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**Proceedings of the Visayas-Wide
Conference on Community-Based
Coastal Resources Management
and Fisheries Co-Management**

**Held at the ECOTECH Center
Lahug, Cebu City
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**Edited by:
Camilla M. Foltz
Robert S. Pomeroy
Charles V. Barber**

ICLARM International Center for Living
Aquatic Resources Management



World Resources Institute



Fisheries Co-Management Project



Tambuyog Development Center

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Foreword

For over a decade, community-based coastal resource management (CBCRM) and co-management have developed into widely adopted principles for the conservation, rehabilitation and sustainable management of coastal resources in the Philippines. In many parts of the country, numerous coastal resource management programs and projects using these approaches have been implemented by a variety of organizations. The ultimate objective of these programs and projects has been to improve, in a sustainable manner, the "well-being" of coastal ecosystems, both human and natural. A recent study on community-based coastal resource management programs and projects in the Philippines (Carlos and Pomeroy 1996) reveals that over 100 CBCRM and co-management programs and projects have been implemented in the country between 1984 and 1994, with over 40 percent of these located in the Visayas (incorporating administrative regions VI, VII and VIII). But still the process of change has not been easy, and success is not guaranteed. There remains much to be learned in order to improve the current methods and processes of CBCRM and co-management to increase the rate of successful implementation.

Undoubtedly, the time, funds and collective efforts put into these programs and projects have allowed implementors and participants to accumulate valuable knowledge and experience in the area of CBCRM and co-management. This knowledge and experience is an important source of information that can be used to improve the design and implementation of CBCRM and co-management initiatives in the Visayas region and elsewhere. Thus, there is a need to promote dialogue and sharing among CBCRM and co-management advocates, practitioners, policy-makers, researchers, coastal residents and other stakeholders. There is also a need to let people in other countries become familiar with the methods and approaches of CBCRM and co-management being used in the Philippines, so as to assist them in achieving sustainability in their own coastal ecosystems.

With the above rationale in mind, the International Center for Living Aquatic Resources Management (ICLARM), Tambuyog Development Center (TDC) and the World Resources Institute (WRI) organized and funded a Visayas-wide conference and workshop on community-based coastal resource management and co-management from 4-7 July 1995 in Cebu City, Cebu. The objectives of the conference were:

1. to provide a venue for sharing CBCRM and co-management methods and experiences among advocates, practitioners, policy-makers, coastal residents and other stakeholders and researchers; and
2. to document methods, strategies, processes, achievements and problems in designing and implementing CBCRM and co-management in Regions VI, VII and VIII.

Over 130 people representing non-governmental organizations, people's organizations, government agencies, international donors, academic research institutions, as well as international and regional research institutions participated in the conference. Papers were presented, testimonials offered, small group discussions held, and workshop sessions on various themes including organizing and training, research, resource rehabilitation and protection, women, and partnerships were organized during the four-day event.

In this proceedings, it was originally planned to group the papers under five workshop themes, but there were some difficulties in getting complete, revised papers from all of the authors. Instead, the proceedings contains edited versions of most of the papers delivered during the conference, supplemented by some testimonials and discussion points drawn from recorded transcripts of the workshop sessions. We hope it provides an overview of the methods, approaches, issues and opportunities for and serves to stimulate discussion, learning and successful implementation of CBCRM and co-management in the Visayas region.

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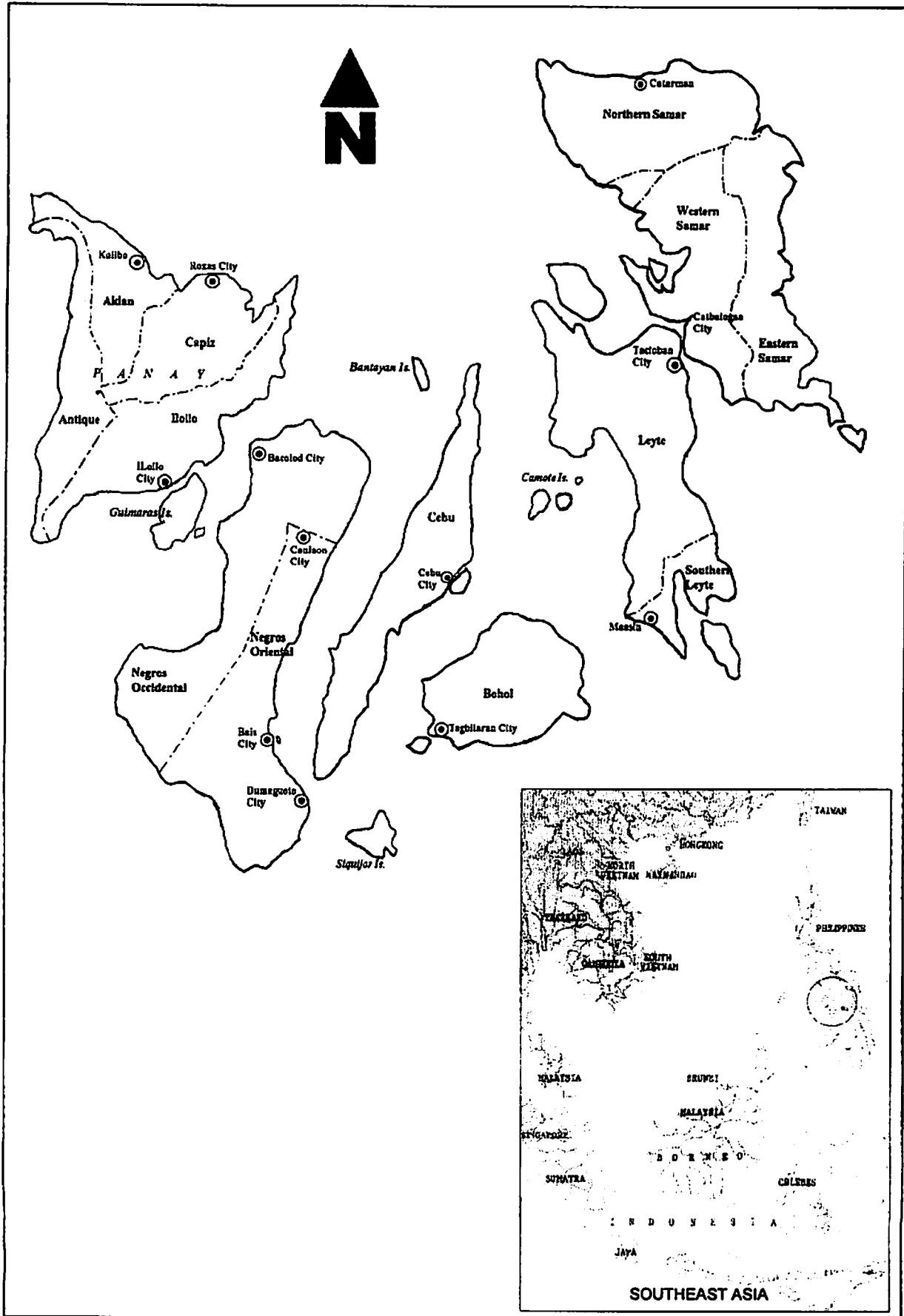
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Figure 1. Map of the Visayas.



Welcome and Opening Remarks

Hon. Rhet Pelaez
Office of the President
Visayas

First of all, allow me to express my heartfelt gratitude for having been invited to this Visayas-wide conference on community-based resource management and fisheries co-management. I welcome all of you today to Cebu.

When I received the invitation from ICLARM, my thoughts associated this word to "alarm": ICLARM, ALARM. Truth of the matter is, there is really an alarm on the way that we have been handling our coastal resources over the last 20 or 30 years. In part this alarm has been raised by the Central Visayas Regional Project (CVRP), which has been working to protect our regional environment both nearshore and offshore. In recent days I have learned about areas in Western Samar and the island of Siquijor, where CVRP's efforts together with some NGOs and LGUs have yielded some impressive results.

A while ago, we hosted Mr. Russell Cheatham, Vice President of the World Bank, on a visit to Bohol and Leyte. Though you would suppose Mr. Cheatham is accustomed to his very well equipped and luxuriously styled office at the World Bank headquarters, I saw something soft in his heart: his concern for rural development, along with a specific interest in our coastal resources. As we visited an island off Talibon, Bohol, he saw how we made a remarkable difference in the way of life of our people. The Visayas region is an archipelago, a feature that differentiates it from Luzon and Mindanao, both contiguous territories. Because of its nature, the Visayas is a haven for coastal resources, and along with this is the special need for coastal resources management. Yet I feel that we have had some successes. No less than the World Bank Vice-President suggested that we come up with a video presentation showing how the people on this island have made a remarkable difference and turned it into one of the largest mangrove plantations in this part of the world.

In Tacloban yesterday, in celebration of People's Day—the very first day of the new provincial government's administration—there were several exhibits. I noted that if we look at growth in terms of the regional economies, it may be in this subsector of aquatic resources where the Visayas has been strongest compared to some other subsectors. For this reason, I am pleased to speak to you on concerns in the national government about the way our aquatic resources should be managed. This workshop is indeed timely. I shall ask the organizers to keep me abreast of the conference outputs, because we have seen in the past a lot of similar gatherings, yet what comes of the four days of meetings? I have seen in the past a lot of beautiful plans, a lot of beautiful programs, but we have remained that way for the past twenty years. I would like to see the more important aspect: implementation of the recommendations produced by a conference such as this.

I think the challenge of our time, in terms of development, is being able to improve livelihood. Let us see how we can help by making sure that conference outputs really get implemented. I was particularly interested in this study conducted by Carlos and Pomeroy which reveals that at least 100 CBCRM co-management projects have been implemented in the twelve regions of the country, of which 40% are in the Visayas. I ask that these be identified so that we can properly synchronize our plans and, more importantly, the implementation of these plans in order to assure the sustainability of the projects. So ladies and gentlemen, may I thank all the organizers for deciding to hold this workshop on one of the priority areas identified by the Office of the President-Visayas.

Mr. Romeo Escandor
Vice Chairman, Regional Development Council, Region VII
Director, National Economic and Development Authority, Region VII

Let me welcome you on behalf of the Regional Development Council of the Central Visayas. I am here in my capacity as vice chairman of the Regional Development Council-VII and also because the co-sponsor of this workshop, the Resource Management Center, is an office under the Regional Development Council.

The RDC of Region VII is implementing several big projects. One was the Central Visayas Regional Project (CVRP-I), funded by the World Bank. We are currently into project preparation of CVRP-Phase II. Coastal resource management is one of the major components of CVRP-II.

We believe that coastal management is part of the total resource management package, especially if we look at watershed development in totality. We hope that you will have a fruitful workshop resulting in some agreements that will not end up only as documents on our shelves, but rather come up with plans that will be implemented in the coming years.

Dr. Charles Barber
Senior Research Associate
World Resources Institute

Thank you very much and good morning. On behalf of the World Resources Institute, I welcome all of you here. I am very pleased to see such a large and diverse group of people. The WRI is a policy research institute on development and environment issues. We're based in the United States but work internationally as well by trying to influence policies and mutually-built capacities to promote sustainable development policies in a range of areas: natural resources, energy, pollution, as well as environmental information systems and environmental economics. WRI is co-sponsoring this meeting with our colleagues from ICLARM and TDC in an attempt to bring together some of the wealth of information and experience you have here in the Philippines in CBCRM and co-management. We hope to make this available to others, and to provide compelling arguments to governments, donor organizations, and the private sector as to why this is the direction in which we all must move, both here and in other countries, if we want to maintain our coastal fisheries resources and manage them in a sustainable and equitable way.

I would like to highlight the three pillars of WRI's philosophy. One is recognizing the crucial importance of conserving the environment and our natural resources; second is the need for a sustainable economic development. But across both of those is the need to promote and take affirmative steps toward greater social equity and equality. I think all three of these elements are necessary as a foundation in any system for managing resources and promoting development, and this is surely true when we look at the coastal zone.

There are a number of linkages that WRI emphasizes in its work. One is the linkage between research and action. For me, action on the ground is the only legitimate end goal for research. The need for dialogue among all of the different sectors involved in the management of natural resources is particularly important in the coastal zone because there we have an interface between land and water. A variety of different sectors and institutions all come together in coastal zones. We need to build the capacity of organizations, especially at the community level, to manage their own affairs and to empower local communities and those who work with them to rally and take the lead in managing their resources and improving their livelihoods.

Another is the linkage between action at the local level and what happens at the provincial and national levels in terms of government policies and action, as well as what happens in the international scene. In this world today, no community can function entirely outside of the influence

of international cultural, economic, and political forces. It is important to be always thinking of how we can act at all levels of social, economic and political organization to try and make positive changes.

There is furthermore a need to blend the number of disciplines. Fisheries management is not just about of fish. It's about people, it's about institutions, it's about power, it's about money, it's about culture. We must keep in mind the need to bring to bear all of those disciplines in analyzing the many aspects of problems that we confront. Perhaps most important, because it is often overlooked, is the need to recognize the value of local knowledge of those who directly manage fisheries and other coastal resources. This is not news to most of you but I think if you look at the way most of the policies for environmental management, fisheries management, and the like have been designed and implemented, respecting and using local knowledge has not been very high on the agenda. We would like to change that.

Finally, there is the need for strong linkages between all sectors of society. It is not possible for either communities on the one hand or government on the other hand to manage fisheries and coastal resources alone. Both must be involved. As all of us are aware there's a wealth of organizations formed by those who actually use resources, NGOs, the scientific community, and I think also—it has not been talked about much yet but I'm sure will be—the private sector, which is often a large part of the problem. But we must find ways to make it a part of the solutions to our problems. It seems to me that this meeting encompasses all of those kinds of linkages, and this is what we are striving for in all of our work in the WRI.

Our hopes for this meeting are threefold: one is to have an open, frank and informative exchange of our experiences and information so that we can all work in the future enriched by each other's experiences. Second is to build new and stronger working relationships among organizations as we move forward on these issues, as well as new personal friendships, which are always the basis of strong organizational relationships. I hope we can generate new knowledge through our interactions and then spread it beyond this meeting, beyond this region of the country, and beyond the Philippines in order to help people in other countries who look to the Philippines as a place where there has been a lot of progress in this area and from which they can learn. I hope we have a very productive and successful conference.

Dr. Robert S. Pomeroy

Senior Research Scientist on Fisheries Economics

International Center for Living Aquatic Resources Management (ICLARM)

Project Leader, Fisheries Co-Management Project, ICLARM

We welcome all of you here and we thank you for participating with us for the next four days. This workshop is a joint activity between ICLARM, Tambuyog Development Center, and the World Resources Institute. It's something that we thought about six or seven months ago, and is an activity to begin to bring together experiences and knowledge on community based management in the Philippines. I want to just briefly give you an idea of ICLARM's particular involvement in this project.

Many of you might not be aware that ICLARM, the International Center for Living Aquatic Resources Management, has been in the Philippines since 1976. It's an international fisheries research center with projects not only in Asia but in the South Pacific and Africa as well. One of the projects we have, of which I am the project leader, is called the fisheries co-management project. It started in May of 1994, and is a five-year project funded by the Danish government, conducted jointly by ICLARM and the North Sea Centre in Denmark, along with various partners in several Asian and African countries.

The reason for this project was that in June 1993 we had an international workshop at IIRR in Cavite to talk about community management and common property of coastal fisheries. Many conclusions from that workshop indicated that the traditional community-based management systems have important roles to play in the management of coastal fisheries. Secondly, recent research on community-based fisheries management systems have shown that when left to their own devices, communities of fishers, under certain conditions, may use fisheries resources sustainably. To many of you that sounds like something you take for granted, but for the international community who have been working in fisheries and dealing with centralized fisheries management, many people are just becoming aware that local fishers can manage their fisheries sustainably under certain conditions.

The third general conclusion was that a new philosophy of fisheries management is needed in which the fisher can once again become part of the resource management team, balancing rights and responsibilities and working in a co-operative rather than antagonistic mode with government fisheries managers—basically saying that the fishers should become an integral part of how we do fisheries management. Finally, co-management is a rational extension of the evolutionary trends in fisheries management over the past decade. What we saw over one hundred years ago was that fishermen were the ones doing fisheries management. As fisheries management became more centralized, the government took over the responsibility, and the fishermen became a lesser part of the fisheries management process. Now we are seeing the trend coming back with fishermen again becoming a part of the process.

Many of you may not know that the Philippines is a leading country in the world in community-based management. One of the reasons for having this workshop is to try to learn and provide the information known within the country to help people establish projects in other countries. We're working in Vietnam, Thailand, Indonesia, Cambodia, and many other countries. They are looking towards the Philippines for instruction and information and to help them improve the way fisheries management is done. How do we define fisheries co-management? Most fisheries management has been done by the central government. There have been informal and traditional types of community-based management activities undertaken, but most of these systems were not recognized by the central government. What we call co-management is really just a recognition that the national government and the local community can work together to manage the fisheries. There are certain functions of the national government that are critical for fisheries management, but the local community itself plays an essential role as well. There is a whole range of types of fisheries management: at one end, the centralized management model where the government has all responsibility for how fisheries management is done—usually from Manila or from a central national agency; in the other extreme, the community has self governance and full responsibility for undertaking fisheries management. One of the things we have realized is that neither one of these extremes actually exists. While we have community-based management, no community really has full authority and full responsibility for how they do fisheries management because at some level you have to interact with the government. So we have what we call intermediate areas co-management in which the community takes over some responsibilities from the government. ICLARM's project aims to gain practical experience in the co-management of fisheries to demonstrate its application as a sustainable, equitable, and efficient management strategy and to develop models of use for adoption by the government, communities, NGOs, and others.

The project is really to develop new ideas, experiences and models which governments, NGOs, fishing communities and others can use to implement a new type of fisheries management. We are working in a number of resource systems, not just coastal resource systems but lakes, rivers and coral reefs. We're also working in several regions and countries around the world. In Asia, this includes the Philippines, Indonesia, Vietnam and Thailand. In Africa: Zimbabwe, Malawi, and a couple of countries in West Africa. So our project is really trying to gather a world-wide perspective.

Many of you may not be aware that, for example, in Thailand the government is starting what they call a fishing rights program, where they're setting up four pilot sites in the country to try

community-based management. In Vietnam, the government is doing the same thing. They're setting up three different sites to try community-based management. In Indonesia, the people have a tradition of community-based management, but the government hasn't recognized this yet. So your neighbors within Asia are all trying to develop community-based management systems, and they're looking to the Philippines for experience. From a workshop paper a couple of weeks ago I learned that the Philippines has had experience in community-based management for over thirty years. It basically started out in irrigation; the National Irrigation Authority was really the first community-based management effort in the country. Then, as experience was gained there, it transferred to the upland areas and to social forestry programs and from there into health programs and finally, in the last five to ten years, into the fisheries areas. So that's a lot of experience both within the country and among different resource systems in the Philippines that people can build on.

Fisheries co-management probably won't work everywhere, but we hope to find out where fisheries co-management can work, and how we can make it work more effectively. In our particular project, we're pursuing this goal through three different research activities.

The first is a comparative case study of fisheries co-management strategies looking at past experiences of fisheries co-management through existing literature, country research, and networking. Our country research involves two parts: working at the national level to look at legal, institutional and administrative conditions, and at the community level to evaluate the impacts of co-management. Most of you working at the local level realize that the Local Government Code was implemented a couple of years ago. We're working with the University of the Philippines College of Public Administration to evaluate the Local Government Code and other fisheries and natural resources policies to see how community-based management projects are implemented in the Philippines.

The second activity is at the community or fisherfolk organization level to extract information about informal traditional management strategies. One of the things that Melvin Carlos has done, and I'm hoping that we can pass it out to you, is an evaluation of the last ten years of fisheries co-management projects. One of the things that we have found was that there are over 100 CBCRM programs and projects in fisheries within the Philippines just in the last ten years, and that includes everything from the CVRP to many smaller projects around the country.

This workshop will fit into a larger, world-wide output. The issues that we're going to talk about here, the outputs that are going to be produced in this workshop, are very important in what's being done around the world, and we hope that the information will be transferred out to the local communities, to the other regions, to the national and to the world-wide audience who are looking to the Philippines for leadership in community-based management. I look forward to meeting and talking to all of you. Thank you.

Ms. Linea Tanchuling
Program Development Officer
Tambuyog Development Center

The Tambuyog Development Center is based in Manila, and we have two main institutional thrusts: one, working with communities to implement community-based coastal resource management, and two: advocating the praxis of CBCRM and co-management to policy-makers and other groups or institutions throughout the country.

For our direct community work, we have areas in Cebu, Sorsogon, and Palawan. Our activities include research, training and education, communication, publications and direct community organization. In the process of working with the communities and in partnership with the people's organizations and other institutions, we have learned so many things about resource

management approaches, tools, and methodologies. But most of all we have learned how it is to work and learn with people.

We believe that there is still so much to learn, which is what drew us to this place in uptown Cebu. We come from different places, different islands. We carry with us different backgrounds: fishers, academicians, researchers, development workers, and in fact we speak different languages and dialects, but what has drawn us here together is that willingness to learn and our commitment to protect our environment and our lives through empowerment and participatory strategies. We come here together to strengthen that commitment even more.

We hope that in the four days that we are gathered, we will learn a lot and that the sharing of experiences as well as ideas will be worthwhile. I also hope that we can hear the voices of our fisherfolks since they play a very significant role in CBCRM and co-management. On behalf of TDC, good morning to everyone.

Keynote Address

Dr. Francisco Felizar, Jr.
Undersecretary
Department of Science and Technology
Government of the Philippines

It is an honor to be invited to give the keynote address this morning even if I came not as an official of the government and I had to seek permission from the Secretary to come over. I came here as a learner, as a participant; I came here as an observer, and I came here to listen to you. But a bit of background about this, why I am interested in looking at co-management and community-based resource management. Way back in 1993, I had the opportunity to work with CIDA, the Canadian International Development Agency, and I undertook a project on community-based resource management. I tried to edit two series of books on community-based resource management, and I hope in this forum that I can validate some assumptions in the things I wrote together with other authors in that particular book. It's been customary for me to come to a conference with a prepared speech, but this morning I won't be doing that, because I would like to simply talk out of my experience and out of observations and out of the discouragement and encouragement I've had serving in the government.

We have a lot of initiatives at the national level. In fact, just last week, the President said: "it is now, it is us." I would like to reiterate the same message to you: "It is now, it is us." We have to empower ourselves, take the initiatives now because tomorrow might never come. Now, because we are racing against time. We have to make up for lost time. It has been encouraging to hear people—especially our friends from foreign countries—come and say they would like to learn from us. We are happy about that, but the reality is, even as they learn from us, they still do things better than we do. I was a university professor for 20 years before being invited by the government to join the Ramos Administration. The programs from 20 years ago are the same programs being talked about now; the problems we talked about 20 years ago are the same problems we face today. Top administrations come and go, but the people at the local level remain. The problem remains; the resources remain. But they are not remaining healthy and integrated; rather, they are degraded, and the people are poorer and worse off than before.

That's why this gathering is very important, especially because the Philippines is an archipelagic country. The last frontier we have is our marine environment. Our coastal resources are a cauldron of problems, opportunities and conflict. We have to solve these problems together. When I said we are racing against time, it's very serious. Look around us, we don't have much left for the future of this country. To us is given the responsibility to manage these resources. I'm very glad that today we have come together to prove equal to the task of conserving and managing our coastal resources.

In the national arena, we have the Philippine Council for Sustainable Development, now in the process of drafting what we call the Philippine Agenda 21. I know all this because I'm the chairman of the committee on the means for implementation, and chairman of the sub-committee on science and technology. A Human Ecological Security Conference called by the Department of Local and Interior Government for the President elaborated that there should be a balance between population and peace. We have the social reform agenda, the Council for Countryside Development, the presidential assistance for the alleviation of poverty. What I'm trying to say is that we have a lot of programs but we are groping as to how to integrate them with each other. For one, we are serving a common client: the Filipino people. There are many initiatives, many resources, many efforts being put into this, and yet we are still hoping that some time in the future, we can achieve success.

Therefore, my proposition is this: amidst all these national initiatives and efforts, there is at this point only one viable strategy for achieving sustainable development: community-based resource co-management, because co-management is about people and their capability; co-management is about the resources and how to use them wisely, how to conserve them. It is about institutions, policies and laws that would enable us to turn our resources into livelihood and income for the community. And therefore, community-based resource co-management provides the option by which we can integrate all our efforts. It is where we can operationalize the goals of sustainable development and the goals of the government, economic competitiveness, and people empowerment. It is where we can see that the resources are protected, enhanced and managed properly.

It's customary for me to open my Bible before going on a trip. This morning I was amazed at the words that came up to me. One of the verses that I read was this: "Knowledge is power and he who has knowledge increases in strength." Our gathering together is sharing of knowledge with each other so that we can be strengthened, we can be inspired, and we can have power that comes from knowledge and information.

Right now, I can see that we have the power to change, the power to manage our resources and to make a difference. I was also encouraged by another verse which says, "In the abundance of advisers, you can wage your war..." This is it. In this particular workshop, all of us are advisers. And if we put our knowledge and experiences together, we wield potentially tremendous power.

The problem, however, is a commitment to what we're doing. I said earlier people learn from us yet continue to do better than we do. We have made a contribution, but I would like to see us outdo ourselves, do things excellently, and strive to perfect our own experiences. We have to have that attitude of creativity. We don't do these things because we have received an honorarium, or because we have grants and funding from foreign organizations, but because we are committed to it.

At this point, I would like to note that community-based resource management has been with us for centuries. If you look at the Banawe Rice Terraces, that is community-based resource management in action. If you look back at history, to the traditional barangay leadership before the Spaniards arrived, we were doing community-based resource management. There was sharing of resources, joint accountability and a lot of common visioning. It's in our culture, so I believe community-based resource management is viable. The forces of history destroyed that culture, but now we're trying to recapture the beauty of community-based resource management and clothe it in a different language, put it in a different package. Call it CBRM or call it co-management, but *bayanihan* is there, it has been there and will be there. Self help has been there and will continue to be there. So I don't believe we will fail in our endeavor.

By this time you are tired of listening to me. Let me congratulate the organizers. I shall be spending my time with you here as a student, as a learner, and as a friend who can be an ally in the national government. Thank you very much.

Case Studies

Introduction

The articles presented in the following section describe community-based coastal resource management project interventions in particular communities in administrative regions VI, VII and VIII in the Visayas. Each study contains a geographical and socio-economic site profile, an outline of the project methodology and process, a section on some problems encountered and how they were handled, and concludes by bringing to light a number of lessons learned that can be of interest to students and practitioners of CBCRM, whether in the Philippines or elsewhere.

Region VI

COMMUNITY ORGANIZING AND FISHERY RESOURCE MANAGEMENT ON MALALISON ISLAND

Renato F. Agbayani¹ with contribution from Wilfredo Homicillada^{2,3}

ABSTRACT

The community fishery resource management (CFRM) project, launched in 1991 in Malalison Island, Antique Province, is a multi-disciplinary, development-oriented research project aimed to support and learn from the collaboration of people's organizations, biologists, and social scientists in applying community-based techniques in fishery management. Currently nearing its end, the four-phase project has introduced a variety of development and livelihood initiatives. Simultaneous studies were made on the marine resources of the island, traditional boundaries and territorial use rights, the economic utilization of resources on the island, and cultivation techniques for seaweed. Remaining activities focus on environmental, social, and economic impact analysis, sea-ranching, further research, and on building up institutional arrangements for the management of TURFs⁴ and artificial reefs. The project's progress to date suggests that the local community will be able to take over managing various project-related activities after the phase-out of instigating institutions.

Introduction

The Community Fisheries Resource Management (CFRM) Project was launched by SEAFDEC AQD⁵ with support from IDRC of Canada⁶ in 1991 on Malalison Island off the municipality of Culasi, Antique Province. Concerns about the degradation of the coastal resources and poverty among the local fisherfolk inspired an effort to undertake a socially-oriented development research program with a number of alternative livelihood and community organizing initiatives (Lacanilao, 1989).

Research conducted under CFRM is development-oriented and multi-disciplinary. Biological studies are integrated with economics, sociology, enterprise management, public administration, and engineering to accomplish community-based resource management. Fishery co-management, through community self-regulation of fishery resources, is an alternative strategy to "top-down" policy making (Hirsh 1992, Hviding and Jui-Larsen 1993). Past experience has shown that active involvement by the community and the legal support of the government (local and national) in the protection of fishery resources can help promote sustained harvests. The concept of CFRM provides opportunities to improve the livelihood and the quality of life of poor fisherfolk through the implementation of appropriate interventions such as community organizing and institution-building, alternative livelihood activities, territorial use rights in fisheries, deployment of concrete artificial reefs, and sea-ranching.

¹ Project Leader, SEAFDEC Aquaculture Department, Tigbauan, Iloilo 5021, Philippines.

² Executive Director, Participatory Research Organization of Communities & Education Towards Struggle for Self Reliance (PROCESS), 31 Avancenita St., Molo, Iloilo City, Philippines.

³ Also contributing valuable information to this text were Rodney Golbque and Erwin Ilaya, former and present community organizers from PROCESS to Malalison.

⁴ Territorial Use Rights for Fisheries.

⁵ Southeast Asian Fisheries Development Center, Aquaculture Department.

⁶ International Development and Research Centre.

Site Profile

Malalison Island was selected from five candidate sites on the basis of socio-economic and biophysical criteria. Socio-economic criteria were: level of income and dependence on fishing; prevalence of destructive fishing practices; use of credit for fishing activities; potential for alternative livelihood activities; and presence of a viable non-government organization in the locality. Biophysical criteria were evaluated relative to the area of (1) live coral, (2) seagrass beds, (3) mangroves, (4) hard substrate, (5) water depth of 10-30 meters, and (6) protection from southwest monsoon. (Figure 1).

A demographic census taken by the CFRM Team at the start of the project showed 74 households with an average of 5-6 members (Siar, pers. comm.). About 72% of the households lived below the poverty level of P2,500/month as defined by the National Economic Development Authority (NEDA), and 52% earned less than P1,250/month. Income from fishing accounted for 60-100% of the total income of 65% of the households. About 49% of the households had 1-2 working members, and another 42% had 3-4 working members. Among the household heads, 84% reported fishing and related occupations (net mending, fish vending, boat making) as their main livelihood. The rest of the household heads were engaged in swine-raising, construction work, coconut lumber making, or farming (Agbayani and Siar, 1994).

The educational attainment of the household heads in Malalison was very low (Agbayani and Siar, 1994). About 72% reached various grades in elementary school, 15% had two years high school education, and 5% had three years of college education. Of the only two college graduates, one is the incumbent *barangay* (village) captain.

Malalison has a young population: in 1991, 68% were younger than 30 years, 19% were 30-50 years old, and only 13% were older than 50 years. Population grew from 431 in 1991 to 485 in December 1994 or 3% annual population growth rate as reported in a barangay census. This is higher than the national estimate of 2.1% by the National Census and Statistics Office. The number of households increased from 74 in 1991 to 94 in 1994.

a. State of Living Marine Resources and Resource Use

The living marine resources in Malalison were assessed during 1991-1994. Over 120 species (49 genera) of corals were found in nine sampling stations around the island (Marte and Y. Primavera, pers. comm.). Coral reef cover was 5-15% in Amihanan on the northeast side.

The fish census along 50m transect lines located at the island's 10m depth contour recorded over 70 species (LMa Garcia and EC Amar, pers. comm.). In May, the highest number of fish species (85) was observed in Amihanan and the highest standing biomass (67 t/km²) in Nablag on the southwest side.

There were five species of seagrass and 74 species of macrobenthic algae identified (CL Marte, pers. comm.). The biomass of these benthic plants are highest in March-May.

The Socioeconomic group of the CFRM Team prepared an agro-fishery village transect using rapid rural appraisal techniques to determine the land and marine resources, economic activities, agricultural and fishery products, problems, and opportunities in Malalison (Conway 1989; Lamug 1989). The transect was divided into the coral reef areas, riceland, upland, inhabited portion of the island, and the shore. Some of the economic opportunities identified were capture of aquarium fishes in the coral reef areas, vegetable farming and salt making near the riceland area, planting of fruit trees in the upland area, establishment of a cooperative-managed consumer store in the village proper, and seaweed farming in the nearshore area (Agbayani and Siar, 1994).

The waters around the island are a shared resource. In 1992, the Malalison waters supported a population of 6,820 in 1,364 households in 16 coastal barangays in Culasi and nearby Batbatan Island (Siar, pers. comm.). Commercial, large-scale fishers from other provinces have

also encroached on the waters of Malalison—to the disadvantage of the small-scale municipal fishers.

Of the 74 households in Malalison, 37% have non-motorized boats and 22% own motorized boats (Siar, pers. comm.). Hook and line is the most common fishing gear, followed by spears and nets. Women and children gather mollusks, sea urchins, sea cucumbers, and other reef products.

Monsoon winds from July to November force fishing activities, especially among spear and hook-and-line fishers, to be cut back. However, lack of sufficient sources of incomes during the off-season compel fishers to use efficient but destructive fishing methods to maximize the catch during the rest of year. Blast fishing was rampant until the individual responsible for initiating and supplying dynamite died in 1991. Malalison fishers alleged that fishers from other islands and provinces continue to use blast and cyanide fishing techniques around the island. The Malalison version of *muro-ami* (locally called *duldog*), introduced by Japanese fishermen before World War II, became a source of conflict both within and outside the island. *Duldog* has been prohibited since 1986; this ban and the social pressure within the community substantially reduced fishing by this method. Overfishing and destructive fishing practices have degraded the marine resources, particularly the coral reefs around Malalison.

A survey covering the period April 1992 to March 1994 documented the average monthly catch, sales, net income, numbers of fishing hours/day and fishing days/month of 38 fishers using different gears (Agbayani, unpublished data). Average monthly catch of net and hook-and-line fishers decreased by 17-25%, a trend that could be attributed partly to the decrease in fishing days/month. Also, there was a substantial decline in the practice of *duldog* as a result of effective information on destructive fishing practices and social pressures among the fisherfolk. Sales and net incomes, however, increased primarily due to the higher market value of the species caught.

Declining productivity in the marine ecosystems is caused primarily by the conversion of mangroves swamps to fishponds, destructive fishing practices, poor enforcement of fishery laws and regulations, and siltation due to forest denudation (Siar et al, 1992). The situation is exacerbated by a high rate of resource utilization due to rapid population growth. Many of these factors can be traced back to the poverty of the local inhabitants.

b. Poverty

In the Philippines, as in many developing countries, fisherfolk are among the poorest of the poor. Their incomes almost exclusively depend on the fishery resources adjacent to their village. In order to improve the social and economic conditions of a fishing community, therefore, development projects like CFRM must examine the causes of such poverty.

Over a three-year period, the CFRM research team immersed itself in the community, and built a causal model of poverty in Malalison (Figure 2).⁷ The direct causes of poverty in Malalison are: (1) the degraded condition of both marine and terrestrial resources, (2) limited livelihood opportunities, (3) low educational attainment of the island residents, and (4) lack of people empowerment. These four factors are closely linked.

High population growth contributes to resource degradation by encouraging over-exploitation of natural resources. The low educational attainment of household heads, the religious prohibition against artificial birth control, the lack of recreational facilities on

⁷ A causal model is a simplified representation of reality; it is a communication tool for use in identifying the causes and mechanisms of a problem under consideration (Eusebio et al 1991; Ramos and Garcia 1993). Such a model is often site-specific and it may be changed or improved during the course of a project. The causal model of poverty in Malalison has been discussed in several meetings and workshops in and outside Malalison and SEAFDEC in order to reach a consensus.

the island, and the tendency to view children as workers, caregivers, or insurance against adversity contribute to the growth rate in Malalison.

Low educational attainment among the Malalison residents—because of inadequate income, lack of accessible educational facilities, and low prioritization of education—has repercussions in other areas as well. For example, the passive posture of the fisherfolk in managing the coastal waters is due in part to the “top-down” strategy of policy formulation and implementation (Agbayani and Ponce 1993), but also to the fact that the fisherfolk are neither educated about their natural resources nor trained in local governance and policy advocacy. Further, lack of education diminishes options for alternative livelihoods. Most Malalison residents have insufficient knowledge, skills, and technology to embark on new money-earning endeavors. Lack of credit prevents or limits other economic activities. Lack of ability to access markets for non-traditional products—i.e., shellcraft—resulted in failure to pursue some government-initiated livelihood programs prior to 1991.

Methods and Process

Under the CFRM Project, socioeconomic and biological studies were conducted to obtain baseline data about Malalison’s natural resources and the user community. Then, several development interventions were formulated for Malalison, the foremost of which involved community-organizing and institution building to empower the fisherfolk. In 1991, Phase I of the project began. Over the first 3.5 years, the project concentrated on community-organizing, institution building, and the introduction of seaweed farming—an environment-friendly technology as alternative livelihood. Simultaneous studies were made on the marine resources of the island, the traditional boundaries and territorial use rights, the economic utilization of resources, and the cultivation techniques for seaweed.

Phase II started in 1994 with the implementation of a system of territorial use rights in fisheries (TURFs) in the waters around Malalison Island and with the deployment of concrete artificial reefs. TURFs as a fishery management strategy was intended to help provide a sense of “ownership” of coastal resources to the organized fisherfolk. Concrete artificial reefs were to be deployed in the area covered by TURFs to revive underwater habitats and increase fisheries production. Research under Phase II included environmental, social and economic impact analysis, institutional analysis on fisheries co-management, economic analysis of seafaring techniques, and economic valuation of artificial reefs.

In 1995, Phase III got underway, with a focus on establishing a marine sanctuary, and on building up institutional arrangements for the sustainable management of TURFs and artificial reefs. In the final phase, sea-ranching will be introduced as a further endeavor to help the fisheries, and more research will be conducted. However, all initiatives introduced in earlier phases of the project will continue until phase out of the external implementing agencies in 1998, at which time carrying on project activities will become the full responsibility of local community organizations and individuals.

a. Territorial Use Rights in Fisheries (TURFs)

Resource ownership is a burning issue in resource management. The open access character of marine resources leads to uncontrolled and destructive exploitation and environmental deterioration (Oakerson 1992; Ostrom 1990). As a management strategy, the granting of territorial use rights in fisheries (TURFs) to a community can enhance their sense of ownership of, and responsibility for, the fishery resource (Siar et al 1992; Bojos 1992; Fellizar 1992; Garcia 1992; Lacanilao 1989).

The Local Government Code of 1991 delegates to the local government units and people's organizations the task of managing their own resources: "Municipalities have the exclusive authority to grant fishery privileges in the municipal waters (15 km from the coastline) and impose rentals, fees, or charges."

The Culasi *Sangguniang Bayan* (municipal council) passed Municipal Ordinance No. 5-90 designating a one km² area between Malalison and Culasi as TURFs area. Effective implementation of TURFs should help ease the fishing pressure and ultimately increase the catch and income of individual fishers. At this time, reaction to TURFs appears to be positive, but evidence of long-term impact remains to be seen.

b. Community Organizing

Community-based resource management hinges on the formation of a strong and sustainable fishers' association. Most often, the organizing process is bereft of clear goals, people's active participation, workable strategies and adequate support in terms of technology, skills, and capability building or alternative livelihood projects. The fact that the fishing grounds in Malalison are open access, communal and state property—i.e., no legislation has established claims or ownership of specific fishing spots—aggravates the situation. The area is a communal fishing ground also for twelve coastal barangays of mainland Culasi, thus complicating resource utilization and conservation initiatives.

In 1991, the Fishermen's Association of Malalison Island (FAMI) was organized with the support of the Culasi municipal government. Its formation encouraged SEAFDEC and PROCESS⁸ to select Malalison from among several possible project sites.

The CFRM's community organizing and institution building activities aimed to empower individuals, through FAMI, to manage their own resources. The project developed a collective initiative among the fisherfolk community to: advocate and lobby their claims and entitlements to higher authorities, apply appropriate technology in their chosen alternative livelihood projects, play a critical role in formulating plans as well as implementing and assessing resource management efforts, and devise their own sustainable resource development scheme.

Organizing and institution building as an intervention strategy was conceptualized and implemented with a timeframe of three to four years. This component of the CFRM project has four major thrusts: community organizing, capability and skills building, process documentation, and alternative economic self-reliance activities. The tripartite partnership—SEAFDEC/PROCESS/FAMI—also links up as needed with local government units, other institutions, academia, and national agencies. FAMI's plans, targets, accomplishments, and gaps were assessed in annual seminar-workshops. These workshops provided FAMI members the fora in which to assess and evaluate the strengths, weaknesses, opportunities, and threats of the CFRM Project.

c. Artificial Reefs

Prototype concrete artificial reefs (ARs) were deployed in Guiob in May, 1994, to test their technical feasibility in terms of design strength and deployment using local labor (Marte et al, pers. comm.). Fifty-four regular concrete AR modules have been deployed in selected sites since 1995. At the initiative of its members, FAMI in mid-1996 declared the Guiob reef, located in the center of the TURFs area, as a fish sanctuary. Within the sanctuary, no fishing of any kind

⁸ Participatory Research Organization of Communities & Education Towards Struggle for Self Reliance, a non-profit, non-governmental organization registered in 1982 with the primary aim of facilitating the formation of strong, autonomous people's organizations and building up their capabilities for participatory and self-reliant development.

is permitted, while in the buffer zone-like TURFs area surrounding it, only some non-environmentally destructive fishing methods may be used.

The responsibility for monitoring the protected area lies with the FAMI and barangay council, some members of which have been trained as wardens and authorized by local government to apprehend violators. However, to date there have been no prosecutions, only warnings. In practice, wardens find it difficult to exercise their full authority in this regard, often because they can relate to the violators' need and desire to fish where the fishing is best.

Fishermen claim that fish stock around the ARs have increased, and that larger and more diverse types of fish have been seen, perhaps signaling a rehabilitation of the coral reefs.

d. Sea-Ranching

In Phase IV, a Resource Management Committee (RMC) comprised of representatives from different types of fishers in the community, representatives from the local government units and concerned agencies, and representatives from SEAFDEC and PROCESS will prepare a resource management plan. The resource management plan will set the rules and rights of the members of the community in the co-management of the coastal resources covered by the TURFs area. As a complementary strategy, sea-ranching of appropriate species will be implemented starting 1997. Research on site assessment and fauna surveys will be undertaken to provide information on the appropriateness of the species to be ranched.

e. Other Livelihood Initiatives

Culture trials of the seaweed *Kappaphycus alvarezii* (Ponce, 1992) were performed in the nearshore area as a demonstration of seaweed cultivation's technical feasibility to the FAMI members. In 1994, FAMI initiated a seaweed farming program for interested members. This endeavor provided an opportunity for the association to manage a cooperative business and to test the economic viability of seaweed farming. A total of seven (7) tons dry weight were produced that year, well over the 5-ton production projection. The enterprise appeared promising, but subsequent seasons of harsh weather left seaweed farmers unable to repay a project loan. With a new loan received in 1996, harvesting efforts may be renewed.

FAMI also revitalized a consumer store in the island by improving management of the enterprise, particularly of the finances. The association has proposed community dialogue on the possibility of introducing new industries to the island, such as eco-tourism, aquarium fish catching, sea shell gathering, and giant clam cultivation.

Problems Encountered

In terms of role distribution, SEAFDEC handled the marine-biophysical dimensions as well as research and fishing technology and skills transfer, while PROCESS adopted the role as primary catalyst for sociopolitical and economic empowerment. Each partner learned much from the other's areas of expertise, and will be able to apply each other's perspectives in future work. The core mandate of the partnership body was to help facilitate the subsistence fisherfolk of Malalison Island to become a self-reliant and responsible community or organization capable of managing and conserving their own resources in light of community-based and integrated resource considerations. At first, coordination between PROCESS and SEAFDEC was ineffective, but this was soon corrected. Quarterly "no-holds-barred" roundtable discussions between SEAFDEC and PROCESS staff were held to identify, analyze, and recommend workable strategies for project activities.

Community members, by and large, expected too much too soon in terms of improved livelihoods and incomes under the CFRM project (Agbayani and Siar 1994). Their initial enthusiasm for the project dropped off early on, as reflected in the declining attendance at association meetings. One PROCESS representative speculated that residents may have been suspicious of efforts to organize the community as left-wing propaganda. Gaining the trust of residents and raising their understanding of the importance of environmental protection, according to community-based PROCESS and SEAFDEC representatives, requires long-term investments in getting to know the people and their problems, their goals and daily schedules. It means following them where they go, and engaging them in one-on-one consultations if necessary. This presents a challenge to external community organizers, who may find themselves embroiled too deeply in community concerns, or torn between the sides of a pre-existing conflict. On Malalison for instance, an age-old family feud continues to hinder full cooperation among community members in the CFRM project and other initiatives.

FAMI encountered some problems at first in rallying sufficient participation for its meetings and activities. For example, most of the male fisherfolk could not attend meetings due to being away fishing all day, or else sleeping during day time after fishing all night, leaving women with the task of organizing and attending meetings. However, it was the men who stood to learn and benefit a great deal from the association's interventions, so some means needed to be established either to plan meetings around their schedules, or transmit the information to them. Additionally, dearth of alternative livelihood opportunities deterred some potential participants. Participation increased as the project introduced some of the livelihood initiatives mentioned above.

On TURFs: the Provincial Council of Antique questioned an early version of the ordinance because it seemed to favor the Malalison community over other sectors or communities in Culasi municipality. However, the municipal and provincial councils entered into dialogue, and these concerns were put to rest. More recently, community ire has been raised by alleged incursions by commercial fishers from outside the region, who reportedly gained permission to fish from the barangay captain by insisting that they only wanted to fish for their own consumption while their boat engine was disabled. Community members raised an alarm on local radio with the effect that more residents are now interested in becoming involved in a movement to restrict the access to nearby fisheries. Similarly, a local resident's decision in 1996 to employ several highly skilled spearfishers from Mindanao has aroused resentment by other residents and a desire to formalize access restrictions and limit some gear types. These issues to this day are being addressed in FAMI meetings and barangay council sessions.

Lessons Learned

Over the several years since the inception of the CFRM project on Malalison, several factors emerged as having a positive impact on the effectiveness of project interventions. For example, as a starting point, the support of local government (both barangay and municipal level) units proved essential. Project endeavors received a considerable boost through local legislation passed in favor of FAMI's TURFs and community-based coastal resources management initiatives in mainland Culasi. The contributions and expertise of each external partner gave critical fuel to the project: SEAFDEC's technologies, funding support, and research studies; PROCESS's experiences in social infrastructure building, networking and alliances with government agencies, and funding support for small-scale livelihood projects. Active and committed funding partners (IDRC, SEAFDEC, LGUs) were indispensable. The CFRM project also enjoyed women's active participation, the presence of organizational committees and supportive local leaders, and a strong popular orientation toward environmental conservation.

The need to work as partners enabled both PROCESS and SEAFDEC to learn from each other. Working in Malalison taught PROCESS members the importance of the marine and fisheries technology being provided by SEAFDEC for an integrated fishery management program. Both partners clearly strove to understand each other's limitations and consciously attempted to be effective partners in development.

FAMI members exhibited a collective resolve toward resource protection and strengthening of community organizations that encouraged PROCESS in its efforts to assist them. In the other direction, FAMI internalized some of PROCESS' socio-economic and environmental concerns. Being partners in development enhances trust and confidence while building toward a common goal. Cultural and indigenous practices and beliefs should be considered in the project strategies and implementation procedures; for example, project implementors proposed tourism development for the island, but found that many residents reject this idea for fear of introducing undesirable influences, such as prostitution, to the island. That women should be actively involved in organizational activities became evident by their level of interest expressed in the association and its activities, and by the fact that many male residents cannot participate fully due to fishing schedules. Today there are women in decision making positions on the board of FAMI.

Strong, strategic alliances and linkages among concerned institutions (research/academe, NGOs, community groups, and LGUs) are imperative to ensure effective planning and implementation of community-based coastal resource management. Other stakeholders, e.g., fish traders or tourism developers, should be part of the alliance to strengthen the bonds among resource users and managers. Experiences by researchers and development workers should be documented and disseminated to policy makers especially at the local government levels.

Future Plans/Conclusion

Gradual phase out of the external project partners has begun already, and will proceed through the planned 1998 project termination. Since the future of marine conservation on Malalison Island depends on the ability of local inhabitants to implement the provisions of their resource management plan, the CFRM Project will continue capacity building activities for FAMI members during the next three years. FAMI members will determine the types of training programs desired, with emphasis on economic activities compatible with marine conservation. It is hoped that government, non-governmental institutions, other stakeholders and co-managers of the resources will sustain their supportive roles.

After the phase out, external partners will conduct additional studies in Malalison on such topics as the social, economic, institutional and environmental impacts of development interventions. However, by official end of the project, FAMI should be a strong, self-reliant organization whose members have sufficient knowledge and capability to find and gain access to relevant technologies and information for their own future development. Ideally, the external partners would like to use FAMI's experiences and membership as models to help future interventions at other coastal project sites around the Philippines.

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Jelson Dayo, President of the Fisherman's Association, Malalison Island

On Malalison Island, the only means of livelihood is fishing. However, for a long time, fish catch has been insufficient. In 1975, the residents established an informal association with elected officers, and the association introduced the *duldog* method of fishing. Between 1975 and 1989, this method helped increase the people's income, and they were able to acquire almost anything they needed. During this time, they purchased motor boats along with 13 sailboats and 40 paddle boats.

In 1990, a government organizer informed the association that SEAFDEC was interested in getting involved in the area, but that the residents must be organized first. Membership in the association reached a high point of 96, but in fact the participants realized that it is not really good organizing when you do not understand why you are organized or if it is done haphazardly. Thus, when there were no more projects, the association membership dropped to 43, and when new projects came up, more people became interested again. So this time they made the membership requirements more strict. We conducted a pre-membership seminar and developed membership forms. Twenty additional people passed the new requirements, so that presently there are 63 members.

Most of the active members are women. Their priority has been the maintenance of the coastal surroundings of Malalison, so if you go to this area, you will notice that it is clean.

FAMI provided the labor in setting up 27 artificial reefs.

Fishermen had the opportunity to go to other provinces like Bohol and Guimaras on an educational exposure trip facilitated by SEAFDEC.

FAMI is now recognized at the provincial and regional levels, and has become a member of the Visayas Fisherfolk and Farmers Confederation. The association has also been involved in general planning for the community, in close cooperation with the Barangay Development Council. Some FAMI members are also officers on the Council.

ECOSYSTEMS REHABILITATION AND RESOURCE MANAGEMENT IN CALILING, NEGROS OCCIDENTAL

Teodulo F. Luchavez¹

ABSTRACT

This paper describes the attempt to introduce integrated management strategies for degraded marine ecosystems in the economically-depressed *barangay* (village) of Caliling, located in the southwest portion of Negros Island. Fishery resource assessment, advocacy for conservation, community organizing, and introduction of livelihood opportunities were the methods and management strategies used in 1994 through 1996 to initiate the protection of coastal resources in Caliling. The application of these strategies has won a number of local supporters. However, the converts have not as yet abandoned the desire to maximize the harvest of wild products from the coastal ecosystems. It is difficult to identify improvements in the physical environment as a result of the present rehabilitation effort, but there are indications of emerging commitment among local residents to use their living resources sustainably.

Introduction

In 1994, implementation of an integrated coastal resource management (CRM) project began in Barangay Caliling, located in the town of Cauayan, Negros Occidental province. Mr. Desiderio Hisona, one of the participating fishers' association members, disclosed in his testimony that although this local coastal resource management project has just started, the participating association members are already beginning to reap benefits, such as income from alternative livelihood projects, specifically salt making and tree planting. Moreover, the fast-growing trees that some association members planted on their land have certainly added monetary value to their small landholdings.

The selection of Caliling as a project site, according to Mr. Hisona, can be attributed to the area's dire need for help, considering the on-going degradation of the surrounding coral reef due to destructive fishing methods and sedimentation from upland erosion, the high rate of fish stock depletion from overfishing, the area's role as a major source of bangus fish fry for fishponds in Negros Occidental, and the area's importance as a feeding site for *dugong* (sea cow)—an endangered marine mammal recommended internationally for protection.

The funding for this project is an extension of the Magsaysay Award Foundation's support to Dr. Angel C. Alcalá's² CRM initiatives. The Caliling effort took the form of a community-based project in which the managing partners are the project staff, the local fishermen's associations in coordination with the Department of Environment and Natural Resources (DENR), and several local government units (LGUs). Researchers from the Silliman University Marine Laboratory (SUML) provided technical assistance, e.g., training in community organizing, research and monitoring. The project implementors, field workers, and beneficiaries are the members of the local fishermen's associations. Funding support for the project was originally intended for two years, beyond which management responsibilities would be transferred to the organized fishers and farmers associations.

Caliling's selection for this project has opened new opportunities for local residents. For example, with the advent of the CRM project, environment-friendly organizations have begun to settle their disputes arising from conflicting resource uses. Various marine studies (Alcalá and Alcalá, 1993; Luchavez, 1994) conducted in the area have helped make local fishers more aware of the severely depleted status of nearshore fisheries. Additionally, the CRM project has

¹ Silliman University Marine Laboratory, Dumaguete City, 6200 Philippines

² Former Secretary of the DENR.

promoted an appreciation among the local people for the importance of other marine species such as dugong and dolphin.

Site Profile

Caliling is a coastal barangay with rugged mountains and narrow fringing reefs. Part of these reefs is the small barrier coral reef, Hulao-Hulao (about 2 km² in area). The hilltops are covered primarily by stunted vegetation, while the lowlands are mostly small farmlands planted with coconut and rice. In the coastal waters, coral reefs and sandy or muddy seabed are the habitats of marine life. The biological resources in both land and marine ecosystems are diminishing because of over-exploitation. For example, timber and other important forest products have been severely depleted by commercial and subsistence logging (personal observations). Local residents still cut the remaining trees for housing materials, fuelwood, and charcoal. Despite legal restrictions, populations of many important marine species such as *bangus* (milkfish, or *Chanos chanos*), mackerel, crabs, and shrimps continue to be harvested without obstruction.

Fewer than eight thousand people live in Caliling, of which two-thirds reside within a half-kilometer of the shoreline. To these people, like residents of many other impoverished villages in the Philippines, the desire to maximize the utilization of common resources seems to be uppermost in their minds. But the current trend of harvest puts the resources at risk. The challenging management concerns raised by this dilemma include: conflict in coastal resource uses, lack of enforcement of existing fishery laws, degraded environment, lack of awareness among the residents that their patterns of resource use will eventually destroy the habitat and resources that provide the bases of their livelihood. These issues are beyond the capability of the present small-scale project, but with this initiative, the initial steps toward a full-blown development project have been made.

Methods and Strategies

Background research. As a prelude to rehabilitation efforts, the SUML in 1994 conducted background studies on Hulao-Hulao reef, monitoring of the catch landings, visual census of reef fish standing stocks, and assessment of live coral cover. The fish yield was monitored from 1994 to 1996. The estimated annual catch from the 14 km² nearshore reef and non-reef area was 39.3 metric tons, or 2.8 metric tons per square kilometer, a slight increase from the two metric tons per square kilometer yield reported by Luchavez et al. in 1984. At its present value (PHP 915,032.02), the yield represents a monthly income of PHP 930.22 per fisherman including income from the bangus fry. The value of bangus fry harvest from 1994 to 1996 showed a range of PHP 53,306.60 to PHP 106,916.70 (Alcala, 1996). Unfortunately, the absence of historical data precludes a comparative analysis to show trends in fish yield. However, the present data can be useful as benchmark against which CRM progress may be measured in the future. The peso value of the catch-per-trip only amounts to about PHP 30.00. Such value does not compare favorably with income of laborers on minimum wage, a fact which helps explain the relative poverty afflicting Caliling's fisher community.

The mean density of the reef fish standing stock was $609.6 \pm 440/500$ square meters (Luchavez, 1994) and the percentage of hard live coral cover ranged from 19.3% - 32.5% (Alcala and Alcala, 1992). These values are preliminary estimates and serve as baseline data useful for future monitoring.

Community organizing. The author, serving as project staff, mobilized local resource users and stakeholders by engaging them in one-on-one conversations and informal meetings. As a result, the Caliling Marginal Fishers and Farmers Association (CAMAFFA) was organized. Experts from SUML and DENR conducted coastal resource management training seminars for local fishermen, coastal farmers, and public school teachers. Then trainees became the core members of local, occupation-specific organizations attempting to implement the project strategies. For example, the public school teachers' organization began teaching environmental education in the primary schools, providing the youth with environmental information. The fishers' organizations helped to implement legislated policies, including management measures and actions that have been formulated in joint assemblies of the barangay organizations. To promote advocacy for coastal resource management, such topics as resource depletion and destructive fishing were raised frequently in informal meetings.

LGU officials spearheaded a campaign of public hearings in which local officials presented priority issues for discussion and approval by the attending public. In most cases, decisions were reached through consensus.

Alternative livelihood. One priority management strategy was the development of alternative or supplemental livelihood activities to reduce harvesting pressure on land and marine resources. The local coral reef ecosystem is a major habitat of fishery resources on which the coastal inhabitants depend, but the fish stocks were showing signs of depletion. To rehabilitate the fisheries, it was deemed necessary to reduce the fishing pressure by decreasing the number of fishermen.³ These displaced fishermen received assistance in the form of a communal multi-species plant nursery which they themselves would develop into a source of income through the sale of seedlings to farmers participating in the DENR reforestation projects.

There was a confirmed report of an extensive reforestation project of DENR in the watershed area of Caliling. That news prompted the project staff to encourage the fishers' association members to put up a plant nursery. It was hoped that the DENR reforestation project would be a market for the seedlings from the nursery. Despite the lack of fresh water to nourish the nursery, some 25,000 seedlings were produced. Unfortunately, the above-mentioned DENR project did not materialize. Nevertheless, those seedlings were planted on privately owned lands of association members.

The problem of inadequate water in the nursery led the project organizers to introduce salt-making as yet another form of supplemental or alternative livelihood. In the summer of 1995, with a funding support of PHP 16,000.00, ten fishers' association members participated in the salt-making venture. Additional participants, mostly women and out-of-school youth, were recruited later to harvest the salt. A total of 50 participants eventually became involved, producing a total of 1,119 bags—90.4 tons—of salt within 66 days (Alcala, 1996). The price of salt fluctuated between about PHP 100 and 200 per bag. By local standards, therefore, salt-making is profitable. Unfortunately, it can only be undertaken effectively during summer because of the longer sunny days required for the evaporation process. During the rainy season, the rising tides flood the salt beds. So by early May, the saltmakers must switch back to fishing.

The natural supply of bangus has been fluctuating. Luckily for the displaced saltmakers, bangus fry were relatively abundant in the coastline of Barangay Caliling in 1995. Unfortunately, that was a short-lived occurrence due to purse-seine fishing that depletes the adult bangus stock.

The seasonal change in activities from salt-making to bangus-fry collecting provided the opportunity to implement yet another management strategy related to the bangus fishery. With assistance from the community organizer, the fisher's organizations sponsored an ordinance for deliberation in the *Sangguniang Bayan* (municipal council). The ordinance required bangus fry

³ It has been shown that protection of fish habitats results in the recovery of fish stocks (Alcala, 1981; Alcala and Russ, 1990; Russ and Alcala, 1994)

collectors to release the by-catch or extraneous fish larvae back into the water. By-catches are traditionally considered trash fish, but a study by Luchavez and Dolar (1987) reported that these larvae and fry sometimes include commercially important species of fish and invertebrates. Sad to say, the proposed ordinance did not pass, but the fry collectors at least were taught to return the by-catch back into the water, not on the dry sand as practiced in the past.

Awareness raising. Public education was another means adopted by the project to promote the rehabilitation of the coastal habitats or ecosystems. Project staff members posted interpretative signs and posters along the coastal highway and other conspicuous places. The staff accompanied members of local participating organizations to the Apo Island Marine Sanctuary in southern Negros Oriental, where the visitors heard brief lectures on the experience of the fisher community of Apo Island and their increased fish catches due to the fish sanctuary (see also Russ and Alcala, 1996). Once in Apo, they were encouraged to observe the Apo community: the standard of living of the residents, the condition of their houses, and the terrestrial surroundings. Most impressive of all, a swim in the sanctuary gave the visitors a chance to observe the fish life and the healthy coral reef protected by the fisher community. Many participants later reported that they had never before seen such large schools of big and tame fish. The rare spectacle whipped up a desire to establish their own fish sanctuary in the Caliling waters.

Legal measures. A few weeks after the visit to Apo Island, Municipal Ordinance No. 96-25 was passed by the Cauayan town council declaring the coastal zone of Barangay Caliling as a marine protected area, with Hulao-Hulao reef as its core. Except for the Hulao-Hulao Fish Sanctuary itself, where no fishing is permitted, non-destructive fishing and traditional activities, including sports and non-destructive recreation, are still allowed in the barangay waters. Dynamite fishing, poisoning, *hulbot-hulbot* (modified Danish seine), and large-scale commercial fishing are prohibited throughout the protected area. Because some small-scale fishermen were adversely affected by the fishing ban in the Hulao-Hulao reef, the project's alternative livelihood component is being maintained to accommodate them.

Problems Encountered

In general, people in Caliling tend to lack the motivation to plant trees in order to improve the environment. Without sufficient motivation, the present reforestation effort may be rendered ineffective because people are likely to harvest the trees to gain short-term economic benefits. Further awareness raising about the long-term importance of sustainable resource management and the advantages of a forested hillside for overall watershed health is needed.

Although the nursery project had a promising start, the lack of running water made the nursery dependent on rain, which rarely falls during summer. To address this problem, the fishers' organization proposed a water supply project for funding by the government. A government office approved the proposal and began implementation, but did not complete it. Then, a local barangay official pilfered the water pipes. So, until the present day, there is no water supply for the nursery. As a consequence, thousands of seedlings wilted and died. Despite the lack of water, the nursery still produces a few planted seedlings, the majority of which are mangrove species that can be nurtured with brackish water (Alcala, 1996).

As already mentioned, the bangus fry collection fluctuates and at this point in time has dropped to a very low level so that fishers had to look for other means of livelihood.⁴

⁴ Lately, the DENR undertook the revegetation of denuded mangrove areas in Caliling. Some members of the fishers' association were contracted by the DENR to plant mangrove seedlings and other beach species. In 1995, two contractors were paid PHP 44,000.00 for the propagation of 20,000 mangrove seedlings. In

A further set of problems included an obstructive, unmotivated government bureaucracy. As already mentioned, the approved project for water supply was left unfinished. Moreover, the municipal government does not seem to have as its priority enforcement of the sanctuary or marine protected area. No policemen have been assigned to the task so far. Community enforcers have been hindered by the lack of financial support for patrolling activities. However, the members of the fishers' organizations are, by their own initiative, starting to conduct occasional patrols around the Hulao-Hulao reef to monitor suspicious fishing activities. Recently, with the help of the present project, the fishers' organization acquired a motorized *banca* as patrol craft. Fishermen now keep watch over the protected coastal waters. However, since the patrol group members are ordinary citizens, they hesitate to arrest the violators. Instead of being apprehended, violators are talked to and persuaded to comply with laws and regulations.

Lessons Learned

1. In Caliling, the people lack knowledge about ecological functions and services. For example, few if any know that mangroves protect coastal communities and properties from storm surges, provide food and building materials, serve as habitat for terrestrial and marine life, serve as nursery areas for early developmental stages of fish, and are a natural laboratory for research. One result of this lack of awareness is that it is difficult to motivate people to take action to protect the environment for its own sake; rather, the people look to their natural surroundings first and foremost as a source of immediate economic benefit. Future resource management projects should emphasize ecological education and awareness raising for the community.
2. With a better understanding of how ecosystems function and what diverse benefits they provide, people will gain a better appreciation for the importance of protecting the environment *before* it becomes too degraded. Rehabilitation of ecosystems is difficult and expensive. It is wiser and more cost effective to protect and manage existing natural ecosystems than to rehabilitate damaged ones.
3. When the project staff first began organizing the community, the targets were small-scale fishers. Some small-scale farmers showed up at the meetings as well, because they were also part-time fishers. So farmers were included in subsequent meetings. Also invited were some local professionals, primarily teachers. At first, the fishers and farmers were not very articulate about their concerns and ideas; they would come late to meetings and then just sit quietly listening without participating in the discussions. Over time, however, some improvement was noticed. They became more active, although they still had some trouble expressing their ideas. So we encouraged the teachers to help speak for them, and to assume some management tasks associated with the project, leaving the fishers and farmers free to focus their efforts on project implementation.
4. Some local small-scale fishers are wary of resource management projects, apparently because of negative experiences in the past. At the start of this project, intended beneficiaries viewed the expected results with skepticism and disbelief. Some prospective participants preferred to wait and see project results before getting involved in later activities.

However, once positive results have been demonstrated, local resource users or the intended beneficiaries become enthusiastic to participate in community development endeavors. For example, the visit of some Caliling residents to the Apo Marine Sanctuary, where they saw abundant fish and learned about the increased fish catches that resulted from local community

1996, PHP 47,000.00 were paid to the association for planting 15,000 seedlings (mangrove and other beach species) in six hectares of land.

action, enabled the visitors to finally decide on creating a fish sanctuary in their own area. The trip to Apo island also stimulated the passage of the Municipal Ordinance No. 96-25 protecting the Caliling coastal ecosystems.

Conclusion

Today, the landscape in Caliling, particularly the watershed areas, is still characterized by stunted vegetation, though subtle changes are emerging with patches of planted trees. The fish yield from the protected coral reef zone remains meager, despite the increasing enforcement efforts. Barring natural catastrophes, however, more positive results of the present rehabilitation efforts should be visible with the advent of the 21st century. The traditional, environmentally damaging economic activities, such as gathering fuelwood for charcoal and other domestic uses, unrestricted fishing by poor coastal residents, illegal fishing by purse-seiners and hulbot-hulbot operators continues, but the negative effects at least are diminished by the commitment to conservation exhibited by a growing number of local resource users bent on enforcing existing laws and regulations.

The public education campaign also aims to attract tourists to Caliling to further expand alternative livelihood options for its residents.

The project is promoting changes in human attitudes towards the environment and natural resources as a means to rehabilitate degraded natural habitats. This is a slow and expensive process. At this stage, the project is in a dilemma—whether to continue until the community becomes sufficiently capable of managing the resources, or to phase out, leaving behind mostly fledgling stakeholders to be on their own. In late 1997, this project may be turned over to the Caliling Land and Resource Keepers, Inc. (CLARK), a local NGO and its implementing arm, the CAMAFFA. The chairman of the CAMAFFA is currently being trained to run the day-to-day management activities such as leading surveillance patrols, supervising livelihood activities, and meeting with fishers to address environmental issues.

Acknowledgment

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Region VII

WILDLIFE PROTECTION AND CONSERVATION: THE TAHONG-TAHONG EXPERIENCE

Camilo T. Cimagala¹

ABSTRACT

A recent small-scale coastal resource management project carried out in a tiny, poor, and politically neglected community in Bohol province shows some early promising results in terms of regeneration of the natural resource base. The project followed up on a number of initiatives introduced under CVRP-I. But without continued funding and supervision to keep up the level of motivation on the part of community residents, and without controls on human migration into the ecologically fragile area, gains made in clam cultivation, the fish sanctuary, and protecting an endangered species of migratory fowl may be reversed.

Introduction

This paper documents the experiences of the Bohol Resource Management and Development Foundation (BOREMADEV) in implementing a project on community-based coastal resource management and wildlife protection/conservation in Tahong-Tahong Islet, Talibon municipality, Bohol province. BOREMADEV was created in 1989. Its board of directors includes several individuals who had worked previously in site management units for the CVRP-I in Bohol. They drew on some of their experiences in CVRP-I, and most of the activities undertaken by the BOREMADEV project replicate and sustain efforts introduced under CVRP, but the new project was not launched until after CVRP concluded, to prevent a conflict of interest. The BOREMADEV project, mainly funded by a grant from the German Development Service, started in July 1993 and was intended to run for three years. Its direct beneficiaries are the islet's fisherfolk and their families. To generate official support for this project, BOREMADEV launched a coordinating campaign with the local government administration and line agencies—in particular, the Department of Environment and Natural Resources (DENR) and the Department of Agriculture (DA).

The Tahong-Tahong project was conceived to enhance the economic and ecological viability of the fishing industry around the islet by raising the quantity and quality of fish, to increase ecological awareness, in particular to provide a more sustainable livelihood basis for the islet's residence, but also to protect an endangered species that migrates to the island annually. Background preparation for the project consisted of a survey and data gathering effort by BOREMADEV in the latter part of 1992. The project aimed to address: 1) degradation of islet's mangroves, which served as source of materials in constructing makeshift houses and firewood; 2) depletion of the islet's commercial marine life as a result of overexploitation and illegal methods of fishing using explosives and fire-meshed nets; 3) low level of awareness among local inhabitants on the need to properly manage, protect and conserve the islet's resource base; 4) fears that the influx of more families coming from Jaguliao would further degrade the islet's resource base; and 5) the abject poverty of Tahong-Tahong's inhabitants.

¹ Area Coordinator for Northwest Bohol, Coastal Resource Management Project, Bohol. This paper also incorporates comments from Mr. Cresencio Lugod, President of the Tahong-Tahong Fisher's Association, delivered in his oral testimony during the workshop.

Site Profile

Classified as part of a wilderness area per Presidential Proclamation No. 2151, series of 1981, Tahong-Tahong Islet is situated almost at the center of Danajon Bank, a vast shoal approximately 25 kilometers long with an average width of 1.5 kilometers, that extends through the seawaters of Getafe, Talibon and Bien Unido municipalities in northeastern Bohol. Like the rest of the islets and islands scattered within Danajon Bank, the tidal flats and shallow waters within the periphery of Tahong-Tahong Islet possess high biodiversity potential. Given the proper protection and management, the indigenous marine resources of this islet could provide a sustaining source of livelihood to the local fisherfolk.

An added feature of Tahong-Tahong is that, like the other islets within Danajon Bank, it is a sanctuary for an endangered species of birds—Chinese egrets (*Egretta ealophotes*)—that migrate to these islets during winter and spring. The egrets begin their annual migration to Danajon Bank in November and leave the area the following April. During low tide, they range far and wide in the exposed tidal flats foraging for food. Despite the small size and sparseness of Tahong-Tahong's remaining mangrove clumps, the number of egrets seeking sanctuary in this islet is comparatively greater than those seeking haven in the other islets of Danajon Bank. The possible explanation for this could be the strategic location of Tahong-Tahong, being situated almost at the center of Danajon Bank.

Tahong-Tahong in 1992 was inhabited by 18 families. They came predominantly from the nearby island of Jaguliao, a part of Getafe town. They settled in the then uninhabited islet in the early part of 1980s and earn their livelihood by gathering shells, crustaceans, sea cucumbers and other commercial marine products found abundant in the area. Few of the residents have been to school; the highest grade achieved by a resident is grade four. Even children of proper age often do not attend school because they are made to help their families earn a living. Almost all families are economically depressed. These families live in makeshift houses resting on wooden stilts packed in close clusters upon a small sand bar with an area of about one-fourth of a hectare. During high tide, water covers the sand bar.

Politically, inhabitants of the islet are still attached to the municipality of Getafe to which Jaguliao islet—their place of origin—belongs. During elections, inhabitants of voting age cast their votes in Jaguliao. This explains why the inhabitants of Tahong-Tahong are not regarded as particularly important by the government of Talibon, which is supposed to exercise administrative control over the islet. For this reason, and because of their geographical isolation, the inhabitants have been deprived of such services as health, education and other forms of assistance from the local government. Fresh water is scarce, educational opportunities, health and sanitation are poor, and government services are virtually non-existent.

Methods and Strategies

Project implementation is divided into two interrelated components: social preparation and technical intervention. The social preparation phase, running from July to December 1993, was designed to instill a strong sense of awareness, commitment and proper motivation on the part of the beneficiaries. Within this phase, BOREMADEV aimed to carry out the following activities:

- hold consultative meetings with inhabitants to inform them about the project, its purpose and objectives, and to validate baseline data obtained during the Foundation's previous survey of the site;

- form a fisher's association, the members of which would also include the wives and sons of fishermen;
- conduct training sessions on basic resource management, wildlife protection, conservation and elementary action planning;
- prompt local fisherfolk to designate sites for artificial reefs, a fish sanctuary, and a nursery for *tambayang* (clams);
- mobilize the community to protect wildlife;
- hold meetings with the municipal offices, mayor, *Sangguniang Bayan* (municipal council), and line agencies of Talibon to inform them about the project and generate their official support.

The effectiveness of this phase of project implementation manifested itself after the training and consultative meetings. The local inhabitants are now zealously protecting the mangrove from surreptitious cutting for firewood and other uses and preventing intrusion into the established fish sanctuary and shell garden. Also, through an educational program, the residents learned not to harass the egrets, and that in fact planting more trees would help protect them. A notable case in point was the intrusion into the fish sanctuary in late 1994 by blast fishers from the nearby islet of Guindacpan. They were driven away by the local fisherfolk, who also confiscated five pieces of home-made dynamite (now in the custody of DA-Talibon). The intruders complained to the barangay captain of Guindacpan, who in turn brought the case to the attention of a member of the municipal council. BOREMADEV personnel and Tahong-Tahong Fishermen's Association officers were summoned to attend a council session on the matter. After the project manager gave a thorough and exhaustive explanation, the board member who had stood in defense of the blastfishers realized his error and backed down.

The technical intervention phase consists mainly of applying the knowledge gained by fisher beneficiaries during the information drive, consultative meetings and training. This phase was intended to last for three years beginning January 1994. The following activities were accomplished by the end of 1995:

- strengthening of the fisher's association that had been organized during the previous phase;
- training on construction and management of artificial reefs, coral reef management, mariculture and community-based fishery law enforcement;
- installation of buoys marking the boundaries of managed coral reef and seagrass areas and the fish sanctuary;
- posting billboards containing slogans on wildlife conservation and protection and the need to conserve remaining mangrove stands;
- organization of a local *bantay dagat* (guardians of the bay);
- distribution of pictorial literature relating to wildlife protection;
- establishment of linkages with local government units, DENR and DA;

- establishment of a "shell garden" of white clams by fencing a one-hectare area, surrounding it with a bamboo fence, and "seeding" it with the smaller of the clams collected during the daily shell-gathering while the bigger ones are taken off to sell;
- monitoring of project progress.

Problems Encountered

Project-related activities temporarily stopped after a strong typhoon struck northern Bohol in December 1995, blowing down all the houses in the project site and forcing all the families living there to be evacuated to Jaguliao Islet. There, the GDS began helping them construct new houses, but in July 1994 the families decided to return to Tahong-Tahong. Along with them came more families from Jaguliao Islet also desiring to settle in Tahong-Tahong, bringing the population from 18 to 26 families. As of now there has been no move by government agencies to prohibit further migration to the environmentally fragile Tahong-Tahong Islet. The project management intends to request that DENR look into this problem.

As with many development projects, the funding did not suffice to cover such expenses as travel costs for an observation tour of project beneficiaries to a community-based fish sanctuary in Apo Island, Negros, and a bird sanctuary in Olango Island, Cebu; planting material for mangrove reforestation (desired as a buffer around the islet); or payment for the services of Foundation personnel. The original GDS grant defrayed expenses incurred during the social preparation phase, purchase of a motorized banca, billboards, housing assistance, buoys, office supplies, travel of field personnel, and some seed capital for a community store that caters to the daily household needs of the fisherfolk families. To cover the financial shortfalls, the project management has been seeking financial assistance again from GDS and other funding agencies.

As mentioned earlier, Tahong-Tahong Islet is for purposes of political jurisdiction considered part of Guindacpan Islet, which has an established government. However, Guindacpan government administrators fail to exert control and supervision over Tahong-Tahong, leaving its inhabitants mostly to themselves. Partly the neglect can be explained by geographical distance: 1.5 nautical miles of sea separate Tahong-Tahong from Guindacpan. The population of Tahong-Tahong is too small to warrant establishment of a separate government unit. Nevertheless, the situation results in Tahong-Tahong's being deprived of any form of assistance or services from either the barangay government of Guindacpan or from the municipal government of Talibon. One possible solution may be to firm up the linkage between Tahong-Tahong to Guindacpan, but this initiative must come from the people of Tahong-Tahong themselves, with the assistance of BOREMADEV.

Lessons Learned

The observation that a small group is highly manageable compared to a bigger one holds true in all project implementation. In projects where a great number of beneficiaries/participants are involved, it is advisable to divide them into smaller groups to facilitate and enhance supervision, control and management. The division would also promote the spirit of healthy competition among these groups when accomplishing the same tasks assigned them.

Community motivation remains one of the most important elements in project implementation. Materials or funding should not be allocated to beneficiaries unless the project management is assured that said beneficiaries possess the requisite motivation to achieve the targets set by the project. Their motivation can be increased, for example, by drawing them from the very start into an active role in planning project interventions and related activities. Because

building up the community's level of interest in the project and its goals is so important, social preparation must always precede technical intervention.

The learning and experience gained during the implementation of CVRP-I are definitely applicable to and useful in all community-based resource management efforts.

Conclusion

Although it is too early to assess the full impact of the BOREMADEV project in Tahong-Tahong, some observations in the fish sanctuary and shell garden indicate that marine life substantially increased. Still, unless appropriate measures are undertaken to arrest the gradual degradation of the islet's resource base, the time will come in the not too distant future, when the local marine habitat can no longer provide a viable source of income to local inhabitants. Left to themselves, the local fisherfolk are incapable of undertaking the protective measures outlined previously. On the basis of the CVRP experience, and borne out by the work in Tahong-Tahong, one can conclude that the key to the attainment of the project goals and objectives mainly lies on the local fisherfolk. However, they must be educated, strongly committed, motivated and capacitated to carry out the various processes involved in resource management and protection.

**SUSTAINABLE COASTAL AREA DEVELOPMENT (SCAD) PROGRAM:
BARILI, CEBU**

Joel S. Gutierrez, Rebecca A. Rivera and Quirino L. Dela Cruz¹

ABSTRACT

The CBCRM framework espoused by Tambuyog Development Center asserts that the resolution of the problem caused by an open-access situation in fisheries and coastal resources lies with the clear assignment of property rights to the coastal community itself. The external NGO plays a facilitative role, enhancing the capacity of the coastal community for controlling and managing the resources. In the SCAD program in Barili, Cebu, Tambuyog channeled its capability-building efforts through SANRACA, a local people's organization, and focused on organizational development, socioeconomic activities and the delivery of basic social services. The strengthening of SANRACA and the experience from SCAD implementation in Barili not only deepened the partners' understanding of community-based resources management, but yielded valuable lessons that can be shared with other communities around the Philippines.

Introduction

Tambuyog Development Center has been implementing community-based programs in several coastal communities in the Philippines for over a decade. A three-year nation-wide study on community-based coastal resource management (CBCRM) complemented Tambuyog's community organizing work and provided a more in-depth analysis of the conditions of coastal communities. In July 1993, Tambuyog sponsored a conference to summarize its long years of community work and to define a unified theoretical framework on CBCRM.

The framework emphasizes the cyclical linkage between poverty and resource degradation in coastal communities: resource degradation exacerbates poverty, and poverty in turn leads to more destructive extraction practices. Underlying both problems is often an unclear property rights system governing coastal resources which leads to poorly controlled and poorly managed utilization of resources. Breaking this cycle requires an integrated approach towards clearly defining property rights arrangements. Tambuyog believes that coastal communities are potentially the best resource managers, having the biggest stakes in coastal resources. Thus, efforts towards the sustainable use of resources, ecological balance, biodiversity conservation and poverty alleviation should be grounded on the empowerment of coastal communities to have access and control over these resources.

Tambuyog's vision for organized and self-reliant coastal communities that control and manage coastal resources for a sustainable national development has been translated into action through its five-year core program called the Sustainable Coastal Area Development (SCAD).

In late 1993, Tambuyog consulted the *Kahugpungan ug Gagmay nga Mananagat sa Sugbu* (KAMAS), a province-wide federation of small-scale fisherfolk in Cebu, on the possibility of implementing Tambuyog's capability building project in a KAMAS member site in the province. Barili municipality was selected given the presence of a functional KAMAS member organization known as SANRACA, the pressing need to assist the community in dealing with the advanced state of resource degradation, and the relative poverty of the people. This capability-building project later evolved into a full-blown SCAD program for Barili with SANRACA as the partner fishers' organization. The SCAD program is being implemented in four barangays in Barili—Japitan, Candugay, Giloctog and Hilasgasan—and a similar program has been introduced in two other provinces: Bicol and Palawan.

¹ Tambuyog Development Center, Manila

Site Profile

The municipality of Barili is located at the southwestern side of the island of Cebu, about three hours from the provincial capital, Cebu City. Barili is bounded in the east by the municipalities of Carcar and Sibonga, in the north by Aloguinsan and in the south by Dumanjug. It has a generally hilly terrain with steep slopes in the east and narrow plains along the coasts. On the western side lie Barili Bay and the Tanon Strait, the area's main fishing grounds.

Barili has 42 barangays, ten of which are located along the coasts. Its total population reached 48,959 in 1990. Coastal population represents about 27% of the total. In 1990, Barili had 7,331 households with an average family size of seven.

Farming and livestock raising are the dominant sources of livelihood in the upland barangays of Barili, while fishing and farming are the primary sources of income in the coastal areas. The major crops include corn, coconut, banana and mango. The average annual production per hectare is estimated at 20 cavans for corn, 1.5 metric tons (mt) for coconut, 2 mt for bananas and 3 mt for mangoes.

Fisheries. Barili has 205 full-time and 495 part-time municipal fishers. About 90% of the boats are non-motorized, using only sails and paddles. The major fishing gears include hook-and-lines, squid jiggers and gill nets. The species most frequently caught are small pelagic fish such as *bodloy*, *anduhaw*, *tamarong*, *bansicol*, *baga* and *lumayagan*. Municipal fishery production reached 645.52 mt in 1990.

In contrast, there are only ten commercial fishing boats in Barili, all based in barangay Japitan. They use only one type of gear—the ring net, locally called *kubkub*. The *kubkub* employs a total of 164 commercial fishworkers. The average gross tonnage of these vessels is estimated at 16.6 mt. In 1990, total commercial fishery production reached 282.24 mt. Aside from the *kubkub*, an average of 20 commercial fishing boats coming from Negros Oriental and the southern municipalities of Cebu also operate in Barili Bay at any given time.

The fishponds in Barili are concentrated in barangays Japitan and San Rafael. These fishponds have been in operation since the late 1970s when vast tracts of mangrove swamps were converted to aquaculture ponds for prawns and milkfish. In 1990, the Department of Agriculture (DA) reported a total of 8 and 25 hectares of prawn and milkfish ponds, respectively. In the same year, a total of 20 mt of prawns and 0.40 mt of milkfish were produced.

Central Problems in Barili. Tambuyog in 1994 conducted a rapid coastal systems appraisal (RCSA), revealing the following problems:

- The Community's Lack of Control and Access to Marine-Based Resources.

A municipal ordinance stipulates that Barili Bay is part of the municipal waters of Barili, thus giving preferential use to the small-scale fisherfolk in the area. However, the *kubkub* continues to operate in these areas, resulting to conflicts with the small-scale users. The continued encroachment of commercial fishing vessels clearly violates the municipal ordinance prohibiting them to operate in waters 15 kilometers from the shoreline. As a result, small-scale users are deprived of a big portion of the catch legally entitled to them.

- Degradation of the Marine Ecosystems Leads to Low Fish Catch.

The marine ecosystems, particularly the mangroves and the corals, are in poor condition, mainly as a result of human-induced stresses such as the use of dynamite and cyanide. Mangrove areas have also been under conversion into fishponds since the 1970s.

- Low Agricultural Productivity Due to Poor Soil Quality.

Poor soil quality in the area, leading to low agricultural produce, is brought about by improper land use. The sloping hills in the area, planted with corn, are easily eroded. The absence of trees that could stabilize the soil further aggravates land erosion. Some crops like corn rapidly deplete the soil of its nutrients, especially nitrogen. Since corn is planted three to four times a year, crop yields tend to decrease every time.

- **Poverty and Lack of Alternative Sources of Livelihood.**

Fishing is seasonal, and the land is not a stable source of income for the people in the area. During lean fishing months from August to February, the men of Barili usually seek employment as construction workers while the women work as household helpers in Cebu City and Manila.

- **Inadequate Provision of Social Services.**

Water is insufficient to the needs of the local people. The main source of water is a gravity-type well, but it dries up during the summer months. Even during the rainy season, when the water table should have a steady water supply, the well cannot provide an adequate supply of water to the communities. This situation forces the women and children to walk several kilometers and stay up late at night just to collect enough water for their household needs. Health services are also irregular and insufficient. Rural physicians rarely visit the area except during nationwide vaccination campaigns. The local people would normally go to the district hospital for health problems, but medicines are so expensive they could hardly afford them.

Methods and Process

SCAD espouses the following basic principles:

Empowerment. This means the actual transfer of economic and political power from an elite few to the impoverished majority. This ensures an active and healthy civil society, and the community exercises its power in the so-called "subsidiary" levels.

Equity. Entire coastal communities—not only a few individuals—should have access to resources.

Sustainability. Development efforts should consider the limits of the resources, i.e., the ecosystem's carrying and assimilative capacity. The sustainable use of resources ensures intra-generational equity.

Systems Orientation. This principle recognizes the dynamics of relationships. The community operates within a larger system of communities, just as their resources are ecologically linked to bigger ecosystems.

Gender Fairness. Development efforts should recognize the crucial roles women play in the household and in community management, their distinct characteristics, and their practical and strategic needs.

Partnership. Tambuyog's main partner in Barili is the San Rafael-Cabacungan Small Fishers Association (SANRACA). The organization traces its origin to the formation of a unit of households in barangay Japitan municipality selected as beneficiaries of Plan International, a welfare NGO known for providing financial support to poor communities in the rural areas. In 1981, Plan's household survey served as the basis for selecting 600 families who would

eventually be beneficiaries of livelihood projects. About 60 families comprised one standard unit (SU). Each SU has a leader, an assistant leader, a secretary and a treasurer.

Plan implemented several livelihood projects including dispersals of fishing boats, nets, gas lamps, pigs and goats. It also supported the education of a number of school-aged children in Japitan and built a school building, gravity-type well and community latrines. In 1984, Plan financed a number of small-scale business enterprises like *sari-sari* stores. Unfortunately, most, if not all, of the livelihood projects failed mainly because the fisherfolk were unable to pay back the loans provided by Plan. A program evaluation conducted by Plan in 1985 showed that only one SU remained relatively stable—SU 10 composed of families from sitio Cabacungan in Japitan and barangay San Rafael.

As a result of that experience, by 1986 Plan began conducting extensive training and education work prior to any project implementation. The training dealt with livestock raising, leadership and other topics. Plan also encouraged people to form their own organizations.

From the core of SU 10, the fisherfolk from sitio Cabacungan and barangay San Rafael decided to form a small-scale fisherfolk organization and submitted a proposal to Plan International. In April 1991, a group of 22 fishers attended a training on human resource development (HRD) facilitated by Plan in coordination with the DA; many of these trainees then became the founding members of SANRACA.

SANRACA was officially initiated in July 1991 with 18 members. As their first project, SANRACA set up artificial reefs and fish aggregating devices known as *payaws*. The actual set up was put off for almost a year because of delays in funding. Nonetheless, the ARs and the FADs were eventually put in place in March 1992. A German Development Service (GDS) grant supported the installation of more *payaws* and the maintenance of SANRACA's cooperative store. The GDS also conducted technical studies in the area.

Additionally, SANRACA went after the commercial fishing vessels that encroach in the municipal waters of Barili. At one instance, SANRACA members confiscated the light boat of a commercial fishing operator who happened to be the barangay captain of Japitan. SANRACA sought the aid of the local police and also reported the incident to the provincial government. They even held a rally in front of the provincial government office. Upon the intervention of the governor himself, the barangay captain of Japitan was "forced" to sign a memorandum of agreement instituting a ban on commercial fishing vessels within three kilometers from the shoreline. Subsequently, a municipal ordinance was passed in May 1993 declaring the waters 15 kilometers from the shoreline of all coastal barangays of Barili as "reservation area for marginal or subsistence fishermen". Violators face imprisonment of up to 30 days or a fine of up to P5,000, or both. By May 1992, SANRACA membership had increased to 35.

Strategy. Tambuyog believes that its role in development work should be facilitative. This means that the work of Tambuyog is focused on building the capabilities of coastal communities so they can become efficient and effective resource managers. In Barili, SANRACA possesses a wealth of experience on resource management. It has shown its organizational strength through the implementation of several rehabilitation programs. The passing of a municipal ordinance effectively making the small fisherfolk the "owners" of municipal waters is a political gain for SANRACA. Thus, in the context of capability building, Tambuyog's efforts are focused on consolidating the gains of SANRACA and expanding the success of community-initiated CBCRM in the area.

Structurally, Tambuyog is working towards the formation and strengthening of three key types of organizations:

- Formal and Informal Structures of Men and Women.

These structures are composed of fishers, women, fishworkers, farmers and other groups in the community. They would also consist of local volunteer organizers (LVOs) from SANRACA and

other ad-hoc formations in the three barangays. At present, an established core of LVOs share the tasks of consolidating and strengthening the fisherfolk groups in the other barangays. The LVOs and members of the ad hoc formations participate in several training and education activities that include leadership formation and skills, paralegal training, environmental awareness, and management of socioeconomic projects among many others.

A women's group (many of whose members are married to SANRACA members) was formed in sitio Cabacungan. The group initiated a clean-up drive called the *Linis Baybay Dagat*, conducted a study on indigenous herbal medicine, and are actively involved in a proposed water supply project. The members undergo extensive education on gender awareness and sensitivity.

- **Resource Management Cooperatives (RMCs).**

Primary and secondary cooperative formations are envisioned to focus on resource rehabilitation projects and income-generating activities. SANRACA is being developed into a full-blown RMC through continuous education work, project implementation, monitoring and evaluation activities.

- **Stakeholders' Forum.**

An equally significant component of the SCAD program is the community's active participation through coalition building and advocacy work in the form of a GO-NGO-PO tripartite body to serve as a forum in which stakeholders can discuss resource use interests, roles, and functions, and where related conflicts can be addressed.

- **Partnerships for Resource Management.**

The Tambuyog-SANRACA partnership lies at the core of a broader program for establishing and strengthening partnerships with various groups to generate wider support for resource management efforts in the area. This involves molding partnerships with government and other NGOs as well as firming-up relations with formal community leaders.

The Tambuyog-SANRACA partnership agreement stipulated that the two organizations would jointly undertake activities to extend the success of SANRACA to the three adjacent barangays and to jointly implement SCAD. Together, they refined and agreed on SCAD and SANRACA's own development program, the Integrated Sustainable Coastal Area Development Program (SISCAD). Organizers and trainers from Tambuyog were complemented by local volunteer organizers coming from the leadership and ranks of SANRACA.

Problems Encountered

1. Two distinct and powerful political blocks in Cebu province have created a political factionalism manifested even at the municipal and barangay levels. In Barili, the mayor heads up a vast and solid foundation of support for one camp, while the other faction over the past several years has been active in fisher-farmer organizations through the Cebu Development Outreach Project (CDOP). Even as newly elected government officials continued the work of CDOP, squabbling among the two political factions persisted, negatively affecting the implementation and continuity of development programs. The different people's organizations have become confused as to what they should do to win the continued support of the local government.
2. Dwindling fish catch combined with low productivity of agricultural lands has resulted in widespread poverty in the coastal communities of Barili. The lack of income sources because of the continued debasement of coastal resources is especially evident during the lean fishing months. During this period, fishermen usually search for jobs outside of Barili, mostly in construction or factories in Cebu City, though the women would often work as household

helpers in places as far as Manila. Having temporary jobs during the lean season is a regular pattern observed in Barili.

This situation drastically limits community organizing work in Barili. The lean fishing months are usually considered an ideal period for holding training sessions and other education work. Theoretically, this period is also the time when people could devote longer hours to activities related to their organization. When they return to the community during the peak season, the fisherfolk are normally too busy to find time for organizational work. The peak months are critical to sustaining the household economy, leaving very minimal time for any other kind of endeavour.

3. There are several development programs being implemented in Barili by NGOs, the Catholic church and the local government. There is very little coordination among these groups at present and this results in confusion among the people and duplication of efforts among these groups. Tambuyog attempted to coordinate with the other groups, but there are some basic differences in methods and approaches on community development. One group is oriented toward livelihood projects, and thus effectively uses socioeconomic work as an entry point to community organizing. Tambuyog and SANRACA espouse a somewhat different approach: they require some level of organization among the POs before implementing a livelihood project.

There is nothing wrong with having several development programs in one community, because the goal of all programs is the economic and political empowerment of the people. The problem begins when developmental groups start "competing" with each other as to who among them has the "better" or more popular program. When this happens, developmental groups start pushing for their own organizational agenda and fail to respect the initiatives and dynamism of the local community organization.

Lessons Learned

Establishing good links with local government units and officials is necessary as the willingness or unwillingness of these people to lend credence to the project may determine the smoothness of project implementation or threaten its success. The gravity of resource use conflicts may also necessitate the legal backing of relevant government offices. Other government agencies can provide logistical support and technical know-how. In the case of DENR, its upland and mangrove reforestation projects have been tapped for lessons and expertise during SCAD. Non-governmental organizations can also complement project initiatives with their expertise in other fields. For example, the German Development Service (GDS) funds some upland development projects that can generate lessons useful for coastal areas and other SANRACA projects.

Maintaining good relations with formal community leaders—barangay captains, council members and the barangay development council members—is essential. This involves recognizing their power and influence in the community, and sufficient courtesy must be placed on these individuals and the positions they occupy. Maintaining good relationships can mean not only winning their support for the project, but also enhances the possibility that initiatives can be coursed through them so as to gain legal credence and wider community compliance.

Preparing for Phase-Out

A new approach incorporated within the SCAD program in Barili involves the formation of a group of local volunteer organizations (LVOs) to play an active role in the implementation of

the SCAD. Part of the agreement between Tambuyog and SANRACA stipulates that some SANRACA leaders and members will act as volunteer organizers for project implementation. This assures that a core group of individuals receives more intensive training and opportunities to gain experience in project implementation. Then, this group of leaders can ease the task of organizing, taking advantages of their familiarity with the community and the community's way of life. The development of the LVOs is a core strategy for sustaining the initiatives under SCAD. It is also a long-term plan for the eventual phase-out of Tambuyog in Barili.

These LVOs not only help in structure formation and organizing support for SANRACA and the three other barangays, but they are also equipped to provide training, conduct research and perform advocacy work. The volunteers receive compensation for the time they take off from their regular economic endeavors. The team leader from Tambuyog is in charge of their supervision and training. Among the methods being employed to develop the LVOs are:

- Formal training: basic and advanced courses in CBCRM, environmental awareness, leadership, conflict management, community organizing, research, trainer's training, advocacy and organizational/cooperative management.
- Informal discussions among the LVOs and the team leader on the approaches and methodologies to be employed in their day to day activities.
- On-the-job training covering trouble shooting of organizational and other community issues and the facilitation of group and organizational meetings.
- Cross visits in other areas with on-going CRM initiatives and exposure to partner NGO program sites through an exchange of PO leaders and members.
- Attendance at seminars and workshops extended by various agencies—both GO and NGO—on topics like disaster preparedness, socioeconomics, and broadcast communications.
- Training in documenting minutes of meetings, monthly activity reports, diaries, and assessments.
- Self-confidence building for networking and advocacy. This entails participation in meetings with different agencies, negotiations and dialogues within the community and even with government officials and participation and paper presentation at conferences.
- Introduction to methods of performing assessments, holding planning sessions and giving and receiving constructive criticism.
- As part of continuous team-building exercises, personal relationship building activities are undertaken to ensure enthusiasm and camaraderie among the group members.

Conclusion

Tambuyog has nine areas in which program success can be indicated. These are:

1. Community-Oriented Values Development and Critical Consciousness
2. Organizational Structure and Development
3. Overcoming Gender and Other Biases
4. People's Active Participation Through Coalition Building and Advocacy Work
5. Basic Social Services Accessing
6. Resource Tenure Improvement
7. Ecological Nurturing and Agricultural Production
8. Economic Self-reliance and Strengthening
9. Decentralization and Local Democratic Governance

Further development and the continuing implementation of the SCAD Program in Barili relies heavily on the strength of SANRACA, which in turn depends largely on the partnership between Tambuyog and SANRACA. As an NGO partner, Tambuyog helps build the capacities of

SANRACA and facilitates its organizational expansion in the adjacent coastal communities. It is easy for NGOs to lose sight of the fact that the people can manage their own affairs. It is the role of NGOs to facilitate and hasten the process of learning and development, but it is not for NGOs alone to decide what should and should not be done in community development, by whatever definition one would like to have. Tambuyog's experience shows that NGOs should recognize the experiences of their partner PO and eventually work towards consolidating and expanding the gains of the PO. Only when NGOs become meaningless can one really say that their work has indeed been accomplished.

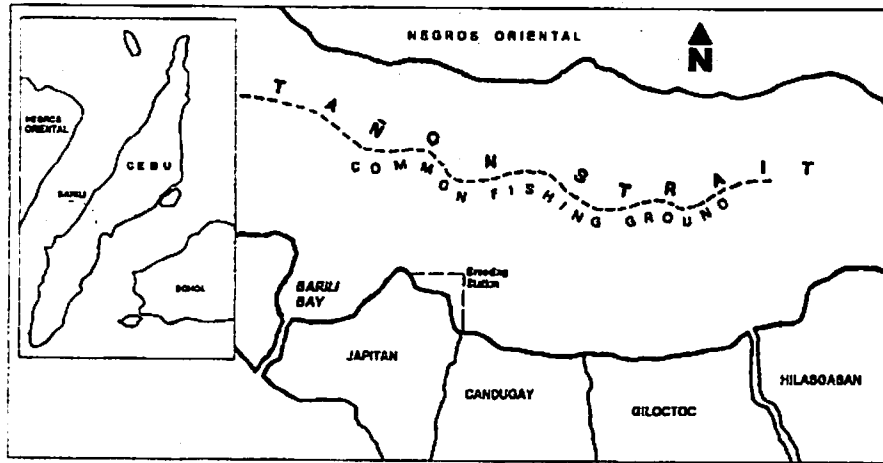


Figure 2. Map of Barili, Cebu.

Luciano Insik, Chairman of SANRACA Fishermen's Association, Barili, Cebu

In 1970, several big-scale fishers with gears such as *basnig* (bag net or round-hold seine), trawl and purse seines entered the municipal waters of Barili and competed with small scale fishermen. From 1975 until 1977, more illegal fishing gears were used which were actually made in the barangay. In 1988, the small fishermen could not easily catch fish any more because these were already consumed by big-scale fishermen. Since they had nothing to eat, all the small fishermen of the coastal barangays in Barili resorted to another alternative, which is salt-making. At the start, we did not have yet the know-how on salt-making; we burned the mangroves that grew in the shoreline so as to start salt-making activities. This was a wrong move since the mangroves were supposed to rehabilitate the fishing areas. Because there were so many residents in the area who were also cutting the trees near the shoreline, within 3 years everyone noticed that the hills were already bald.

SANRACA's aim is to protect the coastal resources especially during that time when illegal fishing was rampant. We also realized that the authorities themselves were practicing illegal fishing activities in the area. What they did was to penetrate into the reservation area and back up the illegal fishers. Since there was nobody to reprimand them, we were the ones who did. We did our best that these people will be apprehended; we were successful and three policemen were demoted. Oftentimes, even the barangay officials were behind illegal fishing activities, especially with the use of dynamite and cyanide. In 1992, the organization was accused by illegal fishers of being the barriers to fishing since SANRACA kept on reprimanding them to stop these illegal activities. We made presentations to the mayor so that the organization's goals will be attained and strengthened. Sad to say, politics in the province of Cebu is very hot so the actual needs of the community were not attended to. Since a reaction was made on our earlier negotiations, we discovered that that was a previous municipal ordinance declaring Barili a reservation area, 3 kilometers from the shoreline. We initiated the move for the implementation of said ordinance. So we were able to catch the barangay captain himself who owns the biggest fishing vessel in the area. This caused conflict in the whole barangay because we were accused of being rebels. Probably they did not understand the real objective of the association. In spite of this, we continued to disseminate information.

Then we initiated the planting of mangroves to replace those cut by the people. We also invited a few people from the neighboring barangays to see our activities so that they will understand our goals. In 1994, Tambuyog Development Center entered Barili in order to foster a partnership with our association. The first thing they did was to conduct research with the association in four barangays. After the research, we assessed our activities so that we would know what has been attained and what has not. From this, we came up with a five-year development plan which we called SISCAD, SANRACA Integrated Sustainable Area Development Program.

A local volunteer organizer was assigned to each area to focus on the implementation of the resource management program and to explain the use of the breeding station or marine reserve so that we will be able to understand what we should do, since we will be the ones to benefit from the program in the long run. We conducted meetings to explain to the barangay council what SANRACA's goal is. We also told the women what their roles are and that men and women should help each other in doing things. For the first time, the women realized that they are not just for child bearing or housekeeping activities. This encouraged the women a lot. The women joined the men, however, they focus mostly on the upland activities.

We are now at the stage on the so-called pre-cooperative where capital comes from the members themselves. We also had a resource mobilization to add up our savings. Our aim is to alleviate poverty and increase our income. This is because when we catch fish, there is a middleman who decides how much he should pay for the fish. We cannot do anything about this, especially during emergencies. When someone in the family gets sick, we are forced to go to the middlemen and borrow money to buy medicines or food. That's why we are slowly going into the process of pre-cooperative so as to get rid of the middlemen.

ESTABLISHMENT OF MARINE RESERVES IN NEGROS ORIENTAL

William E. Ablong¹ and Maike Waltemath²

ABSTRACT

The CBCRM program described in this case study began in 1989 when the Central Visayas Regional Project, Phase I (CVRP) was provincialized, i.e., the local government units of the participating provinces were tasked with replicating the technologies, interventions, and approaches of CVRP. Incorporating technical assistance, community organization, and livelihood support initiatives, the program aims to stop the degradation of marine resources due to overfishing, deforestation, and other factors, to improve the living standards and incomes of small-scale fishers, and to equip local organizations with the ability to care for and manage their own natural resources sustainably. The program has shown promising results in terms of raising community awareness and involvement in conservation activities, in particular through the establishment of a number of marine sanctuaries.

Introduction

The Community-Based Coastal Resource Management Program of the province of Negros Oriental started in 1989 within the scope of the Central Visayas Regional Project Phase-I (CVRP), funded by the World Bank. It was designed to arrest the degradation of the marine environment by protecting and managing coastal marine habitats, and to promote sustainable development in coastal areas.

In February 1993, the Provincial Government of Negros Oriental established the Resource Management Division, a unit under the Provincial Planning and Development Office, to continue and expand the program after CVRP phased out in December 1992.³ The RMD, which has staff and community organizers assigned throughout the province, continues to undertake projects and activities through its three major program components, namely: technical assistance, community organizing, and livelihood support. The technical component is further divided into two units: watershed management (agroforestry) and coastal resource management. The centralized administrative and finance structure of the Negros Oriental Provincial Government provides related or required accounting, finance, personnel and general services.

The CBCRM program of the RMD is envisioned to address the twin issues of poverty and marine environmental destruction through rehabilitation, protection and conservation of coastal resources by working with people's organizations (POs) such as fisherfolk associations. These groups are organized, developed and strengthened to facilitate their transformation into self-reliant and sustainable communities capable of managing their own resources.

Although initial support for the project came from the World Bank through CVRP-I, in July 1988 the provincial government supplemented this funding by appropriating PHP 200,000 from the 20% Economic Development Fund. In addition, some provincial employees were

¹ Former CVRP Project Manager. Presently Chief of the Resource Management Division, Provincial Planning and Development Office, Capitol Area, Dumaguete City, 6200.

² Marine Biologist, German Development Service.

³ RMD was preceded by the Provincial Resource Management Committee which then evolved into the Provincial Resource Management Office and later on came to be known as Negros Oriental Resource Management Office or NEGORMO. NEGORMO, however, was essentially an ad hoc office co-terminus with the CVRP.

detailed to the project to assist with operations and management. For 1995, the program was allocated PHP 3.5 million from the 20% Economic Development Fund.⁴

Of the four Philippine provinces selected for CVRP, only Negros Oriental continued the program after the project was phased out. This success was attributed to the strong community organizing and micro-economic enterprise development components. The program in Negros Oriental includes 19 municipalities and one city with 115 coastal barangays, of which 17 have marine reserves. These will be the focus of this paper.

Site Profile

Negros Oriental province is in the southeastern part of the island of Negros in the Visayas region of the central Philippines. Its total land area of 540,230 hectares form about one third of the total area of Region VII. Approximately 30% of the land area is flat and coastal, with the rest being mountains, valleys and plateaus. The province's population is 1,025,247 (1995 NSO Population Census) with an annual growth rate of 2.2%, 65% of which live in mountainous areas (Macias, 1995). Eighty-four percent of the 22 municipalities and three cities in the province are located along the coastal zone, where the remaining 35% of the people live.

Around 65-80% of the families in Negros Oriental live below the poverty line. Income distribution is skewed, whereby 40% of the province's total wealth belongs to only 10% of the families. Lack of access to regular sources of employment by many unskilled farmers and contract construction workers, as well as the concentration of landholdings in rural areas among very few people, contribute to the worsening poverty situation.

Negros Oriental is basically an agriculture-based economy. Almost half of its gross provincial product comes from agriculture. More than 20% of its total cultivated farmlands are devoted to sugarcane. Sugarcane processing for export is the main and leading economic activity of its food manufacturing industry. Its fruit, rootcrop and vegetable production also contribute tremendously to the income of the province.

In terms of marine resources, almost all major commercial species of fish, such as skipjack, yellowfin tuna, sardines, mackerel, scud, slipmouth and anchovies are caught all year round in the province's major fishing grounds: the North Sulu Sea and Tanon Strait. The coral area of Negros Oriental stretches over 186 km of a 300-km coastline. According to a report from the Center for Establishment of Marine Reserves in Negros Oriental (CEMRINO), which conducted a 23-day rapid assessment using the manta tow reconnaissance survey in 1995, the condition of the coral reefs in the province is: 5% excellent with cover of more than 75%; 14% good with 50-75% cover; 25% fair with 30-50% cover; 30% poor with 10-30% cover and 26% bad with less than 10% cover.

Most of the reefs in Negros Oriental suffer from over-exploitation. This means that fishing pressure is high, resulting in decreasing fish catch. The reefs appear to have been heavily impacted by not only by destructive fishing methods such as the use of explosives, poison, and *muro-ami*, but also by deforestation resulting in silt accumulation on the nearshore, and by the coral-destroying crown-of-thorns starfish present in some of the coastal areas (Macias 1995).

⁴ The 20% Economic Development Fund is a local government fund set aside for projects to alleviate poverty and improve the economic condition of the constituents in the surrounding barangays and municipalities. However, this type of fund is usually used for various infrastructure projects, e.g., multi-purpose pavements, roads, water supply, etc. In Negros Oriental, aside from infrastructure projects, the provincial government regularly allocates funds for environmental and poverty alleviation projects and activities. This is where the Resource Management Division gets its funding to undertake watershed and coastal resources management activities.

The sustainability of the province's resource base is being threatened by continued degradation of the natural resources. Forest denudation is brought about by slash-and-burn agriculture and timber poaching. The practice of cutting trees indiscriminately by upland settlers, farmers and illegal loggers has almost denuded the mountains. A study conducted in 1988 revealed that the province's forest cover is barely 5%, or 29,900 hectares. The remaining primary forest has reached a low of 2% and will vanish within a few years if protective measures are not taken. Soil erosion and diminishing land productivity are also felt by rural farmers in the province. Thus, because the marine resources are also seriously threatened, mangrove reforestation, reef management, and marine reserve establishment are considered as priority projects to speed up the recovery of fish populations.

Methods and Process

The key issue that coastal resource management program seeks to address is the need for rehabilitation of fish populations in the province to make small-scale fisheries more sustainable. It should be kept in mind that the problem of coastal degradation and declining fish catch can only be solved through active support and cooperation of the local community and the stakeholders, e.g. fisherfolk.

In these efforts, the RMD coordinates with its main partners: the German Development Service (GDS) and the Center for the Establishment of Marine Reserves in Negros Oriental (CEMRINO). Together they created a Provincial Coastal Resource Management Committee (PCRMC). Chaired by the RMD chief, the membership of this committee includes the representatives of the GDS, CEMRINO, Silliman University Marine Laboratory, DENR, the Provincial Agriculturist's Office-Fisheries Sector, the Provincial Pollution Control Office, and others. The PCRMC has received authorization by the provincial board to undertake marine rehabilitation activities and to monitor the coastal environment, such as by checking on implementation of the pollution control law. The PCRMC exists to coordinate efforts among the participating organizations to avoid confusion or duplication of activities and services to the community.

Community Organizing. CBCRM enlists communities in the management of their own coastal, social and economic resources. Prior to project implementation, the local community is organized through courtesy calls and consultations between RMD staff, local leaders and heads of government agencies operating in the area. Subsequent meetings with other project participants are held. Community members tend to be more supportive of projects that encourage their active involvement.

A strong indicator of a well-conducted social preparation process is when community members take on full responsibility for the protection and management of their natural surroundings. It is up to them to make relevant decisions, while external agencies and NGOs should only provide information, recommendations and consultative services.

Livelihood Support. Under the program, the livelihood support component has been managed primarily by the RMD livelihood section. GDS provided financial and technical assistance. These efforts have focused on the upland areas and include livestock raising, garments production, consumers' stores, and aquaculture. The livelihood branch of the RMD prepares proposals and feasibility studies, gathering information through meetings with community members. GDS contributes also to environmental education and training.

Marine Reserves. Rehabilitating the coral reef areas and fish populations with the active involvement of the local community has been a core concept from the beginning of the project.

The primary method of implementation is the establishment of many small marine reserves where fishing activities and other disturbances are prohibited. Fishes inside the marine reserves thus have a chance to mature and reproduce. Through prevailing currents, eggs and fish fry will drift to other areas.

At present there are already 17 marine reserves legally established by municipal ordinances in 11 coastal towns of Negros Oriental. In the program, a marine reserve comprises a small coral area of about 6-20 hectares. The reserved areas are intentionally small because restricting fishing access in the short term reduces the fishers' income by limiting where they may fish. Within the reserves, it is prohibited to lay anchor, take, catch, gather, destroy or kill any fish or marine organism.

Program guidelines determined that the idea and decision to establish a marine reserve should come from the community level—in this case, the fisherfolk's association—in the form of a petition to the barangay council. Upon receipt of the petition, the CEMRINO, German Development Service (GDS) and technicians from the RMD conduct a scientific survey in the area and take underwater videos. The survey includes mapping the coral reefs, assessing what percentage of the coral cover is healthy or damaged, and taking inventory of the numbers and types of fish.

After the survey, the RMD in coordination with the GDS, CEMRINO, the municipal government, Provincial Agriculturist's Office (Fisheries Sector) and DENR launch an information drive highlighting the importance of marine reserves for the local community. During this activity, facts about the area are presented and discussed, e.g. through presentation of the underwater videos filmed in the proposed area and in other successful reserves. Furthermore, strategies to be applied are discussed with the local residents and officials.

The information drive encourages barangay officials to formulate and approve a barangay resolution requesting the municipal government to declare the recommended area as a marine reserve. As soon as the ordinance has been drafted, a public hearing is held in which the community expresses any questions or concerns. The provincial government provides the final validation. Then, the RMD technicians, in coordination with CEMRINO (and sometimes with the DENR), install marker buoys in the marine reserve area.

To effectively protect an area declared as marine reserve, the RMD with financial assistance from the GDS gives several types of support to the local community, such as *bantay dagat* (bay watch) training and technical advice for the construction of guardhouses and provision of sign boards. Furthermore, the RMD together with the GDS conducts various activities in the field of environmental education, such as lectures, underwater video presentations and discussions. To involve fisherfolk actively, the RMD may host small contests, e.g., drawing, short story writing or drama, focusing on the marine environment and its problems. Questionnaires and small games not only educate people but also offer an opportunity to evaluate the status of environmental awareness and knowledge of the marine environment.

A special activity was the so-called "Operation Salanay" in the marine reserve of Campuyo, Manjuyod, where a population outbreak of the coral-eating crown-of-thorns starfish (*Acanthaster planci*) was noted. SCUBA and free divers from the local community, LGU, RMD, GDS, CEMRINO and Silliman University Marine Laboratory picked out the destructive starfish from Campuyo reef. The activity was documented on video and shown on television in one of the Governor's weekly Provincial Reports. The video is now used for educational purposes in different project sites.

Rehabilitating the marine environment does not end with passing an ordinance. Therefore, ongoing monitoring activities evaluate the impact of established marine reserves. The fishing community participates by weighing and recording daily the different species caught in the surroundings of the marine reserve.

Problems Encountered

Some areas suffer from such heavy siltation that establishment of a marine reserve will probably not contribute much to the rehabilitation of fish population. Effective reforestation and watershed management programs are needed to help reduce the erosion that leads to silt accumulation along the shore. The RMD program has introduced upland agroforestry projects, contour farming, contour canals, and other activities to try to slow the pace of soil erosion. Organizers have found that interventions need to be almost continual in order to maintain the motivation of farmers to participate.

Enforcing the prohibition on fishing in a protected area is hampered by the fact that penalties are too small to deter violators. The PRMC at one point requested that the provincial government increase the penalty, but it was set at a maximum of PHP 3,000. Large-scale fishers can easily pay this fine. Also, fishermen who have been deputized as fish wardens are ill-equipped or often too intimidated to apprehend intruders. They lack patrol boats and communications facilities. The RMD and GDS provided radio handsets to isolated sites so that wardens can summon assistance from the police. Some pumpboats became available through CVRP, but they were not adequately maintained by the local government for the purpose.

The incursion of *kubkub* (purse seine or ringnet) fishers from outside the area has compounded the enforcement problem. They allege that they have permits to fish in municipal waters, but their fishing method is efficient and therefore rapidly depletes fish stock. The program has been helping several interested municipalities to draft ordinances banning *kubkub*, but hopes in the mean time that the central office will cease issuing such open permits.⁵

Moreover, considering the many activities to be undertaken in the project, the entire province is too big for the RMD to handle, and there is insufficient manpower to perform all necessary activities in the field of marine environmental education.

Lessons Learned

Sustainable coastal resource management requires the active support of a permanent office which can be responsible for providing qualified, long-term support to the community. If supported adequately, the local community will participate and remain interested in protecting and managing marine resources. If not, community motivation will flag as soon as the project terminates.

Environmental education activities and the presence of responsible leadership in the community, which can be the result of effective community organizing, are essential in marine protection and rehabilitation work.

Community organizers and local officials must to raise their level of technical knowledge and qualifications with regards to marine rehabilitation, because qualified external technical staff can only assist once in a while, since they also have large responsibilities to perform.

⁵ In Negros Oriental, there are 56 *kubkub* fishing boats with commercial fishing boat licenses issued by the Department of Agriculture's central office. They are mostly owned by influential, wealthy families and politicians, and operate within the municipal jurisdictional boundaries of 15 km from the shoreline. Under PD 704 and FAO 144, this type of fishing outfit is classified as commercial since it is more than three gross tons. Under the Local Government Code, commercial fishing is prohibited in municipal waters. However, the prohibition is only enforceable if there is a municipal ordinance duly approved by the local legislative council. Small-scale fishermen want these *kubkub* fishers banned in municipal waters, because they create too much competition for fish catch. While the small fishermen use petromax lamps to attract fish, *kubkub* operators use superlights with high wattage bulbs. Apparently, the petromax lamp is no match for the power and range of the superlight.

Environmental education must reach local government officials, policy planners, teachers, and others at all levels, not just fisherfolk. Ultimately, the local community must be made independent from the external program implementors.

Close cooperation with universities and NGOs, especially in the field of scientific research, can make a program very efficient and successful.

Fishing communities should be organized into an association or cooperative to better prepare them as resource managers and to solicit their active participation in the different phases of the project.

Conclusion

Community organizations, e.g. fisherfolk's associations, that are involved in a range of development activities of CBCRM are considered the strongest supporters of the program. They show a growing awareness and great concern that something must be done to protect and rehabilitate the degraded coral reefs. The program participants have internalized the urgency and importance of coastal resource conservation and management as manifested by their active participation in program implementation in contrast to the indifference and apathy which they showed during the initial stage of the program.

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Luciano Opiar, President of the Bongalanan Fishermen's Association, Negros Oriental

I will give you testimony on how true and effective are the programs left by the CVRP-I. In our area, in the beginning, everything was difficult because there were so many different principles and ideas, and we lacked education regarding the government's programs. But Mr. Ablong, who was the CVRP manager of Bayawan, kept coming back, consulting the people on the status of the resources in the area.

Marine biologists observed that there is about 40% of coral reef under the sea that can still be recovered. We were convinced that we could do something to help. There is now a difference in fishing, because before we caught only about half a kilo in one day; now we can already get three kilos in half a day. This is a benefit.

When the GDS came to conduct a fish catch monitoring survey, at first, my fellow fishermen did not understand the process. They could not do regular monitoring because they were already very tired when they came back from fishing. Eating and drinking *tuba* (coconut wine) is all that they can think of. Every three months, we hold meetings to educate the people and tell them that what is needed by GDS is only the weighing and measuring of fish, and recording the type of fish. Later on, the fishermen understood that, and now even children help in making the list. At first, the others did not know what a kilogram was, so we had to teach them. But now, everybody is educated. We have cow raising and goat breeding. We have a guard house for our fishermen. We have a handset so that if ever someone attempts to enter the marine reserve, we can immediately call the police detachment in town. So already we have received many benefits from GDS and the RMD. That's all. Thank you.

LANDSCAPE APPROACH TO COASTAL MANAGEMENT IN BAIS BAY, NEGROS ORIENTAL

Hilconida P. Calumpong¹

ABSTRACT

This case study describes a multi-sectoral effort to involve the local community and government in restoring upland forests, end illegal fishing practices, establish tree nurseries and improve water quality. Initiated by SUML with funding support from CIDA, the project took a "landscape" and "community participatory" approach to the problem of supplementing livelihood options for the residents around Bais Bay, in the province of Negros Oriental. Four years after project termination, although not all the project goals were reached, there appears to have been some improvement in natural resource status and community environmental awareness. Bais Bay is now a popular ecotourist site with its Bayside Hotel, Mangrove Park and Dolphin Watch Program.

Introduction

In 1990, the Institute of Environmental Science and Management at the University of the Philippines at Los Baños hosted a workshop on development planning and environment and natural resource management. At the workshop, sponsored by the Canadian International Development Agency (CIDA), participants discussed their experiences in managing natural resources around the Philippines. For further support, workshop organizers chose three areas because of their unique natural resource profiles and their potential to serve as instructive case studies on natural resource management: the Cordilleras, for management of natural resources in an ancestral domain; Mt. Makiling, an upland site; and Bais Bay, a coastal site. In particular, Bais Bay looked promising as a site for a landscape-wide project because it had forested uplands, cultivated areas, and coastline all in one watershed. The monospecific nature of the region's agriculture (sugarcane), the presence of polluting industries (sugar mills), and the heavy reliance on production from large fishponds would make interventions easier to target. In Bais Bay, organized groups of citizens and a supportive, sometimes pro-active, local government unit could be found, raising hope for a conducive project environment.

Site Profile

Bais Bay is located on the eastern side of Negros Island in the Visayan region, 60 km north of Dumaguete City. It is naturally divided into North Bais Bay and South Bais Bay by Daco Island, now joined to the mainland by a roadway. The coastline is fringed with a very sparse strand of secondary mangrove forest and, in the south, a 200-ha primary mangrove forest (Talabong) extends into the bay. Overall, mangroves constitute 4.6% of the total bay area which, according to the estimates of Calumpong and Serate (1994), amounts to 5430 hectares, including the outermost reef margins. Approximately 88% of the bay is mud-covered, while the rest is about equally occupied by seagrass beds and marginal coral reefs.

The major producer in the 54 km² bay is phytoplankton, fixing 90 kg carbon per day for the whole bay (Calumpong, Nuique and Sandalo, 1994) while the major organic matter contributor is mangroves, producing an average of 5 tons of carbon per day (de Leon, Nuique and

¹ Silliman University Marine Laboratory, Dumaguete City 6200

Raymundo, 1991). Two major grazers are the sea hare *Dolabella auricularia* (Lightfoot, also Calumpong, 1979) and the rabbitfish, *Siganus canaliculatus* (Park) (see Lepiten, 1994)

Bais is the richest bay on Negros Island, supporting more than 3,000 fishers in 16 barangays belonging to two municipalities (Manjuyod and Tanjay) and one city, Bais. Up to 19 different types of fishing gears and techniques have been observed in use in the Bay. The most important catch include rabbitfish, shellfish, shrimps and crabs.

Methods and Strategies

The project started in August, 1991, with a consultative agroecosystems workshop involving representatives of the fishing community, women's groups, as well as government and non-government organizations. Two critical areas of concern emerged at the workshop: declining water quality and diminishing food resources. Specifically, participants identified the following problems as priorities for action: (1) siltation; (2) fisheries overexploited in part from the use of illegal and destructive fishing methods; (3) pollution; and (4) mangrove degradation. They also acknowledged existing information gaps in terms of the degree and rate of siltation, fish catch and maximum sustainable yield of the bay, and water quality (as determined by pollution and nutrient content).

Many of the problems occurring in the bay result from inland activities. For example, several fisherman pointed out that siltation stems from the high rates of soil erosion on the almost bare mountains surrounding the bay, in addition to some agricultural practices in the neighboring lowland. About 65% of the total land area of Bais City (25,109 ha) is agricultural with some 62% devoted to sugarcane cultivation.² Both of the local sugar mills—the Central Azucarrera de Bais in operation since 1925, and the United Robina Sugar Milling Company (URSUMCO), established in the 1980's near Manjuyod—have been implicated in fish kills in their respective areas.

It became clear that a comprehensive management program for Bais Bay was needed, one that could address the interrelated factors contributing to natural resource depletion and community livelihood in the region. With a three-year funding agreement from CIDA, Silliman University facilitated the establishment of a management program under the Environmental and Resource Management Project (ERMP). Due to the proliferation of projects and programs in the area (In Daco Island alone, 30 community organizations exist [Abregana, 1994]), a Bais Bay Basin Coordinating Body formed to coordinate all research and developmental projects. The coordinating body consisted of mayors from the two municipalities and Bais City, representatives from fishers' associations, women's groups, local government and non-governmental organizations.

The organizations, institutions and partners involved in the project and their respective roles broke down as follows:

1. Silliman University Marine Laboratory staff initiated the project, collected and analyzed data, organized the communities, conducted training programs and seminars, and acted as facilitators for all project participants.
2. The City Government of Bais helped in implementation as well as financing some aspects of the project. For example, it sent city employees to work with the project, donated seeds, and lent logistical support.
3. The Municipal Government of Manjuyod assisted in implementation and logistics.
4. The Institute of Environmental Science and Management, UP-Los Baños, channeled CIDA's funding to the project, provided technical assistance through training seminars in GIS, workshops, and information sharing efforts.

² Bais City Department of Agriculture

5. The Canadian International Development Agency served as donor and facilitator.
6. Fishermen's Associations of Capiñahan, Okiot and Dawis, all in Bais City, were active participants and primary beneficiaries. Women's groups and coastal residents along Bais Bay also participated in various project activities.
7. Dalhousie University, Canada, offered additional technical assistance and information.

The project was divided into four components for logistical ease: marine, watershed, productivity and coordination. Each component adopted a community participatory approach, although specific strategies and the degree of community participation varied. In the watershed component, participants were identified by the community (Cadelifña, 1996). In the productivity component, some new associations were formed while existing ones were strengthened (Ablan, Vilar and Monte de Ramos, 1996). For the marine component, implementers organized three studies to better address the issues identified as priorities during the agroecosystem workshop: fisheries, water quality and mangrove rehabilitation. Methods used for fishery assessment were also participatory. Silliman University Marine Laboratory (SUML) personnel trained ten fish enumerators who had been endorsed by their respective communities to identify fishes and monitor daily fish catch in ten landing sites. SUML and the SU Chemistry Department jointly carried out water quality monitoring and analysis on siltation and nutrient levels. Mangrove rehabilitation efforts involved a local college and other community in the establishment of a multispecies mangrove nursery and in reforestation efforts. This paper will focus mainly on the marine component, with its various parts.

Process and Results: Marine Component

Mangrove Rehabilitation. In 1992, the mangrove cover in Bais Bay was estimated to be 250 ha (Calumpong, 1994), concentrated mostly in the southern portion of the Bay in an area referred to as the Talabong Mangrove Forest. This represents only about one-fourth of the mangrove cover measured in the area in 1907 (Calumpong, 1994). Conversion to fishpond is responsible for 79% of this mangrove loss.

The first step in a multi-species reforestation effort to rehabilitate the mangrove was to identify sources of propagules of species other than the prevalent *Rhizophora*. An earlier study (Calumpong, 1992) and previous surveys identified sources of *Ceriops* and *Brugiera* within the Talabong mangrove forest. In this project, other sources in Manjuyod, Amlan (Negros Island), and Palawan were identified. The next step was to set up a nursery. A small area at the back of the project office in barangay Capiñahan was used while negotiations with the local college ensued. Project organizers signed a memorandum of agreement with the Central Visayas Polytechnic College-Bais Campus, in which the College agreed to allocate two hectares of land in barangay Okiot for a mangrove nursery. Students helped with the collection and planting of seedlings. At present, four species are growing in the nursery: *B. gymnorrhiza*, *C. decandra*, *R. mucronata* and *R. apiculata*. Inspired by this effort, the city government has funded the enhancement of species in the Talabong Mangrove Forest and built boardwalks through it to attract ecotourists.

An earlier government project had initiated a tenure program in which Certificate of Stewardship Contracts (CSCs) were issued to selected residents, who agreed in exchange to plant 20% of their area with trees. It did not turn out to be a very effective method for reforestation, because the Contract's terms were not enforced. Either the CSC holders had not been fully informed of their planting responsibility, or they did not have enough room left after building their homes on their small plots to plant more trees. Nevertheless, the ERMP organizers in cooperation with the Department of Environment and Natural Resources thought that CSC holders would be natural partners for the project's reforestation effort. The project identified 183

CSC holders in 3 barangays in Bais City with a total holding of 17.65 hectares (Calumpang, Cadiz and Melendrez, in press). At a project workshop, CSC holders were reminded of the implications of the Contract and encouraged to plant mangroves. A survey conducted later determined that in spite of this additional push, none of the CSC holders had mangrove plantations. A few indicated that they tried but failed due to poor soil, diseases or grazing by goats.

The mangrove team conducted a survey that found the major causes of mangrove cutting in Bais Bay to be for firewood, construction and foliage for goats (Calumpang and Cadiz, in press). Ten "enumerators" (see section on fisheries) received training to encourage five of their neighbors each to plant mangroves in their backyards for their own use. In 1995, the total mangrove area in Bais was estimated at about 300 ha (Cadiz and de Leon, unpublished). Although this is still short of the original mangrove cover, the massive reforestation efforts exerted by the project have sparked a promising trend.

Fisheries. From January to October 1992, 3,077 fishers caught over 183 species of fish, shellfish, crustaceans, and an undetermined number of sea cucumber species in ten landing sites in the bay (Luchavez and Abrenica, in press). Average catch was reported to be 52 metric tons per month using 17 types of fishing gear and four fishing techniques. The most common gear was the gill net or *pukot* with a catch per unit effort (CPUE) of 3.4 kg/trip. Catch per unit effort (Table 1) was highest for the modified Danish seine or *hulbot-hulbot* (7.2 kg/trip) and lowest for squid jigger or *pangnokos* (0.9 kg/trip). Luchavez and Abrenica (1996) report that these CPUE figures and sizes of fishes caught were small compared to sites near marine sanctuaries. These data indicate an overexploited fishery. Some illegal fishing methods (e.g., poisons, explosives) were still in use in 1992.

By the end of the project, ten residents had been trained on fish identification, fish data recording, analysis and data interpretation. In addition, these "enumerators" received special training on information dissemination and advocacy as they were envisioned to become "ambassadors" to solicit community consensus for action based on the project findings, such as establishing a mangrove tourist park and setting up fish sanctuaries. However, when project funding stopped earlier than expected (due to internal restructuring and budget cuts within CIDA), this goal did not materialize. Fortunately, the Bais City government continued to support the project by paying the salary of two community organizers who continued environmental education and mangrove regeneration activities. One of these is now employed by the Department of Tourism.

Except for gill net—the most prevalent gear type in the bay—which dropped from 3.43 kg/trip to 1 kg/trip, catch per unit effort for nine selected gear types showed an apparent increase between 1992 and 1995 (Table 1). The increase may be artificial, however, as most of the data for 1995 were derived from one-time interviews, and the increased catches may be accounted for by a catch redistribution to other gears when the *hulbot-hulbot* was banned inside the bay. Residents themselves pushed for a ban on the *hulbot*, and enforcement of the ban by *bantay dagat* (local government bay watch unit) has been largely successful, as not one violation was recorded in 1995. On the other hand, this reported increase may be real and attributable to: (1) the declaration of three areas in the bay as marine sanctuaries, which may have improved fish recruitment to the area; (2) the overall increase in mangrove hectarage, which may have provided more nursery grounds for fishes, as well as increased the fertility of the bay, by providing more organic matter, or (3) the complete banning on destructive methods of fishing such as the use of explosives, poisons and *hulbot*. Regrettably, since 1992, there has been no long-term data gathering to validate these findings.

Table 1. Catch per unit effort in kg/trip for various gear types used in Bais Bay. Values in parenthesis were derived from interviews.

GEAR TYPE	1991	1995
Modified Danish Seine (<i>hulbot</i>)	7.16	no user
Beach Seine (<i>sahid</i>)	6.26	9.7
Mullet net (<i>tapsay</i>)	5.11	(36)
Fish corral (<i>bunsod</i>)	3.45	no data
Gill net (<i>pukot</i>)	3.43	1
Speargun (<i>pana</i>)	2.99	(6.7)
Multiple Hook and Line (<i>katay</i>)	2.69	(51)
Hook and Line (<i>pasol</i>)	2.34	(2.8)
Squid jigger (<i>pangnokos</i>)	0.88	(3.6)

Water Quality. Baseline data on water quality showed that the amount of silt delivered to the bay was dependent on the sugarcane season with siltation highest during the harvest months of November to May, or what is generally referred to as the milling season (Sa-a and Bustillo, in press). This is understandable, since 90% of the agricultural land in Bais is devoted to sugarcane agriculture; thus, a relatively large amount of land surface becomes exposed after the sugarcane harvest.

Process and Results: Watershed Component

Sugarcane cultivation has also been implicated in forest degradation in the Bais Bay watershed (Cadelina, in press). No baseline information was available as to forest cover and rate of erosion in the area. By ocular inspection, forest cover is virtually zero, causing a scarcity of potable water, especially in the coastal area.

Cadelina (in press) reports that by the end of the project, 38 cooperators had been mobilized and both the Department of Environment and Natural Resources and the Department of Agriculture had seconded personnel to work with the project. DA also provided fruit tree seedlings. Eight community tree nurseries were established in eight sitios: Panalaan, Tinaan, Malaiba, Canlumbog, Banga-banga, Cambalag-as, Tagpo and Amalao. Some riparian zones were planted with endemic forest species. Survival of outplanted seedlings in the riparian zones varied from low (25% in the Palaan-Tinaan riparian zone) to high (Cambalag-as). However, activities stopped after the project phased out in 1993. Erosion measurements remain incomplete.

Process and Results: Productivity Component

In Amalao and Tagpo, the productivity team (Ablan, Vilar and Monte de Ramos, in press) conducted seminars, workshops and trainings on leadership, strengthening women, tree planting and other agricultural skills and soil and water conservation, organized mutual help programs and farmers' associations in Amalao (Amalao Landscaper Association Incorporated, or ALAI) and Tagpo (Tagpo + Cambayungon + Malucani Association, or TACAMA), conducted cross visits and dispersed goats, cattle and swine as alternative livelihood projects as well as fruit and forest seedlings for backyard farming. Again, after project funding stopped, the activities petered out, except for occasional visits.

Problems Encountered

One discouraging obstacle was the lack of interest and internal conflict—for example, the mayors of Bais and Manjuyod have a boundary dispute—among some members of the Bais Bay Basin Coordinating Body. After the Body was formed, it never met again, and failed to function as intended.

Another critical problem arose when CIDA withdrew funding just as the project was making progress in mobilizing community members and gaining their confidence. The effects were more felt in the watershed component, as it had just started establishing the tree nurseries and gathering erosion measurements. Massive reforestation was not accomplished as planned. In the marine component, the effects were less pronounced, as two of the community mobilizers were able to stay on (on Bais City government salary) to continue mangrove reforestation efforts and marine sanctuary establishment. With the productivity component, activities gradually phased out though the two participating communities, Amalao and Tagpo, became a sort of laboratory for students in the College of Agriculture, who make regular visits and perform evaluations there.

The premature cessation of funding cut short the project, leaving too little time for effective integration of the different components to work. More time and money would have allowed more complete erosion monitoring and for upland reforestation efforts to show results, which would in turn have shown a positive impact on the water quality, and then the residents would have seen some beneficial results from the type of management scheme the project was promulgating. However, before withdrawing, the project organizers sought substitute funding through the mayor's office, and now Bais Bay serves as a learning site under the USAID-funded Coastal Resources Management Project. Thus, many of the approaches and initiatives continue under new auspices.

Lessons Learned

Among the lessons learned during the project, some key points emerged:

1. In dealing with one ecosystem or complex areas such as coastal zones, interactions with and among adjacent systems should first be identified and understood. Management programs must address these interactions. For Bais Bay, the problems of potable water scarcity in coastal communities and siltation of coastal waters were identified to be resulting from a deforested watershed and monospecific agriculture. Addressing these two problems requires a cross-sectoral approach.
2. In mitigating erosion and watershed problems, support or livelihood alternatives must be provided to the participating residents, since they took time away from their regular livelihood activities to plant trees. For example, the productivity component in Amalao introduced cattle and swine raising as a livelihood supplement.
3. The community and direct resource users are the most appropriate ones to define the issues, establish priorities, and offer solutions. They should be consulted before any program involving them is started. This will facilitate their cooperation and the effectiveness of the project. In this project, a workshop with community representatives was held to identify issues before the project commenced.
4. The cooperation of the local government and other sectors must always be stimulated, solicited and nurtured. Without their support, the project will have difficulty being implemented. For example, work in the upland was facilitated by the cooperation of the DA and DENR. Additionally, in the case of Bais City, when CIDA support stopped, the Bais City Mayor offered to take on two community workers under his payroll and continue some of the mangrove reforestation activities. By contrast, the problem of erosion due to monospecific agriculture was not adequately addressed, since the sugar

planters themselves were never mobilized. Although they attended the initial workshop, their participation ended there.

5. The commitment of organized coastal residents must be continually strengthened through seminars and training. Most often they dictate the type of training and seminars they think they need. In Bais, they requested seminars on ecotourism, paralegal training, resource assessment and management planning, and conflict resolution. Such activities could reasonably be institutionalized in the extension arms of government offices like the DA, DENR, or Department of Tourism. Forging links during the project with various LGUs is thus essential, so that they may take over training tasks after phase out of the project implementors.

Conclusion

The mangrove cover and hectareage in Bais Bay has increased due to reforestation efforts spearheaded by the project and sustained by the community and the LGU. Fisheries as indicated by CPUE seem to have improved although more current data is required to validate these findings. Destructive methods of fishing (e.g., the use of explosives and poisons and fine-mesh nets) have been stopped, and three marine sanctuaries have been established. No monitoring of water quality was done in 1995, so it could not be determined whether the interventions have improved water quality. Concrete project results are patchy, but with encouraging trends in some areas. For example, among many community members and government workers, especially among the Bais City LGU personnel, resource and environmental awareness has been raised.

Certain activities and trends initiated by the project continue. In all areas, organizations formed or strengthened during the project remain active. In Tagpo, a small teakwood plantation started in 1992 has shown good growth and is being nurtured by the community. In addition, the trees they have planted on the slopes are still there, and community members are now more cautious in cutting trees for firewood. In Amalao, the number of livestock originally introduced by the project has increased, and owners are beginning to make a profit from their sale. Some local women have a small banana chip industry, derived from banana plantings instigated by the project, and have set up an informal association for credit purposes. At the coast, the municipality of Manjuyod has established one marine sanctuary in Campuyo, and the City of Bais has set up two marine sanctuaries in Capiñahan and Tagay Point. There are now boardwalks built in and around the Talabong Mangrove Forest, where trees have been labeled for the benefit of students and tourists. More families now have backyard mangrove plantings. The modified Danish seine is not used any more in the area, and the use of dynamite and poison for fishing has stopped.

The comprehensive "landscape" approach to community development and environmental rehabilitation has broadened the ecological awareness of the participating residents, and has helped project implementors and cooperating LGUs focus their activities by identifying root causes of some coastal problems. We believe this is the approach best suited for managing coastal zones on large islands.

Acknowledgment

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Region III

RESOURCE MANAGEMENT COUNCIL FORMATION IN SAMAR

Joselino Baritua¹ and Artemio Cusi III

ABSTRACT

This paper describes the concept of Resource Management Councils and their various sub-councils focusing on coastal and fisheries management. It draws some examples from the experiences in council formation from Palapag, a municipality of Northern Samar, and discusses in particular the facilitative role exercised by two non-governmental federations of people's organizations: PAKISAMA and FISHERS. The slow pace at which the local and national legal system rises in support of such community-level activities has hampered real progress. Nevertheless, the creation of RMCs has drawn local communities into a more active role in resource management, and perhaps with that, the roots are planted for more effective community-based management in the future.

Introduction

The *Pambansang Kilusan ng mga Samahang Magsasaka* (PAKISAMA) is a national federation formed in 1986 of organizations representing autonomous farmers, fisherfolk, rural women, rural youths and tribal peoples. It has members in 32 provinces nationwide. As a people's organization (PO), PAKISAMA actively pushes for the implementation of genuine agrarian/aquatic reform and rural development.

Realizing the urgent need for the reform of the fishing sector, PAKISAMA convened a Fisherfolk Steering Committee in August of 1988 to discuss the problems of the fisherfolk community and its participation in the formulation of a fishery reform bill.

With the active participation of PAKISAMA in consultations and dialogues regarding a fishery reform bill, the Unity Bill for Aquatic Reform was formalized in January 1990. At the same time, the umbrella organization of fisherfolk groups, the Nationwide Coalition for Aquatic Reform (NACFAR), was formed. NACFAR seeks to unite the various fisherfolk organizations in the campaign for the passage of the Unity Bill in Congress.

Resource Management Councils

Among the components contained in the Unity Bill for Aquatic Reform of 1990 is the creation of Resource Management Councils (RMCs) throughout the Philippines. In essence, the RMCs are designed to provide the mechanisms to empower the small fisherfolk to effectively manage coastal marine resources and alleviate their economic condition.

The most basic unit of the RMC is the Barangay Resource Management Council, or BRMC. It is composed of fisherfolk leaders and other members of the barangay who collectively work for the protection and rehabilitation of their marine resources. Through the councils, the community discusses and seeks solutions to local economic and other problems. The RMCs more specific functions are as follows:

Barangay RMCs:

¹ PAKISAMA Program Officer, Cebu City.

1. rule on disputes related to fishing rights and the subdivision of rights to fishery resources within their jurisdiction by local fisherfolk;
2. recommend to the municipal RMC policies regarding the price standardization of fishery products; and
3. assist in the formation of BRMCs in nearby barangays.

Municipal RMCs:

1. establish fishing zones, demarcated areas and navigational lanes within their jurisdiction;
2. issue permits related to the access to and use of fishery resources within their area of jurisdiction;
3. administer fish landing and ports;
4. create policies for the price standardization of fishery products; and
5. initiate investigations, and file civil or administrative cases² for the violation of the relevant laws.

To establish a successful RMC, a strong and conscientious fisherfolk organization must operate within the area; the particular coastal area must have a high population of fisherfolk; the affected coastal area must have progressive and active leaders; and cooperation among existing non-government agencies and local government units must be harmonious.

The common view of the RMC structure is that so-called Coastal Resource Management Councils (CRMCs) should be composed primarily of the representatives of the fisherfolk community, but secondarily by the different sectors of the community including representatives from government and non-governmental organizations. On the other hand, some adhere to a concept of Fisheries Resource Management Councils (FRMCs). Since fisherfolk and their families are the ones dependent for their livelihood on the conditions of the coastal areas, and are directly affected by destruction of the marine environment, advocates of FRMC strongly recommend that all of the representatives to the council should come from the fisherfolk groups. Despite the difference between the two positions, advocates of the Unity Bill believe that there is no conflict in the concepts since FRMCs can be subsumed or made part of a CRMC.

Sample Case Site: Palapag, Northern Samar

The formation of pilot RMCs is presently encouraged and initiated by concerned people's organizations such as PAKISAMA and member-organizations of NACFAR to address and prevent the wanton destruction of marine resources. NACFAR's first pilot area for the formation of RMCs were the five coastal barangays covered by the Fisherfolk's Unity in the Entire Ragay Gulf Shoreline Association (FUERSA) in Pasacao, Camarines Sur. This was started in January 1991.

With lessons culled from the FUERSA experience in RMC formation, PAKISAMA attempted to replicate the program in Palapag, Northern Samar. This is the federation's first direct attempt at organizing RMCs. Through the project "Institutionalizing People Power for the Conservation and Development of Fishery Resources," PAKISAMA initiated RMC formation with its network member: the Fishermen's Endeavor for the Rehabilitation of the Sea in Northern Samar (FISHERS).

RMC formation in the municipality of Palapag began in 1992 when initial data gathering in nine coastal barangays helped identify pilot areas for the project. This was done with the help of the Association of Social Innovators Network (ASIN), a Catarman-based NGO. It was followed on January 10, 1993 by a municipal consultation wherein the political, socio-cultural and economic problems and issues affecting the fisherfolk were threshed out. A plan of action addressing these issues was presented.

Following the success of the consultation on the municipal level as well as the signature campaign for the Unity Bill, barangay consultations were subsequently held in March 1993 to validate and deepen the existing data. More action plans were formulated.

With funding from OXFAM-UK, in April 1993 PAKISAMA hired three staff members in Northern Samar to coordinate and guide the RMC formation in Palapag. Before the end of June 1993, seven barangays held assemblies, followed by RMC orientation sessions and leadership training. By July, the barangay-level RMCs were already being formed.

The program has so far yielded promising results, as coastal barangays adopting the RMC strategy gradually increase in number. Another indicator of the people's acceptance and support for the program is the fact that in the 1994 barangay elections, FISHERS members who were elected included five barangay captains and 15 barangay councilors.

Consequently, with the increase in the number of participants, a vigorous education and information campaign on existing fishery laws, the adverse effects of illegal fishing methods, as well as alternative fishing methods are continuously conducted not only in the participating barangays but also in other coastal barangays. Among the factors that have greatly helped the success of the RMC pilot program are: (a) the existence of barangay chapters of FISHERS and the commitment and skills of the barangay and municipal leaders of the organization, (b) supportive local government officials, particularly the mayor, municipal council members and barangay officials, and (c) the assistance of committed and capable PAKISAMA-Northern Samar staff members and leaders.

Palapag's RMC and Environmental Law Enforcement

With the formation of the RMCs, vital issues on marine conservation have been brought to the attention of the municipal officers. A number of ordinances have been lobbied and passed by the municipal council of Palapag. Most of the legislation passed concerns the conservation and protection of marine resources, namely:

1. Administrative Ordinance No. 03-93 - declaring the municipal marine reserve and park as a Municipal Marine Sanctuary.
2. Resolution No. 93-039 - creating a Municipal Resource Management Council (MRMC).
3. Resolution No. 94-005 - defining Palihon Island and its surrounding areas, out to 200 meters from its shoreline, as a Municipal Marine Sanctuary.
4. Administrative Ordinance No. 01 - ordinance strictly prohibiting the catching of fry locally known as *cuyog*.

In terms of enforcing these municipal ordinances in marine environmental conservation, the BRMCs in Palapag have assisted the local law-enforcement agencies such as the Philippine National Police (PNP) in apprehending illegal fishers. Since the group's inception, three trawl operators were apprehended and their paraphernalia impounded at the PNP headquarters. Unfortunately, with the intervention of the vice-governor, said operators were released.

The RMC also made progress against dynamite fishing. RMC officers claim that the sound of dynamite explosions per day has gone from 10 down to 5 or even less. Furthermore, these explosions are heard outside the municipal waters, indicating that dynamite fishers are slowly being driven out of the municipality.

Most noteworthy of the RMC operations, however, is the dedication shown by the council members in difficult tasks and, frequently, in dangerous conditions. For instance, the chairman of the BRMC in Barangay Binay found himself in an unenviable position when he helped in the apprehension of his own first cousin for alleged dynamite fishing. The same chairman then received threats from another person caught and detained for a similar offense in August 1994. Similarly, many public servants who have exhibited exemplary conduct in arresting

violators of the law sometimes get transferred to other localities when their superiors are pressured by local politicians protecting the interests of illegal fishers.

Environmental Rehabilitation Management

Resource management must involve resource rehabilitation. Resource sustainability can only be achieved if rehabilitation takes place faster than depletion. Thus, the restoration of mangrove areas and coral reefs must have priority alongside environmental law monitoring and enforcement. In response to this need, the BRMCs of Palapag have embarked on a rehabilitation program for the 200 hectares of depleted mangrove area in Barangays Natawo, Sinalaran and Manajao.

Rehabilitating the coral reefs, severely damaged by destructive fishing methods like trawling and dynamite fishing, presents a greater challenge. In contrast with mangroves, which may only take a few years to reach a full-grown size, the coral reefs require 40-45 years for complete and normal restoration. Fortunately, the 43rd Engineering Brigade provided assistance to the RMCs by delivering one hundred pieces of used tires, nine bags of cement and three empty drums for the immediate construction of artificial reefs.

Livelihood Support

Some years ago, a donor delivered to FISHERS-PAKISAMA three *payaws* (fish aggregating devices), an alternative method of fishing that yields abundant catch without destroying the coral reefs. Unfortunately, a typhoon that hit Northern Samar washed two *payaws* into the high seas. The *payaws* could have withstood the storm had they been made of stronger materials, but the association could not afford to pay the higher cost. Instead, the association hopes to negotiate for replacement of the original *payaws*.

To further augment the income of the fisherfolk, RMC members have initiated crab-fattening and other fishpond projects. In Barangay Natawo, for instance, 14 members of the council are engaged in the fishpond venture and have built protective dikes around the association's fishpond.

Human Resource Development

Sustainability of the organization is also a concern of the FISHERS-PAKISAMA Association. For if people-centered development is to be achieved among Palapag fisherfolk, then an active, well-informed and well-organized mass base is of utmost importance. The increasing number of BRMCs may raise organizational problems such as having too few facilitators to go around. Thus, efforts to harness leadership and refine organizational skills among the council members include regular training seminars. Barangay Natawo's three year plan, for example, calls for the development of 15 core leaders as well as 10 second liners.

The FISHERS-PAKISAMA has facilitated seminars on para-legal education, project management, ecology management, and Rapid Rural Site Appraisal (RRSA). They have also visited existing coastal resource conservation projects in Bohol and Negros Oriental where they learned a lot and gained inspiration for their own efforts. However, lack of funding, inadequate support from concerned government agencies, and difficulty in finding competent trainers have stalled further plans in the area.

The Folk Legal Culture

Friedman (1977) defines legal culture as the attitudes, values and opinions held in a society with regard to the law, the legal system and its various parts. The phenomenon of legal

culture is an important component to be considered in the concept of people-empowerment, particularly, in the formation of RMCs. When the national government decentralizes certain responsibilities on environmental conservation, it must implicitly recognize the capability of a particular community to govern itself in accordance with its own social norms.

The complex and outmoded character of the Philippine Fishery Law of 1975, as well as the government budgetary constraints, hinder the national legal system from adapting and responding to the changing social and natural environments of far-flung maritime communities. Likewise, environmental decision-making processes by concerned government agencies have not helped paint a clear picture of deplorable coastal conditions. The present political-legal set-up has not given the majority of affected communities the right to participate in the formulation and implementation of policies crucial to their survival.

By contrast, marine conservation efforts through the BRMC places the fisherfolk back in their own legal culture, where their rights are recognized and preserved. Since the fisherfolk themselves are more immersed in the conditions of their coastal communities than the government provincial representatives, whatever policies and ordinances formulated and implemented as a result of the community's active participation may exhibit a higher degree of relevance to the lives of coastal residents.

Because of the people's initiatives, any infraction and conflicts on community rules on environmental protection may result in a swift and appropriate response on the part of BRMC officials and the concerned government agency. For instance, the coordinated efforts of the fishermen and the local police have shown impressive results in the monitoring and arrest of illegal fishers.

Since the fisherfolk legal culture is more akin to rural society's way of life, the said norms exhibit more flexibility in the community's control over the social and natural environment. The element of flexibility is a crucial component in minimizing, if not totally avoiding, the destabilizing effects of crisis situations.

In addition, the understanding of the legal culture minimizes the failure of any development program as the sustainability of said program is based upon normative attitudes and the behavior of the residents involved. The folk legal culture determines the relevance, and as such, assigns a "customized" meaning on the rigid and "ivory-tower" precepts of certain program directives.

Problems Encountered and Lessons Learned

The importance of media in crucial issues such as marine environmental protection cannot be disregarded. Bureaucratic red tape, criminal violations and political interventions should be exposed.

Due to inadequate supplies of preserving materials such as ice, fisherfolk cannot stay long in the sea and avail themselves of the abundance of the catch. Furthermore, without a dependable refrigeration system, fisherfolk will always be at the mercy of the big ice plant operators who also happen to be middlemen.

Lack of training among fisherfolk on organizational and leadership skills, para-legal practices, alternative fishing methods, project management, and ecological awareness have slowed down the formation of a strong mass base. Widening of support groups or linkages will hasten the development of players in the RMCs.

The use of alternative raw materials indirectly contributes to the process of rehabilitation. For instance, the introduction of other sources of wood prevents the early denudation of rehabilitated mangrove areas. As such, the creation of a cooperative-based mini-industrial plantation may provide alternative sources of wood for the community.

POs and NGOs in their infancy stages, such as the FISHERS Association in Palapag, are by definition also in their most precarious stages. Thus, support from well-established people's organizations in the form of seminars, training, research materials, small financial contributions and coop-to-coop trade links, can prove crucial to survival.

Without a new fishery law like the Unity Bill, defective and irrelevant provisions of the PD 704 will continue to prevent genuine aquatic reforms, and thus, adversely affect the lives of the fisherfolk.

Conclusion

The RMC project in Palapag rests on the notion that changes in the community do not only come from the top, but could also come from the lower level. With this view, the community's support was enlisted for the establishment of a Resource Management Council, on which most of the people are fisherfolk, though they are joined by representatives from the barangay council, NGOs and other sectors in the coastal communities. The RMC's main achievement in Palapag has been to prompt municipal officials to pass a number of important ordinances. The Palapag RMC enjoyed the full support of the local officials, because they were expressly invited to join in dialogues and consultations. PAKISAMA focuses its efforts on working from the bottom up, so that even if the national federation phases out, the community can continue its activities, since it has experience gained from participating from the planning process onward.

Unfortunately, by national law signed in 1995, the RMC has been forced to restrict itself to a more conservative, recommendatory body only, and its policy aspect has diminished. But RMCs have made promising inroads to spreading community-level involvement in marine and coastal resources management by giving local residents a stake and a role in looking after their own environment.

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FISHERY INTEGRATED RESOURCE MANAGEMENT FOR ECONOMIC DEVELOPMENT (FIRMED): AN INTEGRATED APPROACH TO COMMUNITY BASED COASTAL RESOURCE MANAGEMENT

Nazario P. Magpayo¹

ABSTRACT

This paper discusses an integrated program of community-based coastal resource management developed by the Community Extension and Research for Development (CERD), and labeled FIRMED (Fishery Integrated Resource Management for Economic Development). The FIRMED strategy as applied in Western Samar focuses on community organizing as the core component of CBCRM, in the belief that any successful resource management scheme must hinge on community organization and empowerment. The FIRMED experience in Samar has primarily taken the form of coastal resource protection and fishery law enforcement. Sadly, patronage politics and government indifference toward the prosecution of illegal fishing and intrusion by commercial fishers into the municipal fishing grounds prevented local people's organizations from sustaining their vigilance and active protection efforts.

Introduction

As a community-based coastal resources management strategy, the FIRMED (Fishery Integrated Resource Management for Economic Development) program was developed to respond to the multi-faceted problems confronting coastal communities. FIRMED is an integrated area development program with coastal community organizing as the core strategy toward community empowerment and self-reliance. It has five basic components: community organizing, human resource development, socioeconomic and alternative livelihood development, sustainable fisheries, and policy advocacy and networking. These components complement each other and are equally important to the implementation of the program.

The FIRMED program received funding from the Swiss Association for Development and Cooperation, and has been carried out by CERD in partnership with a provincial-level fisherfolk organization known as SAMASAKA (*Samahan ng mga Maliliit na Mangingisda sa Samar laban sa Kahirapan*). CERD judged SAMASAKA to be a promising partner organization because it had functional leadership and committees capable of implementing plans of action, and its membership consisted of small-scale fishers who were willing to participate in program activities and had no other ongoing project commitments. FIRMED was piloted in five contiguous coastal communities where SAMASAKA has chapter organizations. The selected sites were the *barangays* (villages) of San Miguel, Valles Bello, Casabahan, San Vicente and Parasan, located in northeast Daram Island, Samar Province, eastern Visayas.

Initiated in 1989 and scheduled to conclude formally in 1997, the FIRMED covers three municipalities (Daram, Zumarraga and Catbalogan) and involves 72 sectoral people's organizations, 23 barangay-level federations, three municipal people's organization (PO) federations, three municipal-level coastal resource management councils, one inter-municipal council, and a new provincial PO federation called GIOS-Samar. In 1996, CERD began phasing out and turned over its tasks to GIOS-Samar. By strengthening POs to be the main actors in community-based coastal resource management, NGOs like CERD have proven their effectiveness in capacity building and community empowerment.

¹ CBCRM Outreach Coordinator, Community Extension and Research for Development (CERD), Quezon City.

Site Profile

Daram Island is undulated with rugged slopes that range from 18-110%. The mountainous areas occupy approximately 60-70% of the total land area. Valleys, small depressions and plateaus with slight undulations are present but cover a very small area.

Daram soils consist of Catbalogan soil and Tacloban soil series that are low in fertility but sufficient in Potassium. The meager potential for agricultural crop production can be attributed to a number of factors such as the very shallow soil column, steep slopes prone to severe erosion, and heavy cogon grass.

Mangroves remain in sheltered coves and consist of secondary or residual growth. There are coral reefs in northern, central, western and southern parts of Daram, however, they have been severely damaged by dynamite fishing. Based on the rapid underwater survey conducted by FIRMED-Samar researchers, the coral cover in San Miguel waters in 1991 were observed to be 5-80% live, but the 5% live coral cover occupies a wider area.

The total human population of Daram is 31,374. An appraisal by the Department of Agriculture showed that less than 20% of the population are full-time farmers, more than 60% are farmer-fishers and less than 20% are full-time fishers. About 80% of farmers are renters and tenants. Only one-fifth of the remaining twenty percent (20%)—4% of the total full-time farmers—are considered rich. Of the farmer-fisher population in Daram, 80% live below the food threshold established for Western Samar, while 92% live below the poverty threshold. Those who are engaged exclusively in farming suffer the most, because more than 95% of them live below the food threshold. Poverty in Daram is caused by limited land area (1.6 hectares per household as compared to five hectares per household for the whole of Western Samar)², degraded soil, tenancy and unequitable sharing system in which crew members on commercial vessels or fishers who rent their equipment, usually from fish buyers, receive only a progressively decreasing share of net sale profits.

Fisheries Sector. Because of the limited land area, degraded soil and the lack of alternative livelihood, farmers often resort to fishing, thereby increasing the intensity of fishing pressure and the fast depletion of fish stocks. Within the last ten years, the fish population in the Daram waters declined to less than 30% of its carrying capacity. This increased the competition among fishers in terms of number and types of fishing gears. In order to ensure higher catch, some fishers use the *pahulbot* (Danish seine) more often. Those who do not have enough capital resort to operating mini-pahulbot run by two persons in non-motorized *bancas* (boats).

Those engaged in dynamite fishing rationalize their continued and intensified use of this illegal fishing method by pointing to the unfair competition posed by fishing vessels equipped with more efficient fishing gears (e.g., superlights, trawls and mid-water trawls). Dynamite fishing has become rampant in around Daram, except in northeast Daram where FIRMED has been operating since 1989.

Another problem of fishers in Daram is the fish marketing and trading arrangements. The fishers, especially those who rent their fishing implements from *alpor* (middlemen) are generally obliged to sell their catch to them as well. The *alpor* are present in almost all coastal barangays in Daram Island. The difference in the selling price of fish between the fishers and *alpor* is 33%, between fishers and the wholesaler (fish traders) is 90%, and between fishers and retailers is 150%. For example the *alpor* buys a kilo of alumahan (mackerel) from the fisher at PHP 16, whereas one kilo of alumahan will sell for PHP 30 at the Catbalogan market, or PHP 40 in Manila.

² Data from the National Census and Statistics Office, 1990.

Methods and Process

Taking into account Daram Island's particular problems and needs, FIRMED's approach emphasizes the following goals:

- The formation of people's organizations (POs) in every barangay so that the POs themselves can find solutions to the community's problems. This can be done with the assistance of non-government organizations (NGOs) who have experience organizing POs and who can transfer analytical and organizational skills to their leaders and members. A core part of community organization is to raise ecological awareness and make clear to people the linkage between resource degradation and threats to their livelihood.
- Replication of the initiatives of POs in the pilot areas to neighboring coastal barangays. Experience shows that POs given adequate legal support by local government in managing their fishing grounds (for example, through a municipal ordinance declaring a particular area a marine reserve, and deputizing the fisherfolk as fish wardens), can promote increased fish catch and incomes. A marine reserve was established by this means in the waters of San Miguel, and it is being studied how other barangays may replicate its success.
- The formation of an inter-municipal coastal resource management council, wherein local government units, NGOs and POs sit together to enact policies, plans and programs concerning their common fishing ground and coastal resources. Such a council was formed involving Daram, Zumarraga and Talalora municipalities; consequently, management of a common fishing ground has become more effective.
- Establishment of alternative livelihood projects must be pursued vigorously. This helps alleviate fishing pressure and marine resources degradation. These projects could be marine-based, such as: *tahong* (mussels) culture, fish cage culture, and passive fishing projects in lieu of active gears, or land-based such as: fish processing and marketing, mat making, or handicrafts.
- The interrelatedness and interconnectedness of the ecosystem in terms of migratory species of fish—which normally constitute the bulk of fish population of any fishing ground—need to be explained. Advocacy work with the government units, people's organizations, non-government organizations and other concerned sectors is necessary to manage coastal resources effectively. An orientation toward entire ecosystems takes into consideration land-based activities that affect coastal areas, e.g., destructive farming practices in a sloping terrain.

Program Results

Community Organizing. An inter-municipal coastal resources management council was formed in December 1994 among the municipalities of Daram, Zumarraga and Talalora, which share a common fishing ground. This council was composed of the representatives of municipal POs, the mayors, government line agencies (Municipal Agriculture Office, Bureau of Fisheries and Aquatic Resources and Department of Environment and Natural Resources Community Office), law enforcement agencies (national police, Maritime Command, and Coast Guard), and non-government organizations. The council elects one of the three mayors as chairperson for each quarter.

Crucial in the operation and effectiveness of the council was the role of POs and NGOs in putting forward coastal and fisheries issues/problems and their appropriate demands/solutions. Among the issues presented by POs were the following: 1) low fish catch due to unfair competition from commercial fishers intruding in the municipal fishing grounds; 2) lack of access

to credit facilities; 3) lack of government social services; 4) implementation of land reform programs in coastal barangays; 5) non-enforcement of fishery laws and regulations; and 6) provision of livelihood and fishing implements to small fishers. In this forum, the POs push for their rights as resource users and managers while NGOs play the supportive role through their programs and research on coastal resources management, providing fisherfolk with new skills and training programs on how to manage effectively their resources and organizations.

The legal basis for the council lies section seven of the Article on Social Justice of the Philippine Constitution, which provides that the "the state shall protect the right of the subsistence fishermen, especially of local communities, to the preferential use of communal marine and fishing resources, both inland and offshore. It shall provide support to such fishermen, through appropriate technology and research, adequate financial, production and marketing assistance and other services. The state shall also protect, develop, and conserve such resources. The protection shall extend to offshore fishing grounds of subsistence fishermen against foreign intrusion."

Fisheries Protection. Two marine reserve areas, in Daram and Zumarraga, and two marine sanctuaries, in barangays San Miguel and Basiao, were established through PO initiative and municipal ordinance. A total of 150 artificial reef modules made out of old tire, bamboo, coco and concrete were installed between 1991 and 1994. These structures seem to have led to lessened trawling operations, increased fish diversity and increased fish population. Apprehension activities revived in 1995 after a slack period; in that year, fourteen commercial fishing vessels were apprehended during patrolling operations. The program was able to free fishers from the bondage to the alpor system. In 1990, for example, CERD provided fishers with non-motorized bancas and pressurized gas lamps for squid fishing, and panels of gill nets to catch mackerel. A complementary soft-loan initiative helped fishers to repay the cost of these new gears, to buy some additional gear of their own, and to extinguish their debts to the alpor. The program has also significantly increased community awareness to the environmental and ecological problems that would affect the present and future generations.

Problems Encountered

The northeast Daram fishing ground had been well protected from 1991 until 1993. Starting in 1994, protection became lax against the intrusion of commercial fishing vessels (more than 3 gross tons) like the *palupad*, trawl, and pahulbot. To circumvent the municipal fisheries law, many commercial fishing operators have resorted to the use of boats classified as less than 3 gross tons, but still use the commercial type of fishing nets. Similarly, by 1993, though the artificial reefs installed by the program seemed to have promoted a rising volume of fish catch and therefore incomes of local fishers, this gain has diminished since then as PO monitoring of the area against intruding commercial vessels became less stringent. Several factors explain the decreased vigilance within the fish sanctuary: a) indifference of local government officials, b) non-enforcement of municipal fisheries law by the authorized enforcement agencies (coast guard and police), c) failure to imprison violators apprehended by POs, and d) insufficient supply of patrol boats and financial support for POs to perform regular monitoring and apprehensions.

Another problem frequently faced by external implementing agencies is that people tend to look at NGOs or development programs first and foremost as a source of money. A dole-out mentality among people in marginalized communities is prevalent. Popular interest in new programs often focused not on how people can sustain their development initiatives, but more on how to survive and boost their incomes at present. In response, the external NGO must persevere in continuous consciousness raising on the value of cooperativism, self-help, ecology and environment, savings and credit, and sustainable development. By repeatedly clarifying the goals

and objectives of the program, as well as policies and procedures, PO members are enlightened little by little.

Operationalizing a municipal resource management council is a slow and arduous process. One remains at the mercy of the mayor/chairman to call a meeting. At first, with a mayor who was wary of the participating NGOs and POs, it was indeed very difficult. It is important to follow-up and apply continual pressure on the local chief executive to hold meetings. NGOs can accelerate the process by doing the groundwork for the local government unit, while POs can show what they are capable of, for example, apprehending sanctuary intruders, or conducting barangay assemblies, or visiting a radio station to broadcast information about their issues and demands.

NGOs working in this area had long been subjected to discouraging propaganda and indifference from local government units. This has been the major problem encountered by the program since its entry in the program sites. Some local officials insist that external NGOs share their funding with the local government. To resolve this problem, FIRMED entered into constant dialogue with the mayor and municipal councilors. Regular communications with the mayor and other government agencies proved beneficial in establishing rapport with the local executives.

In actual program execution, the relationship between CERD and SAMASAKA changed over time. Initially, CERD had identified SAMASAKA as a partner for FIRMED after a series of consultations with an NGO coalition of which SAMASAKA was a member. CERD was impressed by SAMASAKA's activist orientation and extensive linkages with barangay-level actors and issues. In fact, the presence of SAMASAKA chapters in Daram had been one of the main reasons for selecting pilot sites in the area. However, during the pilot phase (1989-91) in which CERD was supposed to focus on education and training while SAMASAKA took charge of the community organizing component, some partner relationship problems emerged, in response to which CERD decided began organizing new people's organizations through which it could carry out the remainder of the program. By 1992, the new POs were gathered into municipal federations, then into an inter-municipal federation known as GIOS-Samar.

Lessons Learned

Experience of the FIRMED program in community organizing and resource rehabilitation has shown that communities can effectively manage their fishing grounds when given the authority and support necessary to protect their fishing grounds and apprehend illegal fishers. An inter-municipal resource management council can greatly support fisherfolk initiatives by legislating municipal fisheries ordinances and programs to institutionalize community based coastal resource management.

In community-based coastal resource management—its conceptualization, planning, implementation and evaluation—the active participation of POs plays a critical role. Without the full participation of the POs by direct involvement as implementors of the management scheme, the program/plans will remain a useless and expensive experiment. They are the primary stakeholders as well as the resource users and should have a say in how to use, control and manage their resources.

Problems of poverty and political marginalization are directly related to the problem of environmental degradation. Coastal community issues and problems are multi-faceted and must therefore be addressed holistically in an integrated manner.

The existence of commercial fishing vessels belonging to the wealthy class with close connections to corrupt politicians from the provincial down to the barangay level constitutes a strong force threatening the sustainable development of fisheries and coastal communities as a whole. Therefore, coastal communities must build popular organizations with the necessary

strength to support marginalized fisherfolk in resisting pressures to overfish and degrade the coastal and marine resources.

Community property rights should be invoked by the POs as their legal and institutional basis for promoting coastal resource management. The system of Territorial Use Rights in Fisheries (TURFs) has some basis in the Constitution, and should be examined as a possible tool to help coastal communities gain access, control and management of their resources.

Conclusion

By organizing the people in coastal communities such as farmers, fisherfolk, and women who are largely affected by the degraded status of the coastal resources, sustainable efforts to protect and regenerate natural resources can be effectively undertaken. The initial success of FIRMED is that it has created optimism among NGOs and POs in the Maqueda Bay area for a greater role in resource management.

FIRMED has also been instrumental in establishing links and cooperation between NGOs, POs, LGUs, and NGOs for the establishment of a Municipal Coastal Resources Management Council, a body that formulates fishery laws and ordinances in relation to the use, control and management of the coastal and fishery resources at the municipal level.

Although in Daram the communities have been discouraged in their efforts to protect and manage their region's resources, they have shown that they are capable of effective action when provided with adequate and lasting support.

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COMMUNITY ORGANIZING IN LEYTE: THE LABRADOR EXPERIENCE

Nello Yap¹

ABSTRACT

This paper describes the experiences of one NGO in its efforts to implement the national Fisheries Sector Program on community-based resources management in several severely damaged bays around the Philippines. Although the program's goals and primary components held promise, confusion resulting from a too complicated implementation structure and some uncondusive partner relationships ultimately hindered the achievement of many program objectives.

Introduction

The Fisheries Sector Program (FSP) was launched in 1989 to introduce management schemes for the Philippines' coastal resources, in particular in twelve bays where fishery resources were deemed to have been seriously depleted. Long-term goals of the program include improving livelihood alternatives for coastal communities and promoting sustainable management practices for their surrounding natural resources. The FSP consists of several components: fishery resource and ecological assessment, coastal resources management (CRM), research and extension, law enforcement, credit, and infrastructure. The Department of Agriculture (DA), Department of Environment and Natural Resources (DENR) and the Bureau of Fisheries and Aquatic Resources (BFAR) share responsibilities for implementation along with participating non-governmental organizations and research institutions.

The Leyte Samar Rural Development Workers Association, Inc. (LABRADOR) is the NGO designated to implement the community organizing component of the Fisheries Sector Program in Leyte province. The FSP was implemented by different autonomous field centers of LABRADOR, namely: CABDEC for Carigara Bay, WELSDEC for Ormoc Bay, and the Head Office for San Pedro Bay. Its project areas include the municipality of Albueria for Ormoc Bay, municipality of Carigara, Barug and San Miguel for Carigara Bay, and the municipalities of Palo and Tanauan and the City of Tacloban for San Pedro Bay. The project was designed to run for five years, beginning with a resource and ecological assessment, and covered a total of 82 barangays.

The very first FSP implementation was done in the municipality of Carigara, which also served as the pilot area for FSP-CRM in Region VIII. Its specific goals were determined based on a rapid rural assessment of the area by Silliman University. The FSP ran in two phases: from May 1991 to April 1992 the first year, then January to December 1993. Targeted beneficiaries, to be organized into fishers' associations, were the local fisherfolk, but a broad definition included fishers, vendors, and so on.

Site Profile

Once rich in marine life and mangroves, Ormoc, Carigara and San Pedro Bays now have deteriorating marine and coastal resources. Some 300 hectares of mangroves, mainly in Carigara, have been converted to fishponds. Coral reef beds, seagrasses and mangrove forests are

¹ Center Director, LABRADOR-WELSDEC, Ormoc City.

continually assaulted by illegal practices such as dynamite fishing, trawling and illegal fishpond development.

Illegal upland logging causes sediment to flow into the bay, heavily silting the coral and nearshore areas, lowering marine productivity further. In the case of Palo and Tanauan, soil erosion is going on at an alarming rate. Improper waste disposal, especially near the towns lead to poor water quality and health problems for the local population. In Tacloban City, industries and dense squatter populations disperse chemical effluents along the coastal areas. In Albueria, sugar factories dispose of large amounts of waste into the water.

The target clientele of the project is not only the actual fisherfolk, but also the coastal dwellers whose livelihood is dependent on coastal resources. In Carigara Bay, 75% of the families in the coastal municipalities live on or below the poverty line (1988 figures), and the fisherfolk are generally the poorest among the poor. In the case of Tacloban City, there are only a few barangays where there is a significant number of fishermen, because of its urbanized status. The same is true with Palo, Tanauan, and some barangays in Carigara, Barugo, and San Miguel. In general, the project areas of LABRADOR for FSP have few employment opportunities outside of those which are coastal dependent. Only about one third of the area's inhabitants have achieved secondary or college education.

Methods and Strategies

Community organizing (CO) for the FSP version of CRM was jointly designed by LABRADOR and the DA, and was successfully piloted in the municipality of Carigara. This served as the guide in the implementation of the CO component in other project areas by other NGOs implementing FSP.

The CO component of FSP is designed in such a way that other components, although autonomous and vital parts of the whole concept of community-based coastal resource management, also serve to reinforce the main CO effort. These are: information gathering and dissemination, mangrove reforestation, economic development, and institutional partnerships. These supporting components are shared between the DA, provincial agriculture office (PAO), municipal agriculture office (MAO), local government units (LGU), Philippine National Police (PNP), fish wardens, and LABRADOR. Given this set up, a large part of the work is devoted to tripartite leadership and partnership between the community, line agencies and the NGO. The idea here is that the community organizations can have the maximum support from different concerned agencies. However, this can also be a weakness, since there are so many players that the problem often arises over misconceptions and mixed expectations.

The operational objectives of LABRADOR in the implementation of the CO component of FSP are as follows:

1. to organize fishermen's organizations and facilitate building of their capabilities in planning and management;
2. to organize multi-sectoral councils for CRM policy advocacy and planning.

Two organizations were organized per barangay: the fishermen's association and the barangay coastal resources management council. On the municipal or city level, a municipal coastal resources management council was also organized. The BCRMC and MCRMC propose policies for the barangay and municipal LGU, respectively, pertaining to marine issues. Under the presently conducive local government code (introduced in 1992, stipulating that the NGO and regional or national offices of the DA must get LGU approval for the implementation of projects in their areas), there is good reason to believe that the BCRMC and MCRMC will be instrumental in the advancement of these issues.

Operational objectives for supporting components in CO are:

1. to gather baseline data on CRM, and to conduct information campaigns on CRM with different local institutions;
2. through the MREP (Mangrove Reforestation and Enhancement Project) to assist in CRM planning and implementation, and to pilot test and assist in replication of marine resources enhancement projects;
3. to organize and assist in planning and implementing economic development programs, provide on-the-job training for fishers' associations, and facilitate the establishment of financing links;
4. to identify areas of cooperation with LGUs in the implementation of CRM.

Based on the operational objectives, the most notable achievements to date for the three bays handled by LABRADOR are:

1. the organization and strengthening of fishers' associations and BCRMCs through training;
2. assistance to the MCRMC in successfully proposing a municipal fishery ordinance, as in the case of Albuera;
3. strong tripartite bond between the PO-NGO-LGU parties as seen in Palo, Tanauan, Tacloban and Albuera;
4. initial start-up of alternative livelihood projects for the service communities;
5. concerted information drives by the community, LGU, line agencies, and the NGO as manifested, for example, by the SIPLATDAGAT campaign for San Pedro Bay and TUTOKDAGAT for Ormoc Bay.

Problems Encountered

As mentioned earlier, the FSP version of CRM has many players, a feature that has resulted in some misconceptions and confusion. For instance, law enforcement is the responsibility of the PNP and the Fish Wardens Association; ecological research falls to BFAR, MREP and DA; passage of ordinances are naturally the responsibility of LGUs; and infrastructure building activities come under yet another agency's auspices. Certain sectors in the community, including the LGU, presume that many of the aforementioned components are the responsibility of the NGO. As in the case of Carigara, the LGU expected that LABRADOR was also a lending institution for the economic development programs directed at fishers' associations. It took a great deal of time and effort by way of meetings and dialogue before the true role of LABRADOR was made clear to them. This problem came about because the FSP originated from a broader national policy and design.

Another problem was the piecemeal nature of the project because of time lags in the approval of annual contracts. As such, plans of the organized groups are left in limbo because there are no funds to sustain full time assistance from the NGO. There is already an average of 1.5 years gap in implementation of the project's parts. Follow-up activities of the NGO are likewise placed on hold.

The initial difficulty in implementing the project in Tacloban City because of its urbanized environment and small fisherfolk population was resolved by organizing a multi-sectoral group to focus on minimizing the pollution caused by dense coastal population. The program designed special information dissemination activities to suit the urban environment.

Politics, too, affected the implementation of FSP. In Albuera, for example, the LGU executive and legislative body members are trawl operators, thus introducing a conflict of interest in enforcing fishing restrictions. In Carigara Bay area, local politicians hindered the operation of LABRADOR because it was perceived that the NGO's activities posed a threat to their political standing in the community.

Finally, the community did not receive a sufficient level of support from the participating agencies. A lax attitude toward law enforcement among the PNP, Fish Wardens Association, and LGU, difficult loan requirements imposed on fishers' associations by the Land Bank of the Philippines (the financing partner), and the unwieldy bureaucracy exhibited by the DA in implementing MREPs all contributed to a considerable amount of frustration at the community level, which in turn negatively affected the NGO's efforts and ultimately limited achievement of the overall goals of FSP.

Conclusion

The FSP in Leyte had some promising features in the promotion of community-based coastal resource management. Its weaknesses arose mainly from some flaws in the design of the program, which occurred at the national level. In the future, new initiatives like the FSP would benefit from more mutual understanding, greater cooperation and deeper commitment from each participating agency on the program implementation. This can be achieved only if the anchor agency (in this case, the DA FSP office), takes a firmer stand on issues and is more decisive in its actions. All partners require some flexibility on implementation of the workplan so as to adapt to changing community situations and to reflect emerging interests and objectives. Finally, all partners must make a greater effort to establish rapport with the LGU. Since very little can be accomplished without LGU support, assuming a confrontational stance with the LGU might backfire on the whole project.

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Elmer Baldesco, barangay official

Member of the BCRMC and President of the Save San Pedro Bay Movement.

Before I became a member of the BCRMC, I attended some seminars sponsored by LABRADOR in Tacloban. They have held a lot of seminars for the community organizing volunteers as well as for participatory action researchers, and I was able to be part of those. There used to be rampant illegal fishing in our barangay, but LABRADOR conducted information campaigns on how to stop the activity through community efforts.

Our barangay had other problems aside from those mentioned, and one of them is pollution. The houses in our barangay are so close to each other because of the number of families. Residents all throw their garbage into the sea, because the garbage collector seldom comes to our barangay, and there is no vacant lot available. Another problem is the drainage system. This affects what happens in the coastal marine areas inasmuch as everything drains out into the sea. Since I became a community organizing volunteer, we started an information campaign together with LABRADOR and Barangay Magallanes to implement "Coastal Clean Up Months" activities from September to November 1994. We sent letters to the barangay captain and councilmen to help us. The coastal areas, as a result, are a little bit cleaner now compared to before, when there were no more fish because of the garbage.

Following that, LABRADOR conducted another seminar, this time on community organizer volunteer training. Representatives from the 36 coastal barangays entered. LABRADOR talked about what was happening, and we decided to act against illegal fishers' pollution, and other problems as well. We called ourselves the "Save San Pedro Bay Movement." We are focusing on awareness; we still don't have plans to organize cooperatives, but merely to disseminate information against illegal fishing. There is also dynamite fishing going on. We can't watch for them all the time, because we also have to sleep, and some of us have other work or studies elsewhere. Once we're out of sight, the illegal fishers come back. We needed to show people that we must conserve our coastal resources. Our movement held rallies and parades where we exhibited banners and placards against illegal fishers passing by the coastal barangays of Tacloban. We wanted them to realize that we are aware of what is happening even if we are not actually fishermen.

We made one project in San Pedro Bay on artificial reef installation. We solicited tires from different agencies. We were able to get 120 used tires, which we used to make 43 units of artificial reefs. We also had meetings at night in the different barangays to inform residents that they need to conserve the marine resources. We also convinced the religious groups to participate and help our movement. We plan to have a *tahong* (mussel) culture project if we can get the financing. The City Agriculturist has promised to help us. We share responsibility for guarding San Pedro Bay, especially now that there are laws from our mayor, but we do not have enough trained fish wardens yet.

In our second year, we still have the coastal clean up month in September, and a lecture on *tahong* culture in August. Also, we continue to have information dissemination campaigns in every barangay on fishery laws. We plan to have community discussions on these laws so that everyone is informed, not just the barangay officials who attend the actual seminar.

Additional Articles

Introduction

The following articles were not included in the previous section either because they present broader themes than do the discrete site-based case studies, or because they do not deal specifically with coastal or fisheries resources management. However, they are included in the proceedings because they offer some lessons that can be applied in CBCRM.

THE BANICA RIVER WATERSHED: A CASE STUDY

Hans G. Bissdorf¹

Note: Although the following is not a case study of coastal resources management, it contains several lessons of potential interest or application to CBCRM audiences. This report includes information provided in the oral testimony given during the workshop by Mrs. Nida Bato, President of the Sagbang Agroforestry Reforestation Action Project (SARAP).

In 1992, the Martin "Ting" Matiao Foundation (TMF)² embarked on a study of the watersheds in Negros Oriental. Of the 48 existing watersheds in the province, ranging from 3,000 to 50,000 hectares in area, 14 were deemed to be in critical condition, because of their advanced deforestation, high incidence of erosion, and drying up of rivers. The TMF decided to target an entire watershed for reforestation and the introduction of non-destructive farming methods.

The Banica River Watershed, covering the municipality of Valencia and the city of Dumaguete, was chosen because of its manageable size (3240 ha) and its relative importance as a source of drinking and irrigation water for nearly 100,000 people. Over the 10-year time frame established by the project, the Foundation aimed to promote reforestation of 1,100 ha of land in the upland barangays.

Rapid Rural Appraisal drew out the concerns of the affected residents, and was followed by a series of meetings with community representatives to discuss concepts and approaches. The TMF wrote the proposals and secured partial funding from the Philippine Australian Community Assistance Program of AusAID (PACAP) and the Philippine Department of Environment and Natural Resources (DENR), allowing the project to begin implementation in the barangays of Sagbang and Apolong in June 1994.

Components of the project included: community organizing, resource management training, erosion control, reforestation, agroforestry farm development, and establishment of a revolving fund for community livelihood projects.

Two community organizations were formed to represent the interests of the beneficiaries and to coordinate the activities of the project on the local level. The TMF aimed to strengthen these organizations to enable them to carry on resource rehabilitation and management after the NGO has withdrawn. An administrative staff and several committees were established and trained in an assigned implementation specialization. Field trips to other areas in Negros or Cebu exposed participants to existing agroforestry or agriculture projects and gave them the opportunity to discuss their experiences with fellow farmers.

The TMF established a demonstration farm in Apolong to pre-test farming systems and new crops. Together with a tree nursery, it also serves as a training site for farmers. To complement the TMF activities, community farms have been set up in the participating barangays where the beneficiaries themselves can try out cropping systems. In all agroforestry project activities, the community members provide labor and land, while the TMF provides other inputs and financing. Due to their growing financial and managerial strength, both SARAP and its Apolong counterpart, the Apolong Livelihood Agroforestry Reforestation Management Association (ALARMA), will become direct partners with the PACAP program.

¹ German Development Service.

² The Ting Matiao Foundation is a non-governmental organization working in the field of Natural and Human Resources Management and Development in Negros Oriental. It is the extension arm of the Rotary Club of Dumaguete South.

Lessons Learned

As in all partnerships, occasional problems arise out of the daily activities or due to negligence by one side or the other. The NGO sometimes has to rush or delay activities, due to pressure from funding agencies, delays in procurement of inputs, shortfalls in the monthly target setting by the NGO management, or simply because a staff member became ill and work piled up. In such cases, the community members often feel neglected or confused.

Conversely, the NGO staff may grow frustrated with community members who fail to show up for appointments or when they pose demands that the NGO's budget cannot accommodate. Most of these problems can be minimized if each side is well informed of the constraints each side faces. To address this problem, the Banica Project created a Project Operations Group for Implementation, composed of representatives from both TMF and the participating POs. The goal was to plan and coordinate all project related activities on a monthly basis, but it has not been fulfilled entirely as intended due to poor leadership by the NGO.

Similarly, at the beginning of the project, an advisory board was established including PO representatives, barangay captains, LGU representatives, local industry and producer cooperative representatives, and TMF staff. At first, coordinating meetings were held every month to exchange information on ongoing projects to avoid overlapping activities as well as to inform one another of existing human resources that could be tapped for consultancies. The group later reduced the frequency of meetings, since there were too few new developments each month to report. Another problem—having to discuss the same topics over and over to accommodate changing participants—could have been solved by pressuring participating organizations to be consistent in their assignment of representatives.

The importance of good coordination between NGO and PO must be emphasized. Any information gaps between NGO and PO regarding the implementation of the different interventions can cause misunderstandings that hinder progress. Partnerships should be based on commonly-agreed set of principles. For example, balancing the economical and ecological goals of a project is only possible if the beneficiaries fully understand and believe in the long-term benefits of proper natural resources management. Their natural interest in short-term gains via improved production or additional income through livelihood projects must be at par with their willingness to use sustainable agriculture methods and care for the forests, even if these benefits cannot be seen at once.

There must also be clear mutual understanding of each other's strengths, weaknesses, limitations, nature. Considerable time and effort must go into dialogue and the building of personal relationships. Sensitivity to each other's culture and background will help avoid the pitfalls of appearing to promise things that cannot be delivered. The roles and functions of each participant must be clearly defined.

Conclusion

The experience we gained from the first year of the project was quite encouraging. The enthusiasm of farmers in Sagbang and Apolong to try out something new, and gradually to accept the project as their own, gives every member of the TMF team the encouragement to render the best service possible. But we also learned that partnership is not established by signing a contract; it has to be built through mutual respect, communication, and understanding.

GENDER IN COMMUNITY-BASED COASTAL RESOURCE MANAGEMENT

Luz Lopez-Rodriguez¹

Introduction

This paper presents the Filipino women's situation in coastal communities, particularly those engaged in fisheries. Social and gender analysis is a necessary framework in understanding issues in community-based coastal resource management (CBCRM). Women do not just have a role in the implementation of CBCRM programs, but we must also deconstruct and redefine the vision, the elements and strategies of CBCRM and define for ourselves suitable roles so that we can be full partners in environmental resource management. Though treating gender as a key component in CBCRM planning and execution is relatively new, the case of the *Katibyugan it Mangingisda sa Talangban* (Talangban Fisherfolk Organization, or KMT), an incipient organization of small-scale male and female fisherfolk, helps illustrate some of the critical issues.

Site Profile

Talangban is one of the five sitios of barangay Camaligan. Camaligan is one of the 20 barangays of the municipality of Batan, province of Aklan. Camaligan is the largest and most populous area of the Batan barangays with a total land area of 89.20 km². It is 18 km away from Kalibo and 30 km by road from the Batan Poblacion.

The slope of Camaligan ranges from level to very gently sloping (0-3%) to undulating. The higher level is on the west with several hills as high as 100m are found. On the east, along the Kil-ohan River near Talangban, are tidal flatlands, and in between are gently rolling hills and flat alluvial plains. Around 80% of the area is agricultural land.

The population consists of 1,949 persons or 374 households (1991). Of this, 49.62% are males and 50.38% are female. The mean age was 18 years. Specific to Talangban, the survey reached 166 households or 607 persons or over 31% of the village population.

Sitio Talangban resembles an islet, almost entirely bounded by a winding river system. The highest elevation is only about 80m above sea level; the feeder road is flanked by mudflats, much of which have been developed into fishponds or fishfarms.

Besides homelots and gardens, there are small fields planted with rice, coconut, nipa as well as patches of banana and bamboo groves. The physical and social environment is intimately tied up with the riverine setting that surrounds most of the village. Similarly, the rhythm of rain-fed rice cultivation, tidal flows and lunar successions regulate life and livelihood in this area.

The Balete, Kil-ohan and Aksam Rivers all run through the area, though the most proximate is the Hae-o (Jal-o) River, essentially brackish water with increasing salinity towards the mouth of Batan Bay. Only muddy bottoms cover this river system; there is neither grassy vegetation nor coral reefs, although some banks abound with oysters.

¹ Director of the *Ugnayan ng Pahinungod*, University of the Philippines in the Visayas, Iloilo City. Formerly Project Coordinator of the Food Systems Development Project of UPV.

Women's Roles in the Community

In Talangban, women play multiple roles, all of which have a strategic importance in community livelihood and environmental resource management. CBCRM programs must recognize these roles in order to be sustainable. For example:

1. Women are primary food producers in farming and fishing. Most coastal communities rely on a combination of farming and fishing, depending on the season. Both types of livelihood are essential to diversify the sources of income. Women work on the farm at important stages of rice production, specifically planting, weeding, harvesting, post-harvest processing and marketing. Women tend home gardens and raise livestock and poultry, all of which provide food at the family table as well as cash income. Women fish in the shallow waters along rivers or beaches. Together with children, women catch fish and collect edible shells from the river for home consumption or for the market. They row bancas, install fishing gear and haul nets with their husbands and other relatives. They mend nets, maintain the fishing gear, salt and dry the fish, and process food in other ways to store for lean days or to generate more income.
2. Women trade fish and other locally produced commodities, and they sell consumer goods in *sari-sari* stores. As soon as the catch is landed, women bring the fish to their *suki* (favored buyer) or peddle fish around the village. They also sell vegetables and home-cooked snacks. These efforts are essential in keeping the local economy going.
3. Women consume and use resources. They gather plants and collect marine products for food consumption and for the market. They collect *talaba* (oysters), *tahong* (mussels) and other edible shells along the river banks. They cut nipa and coconut palms and weave them for their housing material and for sale. They weave baskets from buri for storing grains or strip buri stalks and weave them into raffia cloth. Although it is less common nowadays, some women still weave fine piña cloth from pineapple leaves. Women gather fodder for the animals and wood for fuel. They wash clothes at the well and fetch water for the family's use at home.
4. Women manage resources. They plan and allocate their meager income and the resources at their disposal for the multiple needs of the family. They transact credit when resources are inadequate and advise the family members on their consumption patterns when resources are low. They train the young by example on conserving and recycling resources such as water, fuel and food.
5. Women are housewives and caregivers. They are mostly occupied by childbearing, child rearing, housekeeping and other so-called reproductive tasks that nurture the health and general well-being of husbands and other economic producers in the family or household.
6. Women are community volunteers and development workers. As an extension of their caregiving role in the family, women take on unpaid community management work such as being day care workers, barangay health workers, barangay nutrition scholars, school board members and officers, or church volunteers.²

² Women's interrelated functions in reproductive work at home and in productive work outside the home is succinctly captured in the themes *pangabuh* and *pangita* which is documented in Mabunay's study of Talangban women. *Pangabuh* refers to reproduction involving life/sexuality, stemming from root word *buh*: literally life, to live or being alive; figuratively, it also means to survive. *Pangita* comes from *kita*. In the contexts in which it is used, it implies a form of gain, as reward or profit. Thus, *pangita* signifies diverse aspects of production specifically in terms of work

Gender Issues in CBCRM

Environmental depletion and degradation especially harm women. Changing environmental and social conditions affect local fishery resources and activities that shape women's work and lives at Talangban. At the same time, changing circumstances may push women toward new avenues and opportunities. Most of their undertakings indicate deliberate efforts to contribute actively to their household's welfare. However, there are several factors impeding women's full participation in a sustainable development process. Among the key problems and its effects on women are:

- A degraded and depleted environmental resource breeds poverty, results in the further overexploitation of such resources and the marginalization of women. In the past when the rivers and bays were always accessible to all, women and men together fished along the shores using simpler technology, less effort and less time. Now that mangroves are gone, and fishponds occupy most of the fishing ground, women fish less and are confined to edible shell gathering or work more as traders on consignment of produce from the fishpond. Younger women, unable to proceed with higher education, leave the villages to work as domestic helpers and factory workers in cities and town centers. Men undertake most of the fishing activities with increasingly expensive technologies that sometimes require venturing out farther to sea.
- The culturally constructed gender division of labor restricts most women to reproductive work in the home and regards them as secondary or auxiliary economic producers outside the home. Men are generally considered the fishermen; indeed they seldom partake in child rearing or housekeeping. This gender-based division of labor results in the 'invisibility' of women's reproductive work. It implies a hierarchy of work and values whereby 'fishing for income' is more valuable than 'housework for the nurturing and well-being of the family.'
- This division of labor is reflected also in development work. Researchers tend to be blind to women's issues. Research methodologies treat men and women as respondents. Technology development focuses on capital intensive, expert-dependent projects. Organizing on production and environmental projects targets mostly the male head of the households. Training, access to technology and credit programs have mostly been channeled through the men, while women are usually organized around child welfare, health, nutrition and food processing projects. In mixed-gender organizations where the bulk of membership may be women, women are usually assigned to serve secondary roles like secretary or treasurer.
- Poverty and environmental issues complicate women's multiple responsibilities. Deforestation causes water wells to dry up, making housework more difficult and time consuming. Mangrove deforestation and fishpond construction result in salt water intrusion

and livelihood. In combination, as in '*gapangita it pangabuhian*', the terms denote active pursuit of ways and means by which to live; it suggests the connectedness between women's work as one aspect of their living. The connectedness of *pangabuhi* and *pangita* are key concepts and principles which we can learn from in setting the vision and strategies of CBCRM. From Mabunay, Ma. L. 1995. Gender relations in fishing households in Talangban. PhD Thesis. McGill University.

into water wells. Pollution of potable water sources poses serious health risks. When family members get sick, women act as caregivers who must painstakingly nurse them back to health while at the same time continuing to perform their regular work in and outside the home.

A Case of Gender-Responsive Development

The Fisherfolk Association of Talangban (KMT) was organized in July 1992 by the University of the Philippines in the Visayas. Recognizing the gender issues in the community, membership in the association involved 13 households, deliberately encouraging both husband and wife to represent their households. The majority of fishers in Talangban operate stationary gears along the river and engage in occasional wage work in the fishpond around the area. A few are small owner-cultivators with an average of one hectare rain-fed rice land.

A community organizer spent considerable time on informal discussions, individually and in small groups, evoking environmental and economic issues affecting the local residents. When the organizers decided to formally set up the KMT, they defined their objectives as follows: to uplift the community's standard of living by engaging in economic projects, to promote environmental awareness in the community towards conservation of the environment; and to support and collaborate in the intermunicipal coastal resource management program in Batan Bay. Members underwent training in social and gender analysis, community organizing, book keeping and tilapia cage culture.

The cage culture of sex-reversed hybrid tilapia (*nilotica*) was developed Dr. Lourdes Dureza of the UPV College of Fisheries. Her work emphasized participatory technology validation. The KMT members enthusiastically received the training in tilapia cage culture, because the new knowledge would provide them with an additional source of income. The KMT organized themselves for the hands-on training on cage culture, the feeding, monitoring and cage maintenance tasks. They also met at least monthly for organizational meetings, especially on financial and organizational management. Households took turns in managing their project. Men, women and children helped in the feeding, the sampling, the cleaning of cages, and eventually the harvest.

After three months, the tilapia were ready for harvest at 3 to 4 pcs. a kilo and sold at PHP 45 per kilo. Marketing is no problem because there is a good demand for the hybrid tilapia which tastes delicious and with a texture comparable to highly priced fish. The KMT decided to sell the produce entirely by themselves so that they can earn the PHP 5 mark-up for every kilo that usually goes to middlemen. Except for this financial benefit, they decided that the net income would be reinvested in production, until such a time as they have expended their production and gained enough profit to distribute individual dividends. Women mostly handled the financial record keeping.

After one year, or four cycles of production, the KMT estimated a profit of more than PHP 11,000. This is not enough to solve the economic and environmental problems of the community but it has helped them in the following ways: 1) They have a ready source of food for the family and the community during fishing lean times. Tilapia of reasonable size can be selectively scooped out any time for their use; 2) selling the tilapia at a mark-up provides additional income to women and their families; 3) the experience of collective action in managing a project has fostered camaraderie and unity, trained people in leadership, organizational and entrepreneurial skills, and 4) women are recognized as partners at work and at home. Men have started to share more in household chores.

At the moment, KMT members are expanding into hatchery production of tilapia fry. The tilapia cage stands as an example of a viable aquaculture technology that can be managed by a people's organization for the benefit of both men and women. It contributes to food security by

supplying the food needs of the local community as well as a profitable source of income. When further expanded and developed, it can also serve as a partial alternative to exploitative fishing activities in the river and bay.

This technology's introduction would not have been as successful without some complementary interventions, namely:

- gender-disaggregated baseline and women-specific studies conducted by participatory methods;
- community organizing and continuing community education on environmental, economic and gender issues;
- networking and advocacy with LGUs, NGOs and POs;
- application of appropriate, environment and women-friendly technology; and
- gender awareness, equal sharing of responsibilities and decision-making in the home, in production, and in organizational activities.

Problems Encountered

The KMT are constantly reminded that tilapia cage is not a solution to the problem *per se*. They have to work with other groups in protecting the river and conserving the marine resources in the bigger ecosystem, such as the Intermunicipal Coastal Resource Management Council (ICRMC) which is composed of local government unit officials, government agencies, NGOs and fisherfolk organizations.

Once, the KMT they petitioned against the construction of a fishpond dike obstructing a natural waterway in their vicinity. Despite their repeated follow-up with various government agencies, their petition at the time of this writing had not yet yielded satisfactory response. The ICRMC has been hindered by political factionalism among LGU leaders. Fisherfolk participation in the ICRMC is still relatively weak, and they have yet to consolidate their ranks across the various organizations around the bay.

Within each organization such as in the KMT, members must cope with the individualistic tendencies of some members, the occasional lack of enthusiasm among members in undertaking their share of tasks, and the complacency of other fisherfolk in the community in protecting the environment. Follow-up training in financial management is still needed in terms of improving both the system of reporting and of checks and balances. Continuing education sessions on organizational and social issues must accompany technology development.

While there have been gender sensitivity training sessions, other gender issues in the community should be probed and addressed, for instance domestic violence and reproductive health and rights. Women's health tends to be poor due to frequent childbearing, poor nutrition and multiple work burdens. Some women cannot easily decide whether to go out of the house to attend meetings, especially if outside the village, without their husbands' consent.

Conclusion

The KMT has a long way to go yet in terms of achieving sustainable, gender-sensitive, development. At least, they have taken the initial steps. This case study has shown that a CBCRM project intending to adopt a gender-balanced perspective must acknowledge the interdependence of men's and women's labor and the value of each form of labor. It must help women to gain control over their labor and their time, for example by receiving help from their husbands and families in child care and other domestic tasks, so that they can join meetings, organizations, and training sessions. Finally, empowerment for women must be undertaken together with men, so

that people empower themselves collectively, and undertake the joint action necessary for sustainable development.

SUSTAINABILITY OF COMMUNITY-BASED RESOURCE MANAGEMENT IN THE CENTRAL VISAYAS REGIONAL PROJECT-PHASE I (CVRP-I) SITES

May Elizabeth Segura-Ybañez¹

ABSTRACT

The Central Visayas Regional Project-Phase I (CVRP-I Rural) was the first foreign-funded project to support the Philippine Government's decentralization program. Implemented from mid-1984 to December 1992, the project addressed the problems of declining productivity and rural poverty caused by continuing degradation of the region's natural resources. By promoting administrative and fiscal reforms, CVRP supported the devolution of power to the region as well as participatory resource management by smallholders in critical watersheds of Central Visayas' four island provinces (Bohol, Cebu, Negros Oriental and Siquijor). This paper will focus on the nearshore fisheries component and discuss some general findings from the overall CVRP experience in terms of implementation philosophy and prospects for sustainability after project termination.

Introduction

The Central Visayas Regional Project-Phase I (Rural), with funding from the Government of the Philippines and The World Bank, developed community-based resource management as an approach to rural development whereby entire communities become active participants in effectively managing their physical, social and economic resources. As a strategy for rural development, CBRM is founded on the philosophy that people, particularly farmers, fishermen and forest occupants, are de facto managers of the natural resource base in critical watersheds and stewards of the environment in which they live. In keeping with the definition of sustainable development advanced by the Brundtland Commission in "Our Common Future"—development that meets the needs of today's generation without compromising the ability of future generations to meet their own needs—this orientation was central to the original concept for CVRP-I. The guidelines for the application of this concept, however, evolved over the course of the project because in the early 1980s, when the project started being implemented, there were no solid experiences elsewhere to serve as guidance. Today, CBRM is one of the most widely acknowledged strategies for rural development in the Philippines.

The Central Visayas Regional Project Office (CRVPO) implemented the CRVP between 1984 and 1992 through nine site management units (SMUs) located in critical watersheds around the Visayas region. Sites were selected on the basis of the relative poverty of the area, degree of degradation of the watershed, as well as the area's development potential. CVRP-I had watershed management components dealing with three ecological zones in a typical watershed of the region: social forestry, upland agriculture and nearshore fisheries. Its investment in infrastructure such as roads, bridges, trails and domestic water supply systems accounted for about 60% of the project budget. CVRP-I support service components offered institution-strengthening programs for regional line agencies (mainly for Departments of Agriculture, Environment and Natural Resources), for local government units (according to a provincialization scheme initiated by the region in 1988), and for communities through community organizing and mobilization. In

¹ Project Manager III for Technical Operations of Central Visayas Regional Projects Office from CY 1988 to March 1992; presently Manager of the Regional Center for Community-Based Resource Management, Cebu City.

addition, process components included training and manpower development, research and development, development communications and technical assistance.

Methods and Process: The Nearshore Fisheries Component

As with the CVRP-I Upland Agriculture and Social Forestry Components, strategies to achieve the objectives of the Nearshore Fisheries (NSF) Component consisted of the following: (1) various technology and resource management interventions or activities, (2) community organization efforts, (3) infrastructure development, (4) training and technical assistance, (5) institutional development, including provincialization, and (6) measures to enhance resource access. Five NSF project sites were established: the Ipil Watershed of Bohol (Talibon, Jetafe, Trinidad, Bien Unido, Carlos P. Garcia), the Bayawan watershed (Bayawan, Basay, Sta. Catalina) and Ayungon-Bindoy in Negros Oriental, southern Cebu (Ronda, Alcantara, Moalboal, Badian, Alegria, Malabuyoc), and one encompassing all the coastal municipalities of Siquijor.

The Aquafarming Development Foundation, Inc. reports that a total of 114 fisher associations had been organized in the project sites as of August 1992. These associations became the entry points for various interventions, including the guarding of fish sanctuaries against violators as well as information dissemination and training on fish conservation and management. From 1984 to 1991, 182 barangays participated in the various project activities, which all together benefited 8,086 families.

The NSF component initiated various resource conservation and income-generating activities. Of the seven interventions implemented, four were designed to conserve, rehabilitate and enhance fishery resources, namely the establishment of artificial reefs (initially made of bamboo, and eventually developing concrete and rubber-tire modules), fish attracting devices, mangrove reforestation and rehabilitation, and management of natural coral reefs including the establishment of fish sanctuaries and improved monitoring against illegal fishing. The pilot nature of the project allowed it, to a certain extent, to experiment with various nearshore conservation technologies under previously untried conditions.

Other interventions included mariculture and seafarming. Various kinds of shells and culture such as fish cages, miracle holes within mangrove stands, and seagrass culture (*Eucheuma* and *Caulerpa*) were tested using technology guides developed by the Consortium for Integrated Regional Research and Development. Complementary income-generating projects involved the dispersal and redispersal of 132 heads of livestock as well as the weaving of mats and baskets by women fisherfolk. Where the project supplied technical assistance and materials, such as the concrete to build fish sanctuary guardhouses, the community residents provided the labor.

To raise community awareness of environmental degradation and the need for effective management, project workers took fishers on visits to other sites to see other or newer technologies in practice, produced pamphlets on destructive fishing techniques and technoguides on mangrove reforestation and the like. They formed out-of-school children into theater groups to present information to the community in educational, entertaining ways. The project also developed resource access instruments such as the Mangrove Stewardship Contracts, composite law enforcement teams, and inter-institutional resource access committees to settle tenurial and access disputes. It also assisted in the formulation of municipal ordinances dealing with users' rights and fish sanctuaries. Project leaders engaged in conflict resolution activities; for example, when some local chief executives protected individuals who had been apprehended by barangay wardens for illegal fishing, or in the widely publicized case of an influential foreigner who began cutting protected mangrove stands to make way for his beach tourism development.

Physical accomplishments in the NSF project sites included the management of fish sanctuaries in 4,621 hectares of coral reef area, installation of 1,164 clusters of artificial reefs and 278 units of fish aggregating devices, reforestation of 1037 hectares of mangrove areas (not

including research trials in Banacon Island's mangrove stands), issuance of 1,490 Mangrove Stewardship Contracts, and introduction of mariculture in 90 hectares of farm sites.

According to an impact evaluation of community-based coastal resource management projects in the Philippines (Pomeroy et al, 1996), CVRP-I experience in the NSF sites reveals apparent success even in worst scenario cases, i.e., with some positive impacts despite partial or complete failure of a few physical project interventions in some of the study areas. At a minimum, fisher households and communities gained a sense of empowerment and increased knowledge as a result of the project. This was even evident in relatively less successful communities such as Tiguib, Ayungon and Malhiao, Badian. For instance, the same study noted that in Sta. Cruz, Ronda, none of the material interventions was sustained after project completion and yet, despite these project shortfalls, the fisher households claimed that CVRP-I fostered greater understanding and harmony in a community that had once seen strife, and made barangay residents more aware of environmental management and protection.

Implementation of Community-Based Resource Management

To more effectively pursue sustainable development of the pilot watersheds in Region VII, CVRP-I (Rural) in 1986 changed its emphasis from technology development to community organizing. The project's change agents were reoriented to community organizing principles, and a pool of community organizers was hired to assist the site resource management specialists. Indigenous grassroots groups had earlier acted as entry points for strategic planning exercises by the SMUs. Community organizations in the form of cooperatives, federations, associations and theater/research groups emerged and became partners in the attainment of the project's goals and objectives. Project staff facilitated leadership and human resource development training, exposure trips/cross visits and, most importantly, on-the-job experience for these targeted clientele.

A Provincialization Program was launched by the CVRP management in 1988 to insure that the government machinery would gain first-hand experience in supporting CBRM in some watersheds. Since 1984, the regional line agencies had been recipients of the project's Institution Strengthening (IS) initiatives in the form of capital investment, technical assistance, operating funds and management support. These agencies, notably, the Departments of Agriculture, Environment and Natural Resources, among others, even enjoyed provision for the hiring of additional staff. To complement this investment, and in line with the CVRP office's mandate for decentralized schemes, a separate investment with the local government units was made with capital infusion into provincial governments for both on-site investments and for replication areas. Provincial Resource Management Committees (PRMCs) were provided management and technical backstopping to establish the CBRM vision. Institutional capability building was pursued with the setting up of an organization with operational mechanisms to support the provincial resource management program.

In its implementation procedures, CVRP-I (Rural) attempted to nurture the CBRM process by focusing on two critical sets of actors: de facto resource managers, both as individuals and as organizations, and development change agents in the government machinery, whether based in regional line agencies, local government units or project staff. They are the key to providing local initiative, collective spirit, and the will to pursue their vision. Scrutiny of the CVRP-I experience reveals many varied opportunities that were accorded to individual farm/fishing households and communities since 1984. Facilitated by site-based project staff, including roving region-based technical assistance, the CVRP-I investment gave these targeted clientele the chance to gain experiential learning on resource management. Specifically, the processes that were facilitated at the community level included the following:

- analyzing prevailing location-specific conditions including constraints to development, resource potentials and opportunities for instituting changes, including the selection of criteria for a given set of actions;
- acknowledging the value of endemic biological species, indigenous technical knowledge, relevant information such as cause and effect relationships, and coping mechanisms used across generations;
- knowing their rights and privileges in society, getting acquainted with the government machinery, accepting their responsibilities and importance in sustainable development;
- developing technology or experimenting with new designs, ways and means to respond to identified needs—including planning, designing, innovating action, implementing the plan, evaluating and learning from results;
- sharing experiential learning or results with others using simple communication strategies so as to incite others to adapt, test results in their own circumstances, or add to the growing pool of knowledge;
- building linkages with groups and/or individuals to support their vision as contained in their own programs;
- organizing to become power brokers in their communities in the search for resources to support felt needs and common vision including the reallocation of scarce governmental resources or policy formulation in aid of equitable development.

These opportunities have been processed during strategic planning exercises, rapid rural appraisals, cross visits or exposure trips, script writing and theater presentations, barangay assemblies, and the meetings of various people's committees such as community nurseries, livestock committees, microwatershed development committees, and contract reforestation associations. Behind the physical indicators of success in the project are the unquantifiable processes such as these that make these technological and concrete outputs possible, for it can be stated that the project has endeavored to be process oriented and participatory in arriving at progress.

Sustainability of CBRM in the CVRP-I Project Sites

To gauge the sustainability of community-based resource management in the CVRP-I pilot sites after the termination of the project, two factors in the institution building process must be assessed: (1) the internal characteristics of the community-based organizations and key leaders among the de facto resource managers, and (2) the external environment of the government machinery which had been the vehicle established by the project to sustain CBRM in the post-CVRP stage.

By the end of CVRP-I in 1992, the de facto resource managers and most of the community organizations facilitated by the project had been enriched with knowledge and practical experience in resource management in their respective locations. Knowing that sustainability depends on mature organizations endowed with committed, constructive, technically and politically competent leadership, CVRP-I spent time honing the collective spirit of the community of de facto resource managers, opening the gate for individual growth and development to all. This means that a pool of leaders on resource management—rather than a limited few—has been nurtured over the years. CVRP strove to promote mechanisms for democratic selection of new leadership when the present leadership in some sites becomes ineffective, inefficient or unavailable, and to encourage staff spirit within the organizations to call for and initiate change when the need arises. Several cases during the last few years of the project have shown this to be happening with or without project intervention! Furthermore, creating several specialized committees spread the risk as well as the skills of development. This

means, then, that for community-based development to occur, there is a need to interact with other skilled groups in the community to bring about systematic and holistic development. No single group has exclusive knowledge or skills in development. These groups each have patterns of decision making, communications and control that enable them to carry on their work in a relatively efficient and creative fashion.

Next to leadership, a second important characteristic of a mature and viable organization capable of sustaining CBRM is a pervading sense of purpose and commitment. This characteristic, while largely present at this phase of CVRP-I, will be tested after CVRP-I pulls out. Provided that a democratic atmosphere will be observed and nurtured within the community and in the surrounding communities, there is no evidence as of yet that clientele loyalty to the CBRM process will wane. Should an oppressive political and policy environment ever arise, it is logical to expect that the greatest resistance will come from within the CVRP-I sites where communities have had a taste of the fruits of CBRM, in which their dignity, rights, and will were allowed to prevail. Their journey to success was often not smooth during the project—indeed, many times the clientele felt several forces attempt to waylay their plans and visions. But first-hand experience has emboldened the target clientele to face the obstacles. Because the project did not spoonfeed the clientele, because they had to counterpart the project's development efforts with their own resources, and because these beneficiaries have tasted success, it is rational to expect these clientele to be able to respond to changes more responsibly and effectively than other groups who may never have had such exposure. For example, the fisher households in Calagalag, Ayungon noted that because of their involvement from the beginning in the implementation of the project sub-objectives, they better understood the difficulties involved in the introduction of new technologies. In addition, the 1996 impact study by Pomeroy et al noted the larger increase in their ability to participate in and influence community affairs and in their self-esteem as a result of their role as an organization in community organizing, implementation of project improvements, associated surveillance and enforcement activities.²

Programs which meaningfully reflect the organization's commitment and purpose on resource management is the third internal characteristic towards sustainability. Groups that have become structurally more formal, e.g., associations, cooperatives and federations, stand a greater chance of sustaining CBRM after CVRP-I. Each CVRP site has at least one association, cooperative and federation with a concrete program for development. Situated in the premier barangays, these groups can sustain CBRM in their respective areas. The Asian Institute of Journalism has written several success stories of such groups, while the World Bank has included some of these sites in its documentary film "Investing in People." However, most other groups still need guidance and leadership to translate their vision into a concrete program, starting with a project in the pipeline that is their own from inception to evaluation.

Funding constitutes a critical obstacle to the sustainability of resource management efforts. In many project sites, people's organizations have insufficient resources to continue existing programs and start new ones. In some places, better prepared groups still nurse a collective spirit, e.g. Zaragosa Island in Badian and Calagalag in Ayungon, Sto. Niño in Talibon, Palanas in Ronda and Enrique Villanueva in Siquijor. For far-flung areas like Tiguig in Ayungon, Malhiao in Badian, and Sta. Cruz in Ronda, networking with established groups is wanting. In fact, this one precondition for co-management, i.e., regional scope of operations or affiliation to a national/regional federation, is often the missing link for CVRP-I NSF communities. Resources such as funds are very restricting despite the revolving funds initiated in 1988-89, if one is to remember that the project clientele are subsistence farmers and fishermen, and cases of savings resulting may be too few and household based. There are cases, though, when project-facilitated

² Robert S. Pomeroy, Richard B. Pollnac, Canesio D. Predo and Brenda M. Katon. "Impact Evaluation of Community-Based Coastal Resource Management Projects in the Philippines." Research Report No. 3, ICLARM/University of Rhode Island, June 1996.

external assistance was enjoyed by some organizations (e.g., KANIA of Aguing, Bohol through the Canadian International Development Agency).

While most of the CVRP-initiated organizations have the legal authority to initiate their programs, logistic and financial support for these programs at this point in time are needed from external sources as well. Linkages with other groups to insure support for their programs and projects are needed. Enabling linkages with groups who control access to resources have been instigated by the project, such as through the Regional Resource Access Committee (RRAC) of the RDC. However, whether this governmental machinery will prioritize the needs of the CVRP-I target clientele remains to be seen. Functional linkages with groups who have use of the people's organization's services/outputs have been initiated for some of the clientele. Examples of these are the barangay "barefoot technicians" for training, farmer-researchers for farming systems research, and some cooperatives for their produce. But those organizations with services such as contract reforestation and nurserying and sea-farming produce will be competing in the open market with advantaged groups. Their survival and growth will depend on how competitive they will be in the market.

The Role of Government in CBRM

Development is a dynamic process. Sustainable development can materialize through community-based resource management, provided that government promotes not only the harmony among human beings but also between humanity and nature. This means that the policy and political environment, especially with reference to the CVRP-I sites, must sustain a favorable condition for the local initiative created earlier by the project. During the project's existence, how did the government provide for this atmosphere?

From the policy-makers in the CVRP Board to the project management in both the regional office and site management units, the project maintained a philosophy of decentralization or devolution of power, and diversity of style and variety of choices that recognized inherent people power and emphasized the primacy of what the people need, want and can achieve. They were people-centered, especially for the resource-poor, systems-oriented, resource-based with bias for community processes. This philosophy grew over the years of project implementation, and the style resulting from it spread in varying degrees across levels of project implementors. A case in point is the Regional Development Council in Central Visayas which, through the CVRP Office Projects Board, exercised a democratic process of allocating scarce resources, formulating policies and deciding on issues in support of action in the field.

Project implementors, particularly the project staff, acknowledged their roles as change agents of development. As such, they are the colleagues or partners of the de facto managers as they discuss, experiment, implement, analyze and diffuse their knowledge of resource management. This radical shift in orientation from being the main actors of development came about early in the project life. There had been more difficulty, however, in changing the orientation among the staff of regional line agencies and some local government units who had been accustomed to being the main actors in other government projects. The major difficulties also arose because of the more laborious nature of being process oriented rather than technology-output oriented. In the latter case, for instance, the government staff can just disperse heads of animals to arrive at their output; but CBRM requires that the process of setting criteria for dispersal be established by a community committee, then the selection process is undertaken by the committee with the government personnel rendering technical assistance in evaluating the potential recipients. Such efforts can be exhausting, and may take place beyond regular office hours, since it is the schedule of the farmers in the committee that must take precedence. In this respect, the CVRP project personnel who are site deployed and live in the target barangays have an advantage over regular government personnel. The traditional practice of short farm visits akin to project scanning cannot suffice for effective CBRM requirements. However, the Cebu

provincial government installed after the May 1992 elections have regressed to this traditional form of project service.

To create a favorable policy condition with respect to tenurial security, CVRP established Resource Access Committees at both regional and provincial levels to discuss and resolve resource access cases in the CVRP-I sites. This committee has become a member of the Regional Development Council, and it is hoped that they will not only continue to resolve access cases, but that they will also formulate policies in aid of legislation—especially users' rights of marine resources that have remained ambiguous to date. Stewardship contracts and contracts for reforestation extend beyond project life. The DENR, though, has favorable national programs that can see these contracts through. And DA regional staff are now more conscious in implementing laws against different forms of illegal fishing. During the project life, project staff acted as buffers against power plays in the tenurial cases, including even illegal logging activities.

Capital investments for the basic needs of the CVRP-I communities, particularly physical infrastructure and educational facilities, are largely in place. Maintenance of these outlays by the government will be needed to ensure long-term benefits for the localities and beneficiaries. The track record of government with respect to maintenance of capital investments has not been encouraging, though. It is hoped that the provisions of the Local Government Code will be sufficient to capacitate the local government machinery to perform this sustaining function.

The project infused a significant investment of money and technology into the government bureaucracy to capacitate it to provide services and inputs to support the resource management programs. Electronic data processing for speedy monitoring, evaluation and reaction to community programs have been set up side by side with state-of-the-art transportation and communication facilities for efficient delivery of goods and services. Government personnel had been beneficiaries of sufficient training programs based on the needs to support CBRM. In the latter, the government personnel had been exposed to alternatives and options which, in turn, can give the farmers and fishermen a wider repertoire of farming systems. A system for inter-agency cooperation and resource sharing has been initiated by the project. Effective multidisciplinary team effort had been experienced during project implementation. Capacitation, then, has been done. Whether the existing government machinery in both the local government units and regional line agencies will have the *will* to continue such service can only be answered by the government unit concerned.

Indicators of continuity or effectiveness in carrying out this service has changed dramatically after changes of political leadership. In the political setting, power holders have changed, and while at one instance, a social system may have been established to provide solutions to tensions that may arise in the implementation of CBRM, gains may be dislodged by an inflexible administrative system that has no capacity for self correction. In such cases, project management simply awaited more favorable conditions while keeping the doors wide for a win-win situation. Should such a stand-off occur post-CVRP, there might be no venue for negotiations where suitable solutions can be reached. Thus, a continued system to secure effective citizen participation in resource management rests on the *will* of existing political leadership.

The CVRP-I experience indicates that sustainability of community-based resource management will bear out in the CVRP-I sites where the community organizing process resulted in mature and viable people's organizations duly supported by a capable government unit with the will to sustain the CBRM approach to development. In the worst scenario, where communities remained recipients of change rather than the implementors of change, and where the prevailing government bureaucracy did not support CBRM, these watersheds may still enjoy the results of some technological interventions in the short term. However, in the long term, benefits may come to a standstill unless external interventions, either by governmental or non-governmental actors, correct the trend. For several watershed communities in the CVRP-I pilot sites, persistent

problems will turn into challenges that can be tackled and overcome because the people now have the skills and the spirit either to persist, resist or insist on changes.

Conclusion

There are several reasons to view CVRP-I as a success. First of all, it was a radical project in its scope and sensitivity to the participation of communities in providing for their own welfare for generations to come. Second, in several project sites, the DENR Coastal Environment Project has used CVRP-I pilot sites as models for learning about CBRM, and in so doing has ensured for these communities a good policy and administrative environment in which to sustain their activities. Some non-government initiatives, such as those led by CEMRINO and the German Development Service, USAID-funded initiatives, and others have also tapped CVRP-I communities for lessons to apply in their own interventions under different co-management schemes.

In the CVRP nearshore fisheries sites in particular, according to a follow-up report: "The CVRP-I has laid the groundwork for a community-based resource management regime in the region. Fishermen's associations have been organized and enlightened on the value of fish conservation and management. The positive contribution of CVRP-I in increasing catch and incomes of the poor fishing households warrant continued efforts in its resource management schemes into the future." The report goes on to recommend the development of further legal instruments to provide "a policy framework and define responsibilities for fishing community organizations, governmental institutions, non-governmental organizations and regional political units under a joint management arrangement" and to "guarantee exclusion in access to the project's gains through a well-defined system of property rights for the cooperators and a system of payments by the non-cooperators who also benefit from the project activities."³

More generally, the context of CVRP-I initiatives—working with resource poor, marginal and subsistence farmers, fishermen and forest occupants in the most degraded resource base in the region—makes it all the more inspirational. Where people had given up hope for the future, and the prevailing atmosphere was distrust for government programs and personnel in the early stages of project implementation, it was difficult but rewarding to provide opportunities for these marginal groups to painstakingly reflect on their conditions, and then to see them dare to plan and experiment with untested technologies, and finally to take time and effort to analyze and share their learning! The effects of renewed dignity and optimism, and the strengthening of capacities among these subsistence groups to manage their scarce resources pervades to this day in the project sites, especially among those in the premier barangays. These results alone suffice to justify the efforts exerted by the project.

³ Linda M. Peñalba, Marian S. delos Angeles, and Herminia A. Francisco. *Impact Evaluation of the Central Visayas Regional Project Phase I (CVRP I)*. Discussion Paper Series No. 94-22, Philippine Institute for Development Studies, Dec. 1994.

Nong Pediong Padilla, Calituban Island, Bohol

The first seminar initiated by CVRP in Calituban was on the planting of mangroves on the island. The second part of the seminar was a visit to Apo Island, which has a fish sanctuary. I observed that the sanctuary really improved the living standards of the local people and brought benefits to the fisherfolk. When I went home after the seminar, I explained to the barangay captain and members of the council what I had seen. I was very thankful they listened to me, and they gave importance to my learning. At that moment, because it was a regular assembly session, I proposed a resolution regarding the establishment of a fish sanctuary in Calituban Island. Fortunately, the council were agreeable and they approved the resolution on December 22, 1988.

We did not take immediate action, since we were dealing with politicians, and we had to wait to see who would be newly elected. I was one of those selected because people see that I am hardworking. In May, 1989, we created a law that any fisherman who enters the fish sanctuary will pay a fine and face administrative prosecution. The fines that are collected are set aside by the barangay treasurer for use in purchasing bamboo and rope for markers, or for buying batteries for flashlights to monitor the fish sanctuary.

Before the sanctuary, our fish catch was very limited. After the sanctuary was established, no fishermen from the island entered the area, since they understood the concept. There was only one instance when somebody threw a net in, but he was not from the island, and did not know there was a sanctuary. He was forgiven, but the offense was recorded by the barangay secretary. The violator also proposed that he give his catch to the barangay as a donation, so that he would not be sued in court. We sold the fish in Cebu. Fortunately, we got a very good price, and the income was deposited with the barangay treasurer so that if there are things needed by the association—such as markers, ropes, batteries, etc.—there will be money to purchase them. Nobody was against this process, because everyone was after the good of the coastal resources.

So even when CVRP terminated, we still protected our sanctuary in Calituban. We are also very thankful to CVRP for initiating the project in our area.

Calixto Yao, Provincial Environment and Natural Resources Office (PENRO), Siquijor

I would like to mention a few examples from Tulapos, where a fish sanctuary is run by a real community-based fisher's organization under the CVRP coastal resource management program. The fish sanctuary was established some time in 1984 through the initiative of the CVRP-Siquijor with the Tulapos United Fishermen's Association (TUFA). This was after a public hearing was held, attended by the mayor and other officials and of course the community. The sanctuary area is located about 500 meters south of the municipal hall of Enrique Villanueva. This is the eastern side of the island, consisting of 13 hectares, fronting a beautiful beach which has good potential as a beach resort. It is framed by a mangrove stand consisting of sonneratia, pagatpat, and some bakwan. The project was assisted by several line agencies and universities. Silliman University, for example, helped seed the area with giant clams, the tridacna. The LGU and the PNP also supported the project by offering protection. The DA provided used tires to establish artificial reefs, while the DENR coordinated the mangrove establishment effort.

The mangrove establishment program lasted from 1985-1990, and right afterward the area teemed with fish. But then poaching started. Fortunately the CVRP was able to provide the fishers' association with a pumpboat that they can use to apprehend violators. There were times that they had to resort to ingenuity, for example, using fire crackers to bluff poachers at night. The poachers believed that the association was using real guns, so they scampered away.

Then, in 1992, when the Hon. Rhett Pelaez visited the area, he saw how during the night time and rainy seasons, the fishers' association and the PNP wardens have a problem in taking cover. So the presidential assistant provided a little amount of money for the construction of the guard house right in front of the sanctuary. In 1994, the DENR established the Coastal Environment Program (CEP), which is the baby project of our former DENR secretary, Angel Alcala. The association became a beneficiary of some employment contracts under the DENR through the CEP, for example, planting mangroves and building infrastructure.

We didn't know that what we were doing was already co-management. For example, we used an old building from another, discontinued project nearby, and the association—many of whose members are carpenters—constructed a tree house atop a branch of the big pagatpat tree, about 100 meters from the shoreline. This is now becoming one of the main attractions in the area, because even tourists and local residents are coming to see the tree house.

Then the DENR bought some bamboo for the fishers' association to construct a bamboo fish trap to be used on agreed sharing arrangements, which means that whenever they catch fish, they put some aside to feed our visitors. We are now constructing a multi-purpose building with attic rooms, which will later be used for small group training. This is again an opportunity for the association to manage and cater food services.

Cesar Suminguit, Secretary of the Tulapos United Fishermen's Association (TUFA), Siquijor.

In 1984, CVRP was implemented in Enrique Villanueva, Siquijor. The CVRP staff conducted a seminar on the management of coastal resources. We, the fishermen of Tulapos, were organized into an association called the TUFA. Our association accepted a contract with CVRP for the construction of concrete artificial reefs, with 25 clusters, each cluster comprised of 32 modules. The DA also told us to make artificial reefs out of used tires, with 3 clusters. Most of the reefs we constructed are made out of bamboo. The bamboo reefs easily attract fish, but they also easily rot. The TUFA also entered into contract for the planting of mangroves in two contiguous barangays.

In 1986 the CVRP recommended that we establish a fish sanctuary, so we conducted a public hearing inviting the municipal mayor and the public as well as people from different government agencies. We immediately coordinated with the municipal mayor on the use of illegal fishing devices, and we recommended that they be abolished, especially the use of *sahid*, because it is a method of fishing that destroys coral reefs and washes out the natural habitat and food of the fish. We always explained all these things to people in the community so that they will understand that this is the way to increase the number of fish. The DENR is recommending to its central office that Tulapos and three other contiguous barangays will be made into a protected seascape.

Rogelio Salindo, President of the Tulapos United Fishermen's Association (also elected "Best Fisherman for 1989), Siquijor.

I will start at the time that Mr. Pelaez and Mr. Jun Bojos visited our area and asked us what problems we had encountered on our fish sanctuary project. We told them that our first problem is the need for a guard house, because we need shade in times when we guard the sanctuary. In the early days of our sanctuary, we would just lie down in the sand. So Mr. Pelaez called the CVRP manager, Mr. Ernest delos Angeles, and told him that a guard house should be built for us. The second thing we asked for was law enforcement. We need enforcers to stay with us in guarding the sanctuary. He immediately called the provincial commander to give us two CAFGUs (armed civilian law enforcement support) every day together with a policeman.

Moreover, we did not expect Director Alcala's Coastal Environment Program (CEP) to reach our barangay. But our barangay was chosen as the model site in the province of Siquijor. It is our great pride that in the whole province of Siquijor, our barangay was made the first model site, because of our project on which we worked very hard. What we did first was to plant *bakhaw* in all the vacant lots of the barangay and neighboring barangays. Second, we constructed a building—a tree house. Third, the multi-purpose building. Fourth, we made a *bubo* (fish pot) so that whenever we have visitors, we just spread this where the visitors can eat. Fifth, our association established a small store.

There are so many tourists and other visitors from Central Office or Region VII. We are also planning to invite Mr. Bojos again so that he can also witness what TUFA has accomplished. We he visited us before, he asked us whether our association will survive independently even when CVRP terminates. I assured him that I will do everything I can to help the project survive forever and leave something for our children so that they will not be too hard up in the future. That's why I and the other fishermen and our families are all united in improving our baranagay. Now, when somebody visits our fish sanctuary, based on what they see, we no longer hear bad comments but only good ones. Even Governor Ben Aquino said that our fish sanctuary is the second best one based on a survey conducted throughout Region VII. Illegal fishers, they all have penalties. The last one we caught was from Santander; he paid a very big amount because he used a compressor. We also confiscated the fish that they caught. We did not forgive them. We are really protecting the project for the future of our children.

FISHERMEN AS RESEARCHERS IN THE CENTRAL VISAYAS REGIONAL PROJECT-I

Pamela Edo-Sullano¹ and Ponciana Cruda²

CVRP was actually a pilot project on the decentralization of power but is founded on the principles of CBRM and, specifically, on watershed management with the following objectives: resource management, decentralization and devolution. CVRP-I covered critical watersheds in the four provinces of Central Visayas: Cebu, Bohol, Negros Oriental and Siquijor. CVRP as a project was composed of two components, namely: watershed management and support services. Research formed part of the support services component of CVRP-I. It was supposed to develop farming systems technologies and, at the same time, to reinforce local capability to conduct such research with the participation of farmers or fishermen, something that was not very common in the early 1980s.

When CVRP started in 1984, Central Visayas was a part of Region VIII's (Eastern Visayas) research consortium, because Central Visayas did not have a very strong agricultural college of its own. We first formed a task force to develop a research consortium for Central Visayas through CVRP. Later, it became an inter-agency committee with about 15 member institutions, technical line agencies, some private institutions and a few honorary members. The consortium had its own purpose and objectives, because its formation as a group was only facilitated by CVRP. Through an iterative process, we decided to use Rapid Rural Appraisal (RRA) as our framework for CBRM research, and embarked with farmers and fishers on an experiment of different methodologies.

We wanted to create a facility that would enhance community participation and at the same time directly link farmers and fishers conducting research to a formal organization. This facility became a series of Research Core Groups (RCGs) composed of researchers and extension workers from DA, DENR and CVRP who advised farmers and fishers at our "satellite stations" in conducting experiments and verification trials at participating CVRP sites. The coastal part of research—involving Tanghaligue and Talibon in Bohol along with Enrique Villanueva and Tulapos in Siquijor—came much later; we started first with social forestry in four upland sites. We wanted to first to demonstrate a process that was necessary in order for farmers and fishermen to be involved from the very start of conceptualizing a research project, a research agenda and then in the actual experimentation.

We provided materials and training so that the farmers and fishers had what they needed in order to perform experiments. It was an ambitious dream of having this core group that was supposed to think about the research needs of farmers and fishers. We were concerned about sustainability, because if we hire our own researchers from the project, and the project ends, then our research ends with it. So we made a core group whose members came from DA and DENR, two agencies with research funds coming from the central government. This core group was trained and given all they needed to think, write, go to the field, talk to the farmers and fishermen and organize them.

The RRA was usually introduced during a barangay assembly, in which the residents are informed that a research core group is coming from CVRP-I to do rapid rural appraisal. Sets of RRA teams throughout the provinces would walk around the site and look, for instance, where their water supply was. At the same time, inter-agency teams would be gathering secondary data from different offices in the region, province, municipality and barangay concerned. Primary data

¹ Supervising Science Research Specialist, CVRP, Cebu City.

² Agriculture Technologist, Municipality of Talibon, Bohol.

gathering involved visiting the houses of farmers or fishers. It was a very tedious, fearful process and there were times when researchers were bitten by dogs or branded as NPAs (New People's Army). After this, the team was supposed to stay at the site for a week or so to work on the analysis of RRA results and prepare it for validation, a process that usually took the form of a barangay assembly attended also by the mayor and other LGU officials. The presentation typically consisted of the barangay profile, maps, transects and the list of problems seen by the visiting team but agreed upon by the barangay residents. The important part in the validation process was actually the vision setting, which involved asking local people to draw or write how they want the community to be in five or ten years so they get to analyze why they don't have this, why they want to have this, and so on.

Then, the local group at each barangay, together with the RCG and the farmers/fishers, select their own sites in which to do the experimentation. For coastal resource management, we held a field trial in Tanghaligue on the barnacle infestation on mangroves. In Enrique Villanueva, we experimented on *Eucheuma*. Farmers and fishers were actually doing the research with their own methods, supported by the RCG and field researchers. The methodology must be flexible to what the researchers want and need, and it must be very simple so they can understand it at once.

The farmer and fisher researchers in the satellite stations are also invited to larger forums, like regional reviews, where they may ask questions and give recommendations and suggestions. They are equipped with technologies that can be tried at their own sites, reference materials, and opportunities for attending seminars, conferences and other training for their own development. The farmer and fisher researchers then do their own evaluation, whereby they share their results with the barangay council and with other people in the community.

Some significant constraints hindered the process. For one, a consortium is actually just a formation of different agencies with no legal personality, and a commitment only to their own activities. Two, although the junior staff in any line agency would like to do or understand participatory research, sometimes the management itself or an agency or organization will be very hard to convince that participatory research is really possible and worthwhile. Finally, we did not have full-time RCG members. They were merely detailed from various line agencies, so every time their agency had some tasks for them, they got pulled out. In fact, because of these constraints, the research endeavor was not a very successful process. However, the consortium has stayed and received recognition as the research consortium for Central Visayas.

We also learned some lessons. One is the value of system-wide versus commodity-based analysis, meaning that we should not only look at problems in fisheries, but remember that many fishermen are also farmers who have problems on agricultural crops. The second lesson is on community participation in situation analysis, planning and implementation. By our own experience, it was very meaningful for us to have worked with people at the lowest economic levels—farmers and fishermen—and talk to them a little about technology development and participatory research. Lastly, we learned to appreciate simple technologies versus highly technical ones. Understandably, farmers and fishers want to learn about and do simple things. If you make things too complicated, they will just shy away from research.

In conclusion, research in CBRM should: 1) transform data into information useful to farmers/fishers; 2) generate alternative systems, options and solutions to current problems, and 3) involve the community at all stages of technology development or research from the planning to appraisal to actual experimentation.

Nene Guyo, fisher from the barangay of Tanghaligue, Talibo, Bohol.

Our research activity started on August 1989 when the CVRP-I, through the Research Core Group and their assistants, conducted a rapid rural appraisal. At the start, we were very happy because we, the fisherfolk, were given importance. They got us involved in getting information and they listened to our experiences and problems during their stay with us in our barangay. When they made the RRA, the most encouraging part of it was the validation and vision setting. Through this activity, the fishermen were able to realize the situation of the barangay, its various problems and what we have done about them. The researchers also heard our ideas on how we as fisherfolk can help the government, and what we can do in cooperation with them and other line agencies.

In this gathering, we illustrated our visions for the future, our families and our barangay. The fisherfolk of barangay Tanghaligue were united in identifying our problems and which ones should be addressed first. There were so many problems raised, but we decided first to find a way to stop the barnacles that attack our mangroves. Based on this, research on how to control barnacles was conceptualized. The CVRP-I and the RCG assisted us in preparing the research proposal, since we don't have the technical know-how yet. They also taught us the different methods tried by DENR in the control of barnacles in the mangroves: the use of malolexide to kill the barnacles, placing sacks around the mangroves, and scraping the affected mangroves with a knife. To compare results, some other barnacles were left alone. When the fisherfolk discussed the different methods, we decided that we would not use chemical poisons even if this proved to be the most effective method, because we don't want to kill the shellfish and fishes, since we rely on them for our daily consumption. We decided to try another method, namely placing coconut fronds around the mangroves. This is more economical than sacks, because the fronds can be collected locally, while the sacks cost PHP 5 each. Through this experiment, the fisherfolk were able to see for themselves which methods were most effective.

As cooperators, we also encountered problems in conducting the research. We did not get clear results because the duration of our study was supposed to be five years. However, when CVRP-I terminated, our research study stopped because we didn't have financial support. In addition to this, we lacked technical know-how. Still, we learned from this activity that even the poorest of the poor can contribute to research. We can also be scientific persons and can help in solving the problems of our own barangay.

Summary and Conclusion

Drawing on the articles and oral presentations from the workshop, we can summarize issues related to the successes, problems, and questions for the future of community-based coastal resources management and co-management in the Visayas.

Research, Education, and Training

Research is an essential background to any project intervention. It provides the baseline data on which needs can be assessed and progress gauged. Although preliminary and concomitant research is normally carried out by a university or NGO staff, community residents should be drawn into the process at the earliest stages (Edo-Sullano/Cruda; Calumpang). Based on their past experiences, in some cases as virtual "guinea pigs", many communities are understandably wary of researchers (Luchavez). Involving the community at the beginning, and, if possible, training them to participate in the research and data gathering itself can be extremely useful in many ways (Ablong/Waltemath; Lopez-Rodriguez). It can build a relationship of trust between the project team and the community in which it becomes clear that both groups are in a position to help each other, and that the partnership therefore can have mutual benefits. It is a good opportunity to educate the community about their natural resources, about the functioning of ecosystems, and about various technologies. By helping to test the technologies, communities can see for themselves which ones are most suitable to their particular needs and environment. For example, one research activity in Bohol had the residents experimenting with different methods of preventing barnacle growth on mangroves (Guyo). In this exercise, they not only became acquainted with different methods, but were able to choose which one was best for them.

Some questions remain as to the best way to integrate different disciplines in research that are often going on simultaneously: how to blend the process and results of social versus biological research to mutually benefit and complement each other. Similarly, does research happen for its own sake, or is it a fundamental component of an overall program of project formulation and community strengthening? Several workshop participants pointed out that research should always be documented, and published whenever possible, so that lessons can be transferred to other people and places for broader benefit.

Training is absolutely indispensable in building and sustaining the momentum of community-based resource management (Calumpang). In order to undo the effects of generations of environmentally destructive practices, alter age-old habits, or provide sufficiently clear and viable alternatives to traditional ways of exploiting resources, community members must learn about technologies and techniques, and about the importance of managing their resources sustainably. Training as much as possible should be hands-on, so that people can begin immediately to see practical applications of what they learn. One training method that has proven especially effective is the opportunity for

community members from one area to visit another community where certain steps have already been taken, such as the establishment of a marine sanctuary. This way, the visitors can see for themselves how the intervention came about, how it works, and what are some of the results. Many of the case studies highlighted the value of such visits in raising the enthusiasm and commitment level of community residents to replicate similar initiatives in their home areas (Luchavez; Baritua/Cusi; Segura-Ybañez).

To reduce a community's reliance on outside experts in marine biology and related technologies, community education and training efforts must raise the knowledge level of local leaders and educators on technical matters. Building cooperative research partnerships with NGOs and universities can be an important step toward technical self-reliance (Ablong/Waltemath; Agbayani/Homicillada).

Many of the case studies point out that the sustainability of a community's commitment to resource management hinges directly on the quality of its leadership, whether at the level of the people's organization, barangay council, or municipal or provincial officers (Segura-Ybañez; Baritua/Cusi). Therefore, any training and education efforts must strive to build and spread around leadership skills so that an organization or a community's CBCRM initiatives do not rely on a single dynamic individual.

Any data gathering, educational initiatives or information dissemination campaigns should rest on the notion that community members themselves not only are the most directly dependent upon, and therefore the most natural caretakers of, their physical environment, they are also the most familiar with the terrain, with seasonal variations, and with other problems and potentials of their immediate vicinity. Furthermore, they know their own needs, constraints, operating styles and priorities (Calumpong; Segura-Ybañez). It bears repeating until it becomes firmly ingrained that local residents should be consulted and made active participants early on, and at every step along the way in project planning, implementation, and follow through.

Partnership between Local and External Actors and Agencies

Partnership between an external agency—a donor or other NGO—and a local community-based organization such as a fishers' association, is a crucial starting point for effective project implementation. But this partnership must exhibit certain characteristics. It must grow out of a mutual sense of commitment (i.e., it should not be a hand-out situation, but a relationship in which each party contributes something that the other needs: whether financing, technical expertise, labor, or knowledge of indigenous practices or terrain, etc.), and there must be thorough and open communication all along the way (Segura-Ybañez). Each partner must be clear about each other's goals, purposes, operating style, and—most importantly—limitations. Too easily, especially when organizations with different disciplinary backgrounds attempt to work together, expectations can grow or misunderstandings arise.

There must also be adequate coordination. This is particularly important when several partners are involved, or when more than one project is taking place in a single area (Gutierrez et al). Poor coordination can lead to confusion, unnecessary duplication of efforts, or even working at cross-purposes or in conflict (Yap). Frequently, open and ongoing communication suffice to avert these hazards or mitigate their effects. The

example of PROCESS and SEAFDEC in Malalison illustrate how early tensions can be eased through a concerted effort to communicate and coordinate more effectively (Agbayani/Homicillada). At the outset, partners should agree on a set of operating principles and clearly outline their goals, assumptions and constraints. Another aspect of partnership (or co-management) is the need to see it as having several equally important dimensions: mutual trust and shared responsibility between external and local parties, between governmental and non-governmental institutions, even between men and women within a community. As expressed in the Banica River project case study, true partnership does not come about by signing a contract, but is earned, and grows through a process of seeking mutual understanding and building trust (Bissdorf).

Then there is the problem of scale and scope. While current wisdom indicates that taking a holistic approach to resource management is the way to go, there are some complications and weaknesses inherent in this. For instance, even if the primary concern is coastal resource management, many of the problems aggravating coastal and marine ecosystem degradation originate in the upland areas: deforestation, pollution, rapid population growth to name a few (Magpayo; Calumpong). A resource management program should address those issues and seek to alleviate them. However, this approach significantly broadens the scope of a project, and draws in communities with disparate interests, knowledge, income bases, and orientations. It makes any interventions several degrees more complex, by, for example, introducing more coordination concerns. How can the legitimate goal of tackling a whole problem be reconciled with manageability, given divergent local interests as well as limited time, funding, and staff capabilities?

Community Organizing

That community residents have a keen interest in the health of natural resources in their immediate vicinity goes without saying; therefore, their role as primary stakeholders in any resource management initiative cannot be overlooked (Magpayo; Gutierrez et al). In many cases, though, effective results can best be assured by mobilizing them through awareness raising and a set of focused conservation activities. Community organizing must begin early in the project implementation (Cimagala). It should focus on creating or building the capacity of existing people's organizations that can rally community support for the project and then take on responsibility after the external partner has withdrawn. However, the community organizing work should not focus so specifically on the partner people's organization that it forgets that the benefits should accrue to the community at large. One step in this direction could be, as much as possible, to enlist community residents to conduct the organizing activities. They are already attuned to the community's characteristics, needs, and problems, and are already trusted and accepted by the community. Organizing work should also involve a strong component of education.

Gender came up repeatedly as a point of concern in CBCRM. In the past, women and their contributions to community livelihood and resource management have been overlooked. But they participate actively in the life of the community, even if not in the most prominent decision-making or wage-earning capacities. Therefore, any intervention should examine carefully the role of women in a community, and solicit their

participation in all stages of project implementation, from planning to execution to evaluation of results. Women can be involved in data gathering, in alternative livelihood projects, in creating and managing associations, in disseminating information, and other activities (Gutierrez et al). In other words, when we think of coastal resource management, we should not immediately think only of the fishers themselves, who are most often men, but also the roles women do and might play. Their active involvement in all phases of project design and implementation should not be rhetoric, but a fundamental part in practice (Lopez-Rodriguez; Agbayani/Homicillada).

Political and Legal Environment

The role of local government remains central to CBCRM and co-management. Because the government issues the ordinances and carries the authority for enforcing legal regulations on resource management, and because government offices are often critical suppliers of funding or technical expertise, community-based coastal resource management must involve the local government units (Gutierrez et al; Calumpong; Agbayani/Homicillada).

This can be difficult for several reasons: one, most political offices are temporary. The periodic turnover in personnel can mean that while one official supported a project or activity or objective, his or her successor might not, thus undoing the efforts of the previous administration. An example from the CVRP experience bears this out: one administration helped install artificial reefs of concrete, but when the next came into office, the cement went instead toward the building of basketball courts (Cited during open workshop discussion). Similarly, politicians may neglect some communities, either because they are too remote to bother with, or do not carry the same political clout as another area (Cimagala). Two, some politicians have corrupt tendencies or special relationships with moneyed interests, and therefore may hinder effective law enforcement either by failing to prosecute violators or by issuing permits to exempt certain parties from compliance. This can frustrate a community's efforts to monitor and protect its resources, and residents may lose interest in doing their own part (Yap). Three, politicians may be suspicious of outside agencies coming in to the area, and may fear that the external NGO seeks to undermine their authority. Often, they want to see concrete results before coming on board in support of a project's initiatives. To put this skepticism to rest, thorough baseline data can be helpful in showing project progress. However, because securing the cooperation and support of local government units is essential to achieving a sustainable system of CBCRM, ways must be found to cope with these obstacles.

In terms of the legal environment, tenurial access to natural resources remains a sticking point in many areas. The manifold issues of access, use and extraction rights as well as enforcement responsibilities must be ironed out (Segura-Ybañez). In the Philippines, the Local Government Code of recent years devolved a number of important functions and duties to lower levels of government: a step in the right direction, but many communities are not yet fully aware of the code or its practical implications. Further, in many places, there remain unclear legal guidelines, too many opportunities for loopholes or lax enforcement. In Negros Oriental, for example, we saw how the certificate of

stewardship program tried to help inspire local residents to rehabilitate mangrove areas, but there was no follow up, so residents continued to do as they pleased, which was to give other land uses higher priority (Calumpang). There must be a clear and fair legal backdrop for CBCRM that acknowledges the right and responsibility of communities to be the primary caretakers of their environment, but the legal framework must be bound tightly to a reliable and effective enforcement and follow-through mechanism (Baritua/Cusi).

Costs and Benefits

One strong theme came forward again and again: that of limited funding. Most NGOs or donors who conceive a project and introduce it to a community also bring with them the funding necessary for its implementation. Consequently, community residents may begin to see new projects as sources of income, or as an opportunity to improve the community's livelihood in the short term (Magpayo). In many of the case studies, we saw how a community appeared to be genuinely enthusiastic about a project, participated actively in the training exercises, rallied into groups and associations, and carried out a number of project-related activities, only to let these activities fade out or drop off abruptly once the external agent departed or funding came to an end (Ablong/Waltemath). This frequently occurring phenomenon raises the question whether, in spite of best intentions and efforts, many communities have not in fact internalized the lessons of sustainable resource management, but only go along with a program as long as there is someone to guide them through it, preferably with money.

Many case studies claim that sustainability of a project's initiatives depends on continued educational activities and constant training, especially in terms of the long-term benefits of natural resource management vis-à-vis short-term economic gain. But who will manage and pay for this program of perpetual education? Finally, most NGOs believe that their ultimate objective is to become unnecessary, to hand over to the community everything it needs to persist in its drive for sustainable resource management (Gutierrez et al). Regrettably, the reality appears again and again to fall short of this ideal. Unless someone from outside takes responsibility for ongoing activities, and pays for them, community motivation falters. What does this state of affairs mean for the sustainability of even the most well conceived CBCRM initiatives?

Clearly, an underlying theme through many of the issues discussed above is the question of benefits. It is both unrealistic and unfair to expect that anyone, most especially the poor, adopt a purely altruistic view of resource management. Training and awareness raising activities can create a greater appreciation for the intrinsic value of various species as well as the integrity of entire ecosystems, and thereby enhance the commitment of people to conserve and protect their surroundings (Luchavez). Nevertheless, while many religious or philosophical belief systems may hold that the natural world has an innate right to protection from overexploitation or extinction, the human race shares one even more compelling inner drive in common: the need to survive and provide for one's family. Given that this need lies at the foundation for most of the decisions we make throughout our lives, any intervention to establish a community-based resource management scheme must take it into account and acknowledge the right of

local people to benefit from the resource and from externally or internally initiated efforts to conserve it.

If a project cannot actually raise the community's standard of living, it must make every effort to prevent the people from becoming *worse* off, such as eliminating one method of livelihood without providing for viable alternatives (Agbayani/ Homicillada; Gutierrez et al). In this regard, a focus on territorial use rights or some other type of tenurial system for coastal and nearshore areas may be in order (Magpayo). When an area is identified and clearly demarcated in which people know they have a legally protected right to extract resources for their livelihood, they will be more likely to perceive benefits in actively guarding and managing the area. But these areas must be established everywhere, or else people will violate the "rules" of sustainable resource management in other areas even as they adhere to them within their own immediate vicinities.

Finally, the provision of alternative livelihoods has long been a feature of community-based resource management projects. It seems useful, however, to underscore the importance of allowing the community to choose from a range of possible options. For instance, while eco-tourism may be a promising source of income and employment in one area, in another it may be perceived as inviting too many people to a sensitive area or introducing unwelcome cultural influences (Agbayani/Homicillada). Other factors must be considered as well. For example, some fisherfolk work during part of the year on farms, and vice versa; therefore, project interventions in either coastal or agricultural resource management should take into account these multiple interests (Edo-Sullano/Cruda).

The following questions were raised during workshop discussions, and perhaps merit more investigation:

1. How to effectively manage artificial reefs. Should they be used as fish aggregators to revive the ecosystem or to enrich a fishing ground (thus opening the area to overfishing, bringing us back to the old problem)? Do tires make good artificial reefs?
2. Is a protected area better off when there is a local community to take over its management, or when the area is kept free from human habitation (i.e., people are either moved elsewhere or prevented from residing there), possibly subjecting the area to the dangers of "open access"?
3. How can deputized fish wardens be empowered to enforce existing legislation in the face of intimidating large-scale violators or an unsupportive local government structure?
4. How can the maintenance of resource management interventions be assured after the withdrawal of external funding or agents?
5. As a practical matter, how can the immediate needs of resource rehabilitation be balanced against the virtue of taking steps to prevent resource degradation in the first place?
6. How can the demonstrated benefits of working on focused issues with small groups be balanced against the need to take a broad, interdisciplinary view of resource management that takes into account the interrelationships of neighboring ecosystems, e.g., upland forested areas, farmland, nearshore reefs?

Appendix A

LIST OF PARTICIPANTS

1. **Ablong, William (Mr.)**
Resource Management
Division, Province of
Negros Oriental (RMD)
RMD Chief
Capitol, Dumaguete City
Tel. 225-1601
2. **Agbayani, Renato "Rene" (Mr.)**
Southeast Asian Fisheries
Development Center
(SEAFDEC)
Ass. Scientist
Tigbauan, Iloilo
Tel. 271-009
Fax 271-008
3. **Alcaria, Joselito Francis (Mr.)**
DENR-Coastal
Environment Program
(DENR-CEP)
Regional Project Manager
Banalad, Mandaue City
Tel. 462271
4. **Alonsorin, Rowena (Ms.)**
Regional Development
Council VII-Resource
Management Center (RDC-
RMC)
DA7 Compound, M. Velez
St., Cebu City
Tel. 223-684
Fax 223-865
5. **Alfonso, Derkle (Mr.)**
Leyte-Samar Rural
Development Workers
Association (LABRADOR)
IEC Officer
15 Kalipayan Rd.
Sagkahan, Tacloban City
Tel. 321-2681/321-2947
6. **Amorganda, Roque (Mr.)**
Cabugan, Mausulogong
Managat Association
(CAMMA)
President
Cabugan, Bindoy, Negros
Or.
7. **Arcena, Isidra "Cyd" (Ms.)**
Tambuyog Development
Center
Administrative Assistant
Rm 108 PSSC,
Commonwealth Ave.
Quezon City
96-4415/96-4409
Fax 96-4415
8. **Arlega, Arturo (Mr.)**
Small Fisherfolk
Association of Casab-aban
(SPAC)
Chairman
Brgy. Casab-haan Daram,
Western Samar
9. **Aro, Leonardo (Mr.)**
Department of Agriculture
Region 7
Sr. Agriculturist
312-A Pulantubig,
Dumaguete City
Te. 225-2864
10. **Avila, Enrique (Dr.)**
University of the Phils.
Visayas (UPV)
Assistant Professor
Lahug, Cebu City
Tel. 78054
11. **Baclay, Marichu (Ms.)**
Dept of Science &
Technology 7 (DOST 7)
SRS-II
Gov. Manuel Cuenco Ave.,
Banalad, Cebu City
Tel. 77-033
Fax 311-852
12. **Baldesco, Elmer (Mr.)**
Barangay 54 Multi-Purpose
Cooperative (SSPBM)
Brgy 54, Tacloban City
13. **Baldestamon, Cirilo (Mr.)**
Antique Development
Foundation, Inc. (ADF)
Executive Director
2/F Susana Bldg., #3 San
Jose, Antique
Tel. 297
14. **Bana-ay, Dioscora (Ms.)**
The Network Foundation,
Inc (TNFI)
10 Binamira & Sons Bldg.
#4 Gorordo Ave., Cebu City
15. **Barber, Charles "Chlp" (Dr.)**
World Resources Institute
(WRI)
Senior Research Associate
Washington, D.C. USA
- 14 Cabbage St., Valle
Verde 5, Pasig, M.M.
Philippines
Tel. (632) 631-0421
Fax (632) 631-0406
Email
cbarber@phil.gn.apc.org
16. **Baritua, Josellno (Mr.)**
Pambansang Kilusan ng
mga Samahang
Magsasaka (PAKISAMA-
Vis)
Program Officer
UCCP-Cendat Complex, 85
Osmena Blvd., Cebu City
Tel. 220-5889
17. **Bato, Nida (Ms.)**
Ting Matiao Foundation
(SARAP)
Treasurer
Sagbang Valencia, Negros
Oriental
18. **Bernardo, Robert (Mr.)**
South East Asian Regional
Center for Graduate Study
& Research in Agriculture
(SEARCA)
Research Assistant
4031 College, Laguna
Tel. 2287/2290
Fax (94) 2914/(2) 813-5697
Email:
RGB@SEARCA.UPLB.ED
U.PH
19. **Bersales, Jojo (Mr.)**
University of San Carlos -
Bantayan Island Integrated
Seapark Devt. Program
(USC-BIISDP)
Field Manager
Dept. of Sociology-
Anthropology, University of
San Carlos, Cebu City
Tel. 211000 loc 196
Fax 54341
Email:
Jobera@Mangga.Usc.Edu.
Ph
20. **Bissdorf, Hans (Mr.)**
Ting Matiao Foundation
(TMF)
Consultant
109 San Jose Extension,
P.O. Box 193 6200
Dumaguete City
Tel. 035-2252758

21. **Bojos, Rafael (Mr.)**
The Network Foundation,
Inc. (TNFI)
10 Binamira & Sons Bldg.
#4 Gorordo Ave., Cebu City
22. **Borja, Roberto (Mr.)**
Bohol Integrated Devt.
Foundation, Inc. (BIDEF)
Co-Team Leader
39 Hontanosas St.,
Tagbilaran City, Bohol
23. **Buhat, Delma (Ms.)**
Haribon for the
Conservation of Natural
Resources
Program Assistant
340 Villamor St., San Juan,
1500 Metro Manila
Tel. 784-179
Fax 704-316
Email:
haribon@phil.gn.apc.org
24. **Cabigas, Ana Marie (Ms.)**
Cebu City Hillyland
Resource Management &
Devt. Commission
(CCHRMDC)
HRD Component
Coordinator
895 D. Jakosalem St.,
Cebu City
Tel. 217-326
25. **Cadayday, Elan (Mr.)**
Regional Development
Council VII-Resource
Management Center (RDC-
RMC)
DA7 Compound, M. Velez
St., Cebu City
Tel. 223-684
Fax 223-865
26. **Cadiz, Pablina (Ms.)**
Silliman University-Marine
Laboratory (SUML)
Research Assistant
Bantayon, Dumaguete
Tel. 225-2500
Fax 225-4608
27. **Caintic, Leonardo Jr.,
(Mr.)**
Western Leyte Foundation
for Agro-Rural Entities
(WELFARE)
Executive Assistant
Tres Martires St., Baybay,
Leyte
Tel. (053) 415-2023
28. **Calldguid, Amos (Mr.)**
Gabayan Foundation, Inc.
(GFI)
Executive Director
Bo. Obrero, Bals City,
Negros Oriental
Tel. 541-5103
29. **Callnawan, Florentino Jr.
(Mr.)**
Small Islands Agricultural
Support Services
Programme-DA (SMISLE)
Project Devt. Officer V
3/F William Lines Bldg., N.
Reclamation Area, Cebu
City
Tel. 211-600
30. **Capanang, Catalina (Ms.)**
Guiuan Development
Foundation, Inc. (GDFI)
CO Supervisor
Dasang, Guiuan, Eastern
Samar 6809
31. **Capulong, Virginita
"Gingging" (Ms.)**
International Center for
Living Aquatic Resource
Management (ICLARM)
Fisheries Co-Management
Project
Research Associate
Bloomingdale Bldg., 205
Salcedo St., Legaspi
Village, Makati
Tel. 818-0466/818-
9283/817-5255
Fax (63-2) 816-3183
Email: iclam@cgnet.com
32. **Carlos, Melvin (Mr.)**
International Center for
Living Aquatic Resource
Management (ICLARM)
Fisheries Co-Management
Project
Research Associate
Bloomingdale Bldg., 205
Salcedo St., Legaspi
Village, Makati
Tel. 818-0466/818-
9283/817-5255
Fax (63-2) 816-3183
Email: iclam@cgnet.com
33. **Cepe, Marilyn (Atty.)**
NGO Technical Working
Group for Fisheries &
Aquatic Reform
(NGOTWG)
Chairperson
C/o PHILDHRRRA, 59
Loyola His., Quezon City
Tel. 987-538
34. **Cimagala, Camillo (Mr.)**
Bohol Resource
Management & Devt.
Foundation, Inc.
(BOREMADEV)
President
Clarín, Bohol
35. **Coles, Ma. Lourdes (Ms.)**
Ugmad Foundation, Inc.
Managing Director
1230 V. Rama Ave.,
Guadalupe, Cebu City
Tel. 212-541
36. **Cordova, Jemellee "Jel"
Bote (Ms.)**
Tambuyog Development
Center (TDC)
Rm 108 PSSC,
Commonwealth Ave.
Quezon City
96-4415/96-4409
Fax 96-4415
37. **Corpuz, Peme (Mr.)**
Fishermen Endeavor for the
Rehabilitation of the Sea-
PAKISAMA (FISHERS to
RSM)
Project Officer
Cawayan, Cataman,
Northern Samar
38. **Cruda, Ponclana (Ms.)**
Department of Agriculture
Agricultural Technologist
Talibon, Bohol
39. **Dayo, Jelson (Mr.)**
Fisheries Association of
Madison Iskand (FAMI)
President
Malalison Island, Culasi,
Antique
40. **De Paz, Glicerio "Eryong"
(Mr.)**
Regional Development
Council VII-Resource
Management Center (RDC-
RMC)
DA7 Compound, M. Velez
St., Cebu City
Tel. 223-684
Fax 223-865
41. **Deguit, Francisco (Mr.)**
Calagcalag Bakhawan &
Fishermen's Association
(CABAFA)
Vice President
Calagcalag, Ayungon,
Negros Oriental
42. **Dela Cruz, Quirino Jr.
"JQ" (Mr.)**
Tambuyog Development
Center
Rm 108 PSSC,
Commonwealth Ave.
Quezon City
96-4415/96-4409
Fax 96-4415
43. **Dimamay, Rosie (Ms.)**
Antique Integrated Area
Dvt. Project Management
Office (ANIAD)
CO Officer
T. Fornier St., San Jose,
Antique
Tel. 608/63-912-5200948
Fax 912-5200948

44. **Estrañero, Ma. Nelly Lusabla (Ms.)**
Balayan-University of ST. La Salle
Project Coordinator
La Salle Ave., Bacolod City, Negros Occ.
Tel. 20274 loc 23
Fax 20577
45. **Estremos, Fidel (Mr.)**
Western Leyte Foundation for Agro-Rural Entities, Inc. (WELFARE)
CO Supervisor
Tres Martires St., Baybay, Leyte
46. **Etlmadi, Fellisa (Dr.)**
University of the Phils. Visayas (UPV)
Professor
Lahug, Cebu City
Tel. 91034
Fax 71027/53837
47. **Fellizar, Francisco Jr. (Dr.)**
Department of Science & Technology (DOST)
Undersecretary
Bicutan, Metro Manila
48. **Ferrer, Elmer (Mr.)**
University of the Phils. CSWCD
Associate Professor
Diliman, Quezon City
Tel. 97-2477
Fax 97-8438
49. **Flores, Efren (Dr.)**
SEAFDEC
Chief
Tigbauan, Iloilo
50. **Gallogo, Roberto (Mr.)**
KIMA
Fisherman
Palaka, Pulpandan, Negros Occidental
51. **Gamo, Maricel "Chel" (Ms.)**
International Center for Living Aquatic Resource Management (ICLARM)
Fisheries Co-Management Project
Research Aide
Bloomingdale Bldg., 205 Salcedo St., Legaspi Village, Makati
Tel. 818-0466/818-9283/817-5255
Fax (63-2) 816-3183
Email: iclarm@cgnet.com
52. **Gonzales, Minerva (Ms.)**
Community Extension & Research for Development (CERD)
Executive Director
2-A San Pablo Rd., PhilAm Homes, Q.C.
Tel. 99-7775
53. **Green, Stuart (Mr.)**
BIDEF
Technical Advisor
39 Hontañosa St., Tagbilaran City
Tel. 411-2871
54. **Gurra, Josefina (Ms.)**
Fisherman
Tanghaligue, Talibon, Bohol
55. **Gutierrez, Joel (Mr.)**
Tambuyog Development Center (TDC)
Area Coordinator
Rm 108 PSSC Bldg., Commonwealth Ave., Diliman, Quezon City
Fax 964-415
56. **Hisona, Desiderio (Mr.)**
Caliling, Negros Occ.
57. **Homicillada, Wilfredo (Mr.)**
Participatory Research Organization of Communities & Education Towards Struggle for Self Reliance (PROCESS)
Executive Director
31 Avancenia St., Molo, Iloilo City
Tel 77-386
58. **Ilgan, Eleonor (Ms.)**
Katibyugan it Mangingisda sa Talangban (KMT)
Auditor
Talangban, Camaligan, Batan, Aklan
59. **Insik, Luciano (Mr.)**
Sanraça Fishermen Association
Chairman
San Rafael, Barili, Cebu
60. **Janiola, Eutiquio (Mr.)**
The Network Foundation, Inc (TNFI)
Project Supervisor
4 Gorordo St., Cebu City
Tel. 315-157
61. **Juario, Jesus "Jess" (Dr.)**
University of the Phils. Visayas (UPV)
Professor
Lahug, Cebu City
Tel. 78-084/78-057
62. **Lacson, Brenda "Dada" (Ms.)**
Tambuyog Development Center (TDC)
Librarian
Rm 108 PSSC, Commonwealth Ave. Quezon City
96-4415/96-4409
Fax 96-4415
63. **Luchavez, Teodulo (Mr.)**
Silliman University Marine Laboratory (SUML)
Dumaguete City
64. **Lugod, Crescenciano (Mr.)**
Tahong-tahong Fishermen Association
Fisherman Leader
Tahong-tahong Island, Talibon, Bohol
65. **Macalalad, Avelino (Mr.)**
Leyte-Samar Rural Workers Association, Inc (LABRADOR)
Field Supervisor
15 Kalipayan Rd., Tacloban City
Tel. 321-2681
66. **Madakia, Mohamed Haniff (Mr.)**
Marine Institute International
Int. Programme Officer
PO Box 4920 St. John's, Newfoundland, Canada
AIC5R3
Tel. (709) 778-0558
Fax (709) 778-0381
Email: hmadakia/M.I.International e.gill.ijmt.nf.ca
67. **Madamba, Marie Grace (Ms.)**
PHILDHERRA
Program Manager
59 C. Salvador St., Loyola Heights, Q.C.
Tel. 98-7538
Fax 98-7538
68. **Magpayo, Nazario (Mr.)**
Community Extension Research for Development (CERD)
CB-CRM Outreach Coordinator
2A San Pablo Rd., PhilAm Quezon City
Tel. 99-7775
69. **Mayonado, Vicencio (Mr.)**
Oklot, Bais Fishermen Association
Chairman
Sanlagan, Oklot, Bais City, Negros Oriental
70. **Mayordomo, Ma. Josella "Jo" (Ms.)**
International Center for Living Aquatic Resource Management (ICLARM)
Fisheries Co-Management Project
Research Assistant
Bloomingdale Bldg., 205 Salcedo St., Legaspi Village, Makati

71. **Melana, Emma (Ms.)**
ERDS-DENR 7
Chief
Baniad, Mandaue City
Tel. 46-2209/46-2271
72. **Merencillo, Josefey (Mr.)**
Office of the Provincial
Agriculturist-Cebu Province
(OPA-Cebu)
Aquaculturist II
Cebu Provincial Capitol
Tel 931-03
73. **Opiar, Luciano (Mr.)**
Bongalonan Small
Fishermen
President
Bongalonan, Basay,
Negros Oriental
74. **Orillo, Yuleta Ruiz (Prof.)**
University of the Phils.
Cebu City
Assistant Professor
Gorordo Ave., Lahug, Cebu
City
Tel. 78-054
75. **Padillo, Elpidio (Mr.)**
Calituban Fishermen
Association
Fisherman Leader
Calituban, Tagbilaran,
Bohol
76. **Patlingrao, Ronnie (Mr.)**
German Development
Service (GDS)
Marine Fishery Specialist
3/F Capitol Bldg., Cebu City
Tel. 223-399
77. **Perez, Francis Ronald
(Mr.)**
Tambuyog Development
Center (TDC)
Policy Research
Coordinator
Rm 108 PSSC,
Commonwealth Ave.
Quezon City
96-4415/96-4409
Fax 96-4415
78. **Pido, Michael "Mike" (Mr.)**
International Center for
Living Aquatic Resource
Management (ICLARM)
Fisheries Co-Management
Project
Research Associate
Bloomingdale Bldg., 205
Salcedo St., Legaspi
Village, Makati
Tel. 818-0466/818-
9283/817-5255
Fax (63-2) 816-3183
Email: iclarm@cgnat.com
79. **Pojas, Baltazar (Mr.)**
KIMA-Negros Occidental
Fisherman
Brgy Tapon, Palupandan,
Negros Occ.
80. **Pomeroy, Robert "Bob"
(Dr.)**
International Center for
Living Aquatic Resource
Management (ICLARM)
Fisheries Co-Management
Project
Project Leader
Bloomingdale Bldg., 205
Salcedo St., Legaspi
Village, Makati
Tel. 818-0466/818-
9283/817-5255
Fax (63-2) 816-3183
Email: iclarm@cgnat.com
81. **Ponce de Leon, Reynaldo
(Mr.)**
Palawan National
Agricultural College
(PNAC)
Associate Professor
Aborlan, Palawan
Tel. 433-4480
82. **Porte, Lamberto Sr. (Mr.)**
Fishermen Endeavor for the
Rehabilitation of the Sea-
PAKISAMA (FISHERS-
PISSM)
Talolona, Palapag,
Northern
83. **Postrero, Stephen (Mr.)**
Regional Development
Council VII-Resource
Management Center (RDC-
RMC)
DA7 Compound, M. Velez
St., Cebu City
Tel. 223-684
Fax 223-865
84. **Ricafort, Roger (Mr.)**
HELVETAS
Deputy Program Director
121-A V. Luna Ext.
Sikatuna Village, Q.C.
Tel. 922-8568
Fax 921-5334
85. **Rivera, Rebecca "Becky"
(Ms.)**
Tambuyog Development
Center
Deputy Director for National
Operations
Rm 108 PSSC,
Commonwealth Ave.
Quezon City
96-4415/96-4409
Fax 96-4415
86. **Rodriguez, Estela (Ms.)**
Foundation for Agricultural
Research & Resource
Management, Inc.
(FARRMI)
Member
RMC, DA Compound,
M.Velez St., Cebu City
Tel. 223-684
Fax 223-865
87. **Rodriguez, Luz Lopez
(Ms.)**
University of the Phils.
Visayas (UPV)
Director, Ugnayan ng
Pahinungod
UPV, Gen. Luna St., Iloilo
City 5000
Tel. (33) 78-591
Fax (33) 270-106
88. **Sacramento, Sheryll (Ms.)**
Central Visayas Regional
Project-2 Project
Preparation (CVRP-2)
Budget Development
Officer
RMC, DA-7 Compound, M.
Velez St., Cebu City
Tel. 223-684
Fax 223-865
89. **Salindo, Rogelio (Mr.)**
Tulapos United Fishermen
Association (TUFA)
President
Tulapos, Enrique
Villanueva, Siquijor
Province
90. **Salva, Teresita (Dr.)**
Palawan National
Agricultural College (PNAC)
College President
Puerto Princesa City
Tel. 433-43-67
Fax 433-44-80
91. **Sambas, Apollinar (Mr.)**
Bohol Integrated
Development Foundation
(BIDEF)
Project Officer
39 Montanosas St.,
Tagbilaran City
Tel. 411-2871
92. **Santiago, Roy (Mr.)**
Talangwan Small Fisheries
Association (TASFA)
Chairman
So. Talangwan, Cauayan,
Negros Occ.
93. **Sariego, Ria (Ms.)**
Palawan National
Agricultural College (PNAC)
Instructor
Aborlan, Palawan
Tel. 433-4480
94. **Savaris, Josephine (Ms.)**
Philippine Partnership for
the Devt. of Human
Resources in Rural Areas
(PHILDHARRA) - Visayas
Provincial Program
Coordinator
2/F The Reporter Bldg.,
Fabian St., Cogon, Ormoc
City
Tel. 22-4466

95. **Sullano, Pamela Edo**
"Melal" (Ms.)
Central Visayas Regional
Project-2 (CVRP-2)
Supervising Science
Research Specialist
RMC DA-7 Compound, M.
Velez St., Cebu City
Tel. 223-684
Fax 223-685
96. **Sumingult, Cesar (Mr.)**
Tulapos, United Fishermen
Association (TUFA)
Secretary
Tulapos, Enrique
Villanueva, Siquijor
Province
97. **Talatayud, Edwin (Mr.)**
The Network Foundation,
Inc (TNFI)
10 Binamira & Sons Bldg.
#4 Gorordo Ave., Cebu City
98. **Tan, Leonidas (Mr.)**
Small Island Agricultural
Support Services Program
(SMISLE)
Fisheries Specialist
National Mango Research
Devt. Center, Jordan,
Guimaras
Tel (0912) 520-0444
99. **Tana, Touch Seang (Mr.)**
Department of Fisheries of
Cambodia (DOF)
Fishery Advisor
186 Rd. Nazordom, Phnom
Penh, Cambodia
Tel. (855) (15) 912-638
Fax (855) (23) 27-048
100. **Tanchuling, Ma. Linnea**
"Ging" (Ms.)
Tambuyog Development
Center
Deputy Director for
Administration
Rm 108 PSSC,
Commonwealth Ave.
Quezon City
96-4415/96-4409
Fax 96-4415
101. **Torino, Danilo (Mr.)**
Zaragoza-Badian Island
Multipurpose Cooperative
(Z-BIMPC)
Chairman
Zaragoza Is., Badian, Cebu
102. **Trinidad, Anjanette**
"Chingkel" (Ms.)
International Center for
Living Aquatic Resource
Management (ICLARM)
Fisheries Co-Management
Project
Secretary
Bloomingdale Bldg., 205
Salcedo St., Legaspi
Village, Makati
Tel. 818-0466/818-
9283/817-5255
Fax (63-2) 816-3183
Email: iclarm@cgnet.com
103. **Valmorla, Raul (Mr.)**
Bohol Resources
Management & Devt
Foundation (BOREMADEV)
Clarín, Bohol
104. **Vande Vusse, Fred (Dr.)**
USAID
Consultant
1680 Roxas Blvd., Ermita,
Manila
Tel. 522-4411
Fax 522-2512
Email:
fvadevusse@usaid.gov
105. **Verlaan, Vincent Leo (Mr.)**
Asia Pacific Ocean
Cooperation Program-UBC
Research Associate
1822 Eastmall, Faculty of
Law, UBC, Vancouver, BC,
Canada, V6T121
Tel. 1604-822-4798
106. **Waltamath, Malke (Ms.)**
Resource Management
Division, German
Development Service
(RMD-GDS)
Consultant for Fisheries
Capitol Area, Dumaguete
City, 6200
Tel. 35-2251601
Fax 35-2255563
107. **Winkle, Maxwell (Mr.)**
Small Islands Agricultural
Support Services Program
(SMISLE)
Co-Zone Manager
C/o NMRDC, San Miguel,
Jordan, Guimaras
Tel (0912) 520-0444
108. **Yao, Callixto (Mr.)**
Department of Environment
and Natural Resources
(DENR)
PENRO
Siquijor
109. **Yap, Nello (Mr.)**
Leyte Samar Rural
Development Workers
Association (LABRADOR-
WELSDEC)
Center Director
Rm 3A Avalon Bldg., Lopez
Jaena St., Ormoc City
110. **Ybafiez, May Elizabeth**
(Ms.)
Central Visayas Regional
Project-2 (CVRP-2)
Manager
RMC, DA-7 Compound, M.
Velez St., Cebu City
Tel. 223-685
111. **Zozobrado, Jose (Mr.)**
Regional Development
Council VII-Resource
Management Center (RDC-
RMC)
DA7 Compound, M. Velez
St., Cebu City
Tel. 223-684
Fax 223-865

GUEST SPEAKERS

1. **Hon. Rhett Pelaez**
Office of the President -
Visayas
Presidential Assistant for
the Visayas
DECS ECOTECH Center
Lahug, Cebu City
2. **Dir. Romeo Escandor**
NEDA VII-Regional
Development Council
Regional Director
Cebu City

Appendix B

**Visayas-Wide Conference on Community-Based Coastal Resources
Management & Fisheries Co-Management
ECOTECH Center
Lahug, Cebu City
4-7 July 1995**

Program

Day 1: Tuesday - July 4, 1995

Day Chairman and Emcee: Rafael Bojos, Jr.

TIME	ACTIVITY	PERSONS CONCERNED
8:00-8:30	Registration	
8:30-9:00	Invocation and Opening Rites	
9:00-9:45	Welcome Addresses:	
	Office of the President	Mr. Rhett Pelaez
	Cebu Provincial Government	Cebu Governor / Representative
	Cebu City Government	City Mayor / Representative
9:45-10:00	Introduction of Participants	Pamela Edo-Sullano / Francis Perez
10:00-10:15	COFFEE BREAK	
10:15-10:30	Group Picture Taking	
10:30-11:15	Opening Remarks	
	ICLARM	Bob Pomeroy
	TDC	Ging Tanchuling / Becky Rivera
	WRI	Chip Barber
11:15-11:45	Keynote Address	UPV Chancellor Camacho
11:45-12:00	Conference Objectives and Mechanics . .	Melvin Carlos
	LUNCH BREAK	
Presentation Theme: Organizing and Training		
Discussion Leader: Dr. Yuleta Orillo		
1:30-2:00:	PROCESS - FAMI	Wilfredo Homicillada/ Jelson Dayo
2:00-2:30	LABRADOR - CABDEC	Derkie Alfonso / Elmer Baldesco
2:30-3:00	TDC - SANRACA	Joel Gutierrez / Luciano Insik
3:00-3:30	COFFEE BREAK	
3:30-4:00	Reactors' Time	FESFIN, PHILDHRA, PAKISAMA, PCCD, BOREMADEV
4:00-5:15	Open Forum	Day Chairman
5:15-5:30	Session Wrap-up	Discussion Leader

**Visayas-wide Conference on Community-Based Coastal Resources
Management & Fisheries Co-Management**

ECOTECH Center

Lahug, Cebu City

4-7 July 1995

Program

Day 2: Wednesday - July 5, 1995

Presentation Themes: Research, Rehabilitation and Protection and Women In Fisheries

Day Chairman and Emcee: Dr. Jesus Juario

Discussion Leaders: Dr Enrique Avila - AM

Dr. Jesus Juario - PM

TIME	ACTIVITY	PERSONS CONCERNED
8:00-8:30	Recap of Day 1	Chairman Day 1
8:30-9:00	Resource Management Center	May Ybañez / Local Partner
9:00-9:30	SEAFDEC	Renato Agbayani / Jelson Dayo
9:30-10:00	C O F F E E B R E A K	
10:00-10:30	Silliman University	Teodulo Luchaves / Ham Chua
10:30-11:00	Reactors' Time	UPV, ICLARM, TDC, VISCA, CERD
11:00-12:00	Open Forum	Day Chairman
	L U N C H B R E A K	
1:30-2:00	Negros Resource Management Division	William Ablong / Local Partner
2:00-2:30	CVRP	May Ybañez / Local Partner
2:30-3:00	Reactors' Time	TNFI, DENR-CEP, Silliman, SEAFDEC
3:00-4:00	Open Forum	Day Chairman
4:00-4:30	C O F F E E B R E A K	
4:30-5:00	UPV-FSDP-KMTBA	Luz Lopez-Rodriguez / Elinor Iligan
5:00-5:30	Reactors' Time	
5:30-6:15	Open Forum	TDC, DAWN, LIHOK, SEAFDEC
6:15-6:30	Session Wrap-up	Discussion Leader

**Visayas-wide Conference on Community-Based Coastal Resources
Management & Fisheries Co-Management**

ECOTECH Center
Lahug, Cebu City
4-7 July 1995

Program

Day 3: Thursday - July 6, 1995

Presentation Theme: Partnerships (Local and International)

Day Chairman and Emcee: Mr. Renato Agbayani

Discussion Leader: Dr. Felisa Etimade

TIME	ACTIVITY	PERSONS CONCERNED
8:00-8:30	Recap of Day 2	Chairman Day 2
8:30-9:00	CERD - SAMASAKA	Rio Magpayo / Arturo Ariega
9:00-9:30	Ting Matiao Foundation	Dominador Dumalag, Jr.
9:30-10:00	Reactors' Time	WRI, USWAG, EDF, TDC, UPV- Bidani
10:00-10:30	COFFEE BREAK	
10:30-11:30	Open Forum	Day Chairman
11:30-12:00	Session Wrap-up	Discussion Leader
	LUNCH BREAK	
Group Workshops		
1:30-2:00	Organization of Workshop Sessions	Discussion Leaders / Rapporteurs
2:00-7:00	<u>Workshop I:</u> Organizing, Training and Capability Building	c/o Jocel
	<u>Workshop II:</u> Research	
	<u>Workshop III:</u> Rehabilitation, Protection and Conservation	
	<u>Workshop IV:</u> Women in Fisheries	
	<u>Workshop V:</u> Partnerships (Local and International)	

Note: Participants and observers can choose the workshop session(s) they prefer to join.

**Visayas-wide Conference on Community-Based Coastal Resources
Management & Fisheries Co-Management**
ECOTECH Center
Lahug, Cebu City
4-7 July 1995

Program

Day 4: Friday - July 7, 1995

Plenary and Dialogue with Foreign Partners and Institutions

Day Chairman and Emcee: Mr. Melvin B. Carlos

Discussion Leader: Ms. Rebecca Rivera

TIME	ACTIVITY	PERSONS CONCERNED
8:00-8:30	Recap of Day 3	Chairman Day 3
8:30-10:00	Presentation of Workshop Results and Discussions	Designated Workshop Presentors
10:00-10:30	COFFEE BREAK	
10:30-12:00	Continuation of Presentation of Workshop Results	
	LUNCH BREAK	
1:30-2:30	Donor Organizations: Presentations / Commentaries	
2:30-3:30	Dialogue with Donor Organizations	
3:30-4:00	COFFEE BREAK	
4:00-4:30	Summary of Workshop Results	Ging Tanchuling
4:30-5:30	Closing Ceremonies	Day Chairman

***** END OF WORKSHOP *****

Appendix C

ACRONYMS

AR	Artificial Reef
ASIN	Association of Social Innovators Network
BFAR	Bureau of Fisheries and Aquatic Resources
BOREMADEV	Bohol Resource Management and Development Foundation
CAFUGU	Citizen Armed Forces Geographical Unit
CAMAFFA	Caliling Marginal Fishers and Farmers Association
CB(C)RM	Community-Based (Coastal) Resource Management
CDOP	Cebu Development Outreach Project
CEMRINO	Center for Establishment of Marine Reserves in Negros Oriental
CEP	Coastal Environment Program
CERD	Community Extension and Research for Development
CFRM	Community Fishery Resource Management
CIDA	Canadian International Development Agency
CLARK	Caliling Land Resource Keepers, Inc.
CO	Community Organizer or Organizing
CPUE	Catch Per Unit Effort
CRMP	Coastal Resources Management Project
CSC	Certificate of Stewardship Contract
CVRP	Central Visayas Regional Project
DA	Department of Agriculture
DENR	Department of Environment and Natural Resources
ERMP	Environmental and Resource Management Project
FAD	Fish Aggregating Device
FAMI	Fishermen's Association of Malalison Island
FIRMED	Fishery Integrated Resource Management for Economic Development
FISHERS	Fishermen's Endeavor for the Rehabilitation of the Sea in Northern Samar
FSP	Fisheries Sector Program
FUERSA	Fisherfolk's Unity in the Entire Ragay Gulf Shoreline Association
GDS	German Development Service
GIS	Geographical Information Systems
ICLARM	International Center for Living Aquatic Resources Management
IDRC	International Development Research Centre
IIRR	International Institute for Rural Reconstruction
KMT	Talangban Fisherfolk Organization
LABRADOR	Leyte Samar Rural Development Workers Association, Inc.
LGC	Local Government Code
LGU	Local Government Unit
LVO	Local Volunteer Organization
MAO	Municipal Agriculture Office
MREP	Mangrove Reforestation and Enhancement Project
NACFAR	Nationwide Coalition for Aquatic Reform
NEDA	National Economic Development Authority
NEGORMO	Negros Oriental Resource Management Office
NGO	Non-Governmental Organization
OXFAM-UK	Oxford Famine Relief-United Kingdom
PACAP	Philippine Australian Community Assistance Program (AusAID)
PAKISAMA	A national, non-governmental federation of people's organizations

PAO	Provincial Agriculture Office
PENRO	Provincial Environment and Natural Resources Office
PHP	Philippine Pesos
PNP	Philippine National Police
PO	People's Organization
PROCESS	Participatory Research Organization of Communities and Education Towards the Struggle for Self Reliance
RCG	Research Core Group
RDC	Regional Development Council
RMC	Resource Management Council, plus variations:
	B Barangay
	C Coastal
	P Provincial
	M Municipal
	F Fisheries
RMD	Resource Management Division
RRAC	Regional Resource Access Committee
RR(S)A	Rapid Rural (Site) Appraisal
SAMASAKA	A provincial-level fisherfolk organization in Samar
SANRACA	San Rafael-Cabacungan Small Fishers Association
SCAD	Sustainable Coastal Area Development
SEAFDEC (AQD)	Southeast Asian Fisheries Development Center (Aquaculture Department)
SMU	Site Management Unit
SUML	Silliman University Marine Laboratory
TDC	Tambuyog Development Center
TMF	Ting Matiao Foundation
TUFA	Tulapos United Fishers Association
TURF	Territorial Use Rights in Fisheries
UP	University of the Philippines
USAID	United States Agency for International Development
WRI	World Resources Institute

Appendix D

GLOSSARY

Alpor	Middleman
Bakkaw	mangrove
Banca	boat
Bantay dagat	bay watch, or guardians of the bay
Barangay	village
Basnig	bag net or round-hole seine
Bayanihan	community spirit/collective action
Bubo	fish pot
Dugong	sea cow
Duldog (see muro-ami)	
Hulbot-Hulbot	modified Danish seine net
Kubkub	purse seine or ringnet
Muro-ami (also duldog)	net into which fish are scared with sticks or weights knocked against a reef
Pahulbot	Danish seine
Pangnokos	squid jigger
Payaw	fish aggregating device
Pukot	gill net
Sahid	beach seine net
Sangguniang Bayan	municipal council
Sari-Sari	small sundries shop
Suki	favored buyer
Tahong	mussel
Talaba	oyster
Tambayang	clam
Tuba	coconut wine