort spent analyze the impact of the CBCRM component in a more quantitative manner, as done for instance in the studies conducted under the IFM-ICLARM Co-Management project.

The results of the review were mixed. On one hand, the CBCRM component of FSP was found to be highly successful in its efforts to create and raise the level of awareness among coastal communities and LGUs. As targeted, it has also produced and disseminated information materials on fisheries and CBCRM in the 12 bays covered by FSP and throughout the country. On the other hand, the CBCRM component of FSP was reported to have performed below the target in its programmed coverage for mangrove replanting. Its artificial reef projects were also found to have resulted to both the increase in fish stocks as well as served as magnets for illegal fishing activities. Furthermore, the income diversification component of the project was found to be much wanting in attaining its intended objective of raising the incomes of recipients.

The PRIMEX and ANZDEC review reported that much of the problems faced by the CBCRM component of FSP could be largely related to the way the planning phase of the component was handled. It argued that the completion of some of the CBCRM plans were delayed due to the lengthy approval process, lack of technical capabilities among the planners, low prioritization and lack of will, inefficient handover of responsibility for the completion of the plans and delays in the preparation and generation of background information for planning.

6.3 Mid-Term Review of Fisheries Resource Management Component of FRMP

The FRMP is a program that serves to continue on the gains of FSP. Its objectives are to promote conservation and sustainable management of the coastal fisheries resources by reversing the trend of fisheries resource depletion in municipal fisheries, reduce the extensive poverty of fisherfolks in coastal areas by promoting income diversification that will reduce the reliance of coastal communities on fishing and increase their incomes and living standards. The three important components of FRMP are fisheries resource management, income diversification and capacity building.

Last year, midway into the FRMP, a midterm review was conducted to among others assess the accomplishments of the project and the progress of its implementation (FRMP 2001b). As in the case of PRIMEX AND ANZDEC (1996), descriptive statistics were used to evaluate the different components of FRMP, including fisheries resource management. Targets were compared to actual accomplishments to determine the level of implementation of the components.

The findings of the midterm review indicated that the overall performance of the FRMP, including the fisheries resource management component was satisfactory despite some delays in project implementation, problems in the slow contracting process and the shortfall of counterpart staff at the national and field levels. The review pointed out that these issues have to be forcefully addressed otherwise they could further affect project performance and implementation.

6.4 Guidelines for Monitoring and Evaluation Developed by CRMP

The CRMP (2001) developed guidelines for the annual monitoring and evaluation (M&E) of municipal/city coastal resource management plans and programs. The guidelines set forth basic concepts and steps in conducting annual M&E at the municipalities and cities involved in coastal resources management.

The actual implementation of some M&E activities testing the guidelines prepared by CRMP is now ongoing in some cities and municipalities in Region VII. A more detained discussion of the M&E approach developed by CRMP will also be done below.

6.5 Individual Evaluation of CBCRM Projects in the Visayas

Reviews and analysis of some of the CBCRM projects undertaken in Regions VI, VII and VII in the Visayas during the first half of the 1990s were presented during the Conference on Community-Based Coastal Resources Management and Co-Management held in Cebu City in 1995 and compiled in Foltz et al. (1996). The project implementers themselves conducted the reviews

by using descriptive analysis and anecdotal evidence. As in the case of the evaluation of the CBCRM component of FSP, project performance was determined by comparing achievements to pre-set objectives. Despite the various problems reported, most of the reviews suggested that the CBCRM projects undertaken were at least a partial success. In general, the reviews again indicated the elements of a successful CBCRM project which were similar to those already mentioned earlier by other reviews, including a strong research, training and extension component; solid partnership between local and external actors and agencies; effective community organizing; stable political and legal environment; and the reliability of the project as a source of benefits and means of raising the standard of living of the individuals and community that the project affected.

To review this section, the evaluation of individual co-management CBCRM projects done so far employed descriptive analysis or the institutional analysis approach. A new method is also being developed and tested by CRMP. Like the Baseline-Independent Technique, the Institutional Analysis and CRMP approaches are potential starting points in the development of a methodology for the future evaluation of CBCRM projects.

VII. Potential Methodologies for Evaluating CBCRM Projects

7.1 Baseline-Independent Technique

To begin, the Baseline-Independent Approach takes that the success of any project hinges on both project and non-project factors. These factors, then, can be taken as the explanatory or independent variables in a quantitative model explaining project performance. In the case of a CBCRM project, the project variables influencing project success generally include the different aspects of project planning and implementation. Specifically, these are the early participation of the community in project planning, continued community participation in planning and implementation, flexibility of the project to adapt during implementation, involvement of full time development workers and community organizers who also live in project communities, identification of a core group of participants for leadership development, establishment of community education associated with project objectives, coordination of all involved groups, communication of clearly defined objectives to participants and other project-related factors which may be identified.

The non-project or the so-called contextual variables, on the other hand, include the social, political, and economic aspects of the larger context of the project ecosystem and the techno-economic, biophysical, and socio-cultural aspects of the project ecosystem. These contextual variables can be classified further into the following three sub-categories for purposes of analysis: 1) supra-

community level; 2) community level; and 3) individual and household level variables.

Foremost among the supra-community context variables is enabling legislation and supportive government administrative structures at the national level. The other variables are the regional and local governmental and non-governmental organizations and institutions and important aspects of the regional, national and international markets, including the potential for changes in commercialization of resource products.

The community level context variables are the physical and social environment in the community which potential influence the success of a CBCRM project. Particularly, these include the crisis in resource depletion as perceived by the local leaders, target species composition and distribution in the coastal area, environmental features influencing boundary definition, technology used in the coastal area, level of community development, degree of socioeconomic and cultural homogeneity, tradition of cooperation and collective action, population and population changes, degree of integration into the national economy and political system, occupational structure, degree of dependence on and level of commercialization of coastal resource, local political organization, formal and informal coastal resource use rights, and formal and informal coastal resource management.

Since the individual and households are the ones primarily involved in carrying out CBCRMP activities, the individual and household level contextual variables are very important. These variables include education, experience, size and scope of livelihood operation, technology, cultural values, job satisfaction, ecological knowledge, occupational multiplicity, assets and other related variables.

In the actual measurement of the independent variables, some may be taken singly while others can be broken down further into several variables. For instance, the enabling legislation variable could be subdivided into several variables, each representing important features, such as its usefulness in providing for tenurial security, formation of source groups, etc. Also, some of the independent variables may be too complex and difficult to estimate, such as a few of the community-level contextual variables. These may have to be left out in the analysis and only the more important and readily measurable variables are included.

Once the independent variables are considered, the measurement of the dependent or impact variables follows. The impact variables are of two types: those representing the achievement of intermediate objectives and those representing the impact on well-being of the coastal ecosystem, including human and natural. The first type of objectives variables includes the degree of achievement of both material objectives, such as mangrove replanting, and non-

material objectives, such as training and education. The impact on well-being variables, which are the ultimate measure of project impact, include the overall well-being of individual households, overall well-being of the resource, local income, access to resources, control over resources, ability to participate in community affairs, ability to influence community affairs, self-esteem, reduction of community conflict and other similar variables.

To actually measure the independent and dependent variables, data and information from various sources will be gathered. The data for the project variables are usually generated from project reports and through the conduct of a survey of individuals and households involved with the project. For the supra-community level contextual variables, secondary data coming from the institutional sources are primarily utilized. The community-level variables require primary data coming from interviews with local key informants and secondary data from past studies, institutions in the area and other sources. Primary data gathered through a survey are used in the measurement of the individual and household level context variables. The achievement of intermediate objectives variables can be measured based on recorded reports of the performance of the projects and the pre-set objectives. The impact of the coastal ecosystem variables may be estimated by using data gathered through a survey of affected individuals and households.

In the survey of individuals and households, scientifically determined samples from the population of project and non-project participants in a project site will be covered. The non-project participants are included to serve as control (It should be pointed out that the probability that this group may have been affected by the project could diminish their usefulness as control). Primary and secondary data will be gathered from these samples by enumerators trained by the project. Spot checks are conducted to verify the actual conduct of interviews.

The primary data collected will be analyzed using descriptive and univariate and multivariate inferential statistics. For descriptive presentation, the evaluation will employ frequency counts, percentages, means and standard deviations for looking into the distribution of respondents across the context variables. The inferential statistical tools employed include principal component analysis, correlation and OLS regression and dichotomous choice analysis (e.g. logit model). The analysis employs correlation and regression analysis to determine the relationships between dependent and independent variables considered.

7.2 Institutional Analysis Approach

This approach is basically similar to the Baseline-Independent Technique. It involves three components or steps. First, the contextual variables characterizing the resource, resource use, and the resource user are identified. These variables include physical and technical attributes; fisher, stakeholder and

community attributes; market characteristics; institutional and organizational arrangements internal to the co-management system; external institutional and organizational arrangements; and exogenous macroeconomic, political, social and natural attributes. Then, these variables are linked with the locally relevant set of rights and rules or institutional arrangements covering resource access and use. The purpose is to determine the incentives and disincentives for cooperation in coastal resource management.

The second step of the Institutional Analysis Approach involves the measurement of the outcomes or patterns of interaction resulting from CBCRM efforts, based on a set of performance criteria towards assessing the management system's impact on the well-being of both human and non-human elements of the ecosystem. The particular set of criteria includes fishers' perception on specific indicators of efficiency, equity and sustainability of the ecosystem that are crucial to the continued acceptance and participation of the CBCRM project. The third step of the approach involves the description of the conditions and factors required to establish an efficient, equitable and sustainable CBCRM project.

The data requirement and sources for the Institutional Analysis Approach are also similar to that of the Baseline Independent Technique. Primary sources of data are the survey of individuals and households, interviews with key informant and ocular observations while the secondary sources of data are project reports, published literature, local and national institutions and other sources.

In the actual analysis, descriptive and inferential statistics, both univariate and multivariate, are likewise used. The descriptive analysis includes frequency counts, percentages, means and standard deviation and similar statistics. For the quantitative analysis, techniques like correlation and regression and principal component analysis are employed. Correlation and regression analyses are utilized to determine the relationship between dependent and independent variables.

7.3 CRMP Approach

The CRMP approach is utilized to annually monitor and evaluate the performance of municipalities and cities in coastal resources management. In brief, the approach is conducted mainly by tracking down both process and result indicators of the performance of CBCRM implementation. The process indicators are used to monitor the governance aspects of plan implementation and includes variables relating to when and how planned activities are progressing, how social processes are proceeding and whether there is adequate public participation by all stakeholders in CBCRM planning and implementation among others. The result indicators, on the other hand, are used to monitor the outcomes or impacts of these processes on behavior change and socio-environmental conditions.

Examples of are fish catch per unit effort, living coral cover, mangrove area under effective management, household income, frequency of CBCRM related violations and other physically measurable variables which have direct relevance to coastal stakeholders and local government units.

The CRMP approach uses various qualitative and quantitative approaches for M&E. These include the review and analysis of secondary and other available data and information, ocular inspection of shoreline/foreshore areas and municipal waters, interviews with key informants, LGU staff and partner organizations, consultations at the community and barangay levels, participatory coastal resource assessment, quantitative biophysical and socioeconomic assessments and regulatory and compliance monitoring. In doing the M&E, it sets benchmarks that describe the level of performance of LGUs in delivering CBCRM as a basic service at different levels of implementation, beginning, intermediate and advanced.

CRMP (2001) provides the step-by-step procedures involved in the implementation of its M&E program now applied in its project sites. Furthermore, it includes a system for certifying CBCRM municipal and city plans and programs at the provincial and regional levels. The certification is now also tried in its project sites in Region VII.

VII. Conclusion

The above review of literature on the evaluation of CBCRM programs and projects generates some important observations. First, only a few studies have been done so far and most of these dealt on individual projects or project sites, whether singly or in groups. Second, the studies evaluating CBCRM either used descriptive statistics, comparing actual performance against pre-set objectives, or more quantitative methods, particularly the Baseline-Independent Technique and the Institutional Analysis Approach. The latter two methods have been shown to work although limitations as to their accuracy remain. These imply that for future undertakings, the methods have to be reviewed and improved. In addition, the newly developed CRMP method for M&E is certainly a good reference for possibly developing a common approach for CBCRM evaluation in the future and should be considered.

The review of CBCRM activities showed that they have various classifications. In terms of type, for instance, an activity may be a program, project or project type. In terms of implementation, it may be in the planning stage, just ongoing, long ongoing, recently ended or formally long terminated. In terms of location, it may be barangay, municipal, bay-wide or some other site-specific type of effort. Suffice it to say that CBCRM activities vary and the need to come up with a common methodology for activities for assessing them must be tempered by the heterogeneity of the management approach itself. It may be that

in the end, a common methodology for each particular classification of a CBCRM activity is more feasible to develop.

The review of CBCRM activities also showed that at the level of individual projects, many of the CBCRM activities have been successful in the pursuit of at least some of their activities. This suggests the great potential of the approach for solving the various problems in the coastal fisheries. The fact that CBCRM has limited coverage nationally, involves only a small proportion of the population, and generally disregards the interests of other sectors like commercial fishers means that much can be done to improve on the approach and make it a true vehicle of sustainable coastal fisheries development at the national level.

Finally, the phenomenal growth in the implementation of CBCRM programs and projects should be accompanied by an equal zeal to evaluate their impact and performance. The relatively limited number of evaluation studies at present suggests that this is not yet the case. An obvious reason is that the methodologies for evaluating programs and projects are not yet fully developed and familiar to many researchers in CBCRM. This renders methodology development for the evaluation of programs and projects a priority research concern.

References

- Baticados, D. B. and R. F. Agbayani. 1997. Case study of the institutional arrangements in the fisheries co-management on Malalison Island, Culasi, Antique. Southeast Asian Fisheries Development Center, Tigbauan, Iloilo. 99 p.
- Coastal Resource Management Project (2001). Guidelines for annual monitoring and evaluation of municipal/city coastal resource management plans and programs for certification. CRMP Document No. 46-CRM. 17 p.
- Elazequi, D. D., P. G. de Guzman and C. A. Foronda. 1999. Fishery resource management: policy perspective and field experiences in the Philippines. Institute of Strategic Planning and Policy Studies, College of Public Affairs, University of the Philippines at Los Banos, Laguna. 66 p.
- Fisheries Resource Management Project (2001a). Project profile of coastal resource management and related initiatives in the Philippines. FRMP Information Paper No. 18. 52 p.
- Fisheries Resource Management Project (2001b) Mid-term review memorandum of understanding (MOU). FRMP Information Paper No. 60. 16 p.
- Foltz, C. M., R. S. Pomeroy and C. V. Barber. 1996. Proceedings of the Visayas-wide conference on community-based coastal resources management and fisheries co-management. Working Paper No. 4. International Center for Living Aquatic Resources Management and World Resources Institute. 115 p.
- Israel, D. C. 1999. Research and development in the Philippine fisheries sector. Discussion Paper Series No. 99-17. Philippine Institute for Development Studies, Makati City. 35 p.
- Katon, B.M., R.S. Pomeroy, M. Ring and L. Garces. 1998. Mangrove rehabilitation and coastal resource management project of Mabini-Candijay: a case study of fisheries co-management arrangements in Cogtong Bay, Philippines. Fisheries Co-Management Research Project, Working Paper No. 33. International Center for Living Aquatic Resources Management, Makati City. 168 p.

- Katon, B. M., R.S. Pomeroy and Albert Salamanca. 1997. The maine conservation project for San Salvador: a case study of fisheries co-management in the Philippines. Fisheries Co-Management Project, Working Paper No. 23. International Center for Living Aquatic Resources Management, Makati City. 95 p.
- Mulekom, L. and E.C. Tria. 1999. Community-based coastal resource management in Orion: A case study on the development of a municipal-wide community-based fisheries co-management system. Fisheries Co-Management Research Project, Working Paper. January 1999 Submitted Version. International Center for Living Aquatic Resources Management, Makati City. 93 p.
- Pido, M., R. Pomeroy, M. Carlos, A. Garces, R. Agbayani, A. Sandalo, V. Catain, A. Benavente, R. Bacosa, and J. Matulac. 1996. "The application of the institutional analysis research framework in the evaluation of fisheries and other coastal resources management systems in Palawan, Philippines". In Pido et al. (eds). The management systems of marine fisheries and other coastal resources in Palawan, Philippines: concepts, experiences, and lessons. International Center for Living Aquatic Resources Management.
- PRIMEX AND ANZDEC. 1996. Fisheries Sector Development Project Phase I Report Volume II: Fisheries sector program review. 86 p.
- Pomeroy, R. S. 1998. A process for community-based fisheries co-management. In *NAGA, The ICLARM Quarterly*. January-March, 1998 Issue. Pp. 71-5.
- Pomeroy, R.S., R.B. Pollnac, B. M. Katon and C.D. Predo. 1997. Evaluating factors contributing to the success of community-based coastal resources management: the Central Visayas Regional Project-1, Philippines. R No. 6. International Center for Living Aquatic Resources Management and University of Rhode Island. 24 p.
- Pomeroy, R. S. and M.B. Carlos. 1996. A review and evaluation of community-based coastal resources management in the Philippines, 1984-1994. Fisheries Co-Management Project, Research Report No. 6. 78 p.
- Pomeroy, R.S., R.B. Pollnac, C.D. Predo, and B.M. Katon. 1996. Impact evaluation of community-based coastal resource management projects in the Philippines. Research Report No. 3. 282 p.
- Pomeroy, R. S. and M.J. Williams. 1994. Fisheries co-management and small-scale fisheries: a policy brief. Published by the International Center for Living Aquatic Resources Management, Makati City, Philippines. 15 p.

- Rivera, R. A. 1997. Re-inventing power and politics in coastal communities: community-based and coastal resources management in the Philippines. Marine Affairs Program. Dalhousie University, Halifax, Nova Scotia, Canada.
- Sajise, P. 1995. Community-based resource management in the Philippines: perspectives and experiences. A paper presented at the Fisheries Co-Management Workshop at the North Sea Center, 29-31 May, Hirtshals, Denmark.
- Uychiaoco, A. J., P. M. Alino and A. L. Dantis. 1998. "Initiatives in Philippine coastal management". In UP-CIDS Chronicle. January-June 1998. pp. 121-128.