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**Management of Fisheries,
Coastal Resources
and the Coastal Environment
in the Philippines: Policy, Legal
and Institutional Framework**

Antonio G. M. La Viña

Policy Research and Impact Assessment Program



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MANAGEMENT OF FISHERIES, COASTAL
RESOURCES AND THE COASTAL ENVIRONMENT
IN THE PHILIPPINES: POLICY, LEGAL AND
INSTITUTIONAL FRAMEWORK

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Antonio G. M. La Viña



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by Antonio G. M. La Viña

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The views presented in this paper are those of the authors and do not necessarily represent those of the Policy Research and Impact Assessment Program, ICLARM or Sida.

Acknowledgment

While preparation of this report required the usual tasks that come with policy research and analysis, I also had the fortune of being a participant in many of the cases and processes described and examined in this work. I am truly grateful for the opportunity to have been both a participant and observer during the years in the Philippines when community-based management of natural resources, including marine and coastal resources, emerged as a viable alternative to conventional forms of management. In this context, I feel compelled to acknowledge, first of all, the communities of Bolinao and Coron: their courageous examples have inspired many other communities and have shaped so much of my thinking on marine and coastal issues.

I also acknowledge the many lessons and insights I have learned from interacting and working with colleagues from all over the world. In particular, I would like to thank colleagues from the IMO/UNDP/GEF Regional Programme for the Prevention and Management of Marine Pollution in the East Asian Seas, the Marine Science Institute of the University of the Philippines, the Institute for International Legal Studies of the U.P. Law Center, ICLARM and the World Resources Institute (WRI).

Finally, I acknowledge that this work is the outcome of a collaborative effort. I wrote this report while I was serving as Undersecretary of Legal and Legislative Affairs of the Department of Environment and Natural Resources (DENR). It would not have been possible for me to have done this if I did not have the support of a competent and committed staff. In particular, I would like to thank Pinky Baylon, Eunice Aagsaoay, Jojo Garcia, Ingrid Gorre, Suzette Suarez, and, above all, James Kho. While I take responsibility for all shortcomings in the report, what is good and valuable here is a result of this collaboration. To them and to the other “legal eagles” of the DENR, and all those who worked with me “when they were all young and full of hope”, I dedicate this work.

Tony La Viña

Editor's Preface

This study, carried out by Dr. Antonio G.M. La Vina while he was still an Undersecretary at the Department of Environment and Natural Resources (DENR) and now the Director of the Biological Resources Program of the World Resources Institute, identifies the different types of locally based resource management systems in marine and coastal areas, such as co-management; community-based management; and integrated coastal zone management. A historical perspective is provided in identifying these, and case studies of community-based practices are also presented to further illustrate these elements.

This study is an output of the project entitled Management of Fisheries, Coastal Resources and the Coastal Environment in Asia: Institutional, Legal and Policy Perspectives. The overall objective of the project is to look into the elements that are instrumental in formulating the rights and rules (laws, customs, traditions and the like) which provide the legal, institutional and policy framework for the implementation of locally-based (resources) management systems in marine and coastal areas. This project was carried out by the International Center for Living Aquatic Resources Management in collaboration with national aquaculture research system (NARS) partners in the Philippines, Indonesia, Cambodia, Indonesia and Bangladesh.

The study emphasizes on the conflict over control of resources, between modes of utilization, and among stakeholders and interest groups. This context makes it possible to find solutions to problems of environmental degradation and social inequity, which also characterizes the use of marine and coastal resources. The study explores such solution to ensure the sustainable development of marine and coastal resources.

Data were taken from secondary sources, mainly from government statistical offices and published works of experts in the field. Interviews were conducted with stakeholders to supplement the secondary information. However, many of the analysis and conclusions and even some of the data were based on several meetings and consultations done while the author was with the DENR.

The importance of marine and coastal zones to the Philippines is readily apparent, for 60% of the country's 73 provinces, as well as two-thirds of the municipalities are located in the coastal zone. Furthermore, over 60% of the 74 million population resides in some 10 000 coastal barangays, including major urban centers.

In the Philippines, therefore, the coastal zone serves as the base for human settlement and accommodates major industrial, commercial, social and recreational activities. Now because of the wealth and opportunity, which the coastal and marine environment has to offer, high population density in coastal areas is not unusual. More often people are driven by purposes other than subsistence and survival, and thus engage in unregulated activities therein.

The unabated increases in urbanization, industrialization, and population have severely affected the state of Philippine coastal and marine resources. Consequently, the constant and heavy exposures to numerous artificial and natural pressures have taken their toll on the ecosystems. Pollution is likewise a major problem. Several sources have contaminated marine and coastal waters.

Population growth and industrialization have severely affected the state of coastal and marine waters. Red tides occur with regularity, especially around the area of Manila Bay. Marine-based pollution is also significant. Likewise, mining and poor agricultural practices are among the causes of soil erosion and sedimentation in the coastal zone.

Philippine marine and coastal resources and environment are at a great risk, it is in danger of dying or disappearing.

A considerable amount of legislation has been passed, many regulatory mechanisms have been utilized, institutions have been reformed, and new ones have been created. However, these current arrangements do not adequately deal with the mounting problems in the marine and coastal zones. Therefore, the use of other strategies that would move away from command and control approaches and instead adopt community-based and market-based strategies need to be explored. These may prove practicable and effective in guiding resource uses in the marine and coastal zones and in raising revenue for use in the management of the resources.

Historically, it would appear that community management developed independent of and even preceded governmental regulations and persisted even after formal regulatory norms have been set in place. The common underlying reasons why such approaches are desirable are the communities' dependence on the coastal zone, the inadequacy of traditional systems of centralized government management, the greater efficiency in planning and implementation, the democratization of access to resources, the more prospects of success, and the failure of previous cooperative activities.

The essence of community-based resource management is letting the local constituency make their own rules and decisions, and enforce or carry them out. However, these rules and decisions should not infringe on the rights of other communities but enhance overall community welfare. The state's responsibility is to provide only the necessary technical and administrative support to enable the community to carry out these functions, and to ensure the legitimization or recognition of the community's policies outside of it, so that their measures remain effective even in the face of interference from non-members. In addition, it is also the role of the government to prevent conflicts between communities, and between communities and other user groups such as in the case of intrusion by large scale fishing fleets in nearshore areas.

The four case studies presented in the study illustrate the essence of community-based resource management, though each may be distinctly situated from the rest. They represented the range of community-based options available given a particular set of circumstances.

Specifically, the Coron Island experience is that of an indigenous people struggling to maintain their traditional management system in the face of challenges from migrants and from the interventions of the local government unit and the national government. The Apo Island case study illustrates an island community's effort, in partnership with both academic institutions and government programs, to protect its fisheries and coral reef resources. The Bolinao experience appears to be much more sophisticated given the set of challenges that face the local ecosystem and the community. Finally, the Batangas Bay initiative is noteworthy, given the complexity of issues, which accompany rapid industrialization and urbanization.

These four case studies, which depict community-based systems of management, were presented to illustrate even more effective modes of administration of the coastal environment than the purely legal system though each had distinct characteristics than the others. These revealed that even in the face of inconsistency with the national legal system, community-based management can survive. However, conflict in the use of coastal and marine resources remains a characteristic in the studies. Hence, partnership among different sectors is imperative for sustainability. Local governments must support community initiatives, so must the national government also ensure that community efforts are supported. Since local communities have the greatest interest in the conservation and sustainable use of coastal resources, they should have incentives, resources and capacity for marine and coastal ecosystem conservation.

Since environment degradation threatens the vitality and biodiversity of the coastal zones of the ASEAN region, there is a need to ensure a cleaner and safer coastal and marine environment. While there are numerous initiatives being implemented, it remains to be seen whether or not these will be effective and whether or not they can be sustained. However, with respect to the role of community-based resource management, there is a clear recognition of this principle in the more recent international environmental agreements. Yet this is not reflected in most of the regional initiatives which, with a few exceptions, are centered mostly in the role of national governments.

The strategy of community-based resource management has been proposed as a better alternative to command and control or free market approaches to environmental regulation and natural resources management. The strategy is based on the insight that contrary to the widely held belief that all community-held resources are doomed to suffer, it is now known that a wide variety of sustainable community resource management systems do exist.

The democratization of access to the resources lies at the core of an effective community-based resource management approach, and it must be remembered that the rationale for the approach is equity and justice.

Finally, this working paper correctly stresses a point usually lost on policymakers. It is that the law alone is not the factor that engenders successful local management systems and that such systems may succeed and even flourish despite an inhospitable national law climate or one wherein such systems are not provided for, as was the case when Apo Island started its local management system. Other factors come into play such as community cohesion, presence of external agents (i.e., NGOs) and history of community management. The challenge now is for the government to provide an enabling, appropriate and adequate legal and policy framework that institutionalizes and recognizes the important role of local communities in coastal resources management, in particular, and natural resources management, in general, by providing a framework for the confirmation of existing and functioning local management schemes.

Funding for this project was provided by Sida and the World Resources Institute. Dr. Charles V. Barber of WRI provided valuable assistance in this project. The views presented here are those of the author and do not necessarily reflect those of ICLARM, Sida or WRI.

Dr. Magnus Torell
Project Leader
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Contents

Acknowledgments	iii
Editor's Preface	v
List of Figures	xii
List of Acronyms	xiii
Abstract	1
1 Introduction	3
Methodology	4
2 The State of Fisheries, Coastal Resources and the Coastal Environment	5
State of Coastal Resources	5
Living Coastal Resources	5
Non-living Coastal Resources	7
Uses of Coastal Resources	7
Fishing and Aquaculture	7
Agriculture and Forestry	8
Mining	9
Protected Areas	10
Tourism	10
Shipping and Ports Development	10
Industry	11
Urban Development	11
Waste Disposal	12
Management Issues in the Coastal Zone	13
3 Overview of the Legal Policy Framework	15
Historical Perspective	15
Fisheries and Coastal Resource Management	16
Coastal Environment Management	19
Environmental Impact Assessment System	20
Pollution Control	21
Institutional Arrangements	22
Assessment of Agencies Involved in the Coastal Management	22

	Devolution to Local Governments	25
	Institutional Integration	26
	Public Participation	28
	Summary	28
4	Community-Based Resource Management: Four Case Studies	29
	Historical Perspective	29
	Rationale for Community-Based Management	32
	Coron Island, Palawan	33
	Environment Profile	33
	Indigenous Utilization and Management of the Coastal and Aquatic/Fishery Resources	34
	Issues in Resource Utilization and Management	38
	Managing Conflicts and Decision-Making Processes	39
	The Interface Between the National Legal System and the Management System of the <i>Tagbanuas</i> in Coron Island	40
	Apo Island, Negros Oriental	43
	Environmental Profile	43
	Resource Status and Demographics	43
	Resource Utilization	44
	Community-Based Resource Management	45
	The Legal Framework	47
	Management Issues and Constraints	49
	Bolinao, Pangasinan	51
	Site Profile	52
	The Bolinao Community-Based Coastal Resources Management Project	55
	Formation of Community Organizations	55
	The Bolinao Municipal Coastal Development Plan: From CB-CRM to ICM	58
	Local Management Arrangements in Bolinao	60
	The Bolinao Coastal Development Plan: Strengths and Opportunities	61
	Coastal Environmental Profile	63
	Legal and Policy Framework	65
	The Integrated Coastal Management Framework	66
	“Community-Based” Management	67
	Summary of Lessons Learned	68
5	Role of International and Regional Agreements	71
	The Rio Declaration and Agenda 21	71
	The United Nations Law of the Sea Convention	73
	IMO Conventions	75

	The Convention on Biological Diversity	76
	Other Agreements	76
	Regional Agreements	77
	Summary	81
6	The State of Play in the Philippines: Integrating Community-Based Resource Management in the Management of Fisheries, Coastal Resources and the Coastal Environment	83
7	Conclusion	87
	Equity and Justice	88
	References	89

List of Figures

Figure 1	Fish Catch by Sector	6
Figure 2	Mangrove Cover vs. Fishpond Development	9

List of Acronyms

ACIAR	Australian Center for International Agricultural Research
AFMA	Agriculture and Fisheries Modernization Act
APEC	Asia-Pacific Economic Cooperation
ASEAN	Association of South East Asian Nations
BAS	Bureau of Agricultural Statistics
BBDP	Batangas Bay Demonstration Project
BD	Bantay Dagat
BFAR	Bureau of Fisheries and Aquatic Resources
BoI	Board of Investments
BoT	Bureau of Trade
CADC	Certificate of Ancestral Domain Claim
CBCRM	Community-based Coastal Resource Management
CENRO	Community Environment and Natural Resources Office
CEP	Coastal Environmental Program
CFSA	Community Forest Stewardship Agreement
COBSEA	Coordinating Body of the Seas of East Asia
CRMP	Coastal Resources Management Program
DA	Department of Agriculture
DAC	Department of Agriculture and Commerce
DAR	Department of Agrarian Reform
DECS	Department of Education, Culture and Sports
DENR-CENRO	Department of Environment and Natural Resources-Community Environment Officer
DENR-ERDB	Department of Environment and Natural Resources-Ecosystem Research and Development Bureau
DFA	Department of Foreign Affairs
DILG	Department of the Interior and Local Government
DILG-PNP	Department of the Interior and Local Government-Philippine National Police
DND-PCG	Department of National Defense-Philippine Coast Guard
DND-PN	Department of National Defense-Philippine Navy
DoH	Department of Health
DoJ	Department of Justice
DoST-PCAMRD	Department of Science and Technology-Philippine Council for Aquatic and Marine Research and Development
DoT	Department of Tourism
ECA	Environmentally Critical Area
ECC	Environmental Clearance Certificate
EEZ	Exclusive Economic Zone
EIA	Environmental Impact Assessment
EMB	Environmental Management Bureau
EMP	Environmental Management Plan
FAO	Fisheries Administrative Order
FARMC	Fisheries and Aquatic Resources Management Council

Management of Fisheries, Coastal Resources and the Coastal Environment in the Philippines: Policy, Legal and Institutional Framework

IATFCEP	Inter-Agency Task Force on Coastal Environment Protection
IDRC	International Development Research Center
IMO	International Maritime Organization
IPRA	Indigenous People's Rights Act
KAISAKA	Kaisahan ng mga Samahan Para sa Kalikasan
LGC	Local Government Code
LGCAMP	Lingayen Gulf Coastal Area Management Plan
LMB	Liga ng Mga Barangay
MARINA	Maritime Industry Authority of the Philippines
NEDA	National Economic Development Authority
NEPC	National Environmental Protection Council
NFARMC	National Fisheries and Aquatic Resource Management Council
NIPAS	National Integrated Protected Areas System
NPCC	National Pollution Control Commission
NWRB	National Water Resources Board
NWRC	National Water Resources Council
PAB	Pollution Adjudication Board
PAFID	Philippine Federation for Intercultural Development
PAMB	Protected Area Management Board
PAWB	Protected Areas and Wildlife Bureau
PCAIFMC	Presidential Commission on Anti-Illegal Fishing and Marine Conservation
PCSD	Palawan Council for Sustainable Development
PENRO	Provincial Environment and Natural Resources Office
PPA	Philippine Ports Authority
PRA	Participatory Rural Appraisal
PTA	Philippine Tourism Authority
RSP	Regional Seas Programme
SAMMABI	Samahan ng mga Mangingisda ng Binabalian
SAMMAKA	Samahan ng mga Mangingisda para sa Kalikasan ng Pilar
SAPA	Samahang Pangkalikasan ng Arnedo
TAC	Total Allowable Catch
UNCED	United Nations Conference on Environment and Development
UNCLOS	United Nations Convention on the Law of the Sea
UNEP	United Nations Environment Program

Abstract

La Viña, A.G.M. 1999. Management of fisheries, coastal resources and the coastal environment of the Philippines: policy, legal and institutional framework. PRIAP-ICLARM Work. Pap. Ser. 5.

This is a study undertaken to ascertain the elements and trends at the local and national levels, which define the rights and rules that provide the management framework for the implementation of different types of locally based resources management systems in marine and coastal areas. The study showed that the existing institutional set-up is not only complex, confusing and "sectoralized", but more importantly, it is fragmented, thus, causing the major systemic hindrance to more effective management of the marine and coastal resources. Hence, there is a strong and urgent need for sectoral integration and coordination.

Four case studies, which depict community-based systems of management, were presented to illustrate even more effective modes of administration of the coastal environment than the purely legal system though each had distinct characteristics than the others. These revealed that even in the face of inconsistency with the national legal system, community-based management can survive. However, conflict in the use of coastal and marine resources remains a characteristic in the studies. Hence, partnership among different sectors is imperative for sustainability. Local governments must support community initiatives, the national government must ensure that community efforts are supported. Since local communities have the greatest interest in the conservation and sustainable use of coastal resources, they should have incentives, resources and capacity for marine and coastal ecosystem conservation.

Chapter 1

Introduction

This paper is an overview of the policy, legal and institutional framework for the management of fisheries, coastal resources and the coastal environment in the Philippines. The objective of this study is to look into the elements and trends at the local and national levels which define the rights and rules (laws, customs, traditions and the like) that provide the management framework for the implementation of different types of locally based resource management systems in marine and coastal areas such as “co-management”, “community-based management” and “integrated coastal zone management”. In identifying these elements and trends, a historical perspective—focusing on both the development of law and policy as well as practices on the ground—is provided. Case studies of community-based practices in coastal management are also presented in this paper to further illustrate and elaborate these elements.

In both the historical analysis and the case studies presented, the study gives particular focus on identifying and understanding the role of stakeholders and interest groups in the use of fisheries and other coastal and marine resources. The reality is that, conflict in the use of marine and coastal space is frequently the context under which the management framework for fisheries, coastal resources and the coastal environment operates.

Indeed, competition among resource users is a significant issue in the coastal zone. Industrial and real estate developments which require extensive lands in the most scenic or productive areas of the coastal zone compete with other uses, particularly agriculture and conservation. Tourism and recreation activities, which require high environmental amenities and access to infrastructure (roads, water and waste disposal, among others), have adversely affected amenities which should have been allocated to coastal communities. This is not to mention loss of or diminished landscape values and degradation of aesthetic quality as a result of the infrastructure developments. The urbanization of the coast has been disastrous to small-scale municipal fishers because of the devastation of wetlands and the pollution of waterways. Such has likewise threatened significant cultural, historic and anthropological sites in the coastal zone. Mariculture and aquaculture developments which are located in nearshore waters and require high water quality have affected other uses that diminish water quality, such as agriculture. They have also competed with fishing, conservation, ecotourism, among others, which have similar requirements.

Emphasis on the conflict over control of resources, between modes of utilization and among stakeholders and interest groups is the focus of this paper. This context of conflict precisely makes it possible to find solutions to problems of environmental

degradation and social inequity, which also characterizes the use of marine and coastal resources. The study explores such solutions, some of which are now bearing fruit in recent efforts in the Philippines, to ensure the sustainable development of marine and coastal resources. These solutions and the efforts of the Philippines are also examined in the context of global and regional cooperation, in particular focusing on the role of international and regional agreements and arrangements.

METHODOLOGY

Data for this paper were taken from secondary sources, mainly from government statistical offices and published works of experts in the field. For the case studies, interviews were conducted with key stakeholders in order to supplement the secondary information.

Many of the analysis and conclusions, and even some of the data, were products of numerous meetings and consultations that were done while the author was Undersecretary for Legal and Legislative Affairs of the Department of Environment and Natural Resources (DENR).

The objective of this study is to look into the elements and trends at the local and national levels which define the rights and rules (laws, customs, traditions, etc.) that provide the management framework for the implementation of different types of locally-based resource management systems in marine and coastal areas such as "co-management", "community-based management" and "integrated coastal zone management".

Chapter 2

The State of Fisheries, Coastal Resources and the Coastal Environment

The Philippine archipelago is the second largest island group in the world, comprising some 7 000 islands. This lies in the Western rim of the Pacific Ocean and a little above the equator. This is bounded on the north by the Bashi Channel, on the west by the South China Sea, on the east by the Pacific Ocean and on the south by the Sulu and Celebes Seas (IBON 1996).

The archipelago occupies a total land area of about 300 000 km², concentrated in the two largest islands of Luzon and Mindanao. Visayas is the third principal region, which is a group of islands and islets lying in the central part of the archipelago. The country has an extensive coastline measuring 17 460 km. The territorial water has an area of 1.7 million km², and an exclusive economic zone (EEZ) of some 2.5 million km² (Reyes et al. 1994). The shelf area (up to 200-m deep) is about 18 million ha (IBON 1996). Philippine waters comprise an area at least ten times more than its terrestrial environment.

The Philippines is situated in the center of marine biodiversity, brought about by various geological history and evolutionary process. Rich and varied natural ecosystems like coral reefs, mangrove swamps, estuaries, coastal wetlands, seagrasses, sandy beaches, embayments and sheltered coves abound. These areas also contain natural resources of great socioeconomic and even cultural and aesthetic value.

The importance of marine and coastal zones to the Philippines is readily apparent. Sixty percent of the country's 73 provinces, as well as of the municipalities are located in the coastal zone. In 1997, CEP reported that more than 60% of the 60 million population resides in some 10 000 coastal barangays (smallest political unit), including major urban centers.

STATE OF COASTAL RESOURCES

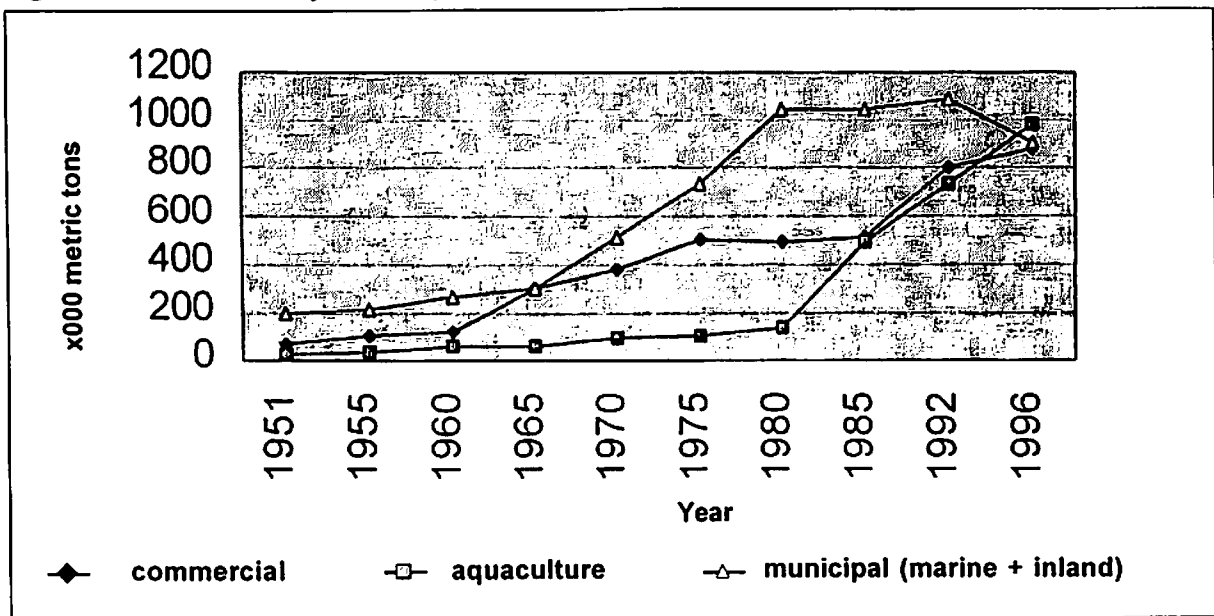
Living Coastal Resources

In 1995, the Philippines ranked 12th among the 20 most productive nations in the world in terms of fisheries (FAO 1997). The quantity of fish production, comprising of municipal fisheries, commercial fisheries and aquaculture, has been increasing through the years. From 1951 to 1996, the annual fish production increased from 296 thousand t to

In 1995, the Philippines ranked 12th among the 20 most productive nations in the world in terms of fisheries (FAO 1997).

2.77 million t. Municipal fisheries registered phenomenal growths in the late 1960s until the early 1980s, but peaked in the late 1980s. During the early 1990s, municipal fish catch decreased. Commercial fishing also rose steadily during the 1960s to the 1980s. The aquaculture sector only picked up in the 1980s. At present, it contributes to about a third of total production (see Figure 1) (BAS 1997).

Figure 1. Fish Catch by Sector. (Source: BAS 1997).



The value of fisheries products was about PhP 83 billion in 1996 (BAS 1997). The fisheries sector contributes about 4.5% of GDP (BFAR 1994).

Approximately 500 000 ha of mangroves were believed to exist in 1918. The area of the Philippine mangrove forest has decreased at a disquieting rate. In 1984, only about half remained. A decade later, 60% of the original cover had been lost. The major cause of the loss is conversion to fishponds. Mangrove fishpond conversion almost tripled from 1952 (> 88 000 ha) to 1988 (224 000 ha). Figure 2 clearly shows the link between mangrove loss and fishpond gain (Aliño, 1997).

Philippine coral reefs were estimated to have an area of 27 000 ha² within 10-20 fathoms (EMB 1996). Based on various surveys, only about 5% is in excellent condition (75 to 100% live coral cover), 25% in good condition (50 to 74% live coral cover), and the remainder are in fair to poor condition (Gomez et al. 1994).

There are approximately 5 million ha of seagrass beds in the Philippines. An estimate of seagrass coverage in seven sites around the country shows that most of the sites were in fair to good condition. However, sites in Southeast Luzon reveal that 60% to 100% of the seagrass beds is in poor condition (CEP 1997).

Non-living Coastal Resources

Of the 17 metallic minerals found in the country, 11 are known to be deposited in the coastal zone. These are chromite, cobalt, copper, gold, iron, lead, manganese, mercury, nickel, silver and zinc. Non-metallic minerals are more identified with the coastal zone. About 24 non-metallic minerals are present in the country. About half of these are in the coastal zone namely: barite, clay, coal, dolomite, feldspar, limestone, marble, perlite, rock phosphate, silica and talc (EMB 1996). Most of these non-metallic minerals are utilized as construction materials. Considering that the government pushes for infrastructure development, mining activities of construction materials has grown.

The Philippines has 132 major rivers, 421 river basins, 19 of which are considered major ones, and a groundwater storage of 261 775 million m³. Of its inland water sources, freshwater swamplands measure about 106 320 ha, brackishwater about 232 065 ha, fishponds at 224 thousand ha, lakes at 250 000 ha, rivers at 31 000 ha and reservoirs at 19 000 ha (IBON 1996).

USES OF COASTAL RESOURCES

Uses of coastal resources may be classified into extractive and non-extractive uses. The former may be further classified according to the resource being extracted, which may either be living (e.g., fisheries, forest products) or non-living resources (e.g., minerals). Non-extractive uses include tourism/recreation and designation as protected areas.

Other major activities in the coastal zone may not directly utilize coastal resources, except as the medium on which these activities are tied. These activities include shipping and ports development, industrial and urban development, waste disposal, security/military activities.

Fishing and Aquaculture

Fish is a vital part of the Filipino diet being the cheapest source of protein. The per capita consumption of fish is among the highest in Southeast Asia at 36 kg/yr (FAO 1997). A significant number of people living in coastal areas depends on fishing for their livelihood either through subsistence fishing, employment in fish trading and processing, operation of fish ports and markets and other support industries such as rope and net making, gear manufacture, boat building and repair. About 1 million people are engaged in fishing or about 5% of the labor force. Another 300 000 are engaged in the processing and manufacturing of fishery products.

There has been a marked decrease in the number of fisherfolk in the past two decades. In 1975, there were about 1.26 million fisherfolk and fish farmers, but in 1994, there were only about 1 million. The decrease was felt both among full-time fisherfolk involved in marine capture fisheries and part-time fishers. This may have been due to the drastic decline in the abundance of fishery resources in the municipal waters of the country, thus, discouraging small-scale fisherfolk to continue their activities (Menaveta 1997).

In 1990, there were about 430 000 vessels in the fishing fleet, mostly open craft. About 3 300 are officially classified as commercial vessels with a total tonnage of 155 gt (Labon 1991). About 85% of the municipal waters (up to 15 km from the shore) is considered overfished. This is supported by data that show a steady decline of the contribution of municipal fisheries in the overall fish production (Figure 1).

*“...a marked decrease in the number of fisherfolk...
...due to the drastic decline in the abundance of fishery resources in the municipal waters...”*

Aquaculture posted a significant share in the production of fish beginning in the 1980s. This has grown steadily due to its increased productivity and economic viability. By 1994, aquaculture contributed 30% of total fish production (Figure 1).

Aside from fish, coastal waters provide a wide variety of edible invertebrates, such as mollusks, sea cucumbers, sea urchins and jellyfish. The gathering of seaweeds is also common. The culture of seaweed for extraction of carageenan is extensive in the Visayas and Mindanao. Seaweed farming is very lucrative, bringing in about PhP1.6 billion in revenue in 1996 (BAS 1997).

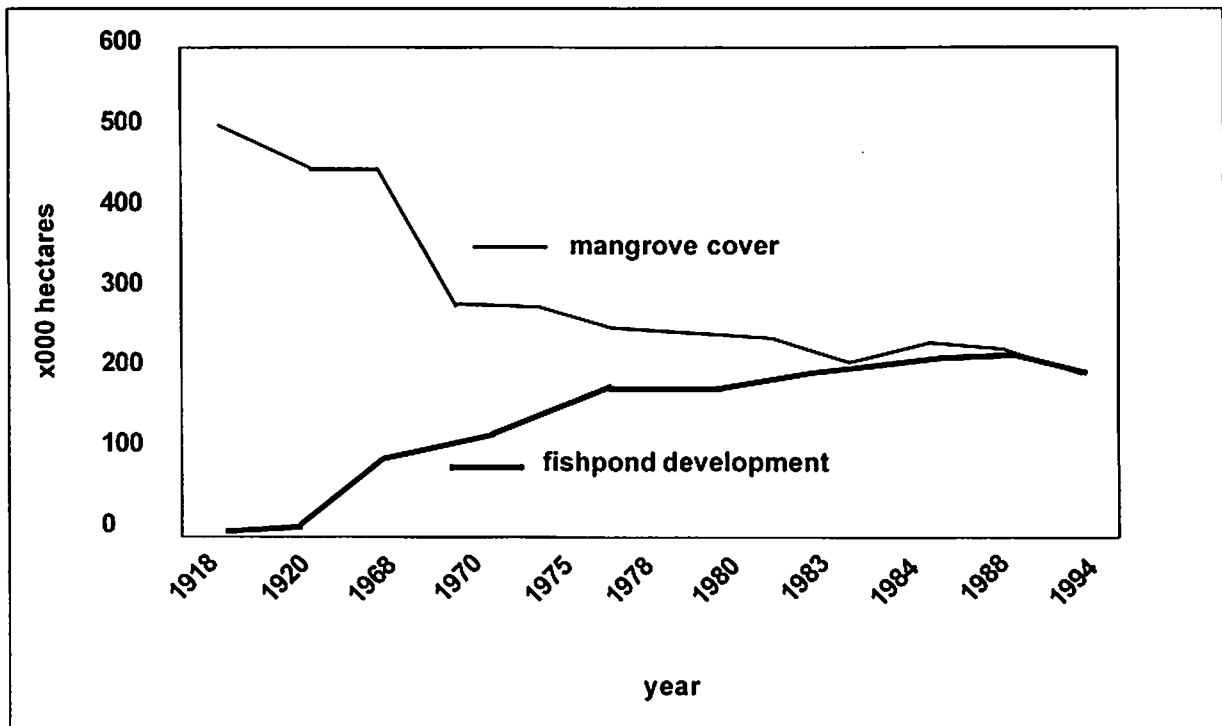
Marine products are harvested not only for food but also for medicinal, commercial and industrial uses. There are several on-going researches on bioactive compounds found in sponges and tunicates, which have anti-cancer potentials. Despite an existing ban, corals are harvested for sale as decorative items or as construction materials. There is also a growing market for aquarium fishes, which spurs fisherfolk to gather them in large quantities, often through destructive means such as cyanide use.

Agriculture and Forestry

The islands composing the Philippines are typically mountainous or hilly in the central area, with fertile flat lands extending out to the sea. The width of the flat lands, which are best suited for agriculture, varies. However, except for the large islands of Luzon, Mindanao, Palawan and the larger Visayan islands, the agricultural areas do not extend far inland. For this reason, most agricultural lands would be considered coastal lands wherein coastal agriculture mainly involves the growing of cereals (e.g., rice, corn). At present, more and more agricultural lands are transformed into cities and industrial centers.

Mangrove forests are also threatened. The reduction of the mangrove forests in the country is largely attributed to its conversion into fishponds. Between the years 1952 and 1987, fishpond areas increased at an average rate of 3 600 ha/yr. This quantity closely corresponds with the decline in mangrove areas (Figure 2). Other factors which contributed to the depletion of the mangrove forests are the conversion to industrial and human settlements and the exploitation of these mangroves for their forest products inasmuch as mangroves are sources of timber, firewood, charcoal, tannins, tanbark, *nipa* sap and shingles.

Figure 2. Mangrove Cover vs. Fishpond Development. (Source: BAS 1997).



Mining

"...Mangrove forests are also threatened....
...conversion into fishponds...
...conversion to industrial and human settlements..."

Mining in the coastal zone generally involves quarrying of sand, stones and rocks used in the construction sector. White sand and silica are also extensively gathered, the former to beautify resort areas which do not have natural white sand cover. Marble mining is also significant.

Quarrying continues in spite of serious problems such as erosion and siltation. In addition, the mine tailings of more sophisticated mining operations inland (gold, copper and the like) have considerable adverse impacts on the coastal environment.

As of 1994, there were 8 large-scale operating gold and silver mines, 20 small-scale gold and silver mines, 9 large-scale base metal mines, 3 small manganese operations, 3 large chromite operations, and 21 small-scale chromite mines. For non-metallics, there were 45 limestone quarries, 14 marble quarries, 36 silica, 4 dolomitic, 16 rock phosphate, 6 feldspar and 36 clay mines (EMB 1996).

Mine wastes and tailings present the greatest pollution threats from the mining industry. Natural calamities such as typhoons and earthquakes cause impounded materials to be washed out or carried to bodies of water, ultimately to the sea. Mine wastes generation peaked in 1991 at 47.44 million t. Mine tailings produced that year reached 42.7 million t. However, mine wastes and tailings decreased an average of 14% from 1990-1994 except for 1991 (EMB 1996). This is largely due to the closure of several large mining operations as a combined result of economic and technical factors.

Protected Areas

There is a whole range of protected areas in the coastal zone. There are at least 15 major areas under the National Integrated Protected Areas System (NIPAS), covering an area of more than 1 million ha of both land and sea components (PAWB 1998). In addition, there are numerous small fish sanctuaries and reserves established by the Bureau of Fisheries and Aquatic Resources (BFAR) and by local governments.

Tourism

Tourist attractions in the Philippines have been identified by the Department of Tourism (DoT) and are classified as follows: social and cultural attractions, natural attractions and scientific and artificial attractions. In most cases, these attractions are located in coastal areas.

The 18 of the top 25 tourist destinations are coastal in nature. Natural attractions in the coastal zone include white sandy beaches, submarine gardens, diving grounds and the like. Of these, about 246 or 70% are beaches, 77 or 22% are islands and the remaining 30 or 8% are fishing and diving grounds, submarine gardens and bays (EMB 1996). These areas are not only visited for their scenic attractions but also because of the recreational activities they offer. The number of tourist arrivals in the country has reached almost two million per year.

Shipping and Ports Development

In 1995, the Philippines had a total number of 10 072 vessels, classified into merchant fleet and fishing fleet. Those included in the merchant fleet were passenger ferries, cargo containers, and barges, among others. These comprised 50% of the total number of domestic vessels. A larger percentage of the remaining half consists of fishing vessels (MARINA 1986). The data did not take into account the more than 400 000 small open boats that dotted the sea.

Berthing facilities and storage facilities are among those comprising the port system, primarily, to serve domestic vessels, more particularly those engaged in fishing and coastal commerce. On the other hand, there are 233 enterprises engaged in shipbuilding, ship repair, afloat repair, boat building and ship-breaking activities licensed by the Maritime Industry Authority of the Philippines (MARINA) as of December 1996. Of this number, 21% or 82 are small shipyards, 10 are medium shipyards and 14 are large shipyards (MARINA 1986).

Industry

The coastal zone has attracted industrial and commercial establishments because of its accessibility to raw materials and its proximity to population centers.

There are five types of industries which thrive in coastal areas:

- ❖ Industries that benefit from location near low-cost water transportation and inland transportation systems;
- ❖ Industries that derive power from or use water for processing or cooling purposes;
- ❖ Industries that are beneficially located near centers of population but do not have direct dependence on, or need for water or water access;
- ❖ Marine transportation industries; and
- ❖ Industries that depend directly on the marine environment for raw materials for commercial activity.

Based on information in 1983, industrial development density is at a minimum of 5 industries per 1 000 km². Approximately, the same proportion applies in the coastal areas (EMB 1996).

Urban Development

“Human settlement” encompasses not only shelter, but all other necessary infrastructures such as roads, water supply, energy sources, transportation, community building and other facilities. Human settlement development is primarily influenced by a growing population. To date, the density of persons per square kilometer has increased tremendously from 64.1 in 1948 to 228.7 in 1995 (NSCB 1996). Over 60% of the total population resides in some 10 000 coastal barangays, including some larger urban centers considering that coastal areas provide livelihood to many people (CEP 1997).

A number of subdivisions are situated in coastal zones. In fact, some foreshore areas are being reclaimed to house residential, commercial and industrial establishments in order to address the increasing demands of urbanization. A deplorable development is the

practice of building resorts, factories and buildings right on the shore, even abutting the sea, in clear violation of mandatory easement rules.

Together with the rise in coastal communities is the need to meet the demand for transportation facilities. In support of this, a network of roads and highways is provided. Natural land forms influence the major road networks of the country's coastal provinces. These major roads run along the coastlines which branch out to minor arteries leading to inland areas.

Waste Disposal

Waste disposal is a major "use" of the coastal zone. The problem of waste disposal is especially acute in urban areas. In Metro Manila alone, the per capita waste generated is about 0.66 kg in 1995. Considering that the metropolis is home to about 10 million people, the total waste generated is more than 6 000 t/day. This is expected to increase to 13 300 t/day in the year 2014. The current collection efficiency in Metro Manila is 85%. Fifteen percent or 900 t of wastes is either burned, but more likely thrown in canals and *esteros* or deposited in rivers that flow to the sea (EMB 1996).

In 1992, only about 76% of the population had access to sanitary toilets. Sewerage systems only exist in large cities. Even so, only a small portion of the city is served. In Metro Manila, only 7% is covered by the sewerage system. The rest of the population relies mostly on on-site disposal or septic tanks which drain directly into the drainage points of existing rivers and creeks (EMB 1996). Untreated domestic sewage is the major source of water pollution.

MANAGEMENT ISSUES IN THE COASTAL ZONE

In the Philippines, as is true elsewhere in Southeast Asia, the coastal zone serves as the base for human settlement and accommodates major industrial, commercial, social and recreational activities. High population density in coastal areas is not unusual because of the wealth and opportunity which the coastal and marine environment has to offer. Families depend on coastal and oceanic waters for their livelihood. However, driven by

"... the coastal zone serves as the base for human settlement and accommodates major industrial, commercial, social and recreational activities."

purposes other than subsistence and survival, various types of activities now flourish therein, most, if not all of which are unregulated. Such "development" is not without its consequences. The unabated increases in urbanization, industrialization, and population have severely affected the state of coastal and marine resources. Consequently, the constant and heavy exposures to numerous artificial and natural pressures have taken their toll on the ecosystems.

These pressures have caused the rapid depletion of mangroves, destruction of coral reefs and the drastic decline

in fisheries yield. All the major bays in the country have now been overfished. Destructive fishing practices like dynamite fishing, *muro-ami*, use of cyanide and the like, have resulted in the degradation of marine and coastal ecosystems. Moreover, upland deforestation, industrial and domestic waste generation, mining and shoreline development, not to mention uncontrolled tourism have been identified as the culprits in the continued degradation of the coastal and marine environment. More than 400 km of the country's coastal areas are now heavily eroded, silted and sedimented.

Pollution is likewise a major concern. Point sources include industrial effluents, water run-off from urban areas and sewage discharges, among others. Non-point sources arise from activities such as land clearance (as a result of construction work and subdivision development), livestock production and agricultural activities, including the use of fertilizers and pesticides. All these have contaminated marine and coastal waters. The effects of these pollution are the loss of seagrass beds from coastal lagoons, bays and estuaries and the recurrence of algal blooms, among others.

Population growth and industrialization have severely affected the state of coastal and marine waters. Discharge of contaminants into the coastal zone is uncontrolled. While coastal and marine waters are classified according to their best usage, these waters could not be so utilized. They are unfit for their intended use because of the state of these waters. Manila Bay best illustrates the problem affecting coastal and marine waters due to pollution not only from industrial sources but from domestic sources as well. Total fecal coliform counts were shown to be over the standards set by the DENR. Industrial wastes were also detected in alarming amounts (EMB 1996).

Red tides occur with regularity especially around the Manila Bay area. In 1992, the greatest number of red tide occurrences (269) and deaths (11) were reported. While the figures decreased in 1993 and 1994, these increased again in 1995. As regards national figures, a total of 758 cases of red tide poisoning were reported and 49 deaths were noted. Red tide tends to occur at the onset of the rainy season after a warm dry period. This is attributed to the high organic loading from the rivers draining into the bay (EMB 1996).

Marine-based pollution is also significant. Some of the sources include oil spills (both spills at sea and ship-sourced oil-spills), release of sediments from mining and organic compounds (e.g., anti-fouling paints, ballast water discharges and sewage from vessels), and marine transport activity (chemicals, bulk and packaged noxious substances, waste products carried or generated on board ships).

Three incidents of oil spill were reported from 1973 to 1975. One of these was a result of the sinking of the LUSTEVECO barge sometime in August 1975. From 1978 to 1980, four more oil spills were reported. During 1990-1995, a total of 75 oil spill incidents were noted. Of these incidents, 71% was caused by accidents such as sinking, collision, and grounding. The remaining 29% was due to cargo handling operations such as loading, bunkering and discharging (EMB 1996).

Mining is one cause of soil erosion and sedimentation of the coastal waters. The adverse effect of mining on the coastal environment may either be from *in situ* mining operations on the beach zone or from direct or indirect disposal of mine wastes or tailings into marine waters. Mining activities also result in sedimentation whereby outfalls of mine tailings find its way into the coastal system. Sedimentation arising from mining activities cover vast areas of corals as was the case involving the Atlas Mining and Marcopper Mining Corporation which directly dumped mine tailings into the sea. A large volume of tailings has been discharged into the sea particularly in Calancan Bay, Marinduque and at Iba, Toledo City in Cebu, resulting in fish kills and the destruction of fish habitat.

Poverty in the coastal areas has likewise been pointed as a source of ecosystems degradation. About 80% of the municipal fishing families in the country is estimated to live below the poverty line. These families are dependent upon the coastal ecosystems for their livelihood. Increased pressure and competition have forced small-scale fishers to resort to the more destructive methods of fishing. Lack of alternative livelihood aggravates the situation hence the cycle of resource destruction and depletion continues.

In summary, Philippine marine and coastal resources and environment are at great risk—in danger of dying or disappearing. Indeed, continued use at current rate and scale may create irreversible impact.

Based on the number of water right permits granted by the National Water Resources Board, a generally increasing trend in groundwater and surface water usage is noted. This posted an increase of 11.4% over a six-year period from 129 777.75 million m³ in 1990 to 144 622.50 million m³ in 1995. In terms of water usage by sector, only 0.3% and 0.03% are attributed to fisheries and recreational purposes, respectively, with power generation as the biggest user of water followed by the agricultural, domestic and industrial sectors (EMB 1996).

The extensive coastline measuring 17 460 km is radically being modified especially in areas adjoining major urban centers. Foreshore areas are being reclaimed and utilized to accommodate residential needs as well as commercial and recreational uses. Moreover, ports and other similar structures are put up along these areas to support the transportation system and to promote national and regional trade.

Chapter 3

Overview of the Legal and Policy Framework

This section discusses the existing legal and policy framework which has been formulated and enforced by the government and the manner by which this changed over time. However, this does not include the rules developed and practiced by some local communities which do not form part of the formal legal system. Local customary norms are considered in the next section which deals with community-based management.

The Philippine government has always relied principally on regulatory mechanisms to manage the marine and coastal zones, particularly to control activities, allocate resources among users and potential users and resolve conflicts among competing values. These regulatory mechanisms can be classified into two broad categories: (a) those used to regulate access to and use of public resources such as fisheries mineral deposits, forestry, flora and fauna and public land; and (b) those used for environmental protection such as the Environmental Impact Statement (EIS) System, NIPAS and pollution control.

HISTORICAL PERSPECTIVE

Kalagayan (1991) describes early Filipinos as forming barangays (villages) which had jurisdiction over coastal resources. The barangays defined their own fishery limits which were exclusive of other barangays. However, the traditional rights of barangays over their fishing grounds were eroded during the Spanish period when all fisheries and natural resources were declared as held for the Crown (known as the *jura regalia* or Regalian Doctrine). The right to exploit and manage the resources were transferred from the community to the central government. This system of state ownership was introduced to the Philippines as an extension of the Spanish legal system and continued in force throughout the period of Castilian domination (Noblejas and Noblejas 1992). The Regalian Doctrine has since been adopted as the norm. Even the 1987 Constitution of the Republic of the Philippines, retains the concept which serves as the justification for government to claim full control and supervision over all aspects of use and protection of marine and coastal resources.

However, in practice, some aspects of control over the resources have been devolved to local governments. During the American period, municipalities were given the authority to grant fishery privileges within their jurisdictions (Kalagayan 1991). Still, policy

formulation and general management remained with the central government. Since then, policy formulation and regulation has largely remained centralized, top-down and non-participatory (Sajise 1995). Control over the resources is a central issue because the laws governing activities in the coastal zone invariably involve maximizing exploitation of the resources. Those who have control get the most benefit.

Over the years, the laws and policies evolved not only as a centralized system but also as a sectoral one. Specific laws were passed to address particular issues. The uses of coastal resources and activities in the coastal zone were governed by separate, often conflicting laws. For instance, aquaculture was regulated under the fishery laws, but mangroves were considered forests and governed by forestry laws which were administered by a separate agency. The connection between the activity and the resource was not effectively addressed by the sectoral approach.

In the last two decades, there have been attempts to solve the problems through a holistic approach, recognizing the interconnection of the various component ecosystems: from the upland forests/watershed areas to the lowlands, the mangroves, the intertidal zones, the reefs and seagrass beds, and off-shore areas, that compose the whole coastal environment. However, these efforts have met with limited success.

The 1990s mark the enactment of major laws that move towards integrated management, decentralization of control and recognition of the rights of local communities to directly manage the resources or actively participate in the decision-making processes.

"Over the years, the laws and policies evolved not only as a centralized system but also as a sectoral one."

In 1991, Congress passed Republic Act (RA) 7160, otherwise known as the Local Government Code of 1991 (LGC). The law gave back to local government units (LGUs) the primary control over marine and coastal resources. In the meantime, community-based efforts to

revive and protect the resources were initiated both by government and nongovernment organization (NGO) sectors. The devolution of certain management and allocation decisions to the community level may be more effective than the management efforts provided by distant, understaffed and under-funded agencies (Carlos and Pomeroy 1995). In 1998, Congress passed two significant laws: the new Fisheries Code (RA 8550) and the Agriculture and Fisheries Management Act or AFMA (RA 8435) which incorporate measures to curb overexploitation and manage the resources sustainably.

FISHERIES AND COASTAL RESOURCES MANAGEMENT

The evolution of the present regulations governing fisheries can be traced as far back as the Spanish Law on Waters of 03 August 1866, which recognized the right of the public to fish from the shore and granted rights to Spanish registered seafarers and merchant

sailors to fish from boats in maritime coastal zones. The Spanish Law on Waters was extended to the Philippines by Royal Decree of 08 August 1866 (Peña 1997). The decree declared that the shores, coasts and coastal seas are part of the national domain, though open to public use. Even as early as 1598, though, Antonio de Morga demanded that a regulation-size net be prescribed for use and complained that fishing with too closely knit nets was doing harm since they were killing the small fry. Fisheries regulations remained relatively unchanged during the Spanish period.

During the American occupation in 1932, a comprehensive fisheries law (Act No. 4003) was enacted by the Philippine Assembly. The Fisheries Law of 1932 contained provisions for the protection and conservation of fishery resources such as the declaration of open and closed seasons, protection of fry or fish eggs, prohibition of use of noxious or poisonous substances and explosives in fishing and prevention of water pollution. The law also contained special provisions on the gathering of mollusks, sponges and hawksbill turtles. The main regulatory or management strategy implemented was the selective grant of licenses or permits to qualified persons. The license was coupled with limits on access to the resource such as setting of minimum sizes of fish, shellfish or turtle that may be caught or restricting certain fishing practices to certain places or time of year.

Goodman (1983) noted that the Fisheries Law of 1932 was pushed to curb the domination of Japanese capital in the fishing industry. The Japanese had moved successfully into the Philippine fishing industry before 1930. Four hundred Japanese fishers were operating 64 power fishing boats in Manila Bay and 36 deepsea power vessels in the Gulf of Davao. They had brought into the Philippines such innovations as swift, powered, fishing vessels, the beam trawl, and the trap net, as well as scientific survey-ships that pinpointed from year to year the richest fishing grounds.

The 1932 Fisheries Law provided that commercial fishing vessels of more than 3 t must be licensed only to Filipinos or Americans, and aliens may participate only by investing in the corporations which was 61% owned by Filipinos or Americans. The law was not effective in controlling Japanese domination because the Japanese merely used Filipino dummies who owned the boats only in name. According to Goodman, it has even been suggested that the impetus for the passage of the law was for some people to profit from the regulation by serving as dummies (Goodman 1983).

In the ensuing years, Japanese interest in Philippine fisheries was further reinforced by the signing of a secret treaty between Philippine President Manuel Roxas and General Douglas MacArthur representing the Japanese Board of Trade. By virtue of this treaty the Philippine-Japan Treaty of Amity, Commerce and Navigation was drawn up in 1960. However, it was only in 1973 that the Philippines ratified the treaty because of local opposition. By virtue of this treaty, the Philippines supplied Japan with its tuna, shrimp and other marine commodities while Japan exported to the Philippines canned mackerel and sardines.

In 1947, when the Philippines had become fully independent, Congress created the Bureau of Fisheries (BoF) under the Department of Agriculture and Commerce (DAC)

to promote further the development of the fishing industry in the Philippines¹ (BFAR 1987). The office was granted broad powers to issue licenses and permits, conduct studies, supervise and control the demarcation, protection, management, development, reproduction, occupancy and use of all public fishery reserves and national and municipal fisheries and fishery reservations (RA 177, Section 4). The bureau was abolished in 1963 and replaced with the Philippine Fisheries Commission (PFC) under RA 3512.

The commission exercised even broader powers than its predecessor. The added powers pertained mainly to increasing fish production by encouraging more fishing activities and increasing fishing efficiency through better technology. The commission was a collegial body with representatives from the private sector.

The move towards the development of fishery resources was accelerated further upon the promulgation of the Fishery Industry Development Decree (Presidential Decree [PD] 43) in 1972. The government sought to promote, encourage and hasten the organization and integration of the activities of all persons engaged in the industry so that the country could achieve self-sufficiency in the supply of fishery products. The government committed to help provide financing, training and extension services towards this goal. By this time, the BoF had been restored and the PFC replaced with the Fishery Industry Development Council, which included among its members representatives from government banks and the head of the Board of Investments. This emphasized further the goal of maximizing the exploitation of the country's vast fishery resources.

In 1975, PD 704 (Fisheries Code) was issued because of an urgent need to revise and consolidate all laws and decrees affecting fishery resources which have largely remained untapped due to unnecessary constraints brought by existing laws and regulations and by the failure to provide an integrated development program for the industry. In the declaration of policy, the acceleration of development of the fishery industry is tempered with the policy of keeping the fishery resources in optimum productive condition through proper conservation and protection as expressed in the provisions on establishment of fish sanctuaries and prohibitions of destructive fishing methods.

The 1975 Fisheries Code's more significant impact was on the foreign involvement in Philippine catch fisheries. The code paved the way for the reintroduction of Japanese investment in the local fishing sector. By virtue of this law, Japan thus became the dominant partner of the Philippines in joint ventures in fisheries.

Fishery laws in the Philippines did not change until February 1998 when the Philippine Congress enacted the new Fisheries Code of 1998. While it contains more specific provisions on sustainable development of fishery resources, it has not changed the orientation of the law in emphasizing exploitation of these resources.

¹ Originally, fisheries management began under the Division of Fisheries in the Bureau of Science in 1907.

Under the new code, the declared policies of the State emphasize food security, prioritization of local fisherfolk in the allocation of privileges and benefits and sustainable development, among others. The code provides for limitations to access of resources through quotas that should not exceed the maximum sustainable yield, close seasons, restrictions on use of destructive fishing gears, designating fishery reserves and sanctuaries. A significant change in the new code is the devolution of the function of fishery management to the local governments. Municipal waters, extending up to 15 km offshore are under the control of municipal and city governments. The national government retains control only of waters beyond the municipal jurisdictions. This is in line with the

general principle of devolution under the LGC, which was passed seven years earlier. The LGC transferred to local governments broad powers of general environmental protection, but especially the control over the coastal areas within their jurisdiction. The LGC, however, focused on permitting and fiscal matters. Now, with the Fisheries Code, general management and development powers are given to the local governments.

“Under the new code, the declared policies of the State emphasize food security, prioritization of local fisherfolk in the allocation of privileges and benefits, and sustainable development, among others.”

A few months before the enactment of the new Fisheries Code, Congress passed the AFMA which focuses on food security and global competitiveness in the agriculture and fisheries sector, while, at the same time, ensuring the equitable sharing of benefits among the stakeholders. The act aims to provide financial and technical support to the agro-fisheries industry in its modernization effort.

COASTAL ENVIRONMENT MANAGEMENT

Regulations relating to the management of the coastal zone are generally incorporated in broad environmental laws, such as the environmental impact assessment (EIA) and pollution control laws.

Environmental Impact Assessment System

An important legal mechanism for environmental management in coastal and marine zones is the law on EIA system. In the Philippines, an EIA system was first adopted in 1977 when the National Environmental Protection Council (NEPC) was created and given, among others, the power “to review environmental impact assessments of projects submitted by government agencies².”

² PD 1121, Section 2(e).

Under PD 1586, environmental impact statements were required only for undertakings or areas which were declared by the President as environmentally critical. All other projects or areas, those which are non-critical, were not required to submit these statements. However, the NEPC was authorized to require non-critical projects or undertakings to provide additional environmental safeguards as it may deem necessary³.

In 1981, Presidential Proclamation 2146 was issued, identifying as environmentally critical projects, heavy industries, resource extractive industries, as well as infrastructure projects. The environmentally critical areas (ECAs) were also defined, including all declared protected areas, critical habitats of wildlife, prime agricultural lands, mangrove areas and coral reefs, areas of significant historical, cultural or aesthetic values and areas often hit by natural calamities, among others.

The most important features of the Philippine EIA system are: (a) the distinction made between environmentally critical projects and projects in ECAs; (b) the decentralization of EIA system decisions to regional offices for non-critical projects in environmentally sensitive areas; (c) the incorporation of the principles of environmental risk assessment in the system; and perhaps most significant (d) the inclusion of social acceptability in the criteria in the issuance of an environmental compliance certificate (ECC).

By requiring an ECC for all projects in all environmentally sensitive areas, most activities in marine and coastal areas would then require an ECC. Indeed, the history of the implementation of the EIA system would reveal a continuing process of including in the list of projects requiring an ECC. Operation of a ferry system in Laguna de Bay and the dumping of waste water in the seas are two recent examples of new activities that have been added to this list. By decentralising these decisions to the regional offices of the DENR, a more efficient implementation of the EIA system is possible.

The inclusion of environmental risk assessment and social acceptability in the EIA system is the most potent tool for decision-makers. Lack of environmental risk assessment was perceived to be one of the reasons which resulted in the mining disaster that occurred in Marinduque in 1996, resulting in extensive damage to the Boac river and outlying coastal areas. The inclusion of environmental risk assessment in the EIA system is a step to avoid a repetition of such disaster. As for social acceptability, its inclusion in the criteria for the issuance of an ECC is a result of many experiences by the DENR of controversial projects which generated serious concern, in many cases outright opposition, among affected communities. By requiring social acceptability⁴, the expectation is that

"The inclusion of environmental risk assessment and social acceptability in the EIA system is the most potent tool for decision-makers."

most negative environmental consequences of a project are avoided or, at the very least, mitigated.

³ PD 1586, Section 5.

⁴ DAO 96-37, Section 3 (cc).

In sum, the EIA system in the Philippines provides perhaps the most important tool for the effective environmental management of marine and coastal areas. Indeed, in one project involving a proposal to build a cement plant in a coastal area (discussed later in this paper), the DENR denied the ECC. The DENR cited as one of the reasons for not allowing the project to operate its failure to fulfill the requirement of social acceptability.

Environmental pollution is regulated by the DENR as a general rule. The DENR, through the Environmental Management Bureau (EMB), sets ambient, emission and effluent standards to control the discharge of pollutants into the air, land and waters. In 1987, the DENR absorbed the powers of the National Pollution Control Commission (NPCC) created under the Pollution Control Law, when the department was reorganized under Executive Order (EO) 192.

Pollution Control

Both air and water pollution have significant impacts on the coastal environment. Pollution, in general, is governed by PD 984. Under that law, the NPCC formulated the policy, set pollution control standards, adjudicated violations and performed other regulatory functions. When the DENR was reorganized, the general regulatory functions were transferred to the regional offices, the policy formulation and standard setting were assigned to the EMB, while the quasi-judicial functions were given to the Pollution Adjudication Board.

Marine pollution is regulated by the Philippine Coast Guard (PCG). Under PD 600, it shall be unlawful to throw, discharge, or deposit, or cause, suffer, or procure to be thrown, discharged, or deposited either from or out of any ship, barge, or other floating craft of any kind, or from the shore, wharf, manufacturing establishment, or mill of any kind, any refuse matter of any kind or whatever description other than that flowing from streets and sewers. The discharge of oil and other noxious substances is also prohibited. In cases of oil pollution, the polluter is liable for the clean-up in addition to criminal fines and imprisonment.

"In cases of oil pollution, the polluter is liable for the clean-up in addition to criminal fines and imprisonment."

If one considers PD 984, on the one hand, and PD 600, on the other, there is an apparent overlap. Both laws address the issue of discharge of pollutants into the waters and seas, whether from land-based or ship-based source. Thus, PD 600 was amended by PD 979 to delineate the functions of the concerned agencies, while retaining essentially the same prohibitions. In line with the goal of avoiding duplication and conflict in functions, the DENR and PCG entered into an agreement whereby the DENR regulates land-based sources and PCG monitors and regulates ship-based pollution sources.

INSTITUTIONAL ARRANGEMENTS

Assessment of Agencies Involved in Coastal Management

An exhaustive review of all government agencies involved in coastal and marine resources management would require a review of the entire governmental machinery since almost every aspect of the bureaucracy has some direct or indirect participation, from budget management, finance and economic planning to tourism, agriculture, agrarian reform and even national defense, foreign affairs, education and labor.

To simplify the distinction between and among different government agencies with marine and coastal management functions, four categories according to their general functions may be made: (a) policy-making/general management; (b) scientific; (c) research; and (d) law enforcement and coordinating functions.

Under category (a) falls the following: DENR which has overall responsibility for environmental protection and management of both marine and coastal environment; Department of Agriculture (DA) which has jurisdiction over the conservation and proper utilization of agricultural and fishery resources. Under its Fisheries Sector Program (FSP), the DA has implemented a new management system known as Coastal Resources Management Program (CRMP) which is being pilot-tested in 12 priority bays; the LGUs, which, by virtue of the devolved functions under the LGC of 1991, had been given the exclusive authority to grant fishery privileges in the municipal waters. The more important power is the expansion of their jurisdiction over municipal waters up to 15 km; autonomous regions which under the Organic Act of Muslim Mindanao (RA 6734), the regional government has been given full control over natural resources management, except for some strategic resources; the National Economic Development Authority (NEDA) coordinates various social and economic plans, policies, programs and projects of the country on a national and sectoral basis.

Category (b) includes the following: the Department of Science and Technology-Philippine Council for Aquatic and Marine Resources Development (DOST-PCAMRD), which is a policy-formulating and coordinating body for aquatic and marine science and technology development; the DA-BFAR, which is the main coordinating body for all researches conducted by the DA; the DENR-Ecosystem Research and Development Bureau (ERDB), which is DENR's research coordinating unit; the University of the Philippines-Marine Science Institute (UP-MSI), which is the national center of excellence in the marine sciences.

Category (c) includes the Department of the Interior and Local Government-Philippine National Police (DILG-PNP), which is lodged with the general responsibility of crime prevention and the apprehension of violators; the Department of National Defense (DND)-PCG, which has the primary role in the prevention and control of marine pollution.

Category (d) includes Presidential Commission on Anti-Illegal Fishing and Marine Conservation (PCAIFMC) or the Bantay Dagat Committee (BDC) which does mainly law enforcement in coastal waters; the Inter-agency Task Force on Coastal Environment Protection (IATFCEP), which coordinates the departments and agencies enforcing coastal environment protection; the Department of Foreign Affairs (DFA), which heads the Cabinet Committee on Marine Affairs which addresses the various concerns on the implementation of the United Nations Convention on the Law of the Sea (UNCLOS).

There are other national agencies involved in the management of specific resources, like the BFAR, which is the lead agency in fisheries management; the Department of Health (DoH), which is involved in marine and coastal resources management issues that have a bearing on public health; the National Water Resources Council (NWRC), which governs the ownership, appropriation, utilization, exploitation, development, conservation, and protection of water resources whether subterranean, surface or atmospheric, fresh or sea water; the Philippine Ports Authority (PPA) which is involved in ports development.

The DENR has, in its past and present organizational structure, traditionally been recognized as the agency with the general mandate over natural resources utilization and management, including marine and coastal resources. The department has the potential to design and implement a program that covers the entire spectrum of coastal resources management: from wildlife protection, protected areas management, to pollution control, forests/mangroves conservation, land use, mining regulations, and others.

The management and exploitation of marine and coastal resources traditionally went hand-in-hand with environmental protection under one government agency, the Department of Natural Resources (DNR). As far back as the Fisheries Act or Act 4003 (1934), fisheries were under the jurisdiction of the DNR. This was the system until 1984 when the BFAR was removed from the Ministry of Natural Resources (MNR) and transferred to the food production group of the Ministry of Agriculture and Food by virtue of EO 967. Interestingly, the management of coastal and marine habitats were retained in the MNR. The apparent split between utilization functions on the one hand and conservation/protection functions on the other has remained to this day.

Programs of the DENR have serious and substantial impacts on coastal zone management, whether directly or indirectly. Through its forestry programs, the department has control over mangrove and watershed resources. The department also supervises the NIPAS which can propose the establishment of coastal and marine protected areas. Wildlife conservation is a major concern of the department. While it does not take the lead role in the protection of marine wildlife, the department has programs specifically aimed at the conservation of marine species such as turtles and marine mammals. The DA, through BFAR, leads in the protection of marine wildlife.

Through its environment programs, the department regulates the discharge of wastes and other pollutants into the seas. Activities in critical coastal areas are subject to the EIA system. Environment programs address environmental impacts brought about by human

activity. The EIA system being supervised and implemented by the DENR, ensures that development projects do not become environmental threats. Projects, which pose serious threats, are denied environmental clearance. Proponents are required to submit Environmental Management Plan (EMP) to prevent, minimize, mitigate and monitor environmental impacts. Monitoring and regulation functions in relation to the implementation of the EIA system contribute to the overall program of protecting coastal resources.

The organizational structure of the DENR directs the implementation of programs to the regional offices. Policy-making and research functions are performed by staff bureaus.

In 1993, the DENR launched the Coastal Environment Program (CEP), which takes an integrated approach to coastal resource management. The CEP's mandate includes the promotion of the use of environment-friendly coastal technologies, expansion of livelihood opportunities in, and assure equal access to, coastal resources and upgrading the capabilities of all DENR personnel in the management of coastal environments⁵.

Indeed, it is interesting to note that fisheries, marine and aquatic resources were not included in the jurisdiction of the DENR under the department reorganization in 1986 (EO 192). However, under the general government reorganization under EO 292 (Administrative Code of 1987), which was promulgated barely a month after EO 192 was issued, fisheries, marine and aquatic resources were added to DENR's concerns. Some view this development as a source of confusion and conflict of jurisdictions, but the DENR has taken advantage of this expanded mandate to undertake the CEP.

The various programs implemented by the DENR are part of the performance of its traditional functions. The department has accumulated experience and expertise in these areas over the years.

Under the Administrative Code of 1987, the DA is mandated to promulgate and enforce all laws, rules and regulations governing the conservation and proper utilization of agricultural and fishery resources as well as conduct, coordinate and disseminate research studies on appropriate technologies for the improvement and development of agricultural crops, fisheries and other allied commodities.

"The fragmentation of fisheries administration between various agencies of the DA, and to some extent other departments, is considered the root cause of its weakness."

The fragmentation of fisheries administration between various agencies of the DA, and to some extent other departments, is considered the root cause of its weakness. This is obvious when considering the history of the BFAR. The bureau started out as the Division of Fisheries under the

⁵ DAO 93-19.

Bureau of Science in 1907. In 1933, it was transferred to the Ministry of Agriculture and Commerce as the Fisheries and Game Administration. Later, it was reorganized as the Bureau of Fisheries in 1947 pursuant to RA 177. In 1963, it became the PFC. In 1972, it was reverted back to the Bureau of Fisheries. In 1974, it took the name BFAR and was placed under the MNR. A decade later, it was transferred to the Ministry of Food and Agriculture (BFAR 1987).

Throughout the history of BFAR, it has moved from a science office focusing on research to the commerce office, focusing on trade, to the natural resources office dealing with conservation, to the agriculture office focusing on food production, not to mention its stint as an independent commission. In every transfer, its focus changes as influenced by the thrusts of its parent office.

Under the present system, the DA, through BFAR, its regional offices and specialized agencies, has jurisdiction over fisheries resources only. The department coordinates with the DENR when activities call for integration of other resources, such as mangroves.

In an attempt to create a holistic approach to coastal resources management, the DA spearheaded under its FSP a new management system known as CRMP which is being pilot-tested in 12 priority bays. The program aims to integrate and coordinate the efforts of national agencies and local governments in the management of coastal resources.

The power of the department over fisheries resources was seriously eroded with the enactment of the LGC. The code provides for the devolution of the general control over fishery resources within municipal waters to the municipalities/cities. With the enactment of the New Fisheries Code (NFC), the BFAR has been beefed-up as an institution, but its powers are still much limited because the code has given to local governments the general power over the conservation and development of fishery resources.

Devolution to Local Governments

While LGUs, individually, have limited jurisdictions, their collective impacts have national implications. In fact, local government as an institution plays a major role in coastal resources management by virtue of the devolution of functions under the LGC of 1991 (RA 7160).

Even as management and utilization of coastal resources has been described as strongly held by the central government, the fact remains that traditionally local governments have played a major role in the management of the resources, especially fisheries.

The LGUs have considerable control in matters related to environmental protection. The LGC provides that national government agencies must consult the LGUs prior to the implementation of any project or program. The need to consult is especially enjoined when the project or program has significant environmental impacts.

To be sure, local governments have the capacity or the potential to develop a total approach to coastal resource management within their jurisdiction. While the laws do not provide for comprehensive nor detailed provisions on coastal resources management, the general provisions can serve as bases for formulating a complete municipal CRMP (La Viña 1997). However, it is the common observation that local governments are ill-prepared to take on the responsibilities. Both expertise and logistics have long been concentrated in central government agencies. Few LGUs are equipped with the financial and technical capabilities to carry on a sustainable program on coastal resources management.

Environmental management programs, to be effective, must manage whole ecosystems which seldom correspond to political boundaries. Thus, it is imperative that local governments join together to manage common resources. The LGC has provided for instances where LGUs may cooperate to achieve common goals⁶.

The program to manage shared resources must be forward looking, considering the natural advantages afforded by the available resources, the goals of the LGUs involved and the practicability of implementing the program. In other words, strategic planning is essential to optimize the use of the resources in line with the development strategy of the local governments and their role in the national development strategy.

Institutional Integration

The case of the Batangas Bay Region (BBR) is a good example. In theory, each municipality can opt to initiate programs for resources within its jurisdiction only. However, it was determined that an integrated approach would be more appropriate considering that the Bay has a huge potential as an alternative international port. The benefits of having a port would redound to the whole region, but the benefits would not accrue if the development plans are not designed in an integrated manner with the support of all local governments having jurisdiction over the shared resource.

In most cases, it would be ideal for the province to initiate and implement an integrated program because its territorial jurisdiction adequately covers whole ecosystems. However, while it has general supervisory powers over component municipalities, the real powers are often exercised by the municipalities. For example, the province cannot devise an integrated fisheries program. The problem is complicated further when the resource is also shared by a highly urbanized city which is independent of the province. In such cases where no local management institution can implement an integrated program, a multilateral body has to be created with representations from the concerned local governments.

⁶ Section 3 (f) provides: "Local governments may group themselves, consolidate or coordinate their efforts, services and resources for purposes commonly beneficial to them". A procedure in Section 33 which states that LGUs "may, through appropriate ordinances, group themselves, consolidate or coordinate their efforts, services and resources for purposes commonly beneficial to them. In support of sound undertakings, the local government units involved may, upon approval by the sanggunian concerned after a public hearing conducted for the purposes, contribute funds, real estate, equipment, and other kinds of property and appoint or assign personnel under such terms and conditions as may be agreed upon by the participating local government units through memoranda of agreement".

A multilateral body need not be composed only of local government representatives. In order to be more responsive, it should also include representations from key stakeholders, thus making it a multisectoral body. Such body can serve as the policy-making forum where all stakeholders can participate and have their concerns addressed.

In the case of the BBR, it was determined that the most feasible organizational structure would be a council created through a provincial ordinance with participation from local governments, private sector stakeholders and representatives from national government agencies. The participation of national government agencies is essential in order to coordinate efforts of the local council with national plans and programs.

A high-level council would not be the appropriate body to effectively carry out the programs and actions that have been decided. The council is there only to guide or set the direction. Day-to-day activities have to be delegated to a full-time implementing arm. In the case of Batangas, an office called the Provincial Government-Environment and Natural Resources Office (PG-ENRO) was created to serve as the secretariat of the council as well as its designated implementing arm.

The creation of a multisectoral council and its implementing arm requires legislation. Policies following the integrated approach also need to be translated to action plans that likewise require legislation in order to be implemented. As the policies are translated into action, resources have to be allotted by the participating local governments as well as the other government agencies.

At the national level, there have been attempts to create multisectoral agencies to manage coastal resources. The PCAIFMC or BDC was formed in 1989 and is chaired by the secretary of the DA with members consisting of the secretaries of the Department of Justice (DoJ), Department of Education Culture and Sports (DECS), DND, DILG, Department of Tourism (DoT), DENR, Press Secretary and the general manager of the Philippine Tourism Authority (PTA). This was created in response to the "urgent need to coordinate the efforts of national and local government agencies, civic organizations, and the residents of fishing communities for a total and simultaneous campaign to stop and reverse this destructive trend, and manage our fishery resources to maintain their productivity."

The activities of the committee have mainly focused on law enforcement. The committee has distributed patrol boats to LGUs to be used for apprehending illegal fishing activities. Much of the funding has come from the Fisheries Sector Program (FSP) of the DA.

In 1993, another agency, the IATFCEP was formed by virtue of EO 117, series of 1993 at the initiative of the DENR. This was an extension of the CEP launched by the department in the early part of the same year. The creation of the task force was intended for cooperation and coordination among the departments and agencies enforcing coastal environment protection to strengthen and sustain law enforcement systems throughout

the country. However, it appears that the task force also focuses only on law enforcement and not on the other aspects of coastal and marine resources management. This is apparent in the initial designation of the DND-Philippine Navy (PN) as lead agency, which will be replaced by the DILG-PNP after one year.

Both IATFCEP and PCAIFMC as coordinating bodies started with lofty ideals. Neither has come up with a comprehensive program to manage coastal and marine resources, not even a program to coordinate and rationalize existing efforts. Both bodies focus mainly on law enforcement. However, other aspects of management have to be coordinated, even more than law enforcement. For instance, research efforts on the status and sustainability of use of the resources must be a combined effort of national agencies and local governments. Few resources, if any, are limited to a single municipal jurisdiction.

Public Participation

Community participation in policy and program formulation was institutionalized with the promulgation of EO 240 (1995) which mandates the formation of Fisheries and Aquatic Resources Management Committees (FARMCs) in coastal barangays, cities and municipalities. The executive issuance was met with much support from fisherfolk and proved promising. At present, the FARMC concept has been institutionalized and integrated into the new Fisheries Code.

Community participation is crucial to the success of any regulation program. There is a higher probability of success when the community is involved at the earliest stages of developing a regulatory regime. The shaping of the regulation should take into account the existing practices as well as inputs from the community. In this way, they have a sense of responsibility for making the regulation work because they were part of its development.

In Bolinao, Pangasinan (further discussed in the case study below), the community itself worked to develop the management program for their coastal zone. The scientists and community organizers merely provided the guidance to ensure that the management plan has a sound scientific basis. The community then lobbied for the adoption of the plan by the local government.

SUMMARY

Though regulatory mechanisms have their specific functions, sole reliance on them have proven to be quite insufficient and ineffective in abating the degradation/depletion of marine and coastal resources and thus, in bringing about better environmental quality. There are telling examples of past and present management failures. A considerable number of legislation has been passed, many regulatory mechanisms have been utilized, institutions have been reformed, and new ones have been created. However, these current

arrangements do not adequately deal with the mounting problems in the marine and coastal zones.

The use of other strategies—that would move away from command and control approaches and instead adopt community based and market based strategies—need to be explored, as there is considerable scope for their use. These strategies may prove practicable and effective in guiding resource uses in the marine and coastal zones and in raising revenue for use in the management of the resources.

In sum, it can be observed that the existing institutional set-up is not only complex, confusing and sectoralized, but more importantly, it is fragmented. This fragmentation is the major systemic hindrance to more effective management of the marine and coastal zones. A conclusion can thus be made that there is a strong and an urgent need for sectoral integration and coordination.

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Chapter 4

Community-Based Resource Management: Four Case Studies

Despite the intricate legal system set up for managing the coastal environment, other modes of administration have grown and even become more attractive. These include community-based systems of management.

HISTORICAL PERSPECTIVE

Before the arrival of the Spaniards, landowning was communal in character, with the actual title vested in the *barangay*. Wealth was determined by how many dependents a chieftain could muster to cultivate the communally owned lands (Phelan 1959). In the maritime field, endeavors reflective of this communal tradition survived even up to the Spanish period. In some of the villages, the leaders united to build a vessel, a pirogue, in which they shipped their produce under the conduct of a few persons who went to navigate it and disposed of the cargo. After the produce was traded at the port of destination, the returns were distributed to all according to their share. Festivities were then held, the saints thanked for their kindness, and blessings invoked for another year. After this cooperative undertaking, the vessel was taken to pieces and distributed among the owners to be preserved for the next season (De la Costa 1965).

Throughout the Spanish and American colonial periods, conflicts between state regulation and community-based practices over the use of coastal resources played a secondary role to the peasant's struggle for reform in the agricultural sector. This was mainly because the Filipinos were always farmers as well as fishers. In the provinces, it was rare to see a Filipino who was engaged in only one occupation (Wright 1907).

A common tactic of resistance of the peasant class in the Philippine society is the intentional disregard of state regulations which is both non-confrontational and can be resorted to most of the time with the least repercussions because the government was never strong enough to enforce absolute compliance.

Non-compliance may also assume another character, like non-compliance has largely become a social norm because of customary support to the activity prohibited by regulations. Usually, the activity sought to be prohibited involves means condoned (or at least not strongly condemned) by the larger community, and does not result in injuries that the individual actors can clearly and vividly connect with their own behavior.

However, there are also instances of vocal, if not active, resistance by the local communities to state regulation of coastal resources when the latter clash with traditional community resource-use. In 1975, measures were passed banning the gathering of migratory species in Naujan Lake, Oriental Mindoro in order to cater to the fingerling demands of the fishpen industry. Two fishers were caught fishing in the prohibited area by the parks warden. The two fishers hacked the warden to death when they failed to plead with him (Bautista and Anigan 1978).

RATIONALE FOR COMMUNITY-BASED MANAGEMENT

Historically, it would appear that community management developed independent of and even preceded governmental regulations and persisted even after formal regulatory norms have been set in place.

Years of experience in Community-Based Resource Management (CBRM), from forestry to fisheries, show the common underlying reasons why such approaches are desirable. Batongbacal (1991) summarizes these in the context of coastal resource management as follows: (a) the communities' dependence on the coastal zone; (b) inadequacy of traditional (government) systems of centralized government management; (c) greater efficiency in planning and implementation; (d) democratization of access to resources; (e) more prospects of success; and (f) failure of previous cooperative activities.

"CBRM is deliberately intended as an integrated approach to area development; it is holistic in the sense that it responds to resolving conflicts over multiple resource use and attempts to integrate the socio-political and the economic aspects with the biophysical elements of resource management."

In sum, CBRM is deliberately intended as an integrated approach to area development; it is holistic in the sense that it responds to resolving conflicts over multiple resource use and attempts to integrate the sociopolitical and the economic aspects with the biophysical elements of resource management. The CBRM emphasizes that environmental problems have both social and technological aspects. Therefore, CBRM, is about letting the grassroots, i.e., the local constituency, make their own rules and decisions, and enforce or carry them out. The state's responsibility is to provide the necessary technical and administrative support to enable the group to carry out these functions, and to ensure the legitimization or recognition of the group's policies outside of the group so that their measures remain effective even in the face of interference from nonmembers. Thus, the general concept of CBRM was born out of political struggle; the control of natural resources was a direct manifestation of the distribution of power and wealth in soci-

ety. Since the issue of environmental management thereby became an issue of equity, the philosophy and approaches that developed in the Philippines for the application of new environmental agenda emphasized community-based models of resource management (Batongbacal 1991). The initial successes of these models in community-based forestry projects were thereafter sought to be duplicated with marine resources.

In this paper, four case studies are presented covering the range of experiences in the Philippines of CBRM. The Coron Island case involves indigenous peoples. The Apo Island experience is the classic example of a community-based approach in fisheries and coral reef management. The Bolinao case study looks into the interface of traditional fisheries and coral reef management issues with questions brought about by modernization and industrialization. Finally, the Batangas Bay experiment illustrates possible options as the pressures of such modernization and industrialization begin to prevail.

CORON ISLAND, PALAWAN⁷

Coron Island is home to the *Tagbanuas*, an indigenous group of some 283 families, all of whom are presently members of the *Tagbanua* Foundation of Coron Island (TFCI). The island has two settlements, one in Cabugao, the other in Banwang-Daan, where most of the town's *Tagbanuas* congregate. The official population data of the CMPDO shows 4 888 *Tagbanuas* (18% of total municipal population) living in the municipality⁸. The *Tagbanuas* have been on the island since time immemorial and consider not only the land but a portion of the sea as their ancestral domain⁹ (DENR 1998). The *Tagbanuas* exercise indigenous resources management practices anchored mainly on their culture and beliefs.

Environment Profile

Coron Island is part of the Calamianes Island Group located in Northern Palawan. The island is about 5 km from the town center of Coron on Busuanga Island and has a total land area of approximately 7 700 ha. Coron Island is blessed with rich natural resources and a natural landscape that makes it very attractive to tourism-related development activities. There are 8 brackish lakes and 3 smaller ones located on the island, the largest being Lake Abayok which is 20 km long and 30 fathoms deep. Lake Kayangan is 12.5 ha in extent. Underground connections with the sea have allowed the entry of giant barracudas and octopuses, giving one of the lakes its moniker "Barracuda Lake." Climate is dry from December to April and monsoonal the rest of the year¹⁰.

⁷ The information used here was from an unpublished study conducted by Philippine Association for Intercultural Development, Inc. (PAFID) between 1997 and 1998 and funded by the Legal Rights and Natural Resources Center, which documents the experience of PAFID and SARAGPUNTA, a federation of *Tagbanua* community organizations in Northern Palawan in the delineation of the latter's ancestral domain claim. The study is currently under review and is due for publication soon.

⁸ The PAFID study notes the significant difference between the 1998 population tally of the Coron MPDO and the 1996 population figure of the Institute of Philippine Culture, which was culled from the MPDO records. PAFID suggested that the *Tagbanuas'* might have suffered great mortality or there was a sudden surge of non-indigenous immigration in the *Tagbanua* barangays.

⁹ The time immemorial possession of the land and a portion of Coron waters has been recognized by the Philippine government with the issuance of the *Tagbanuas'* Certificate of Ancestral Domain Claim. Former Undersecretary Antonio La Viña, in his memorandum for the DENR Secretary dated 02 June 1998 recommending the issuance of the CADC to TFCI, recognized the important contribution of the groups indigenous management system in the sustainable utilization of their ancestral waters and the natural resources found therein.

¹⁰ This portion was based largely on an unpublished baseline study conducted by PAFID in 1995, which was an attached document to the TFCI's application for CADC originally submitted in 1993.

About 5 000 ha of the total land area of the island are made up of the rocky cliffs, which is why the *Tagbanuas* do not primarily depend on agriculture for their subsistence (IPC 1996). For their livelihood they depend on two sources: (a) fish and other aquatic resources such as *tekbeken* (small octopus), *balat* (sea cucumber), *latuk* (edible seaweed) and others; and (b) edible birds nests or *luray* for those who own clan caves. The outer rim of the island, forming fissures and caves are home to the swiftlets (*balinsasayaw*) which construct edible bird's nest that the *Tagbanuas* gather and sell to local Chinese traders.

In terms of agricultural production, only a few families cultivate *kuma* (swidden farms), which are mostly planted to upland rice and corn. A typical *kuma* is good for one harvest of rice, which, quite often is barely enough to tide over a typical *Tagbanua* household to the next harvest. To supplement both income and food supply, most families plant cashew trees in backyard lots and the nuts are sold in exchange for rice¹¹. The jagged terrain and scrub like vegetation discourage vegetation clearing. Hence, the undisturbed vegetative cover provides protection for wildlife, acts as a watershed and provides natural nutrients to the hills and small plains below. Some of the water conserved by this mantle of vegetation is stored in the lake.

The island has three vegetation types: forest-covered limestone, beach forest and mangrove. The island fauna include the Philippine macaque, wild pigs, porcupines, anteaters, lizards, Palawan hornbill and various parrot species. Marine turtles nest on some of the beaches and dugongs are also seen around the coast.

Indigenous Utilization and Management of the Coastal and Aquatic/Fishery Resources

The *Tagbanuas* harvest more from the sea than from the forest. This explains why they vigorously fought for the recognition by government of their claim over their ancestral waters (traditional fishing grounds) as it is an integral part of their ancestral domains claim. Both land and sea are vital not just for the daily subsistence of the *Tagbanuas* but moreso for the preservation of their way of life. While the *Tagbanuas* consider the marine resources as part of their ancestral domain, they do not think that this is for their exclusive use. They believe that the sea is a communal property. They "allow" access by outsiders for as long as the fishing methods are legal and these are not done in sacred areas.

"The *Tagbanuas* harvest more from the sea than from the forest.

They believe that the sea is a communal property. "

The *Tagbanuas'* resource utilization and management system is operationalized within the context of the *panyaan* and the *amlaran* (sacred areas at sea and on land, respectively, which are considered restricted areas), the observance of customary laws governing resource access and use, and the role of the clan elders in the

¹¹ Taken from PAFID's unpublished study, 1997-1998, p.16. The information was validated in an interview with Rodolfo Aguilan, Chair of TFCI, in October 1997.

observance of traditional laws, especially the imposition of sanctions/penalties as a means of control or discipline.

The *panyaan* are marine areas traditionally avoided by the *Tagbanuas* because of a belief that these are inhabited or under the influence of sensitive spirits which bring harm on anyone who trespass the area. The same belief govern the *amlaran* (sacred areas on land) and the *amuyuk* (sacred lakes) which the *Tagbanuas* believe to be inhabited by spirits in the form of octopuses (in the sacred lakes). Access and use of resources found in the sacred areas may only be given to a *Tagbanua* by the elders and the community *albularyo* (medicine man). When within the "restricted zones" the individual is instructed to strictly observe certain behaviors, such as silence or limiting one's speech or using an entirely different language so as not to disturb much less offend the spirits. Failure to do so, the *Tagbanuas* believe, would surely bring misfortune, even death, to the individual. In such a situation, the only way to appease the spirits which inhabit the sacred areas is for the *albularyo* to perform traditional rituals. Therefore, the reason why the *Tagbanuas* prohibit fishing or gathering of resources in the *panyaan* or sacred areas both for *Tagbanuas* and non-*Tagbanuas* is also for the welfare of the people. The prohibition is to protect them from the wrath of the spirits inhabiting the sacred areas¹². Their Certificate of Ancestral Domain Claim (CADC) application calls for the respect of all these sacred areas.

"The resource management also covers the cliffs of the island down to the valleys and traverses the lakes and rivers as well as the mangroves and the sea.

Everyone in the community is allowed access to these resources for as long as these rights are not abused."

The *panyaan* may be likened to the modern day marine reserves or marine sanctuaries while the *amuyuk*, the sacred lakes, are crucial part of the island's watershed and shelter the swiftlets' caves. For the *Tagbanuas*, these sacred areas are considered crucial to the sustainability of their natural resources, their ancestral domain, and the survival of both the present and future generations of their people.

The resource management also covers the cliffs of the island down to the valleys and traverses the lakes and rivers as well as the mangroves and the sea. Forests resources are communally owned. No individual is allowed to own even a portion of the forests. Everyone in the community is allowed access to these resources for as long as these rights are not abused.

In an interview with Rodolfo Aguilar, the chair of TFCI, he said that the *Tagbanuas* have a set of rules for the caves located on the cliffs of the island. The individual who discovers the cave is supposed to have exclusive rights to harvest swiftlets' nests in that cave and such rights are respected by other nest collectors. Almost all able-bodied persons on the island participate in the *balinsasayaw* season. This

¹² Based on PAFID unpublished study on mapping of ancestral lands and waters, 1997-1998, sponsored by LRC, p.26. The information was verified by statements of Mr. Rodolfo Aguilar and other leaders as well as community members interviewed for this case study during a field research undertaken in October 1997.

practice has been handed down from generation to generation and it has been traced back to the coming of the Chinese traders even before Magellan came. The collection methods of the *Tagbanuas* have always been governed by an "open and closed season" in order not to adversely affect the population of the swiftlets¹³. The season for nest gathering could vary yearly. In Banwang-Daan it could start as early as December and end in April while in Cabugao collecting begins in January and lasts until April as well (IPC 1996).

Meanwhile, others seek livelihood elsewhere through fishing or diving. The *Tagbanuas* traditionally use the waters around the island for subsistence fishing and at the same time conduct swidden farming and other land-based livelihood activities to support themselves. The amount of resources they extract is only limited for their own sustenance. Traditionally, they do not engage in extraction of resources in commercial quantities.

Their fish catch usually consists of reef fishes such as groupers, snappers, rabbitfishes, parrotfishes, (*lapu-lapu*, *maya-maya*, *samaral*, and *molmol*, respectively). Other marine life that they extract are seaweeds (*lato*), shellfishes, lobsters (*banagan*), eels (*indong*), mackerels (*tanguigue*), anchovies and others.

Interviews¹⁴ with officials of the TFCI and respected elders of the community revealed that the *Tagbanuas* have in the past used traditional fishing gear such as spear (*sibat*), bow and arrow (*pana*), hook and line (*karwil*) and other traditional less invasive and non-destructive fishing gear. The *Tagbanuas* attribute the diminution of their fish catch and the destruction of their traditional fishing grounds to the modern and more invasive fishing methods used by outsiders, which yield more catch and sometimes are over-efficient. Hence, they have created rules enumerating prohibited fishing methods within their ancestral domain. These rules are also based on the legal regime prohibiting certain fishing practices. The *Tagbanuas* call these prohibited fishing practices as illegal and these include blast fishing, the use of cyanide, Danish Seine (*hulbot-hulbot*) and the use of compressors.

The *Tagbanuas* consider the entry of commercial fishing vessels within ancestral domain areas as wrongful because they consider the very large fish catch of these vessels as unsustainable and deplete the resources rapidly. According to Aguilar and Veloso, TFCI Chair and barangay captain respectively, they also consider *muro-ami* and other illegal fishing methods as wrongful. For them, these kinds of fishing practices deplete the fishing stock and destroy the environment.

¹³ Mr. Aguilar, however, admitted that on rare occasions some *Tagbanuas* violate the community's rule on nest gathering, that is, they collect nests even before the eggs have been hatched just like what non-*Tagbanua* gatherers would do. Such behavior is dealt with accordingly by the community leaders.

¹⁴ Interview with Mr. Aguilar, Mr. Renato Dacullos and Brgy. Captain Macoy Veloso, October 1997. Mr. Aguilar and Brgy. Capt. Veloso are officials of TFCI and at the same time respected elders of the community.

Seaweed farming has been recently introduced to the *Tagbanuas*. Mostly, it is the women who engage in this activity. Their harvest of seaweeds is only to the extent that the seaweeds can still regenerate.

The *Tagbanuas* have traditionally practiced swidden farming. Part of the hilly land of the island has been cleared by swidden farming to grow food crops. Traditionally, these lands have been left to fallow and recover fertility. Unfortunately, this stable practice is jeopardized because migrants have gained control of some of the prime farm lands, thus, pressing the displaced *Tagbanuas* to move to higher, steeper slopes and to expand the scope and frequency of swidden methods beyond traditional practice. There used to be land erosion due to excessive *kaingin* or swidden farming. However, after the *Tagbanuas* entered the stewardship agreement with the government, they have avoided the practice of swidden farming. The *Tagbanuas* recognize property rights in favor of persons who clear an area through swidden farming. Persons can only return to areas they previously cleared.

The prime farmlands comprise about 350 ha. The major crops are coconut, cashew, cassava, *camote*, *kadios*, *palay* and millet or *dawa*. A number of the root crops growing in the forests has been domesticated and is now planted on level lands.

In general, annual crops are planted by traditional swidden methods even on level lands. Several *Tagbanua* farmers, however, have started using more productive methods such as tillage and the construction of dikes to trap rain water for *palay*. Although, these are not sanctioned and there are strong taboos against disturbing the earth.

The cutting of trees near streams, springs, wells, and near the coast is prohibited. The *Tagbanuas* recognize the value of these resources as watersheds which ensure irrigation to their crops as well as prevents soil erosion. *Tagbanuas* recognize the value of the mangrove ecosystem to their marine environment. They know that these are fish breeding areas and have to be protected. Hence, as a rule, mangrove trees cannot be cut unless there is consent from the council.

Specific products include medicinal plants, root crops, trees and other edible resources may be gathered from the forests. The wildlife is sustainably protected by a policy prohibiting hunting of wildlife except pigs which are not young.

A rule common for the use of all resources is that one must not extract these in unsustainable quantities. In the gathering of plants, for example, it is important that one leaves a portion sufficient to sustain the life of the plant.

Based on an unpublished research done by Philippine Association for Intercultural Development (PAFID) between 1997 and 1998, ancestral lands are passed on through the women since they are often the ones charged to manage the family's *kuma* and *taranuman* (swiddens and fields). Hence, they are not expected to just leave the land. In this respect, the women in the community are crucial to the continuity of occupation of the ancestral

lands and the community's claim over the resources therein. Even male members of the community acknowledge the effectiveness of such an arrangement in preventing the loss of portions of the ancestral domain through deceit. There have been a number of instances in the past when parcel of lands within the *Tagbanua* territory have been signed away to non-*Tagbanuas* after the men who have been entrusted with them were lured to sign waivers of rights or other instruments, at times after a good round of gin or in exchange for paltry sums.

Officers of TFCI said that another benefit from the stewardship of women of the group's ancestral lands is preservation of the boundaries of the lands often marked by the source of tubers and other rootcrops usually managed by the women. When gathering tubers and other rootcrops, the rule is to leave behind the root in order that the plant can continue to reproduce. The *Tagbanuas* have a concept of succession incorporated with the concept of ownership and private property¹⁵.

Issues in Resource Utilization and Management

Conflict over access, utilization and management of natural resources in Coron Island, specially coastal and aquatic resources, is a matter that has constantly plagued the *Tagbanuas* of the island. The struggle became more intense once TFCI applied for a CADC for their ancestral lands and waters (traditional fishing ground). The struggle for control over the resources of the island involved the municipal government, the indigenous people, and private vested rights (individuals, families and even business entities). The *Tagbanuas* scored their initial victory when in July 1990 the local DENR-Community Environment and Natural Resources Office (CENRO) awarded a Community Forest Stewardship Agreement (CFSA) to TFCI covering the entire island and a portion of Delian island (7 748 ha). The CFSA, however, does not secure the *Tagbanuas'* traditional fishing grounds and the resources therein.

With the issuance of their CADC and government's recognition of their rights over their ancestral domain, the challenge to TFCI now is to develop an ancestral domain management plan that shall govern both conservation and development activities within the area. While it has secured their rights over the area, the issuance of the CADC did not remove the obstacles and threats posed by private claims over portions of lands within the domain. Sadly, the local government including the local DENR has been instrumental in perpetuating this situation each time they issue permits for resource utilization or extraction, or recognize private claims based on tax declarations (municipal government) in the *Tagbanuas* ancestral domain.

¹⁵ According to the PAFID study, some *Tagbanua* communities allow private ownership of smaller coral reefs and portions of the forests by families or clans. In such cases, only family or clan members can fish on those reefs and gather rattan firewood or timber from so called clan forests. Such arrangements, however, do not exist in the *Tagbanua* communities in Coron Island. This system was abandoned after the Japanese occupation, by which time rattan and timber supply in clan forests began to diminish. The study also noted that the reefs started to be used communally after conflicts in use rights were referred to the municipal government which resolved that, henceforth, coral reefs are communally owned and could not be owned by just one family or clan.

The problems are not confined to the terrestrial aspect of the *Tagbanuas* claim. Pearl farming has been allowed by the mayor to operate in the surrounding waters of the island without prior notice to the *Tagbanuas*. In fact, the municipal council even issued a resolution, Resolution Number 14 series of 1997, which allowed the mayor to enter into a memorandum of agreement with a private corporation (Hikari SSP Corporation) for the latter's lease of the municipal waters in the area for the operation of a pearl farm.

To date, the municipal government remains opposed, albeit discreetly, to DENR recognition of the *Tagbanuas*' ancestral waters. The concept of ancestral waters does not sit well with the municipal government's plan to promote Coron, specially Coron Island, as a world class tourism area. Under Proclamation Number 219, the PTA has jurisdiction over Coron Island and the implementation of the Tourism Management Plan (TMP) for the Calamianes area. More recently, the DoT has identified Kayangan Lake as a potential tourist area without consulting the *Tagbanuas*.

Meanwhile, leaders of the TFCI has alleged that the CENRO, the local DENR office tasked to receive and process CADC applications, among others, has issued certain licenses and permits such as pasture lease agreements within ancestral domain claims. Such actions contradict and undermines its decision to endorse for approval the CADC application of TFCI and the still existing CFSAs that was issued by the same office.

Interviews with TFCI officials, *Tagbanua* elders, local NGOs and others also revealed that private investors and the local elite have been able to procure titles over areas which allegedly are still forest lands and within ancestral domain claims. Illegal fishing operators, on the other hand, are allegedly also able to influence municipal leaders and are able to evade arrest and prosecution¹⁶.

Managing Conflicts and Decision-Making Processes

The *Tagbanua* communities in Coron Island at present are collectively governed by a council of elders which is responsible for the observance of indigenous laws and the enforcement of customary laws, including imposition of penalties and sanctions for infraction committed by members of the community. In the past, the system of *panglaw*, or corporal punishment was meted against *Tagbanuas* who willfully committed serious crimes. Over time, however, the *panglaw* diminished in use as the roles of mediators (*mepet*) and keepers of traditional laws were slowly replaced by the *barangay* structure. The *barangay* organization, in addition to the traditional community council of elders adds a modicum of structure. A number of *Tagbanuas* serves as *barangay* leaders, as well.

¹⁶ These allegations have figured consistently in the interviews with the TFCI officials, *Tagbanua* elders, local NGOs like Kawil Amianan, International Marinelife Alliance, members of local law enforcement units, and private individuals, who all requested that their identity be kept in confidence.

Today boundary disputes, questions on taxation with neighbors are brought to the municipality. The *Tagbanuas* also consider the large commercial fishers as a big problem but they leave this problem to the government as they believe this problem is already beyond their capacity to resolve.

There is an interface of formal and informal structures where the legal system is beginning to recognize the non-formal management structures of the *Tagbanuas*. The *Tagbanua* community recognizes the laws and policies at the *barangay*, the municipal, and the national levels. Even cases of mediation are settled by the *barangay* council or the *lupong tagapamagpapa*.

With the advent of the *barangay*, the *Tagbanuas* put in writing the rules of their community with the corresponding fines and sanctions. They impose fines for illegal fishing, cutting of trees, mangroves, and violation of local norms on swidden farming. The fines are graduated and often, a higher fine is imposed for non-*Tagbanuas*.

In the recent past, the elders, aside from their task to address conflicts within the community, also exercised control over the resources. They had the right to appropriate the resources to the members of the community. Everyone was free to find their own place. However, they were not allowed to sell it. Non-*Tagbanuas*, on the other hand, did not have any proprietary rights to resources found within the traditional ancestral domains of the *Tagbanuas*. The elders, through the decisions that they made, also had to ensure that the resources would continue to sustain the next generation. Ensuring that the resources were safeguarded for the use of all community members was a cardinal rule in *Tagbanua* society. The elders had the authority to punish wrongdoers.

Although it may seem that traditional (customary) laws and the laws governing the *barangay* structure have begun to overlap with the participation of some *Tagbanua* leaders in the *barangay* political process, the elders and the officials of TFCI continue to uphold their traditional laws, culture, belief system and have chosen to maintain a non-commercial approach in utilizing their resources. The elders said in interviews that they believe that it is precisely this way of life that has sustained them as a people, nurtured by their ecologically intact and resource rich ancestral domain (Aguilar and Dacullos, pers. comm.).

The Interface Between the National Legal System and the Management System of the Tagbanuas in Coron Island

In 1977, President Ferdinand Marcos declared the entire province of Palawan as a game refuge and bird sanctuary and the small islands of Palawan as national reserves closed to exploitation and settlement. In 1978, Coron Island was declared a tourist zone and marine reserve under the control of the PTA.

In 1992, RA 7611 or the Strategic Environment Plan (SEP) for Palawan Act was passed. This provides a "framework for the sustainable development of Palawan and

shall serve as guide to the local governments of Palawan and the local government agencies in the formulation of plans, programs, and projects affecting the province” (Section 5). The law provides a graded system of protecting natural resources in the whole of Palawan including areas traditionally occupied by cultural communities. The law mandates the following:

- ❖ Forest conservation through the imposition of total commercial logging ban in areas of maximum protection and other restricted use;
- ❖ Protection of watersheds;
- ❖ Preservation of biological diversity;
- ❖ Protection of tribal people and their culture;
- ❖ Maintenance of maximum sustainable yield;
- ❖ Protection of rare and endangered species and their habitat;
- ❖ Provision of areas for environmental and ecological research, education, and training; and
- ❖ Provision of areas for tourism and recreation.

Indeed, it is important to note that the SEP law recognizes “tribal areas in land and sea” and shall apply the same graded system upon proper consultation with the “tribe”. Furthermore, it must be noted that the *Tagbanuas* have a management system to ensure that all the above considerations are met.

The Implementing Rules Regulations (IRR) of RA 7611 enumerates areas for maximum protection and buffer zones. Certain categories coincide with the sacred areas of the *Tagbanuas*. The *Tagbanuas* prohibit access to certain sacred areas because these are allegedly inhabited by spirits. The physical location of these areas, however, indicates that these are rich in biodiversity. Thus the goal of protecting a resource is achieved in different ways.

The IRR also considers areas of outstanding cultural value such as sacred and burial sites as areas for maximum protection. The Municipality of Coron, in Resolution Number 20 series of 1995 also adopted the guidelines of the Environmental Critical Network contained in RA 7611 and adopted by the Palawan Council for Sustainable Development (PCSD). The coastal core zone in the IRR also coincides with areas where *Tagbanuas* restrict access and use. These are selected coral reefs, seagrass, and mangrove ecosystems.

The municipal government has also enacted several municipal resolutions relating to the protection of coastal and marine resources. Most of them, however, are replicas of national laws and policies. They are as follows:

- ❖ Ordinance Number 5 series of 1993 - Prohibits the throwing of garbage in canals, vacant lots, and into the sea. The PCG, PNP and PPA, including all barangay officials are empowered to implement the ordinance.
- ❖ Ordinance Number 4 series of 1994 - Requires the registration of compressors used for fishing and other underwater activities operating in municipal waters.
- ❖ Ordinance Number 7 series of 1994 - Banning *bulbot-bulbot*, *lintig*/baby *muro-ami*, *norway*, and other deleterious destructive methods of fishing activities within the municipal waters of Coron, Palawan.
- ❖ Ordinance Number 3 series of 1995 - Requires all fishing operators engaged in live fish trade to accredit with the community fisheries board or its duly authorized representative in the municipality.
- ❖ Ordinance Number 6 series of 1996 - Makes it unlawful for any person to construct houses and other human structures for the purpose of dwelling within 10 m from the high water level of mangroves, swamps, lakes and other seaside areas unless intended for development such as market, ports and the like. Tourism related establishments are likewise exempted from the rule.

Again, there are parallel rules between the municipal ordinances and the traditional *Tagbanua* rules in terms of environmental protection.

The recognition of the traditions of the *Tagbanuas* is further strengthened when Congress passed the Indigenous Peoples Rights Act (IPRA), which recognizes the right of indigenous peoples to manage their ancestral domain. The IPRA has yet to be fully implemented, but even in mid-1998, the DENR had already issued a CADC recognizing the claim of the *Tagbanuas* to the island of Coron and the surrounding waters.

The *Tagbanua*'s indigenous management system was a great factor in the preservation of the coastal and marine environment in Coron Island. Their indigenous concept is a precursor of the present concept of sustainable management of resources. However, there are numerous threats to their environment and to their way of life. The tenure to the land and the waters, which the *Tagbanuas* and their ancestors consider their home since time immemorial, is now held precarious by the subsequent legal regimes and external actors in the area. Until now, their ancestral domain rights have not yet been recognized by the government. Given this limitation, their indigenous management system is now the subject of incursions by external forces such as the local government, the tourism industry, and the fishing industry.

Elders and the leaders of the TFCI explained in interviews that, coastal management is all about finding a balance among the actors and between the different users of the resources. They claimed that they have never excluded other users from their ancestral domain claim. Other users, however, must learn to respect their indigenous ways and their indigenous management system which is simply all about using the resource in a sustainable manner.

APO ISLAND, NEGROS ORIENTAL

Environmental Profile

Apo Island is a 74 ha volcanic island located at the southern coast of Negros Oriental in the middle of the Mindanao Sea. The island is approximately 25 km south of Dumaguete City from which it can be reached by a 2-hr pumpboat ride. From the nearby mainland barangay of Malatapay, Zamboanguita, it can be reached by a 30 min pumpboat ride. The island is under the political jurisdiction of the Municipality of Dauin, Negros Oriental.

The highest peak is approximately 200 m high at the northern side while a low-lying hill dominates the southern half of the island. The rest of the island is generally flat to sloping. Two small shallow lagoons overgrown with mangroves can also be found on the southeast side. Only little of the original vegetation remains except in some steep, rocky areas. About one-third of the island is known to have rich soil and is flat for cultivation. A narrow but diverse fringing coral reef surrounds the island.

The coastline consists of steep, rocky cliffs and small white sand beaches, two principal ones are located in the southwestern and southeastern portions. Live corals are found to be most extensive in the eastern and southeastern portions of the reef with much of its growth supported by volcanic rock boulders. The reef is characterized by steep drop-offs and gradually sloping drops of 20-40° decline.

Northeast (*amihan*) and southwest (*habagat*) monsoons affect wave action and fishing activities around Apo Island. The *amihan* occurs from November to March or April and inhibits fishing on the favored northeast reef. The *habagat* occurs from May to September and October and provides calm seas and favorable conditions for fishing. The current is predominantly wind-driven, strong, non-reversing and consistently flowing in a southwest direction both at ebb and flood tides. Current direction rarely changes throughout the year. Water visibility is excellent usually reaching more than 100 ft (Calumpong 1997; DENR-CENRO Dumaguete 1995; Silliman University Marine Laboratory Site Description Report, nd.).

Resource Status and Demographics

The most significant coastal resource of the island which made it stand out in the whole country is its beautiful and abundant fringing coral reefs. About 1.78 ha of these have been established as a fish sanctuary earlier, before the whole island was declared a protected area by the national government in 1993. The said area is found to have 127 species of reef fishes belonging to 25 families, 7 species of mangroves, 5 species of seagrasses and 23 species of seaweeds. However, seagrasses and mangroves are very sparse and occur only in small patches (Silliman University Marine Laboratory Site Description Report, nd.).

The reef condition in the sanctuary side significantly changed over a 13-year period with a total coral cover of 68% in 1983 to 78% in 1995. From 1992 to 1995, cover of hard corals increased from 41.3% to 53% while cover of total sediment decreased from 32% to 16%. Taken as a whole, the total coral cover of Apo Island increased from 64% in 1983 to 70% in 1995. Percentage of coral rubble is insignificant. One hundred percent of Apo's coral cover is in good condition (Silliman University Marine Laboratory Site Description Report, nd.).

The sanctuary also showed a significant increase in fish species diversity and abundance from 1985 to 1992. The increase in numbers of all target species resulted mostly from the lack of fishing pressure. Large marine life such as groupers, surgeonfish, parrotfish and jackfish were found in abundant numbers. Twenty-two species of butterfly fishes were recorded. In terms of fish yield, 16.8 t/km²/yr was recorded in 1981. During 1985-1986, the fish yield for reef fishes was 31.8 t/km²/yr and 4.9 t/km²/yr for non-reef fishes. In 1995, the total catch recorded was 273.99 t/km²/yr indicating an almost eight times increase from 1985-1986 levels (Silliman University Marine Laboratory Site Description Report, nd.).

Land use in the island includes around 4 ha for residential use, around 4 ha for agricultural/multiple use, and about 46 ha as restoration zone. Total land area is 73 ha (DENR-CENRO Dumaguete 1995).

About 77% of the population of Apo Island is fishing full-time, 21% is part-time, and 2% is occasional. Others also engage in the retail business and dressmaking. Average monthly income per household is only PhP1 450 or US\$33. About 38% of the population has secondary income sources such as vending, hollow block-making and hat/mat-weaving. Fishing involves the use of outrigger canoes or motorized pumpboats. The most common fishing method is the hook and line. Other popular methods are gill nets and spearfishing while a few use fish traps and beach seine nets.

Farming is also practiced by 70% of the households. Since there is a lack of arable land, crops such as corn, sweet potatoes, cassava, beans, coconut, vegetables, other fruit trees and ipil-ipil are cultivated in small farm plots. Livestock is also raised. One of the mangrove lagoons has been converted into a milkfish pond by a group of local fishers in July 1995 (Silliman University Marine Laboratory Site Description Report, nd.; DENR-CENRO Dumaguete 1995). Apo Island has become a significant dive tourism destination. Residents reported that the number of tourists has been increasing.

The island has around 250 households with an average family size of 7. Most of the parents, or around 80%, have only attained elementary level, while about 4% is considered illiterate. The rest—16% (fathers) and 11% (mothers)—had attained high school level. Only 4% of the mothers had been into college. Among the children, 60% has gone through or undergoing elementary education, 20% in secondary, 7% in tertiary and the rest (13%) has not. All the residents are Roman Catholics. The small size of the island and salinity of the water do not attract migration from other places so the Apo Island

community is a closely-knit traditional fishing community (Silliman University Marine Laboratory Site Description Report, nd.; DENR-CENRO Dumaguete 1995).

Educational facilities found in the area are limited to two elementary school buildings. There are beach resort facilities privately-owned and developed for visiting tourists. A lighthouse operated by the PCG is found at the highest point of the island.

Resource Utilization

Illegal fishing methods such as dynamite fishing and *muro-ami* had been observed in 1977. Dynamite use was introduced by outsiders from Cebu, among other places, from where dynamite ingredients also came. Dynamite fishing mostly by outsiders in the south-west reef was stopped in 1985, but *muro-ami* still occurred occasionally (Calumpong 1997). This was confirmed in an interview with Mr. Dado Suan, a *barangay* official.

Between 1979 and 1980, Silliman University (SU) extension workers conducted informal marine conservation and educational programs with the Apo Island residents. In 1982, an agreement was reached between the island village, SU and the Dauin municipal council regarding the guidelines of the marine reserve. Minimal management and protection was implemented the next year.

In 1984, the Marine Conservation and Development Program (MCDP) of Silliman University implemented a comprehensive marine reserve in the island in collaboration with the residents and the LGU. The entire marine habitat surrounding Apo Island to 500m offshore was declared a municipal reserve. The marine sanctuary was established on the southeast side covering an area of 11.2 ha to 250 m offshore or 284 ha to 500 m offshore and bordering 450 m of shoreline. The sanctuary was marked by buoys. In 1985, the community education center, which provided a venue for community meetings, workshops, seminars and lectures, and which sheltered tourists and visitors, was established. A core group called the marine management committee, which is responsible for the upkeep and enforcement of the marine reserve, was also formed. In 1986, the consumers' cooperative was started (Calumpong 1997; Silliman University Marine Laboratory Site Description Report, nd.).

Apo Island was declared a Protected Landscape and Seascape under Presidential Proclamation Number 438 making it part of the NIPAS. The island is now under the administration and control of the PAMB which is composed of representatives from the DENR and other government agencies, LGU, the academe and the community.

Community-Based Resource Management

The Apo Island experience was one of the first coastal management initiatives in the country that used the community-based approach. Although initially the major agent in this experience, namely Silliman University (SU) in Dumaguete City, intended to conduct purely academic research at their project site, their involvement in the island's management

of its resources eventually took a radical turn. According to Suan, at the very start the university's extension workers laid down a basic information campaign that would eventually pave the way for the establishment of a marine reserve. Workshops and meetings were held using a variety of non-formal techniques to cultivate environmental awareness.

Opposition to the establishment of the sanctuary came from the community itself. They were told that the sanctuary can be disestablished after some time if it did not benefit the community. Information and education activities were also held in order to make the community aware of the benefits of establishing the sanctuary. The local government was supportive of the project from the start because of the technical know-how the university brought in. The project was to serve later as the model for other CBRM projects of the local government (Calumpong 1997).

With the establishment of the marine reserve, the felt need for an organized community to sustain the management efforts coincided with the initiation of the MCDP of the university. This program aimed to strengthen the Apo Island Marine Reserve by empowering the community to take responsibility for managing the natural resources of the whole island. Two community workers were assigned in Apo. They were responsible for organizing and sustaining community participation. By developing relationships and strengthening local institutions, they built trust in the community, introduced new ideas, and increased the capacity of the people to make management decisions. The organizers also learned much from the indigenous knowledge of the community such as the best fishing grounds and methods. Traditional social graces also helped to integrate the community organizer with the community. They became godparents during baptisms and attended other social occasions such as funerals, weddings and fiestas (Suan and Briones, pers. comm.).

According to interviews with staff of Silliman University Marine Laboratory (SUML) and Silliman University-Legal Enforcement and Action Program (SU-LEAP), the program sought to identify a group which would be responsible for enforcing the regulations of the reserve. This core group grew out of some of the activities of the program such as the building of a community center. Eventually, a general election was held to formalize the core group. Officials were chosen and the new group was called the marine management committee (MMC). This committee, aside from being responsible for the upkeep and policing of the marine reserve, proposed resolutions to the municipal council for the improvement of the reserve's and the island's management.

A last component of the project was assistance in alternative livelihood. Trainings were held on the establishment of a cooperative. Mat weaving and agroforestry were strengthened and organizations formed. A women's weaving group called Apo Weaving Association enabled the women to earn extra income by selling woven mats to tourists in the island or by bringing these to the weekly market at Malatapay in the mainland. A consumer's cooperative was formed in 1986 with initially 46 members. Now, it has 80 members and is running a store (Omilig, pers. comm.).

There are currently two community workers from the DENR-CEP to assist with organizing and sustaining community participation. Two resource mobilizers from SU are also present to assist the community in identifying supplemental income and monitor fish catch. At present, the university has limited itself to providing data and products of researches to help in the implementation of livelihood programs and management of the island's resources. The LEAP of the university conducts paralegal training and provides legal assistance to management problems. Present consciousness-raising involves integration of environmental education into the school curricula and continuing education for the community at large.

The Resource Management Division (RMD) of the province had also entered into a memorandum of agreement with the DECS with regard to the making of lesson plans on environment and natural resources protection for school children. In the seminars of the RMD, a priest is also tasked to deliver the lecture on stewardship and uses biblical teachings to arouse the environmental concern of the community. There are also attempts at integrating resource management efforts in the sense that upland *barangay* officials are included in resource management seminars where they are informed how their activities affect the coastal area.

The MMC presently is responsible for caring for the sanctuary area as well as collecting donations for snorkeling and the use of facilities. Enforcement is carried out by the MMC. A 10-member *barangay tanod* team and a 26-member *Bantay Dagat* team conduct the policing and monitoring activities. Violators are approached, given a warning, and eventually assessed a fine. Due to community support, as well as successful enforcement over a 10-year period, there are very few incidents of violation, according to *Bantay Dagat* members.

According to Omilig and *Barangay* Councilor Suan, the local government of the Municipality of Dauin and the *barangay* council are supportive of the community efforts. The RMD of the province sends technical assistance. Line agencies of the national government have been involved in the efforts to manage the coastal and marine resources and environment. One of the DENR's more important projects was its reforestry program which contributed to the desalination of the water supply in the island. Previously, the people of Apo Island brought in their drinking water from the mainland at a high cost. Now, their water is potable.

Suan added that the benefits of the community management efforts started to be felt around 1987 and 1988 when, according to a *barangay* official, the profit from the fish harvest enabled some residents to send their children to Manila for schooling.

The Legal Framework

Laws, both local and national, served to contribute to the protection of the coral reefs and fishery resources in Apo Island. In 1985, the entire marine habitat surrounding Apo Island was declared a municipal reserve. Apo Island was also previously declared a

marine reserve and tourist zone under Proclamation Number 1801. Finally, in 1994, the island and its vicinity (1.5 km of sea) was declared a protected landscape and seascape by Proclamation Number 438 pursuant to the NIPAS Law.

The ordinance declaring the municipal reserve consisted of two major parts. The first part prohibited several fishing methods in the 300 m distance from the high tide mark. Among the prohibited activities were already covered by national laws so they are mere surplusage, e.g., dynamite-fishing, *muro-ami* and cyanide-fishing. This area is known as the traditional fishing area and only hook and line, bamboo traps, gill nets, spearfishing without scuba, and traditional gleaning are allowed. The second part of the ordinance established a core zone in the southeast corner of the island, which was to be known as the sanctuary. No fishing or collecting activities was allowed in this sanctuary while the anchoring of boats is allowed so long as the corals are not destroyed. This ordinance recognized the intersectoral initiative in establishing the reserve as well as the central role of the community in its management.

Proclamation Number 438, which was issued on 09 August 1994, established 691.45 ha of marine area around and including the island itself into a protected landscape and seascape. This placed the area under the administration and control of the DENR in coordination with the local government of Dauin pursuant to the NIPAS Law. Sustainable development of the area is addressed in order to respond to the social and economic needs of the local community without causing adverse impact on the environment. The destruction of the coral reef ecosystem or the conduct of other activities which would disturb or destroy the ecosystem were prohibited.

As of 1997, there were still no PAMB regulations that would provide the guidelines for the different uses allowed inside the protected area. With regard to diving activities, divers are required to register with the *Bantay Dagat* but it has been pointed out by the latter that they seldom do. The proposal is to limit the number of divers in the sanctuary to 10 at any given time.

Suan said that a legal question that confronts the community of Apo Island is security of tenure over the land. The existing regime of land ownership in the island is more described as traditional rather than formal. People inherit their land from their ancestors and they can be tilled by others if the owner is not capable of tilling the inherited property. In a sense, this makes land use communal rather than private.

There have been efforts to title their properties but they were advised that it is not worth the effort because the whole procedure would be costly and because the chances are more remote with the declaration of the whole island as a protected area. Land can also be sold but as much as possible such transactions are limited among island residents. During the term of Secretary Angel Alcala in the DENR, a moratorium on the transfer of land was declared to prevent the further development of resorts. At present, there are no efforts in the PAMB to recognize the tenurial claims of the community through legal instruments.

Management Issues and Constraints

Probably the biggest problem confronting the Apo Island protected area at present is dive tourism. Because of its excellent coral cover relative to the rest of the country, Apo has become an increasingly popular destination for scuba diving. The large number of tourists and dive boats and improper methods have become a threat to reef quality. The magnitude of the problem began to attract attention in 1993 when about 200 divers visited the island in the months of November and December (Vogt 1996).

The role of the foreign-owned tourist diving school and shop in the island itself is being examined given the status of the area as a protected landscape and seascape. Ironically, the diving school was granted an ECC by the DENR although allegedly for a different purpose. Student divers both of the diving school and the dive tour operators are especially prone to cause damage to the corals because of ignorance, negligence and inexperience. The conduct of such activities is highly consequential to the environmental well-being of the island given its small size and fragile ecosystems (Vogt 1996).

As already mentioned, the community and LGU, through the PAMB, are developing regulations and guidelines for scuba diving at Apo in order to ensure that the community benefits from the activity and that it can be maintained at a sustainable level. Presently, the financial benefits of transporting tourists to the island is substantial. In the resort/dive shop itself, jobs have been provided to four members of the local community (Vogt 1996).

However, it is the dive resort owner and dive tour operators who benefit much from the tourism business in the island. This reflects the unchanging nature of resource exploitation in the Philippines. Even in this relatively new phenomenon of community-managed resources which attract droves of tourists, it is still not the community who gets the substantial portion of the benefits. As was the case in commodity-resource extraction, fishpond development, and export-oriented fisheries development, the community was always the least to benefit. What is worse with this latest pattern of resource exploitation is that the dive shop/resort and dive tour operators exploit a resource whose existence is largely owed to the community. The dive shop/resort and dive tour operators never invested a single cent nor sweat into what the coral reefs of Apo are now. According to Omilig, they get highly paid by tourists yet pay only token fees to the community: PhP100 per day for big pumpboats, PhP50 per day for bancas, and PhP50 per tourist.

Suan said that another issue which has taxed the energy of the Apo residents is the fishpond problem. The larger lagoon in the island was acquired by an outsider (non-resident of the Island) through a fishpond lease agreement with the DA. Aside from depriving the whole community access to harvest, the fishpond owner has also cut mangroves replanted by residents under a DENR program. Some members of the community have been arrested for illegally harvesting from the lagoon which was formerly community property.

Another management constraint is the lack of financial resources. Since the budget is limited, the community adjusts its management strategies to the available funds. Once the regulations from the PAMB are implemented, there is also a question of where collected fees will go since the law provides that a portion will go to the national government for the NIPAS administration and the other part to the PAMB for disbursement to the protected area superintendent. There is no provision in the law that states collected fees can go to local POs or NGOs, even if these organizations have been responsible for the establishment and sustainability of the reserve long before government came in to share in its success.

With regard to the *Bantay Dagat*, some are not so diligent in their functions because they do not receive any allowances or remuneration for their work. The job, they claimed, is purely voluntary and the volunteers still have to earn a living.

Omilig pointed out that some alternative livelihood projects also suffer setbacks. The program objectives of the agro-forestry projects are not met on schedule because of the late disbursement of funds by the DENR. The reason is that the DENR runs out of funds and even the salary for laborers of the reforestry program is not paid. On the other hand, the hog-raising project also of the DENR-CEP was not successful because the hogs died of diseases so the project was stopped temporarily.

The influx of government interventions also created confusion as to the roles and responsibilities and powers and functions of each in relation to the community-based management structure. The latest of these government interventions is the PAMB, which is mandated under national law to be the general administrative body in charge of the protected area. But the real powers are vested in the DENR secretary and the local Protected Areas Wildlife Division (PAWD) of the DENR.

Even with its tradition of community-based decision-making processes, the coastal resource management regime in Apo Island is legally tenuous in the absence of clear laws giving the community real powers of management and policy-making. The NIPAS law even provides the DENR Secretary the power to adopt a program of gradual resettlement of the tenured community outside the island, the exercise of which is largely discretionary. Though the exercise of such a power is doubtful given the crucial role the community plays in the care and protection of the island's ecosystems, the present set-up still brings to the fore the issue of lack of legal mechanisms that strengthen the institution of community-based resource management.

At present, the role of the community under the law is limited to participating in the decision-making of the PAMB like any other stakeholder. The law does not distinguish between the major role they play and the supporting role of the other represented sectors in the PAMB on the management of the island's resources and environment. The present PAMB is also reactive in the conduct of its management functions. This only responds to problems instead of establishing policies ahead of the problems envisioned.

Vice-mayor Briones of Dauin, Negros Oriental said that there are also coordination problems between the municipal government and the RMD of the provincial government. As has been observed by the municipal government, the RMD sometimes goes directly to the community without coordinating its activities with the municipal government. The municipal government also lacks equipment and resources to conduct monitoring activities. Capability-building initiatives consists of seminars on environmental protection and coastal resources management. Their extension service to Apo Island consists of a municipal health employee in the island. They have not been able to provide assistance in the community's livelihood programs.

At the provincial level, the resource management division of the provincial government owes its existence to the initiative of the present governor. The problem of institutionalizing resource management is still an issue because the present staff are population officers with plantilla positions from the defunct population program of the national government. With the change in governor, the RMD might be absorbed by the Provincial Agriculture Office (PAO) which mostly deals with production rather than conservation and resource management. Also, another layer was added with the recent creation of the Provincial Environment and Natural Resources Office (PENRO). The effect of the creation of this office with existing functions of the RMD is still unstudied. Thus, it is feared that its functions will overlap with those of the existing RMD.

With regard to law enforcement, the enforcement of national laws is still a major problem. The lack of policies on territorial use rights is also a concern because outside fishers constitute the major problem when it comes to destructive fishing practices.

Even in a small island community such as Apo, local politics still causes disunity and resource management problems because the islanders support different politicians or have different political godfathers. So some resource management problems remain to be purely political in nature.

BOLINAO, PANGASINAN

On 06 August 1999, the DENR denied, this time "with finality", the application for an ECC of the Pangasinan Cement Corporation (PCC) for its proposed cement plant complex to be located in the town of Bolinao in Pangasinan. To the oppositors, it was a decision that spelled victory for the environment and advocates of sustainable development. To the project proponent and its endorsers/supporters, DENR's decision was charged as anti-development. However it was viewed by the public, there was one very important fact that was reaffirmed by that decision; it advanced the power of civil society, particularly local POs, to meaningfully participate and influence decisions on matters that have far-reaching implications on the sustainability of life and the resource base upon which life's survival depends, both at the local and national scales.

Site Profile

The town of Bolinao is located on a cape at the northwestern tip of Pangasinan, bounded on the north and west by the South China Sea, on the east by the town of Anda and Caquiputan Channel, and the town of Bani on the south. The town has a total land area of 23 320 ha. The town is 365 km away from Manila by land via Dagupan City (Ferrer et al. 1996).

Bolinao has two pronounced seasons: the dry season which occurs from November to June and the wet season during the rest of the year. Average planting season starts in June or July or just about the time when the soil is already saturated with rainwater. Except for a few farms with artificial wells, rice farms are generally rainfed. Rainfall is highest in August at 780 mm and lowest in the months of December, February and March. Although there are three major rivers in Bolinao—Balingasay, Busay and Ilog Malino—irrigation is sorely lacking, which is why many are shifting to growing drought resistant crops. Since rice farming takes place only during the wet season, there are many idle lands. Agriculturally productive land is just around 47% of total land area and this is made up of irrigated, rainfed and upland or hilly lands. The rest of the area is classified either as built-up area (470 ha), pasture land, forest land, institutional or infrastructural (2 529 ha), fish-pond (641 ha), open-range (1 888 ha), or are actually rivers/creeks (430 ha). Farmlands are planted mostly to rice, with some corn, cassava and other root crops, coconut, fruit trees, fuelwood and others (Yambao and Salmo 1997).

The town of Bolinao is composed of 30 barangays, with 22 located along the coast. The topography of the town is characterized by rocky and hilly terrain, varying from flat to rolling with some steep areas near the seashores in the western and eastern portions. About 40% (9 099 ha) of the area is flat or nearly flat while the rest is sloping and flat uplands or plateau which makes agriculture production difficult. Limestone is generally abundant and found almost everywhere in Bolinao. The degree of abundance, however, varies; it is largely evident near the coasts and is minimal in the mainland. Phosphate also abound in the area.

Bolinao has the most extensive coral reef formation in the Province of Pangasinan. The reef stretches to the islands of Santiago and Dewey off north and along the northwestern coast of the mainland, covering a total area of about 8 000 ha. The reef consists primarily of slopes and flats separated by a wave-breaking reef crest. The average coral cover on the slope is approximately 20-30%. The Bolinao reef system serves as a critical support system for the associated shelf systems in the provinces of Pangasinan and La Union. Substantial amounts of invertebrates, seaweed and fish are found in reef flats. The extensive reef cover of Bolinao accounts for about 270 of the more than 350 different species of finfish, shells, seaweed and other edible marine organisms that can be found in the local markets around Bolinao (McManus and Chua 1990).

In 1986, a survey by scientists from the UP-MSI revealed that 60% of the coral reef is already dead due largely to blast fishing and the use of sodium cyanide. This condition of the coral reef is reflected further in the very small average presence of adult fish that

were observed throughout the reef and the decline in average fish catch. According to data from the Lingayen port, the Bolinao reef fishery used to yield an average of 430 t of finfish and supplies 30% of the country's aquarium fish exports (LGCAMC 1996).

Seagrass is dominant in 27 km² of the reef flat, interspersed with a few square kilometers of intertidal sand flats. Rabbitfish and cardinalfish abound in these areas. The cardinalfish is known to depend on coral for cover during the day. Substantial change in the seagrass fish community is expected to happen if the coral cover of the area continues to deteriorate.

In the 1960s, mangrove trees thickly covered a large part of the town's riverbanks. The coverage started to dwindle when fishponds were opened in the 1970s. Denudation accelerated in the 1980s when fishponds expanded. The rapid decline in mangrove cover contributed to the rapid decline of bangus fry, which was already imperiled by rampant blast fishing.

The coastal communities of Bolinao is composed of Bolinaoans, Ilocanos and Visayans. As of 1992, Bolinao had a total population of 52 701 or 9 944 households. About 3 000 of the local population are small-scale fishers who depend on the highly diverse coral reef-based fishery resource of the town. Analysts project that the population could double in the next 30 years (Juinio-Menez et al. 1995) and that there will be a sharp increase in human population who will shift to fishery-related activities since opportunities in agriculture and industry remain limited (McManus et al 1992). Without a comprehensive response, this trend could lead to an acceleration of the environmental degradation of the area.

At present incomes from occupations in Bolinao—fishing, trading, local industry, commerce, service and others—fall below the poverty level. Based on 1990 data from the DAR (Bolinao office), the majority of the population is engaged in farming (49%) and more than a third (31%) is into fishery related activities. The rest of the population is engaged either in trade and industry (4%), commerce (3%), or services (11%). Furthermore, it was observed that with the poor performance of agriculture in generating significant income, they expect more and more households to turn to fishery-related activities in order to supplement family income. By itself, though, average income derived from fishing remains very low. In fact, of all major local occupations in the town, fishing provides the lowest average monthly income at PhP1 830, which is substantially below the 1990 poverty level (PhP2 650) set by the DA (McManus et al. 1992).

In 1992, the combined fish production from offshore fishing activities by motorized and non-motorized boats totaled to 1 595 t (1 595 000 kg), mostly tuna. In the same year, inland fishponds, which is spread over 642 ha, had a turnover of 1 339 t. Taken together, inland and offshore fisheries generated a total of 2 934 t which, at PhP50/kilo, translates to a gross sale of PhP146 700 000.

However, despite these figures, there is a general condition of "occupational immobility" among the local marginal population. This owes to the fact that a third (35%) of

the local population did not go to school at all, and only 7% received training beyond high school. Given the generally poor condition of existing educational facilities, if not their complete absence, there is very little incentive for a family to send their children to school. Children are a significant work force. In fact, family incomes are enhanced by employing children in the gathering of marketable reef organisms.

Nearshore fishing is another popular fish-gathering activity and it is undertaken all-year round. Fishers usually use either bamboo rafts or non-motorized outrigger boats. The average fish catch is 2 kg which is sold to neighbors or fish vendors at the local wet market or *talipapa*.

Deepsea fish also abound in the market and they are specially popular among tourists. Fish catch include yellow fin tuna, skipjack, *tanguigue* and blue marlin. These fish are highly profitable that they are readily shipped to Manila by fish dealers.

Bangus fry gathering is also another source of livelihood for coastal residents. Gathering is done from March to August. Fry gatherers sell their fries to concessionaires, who dictate the price per 1 000 fries. Thirty percent of the price goes to the concessionaire. At one time the price per 1 000 fries was PhP900 but was later reduced to PhP700. Since prices declined, gatherers have opted not to harvest especially during months when prices are very low (McManus et al. 1992).

Among fishery-related activities, the shellcraft business is the most lucrative providing an additional family income of PhP1 350/month (Junio-Menez et al. 1995). Most of those engaged in this activity are women. Fish, seaweed and various invertebrates are harvested by women and children at low tide since these marine products are part of the traditional regular diet of local subsistence communities. Sea urchin also abounds in Bolinao. The growing local demand for sea urchin roe has led to enhanced harvesting and further improvisations in harvesting gear.

A study conducted by the UP-MSI revealed that the reefs of Bolinao were overexploited and deteriorating because of destructive fishing methods and other artificial causes. Blast fishing was observed on both the reef slopes and the reef flats (McManus et al. 1992). This was widely used by fishers in the reef areas in order to facilitate harvest of schools of pelagic fish. Blasting devices are generally prepared by locals. This and the use of sodium cyanide in aquarium fish gathering contribute to the degradation of Bolinao's coastal and marine ecosystem and, consequently, the rapid depletion of resources. This situation is now taking its toll on the livelihood of the local people, threatening the sustainability of the community. Against this background, three development-oriented organizations undertook various initiatives, initially independent from each other, and eventually forging a tripartite partnership to undertake a community-based coastal resources management project in Bolinao. The project was undertaken in partnership with the local communities and in close coordination with the municipal government of Bolinao.

The Bolinao Community-Based Coastal Resources Management Project

The Community-Based Coastal Resources Management (CB-CRM) project in Bolinao is very fortunate. This has the combined expertise of the UP-MSI in the physical sciences, the UP-College of Social Work and Community Development (CSWCD) in the area of social development, with strong academic foundation, and the Haribon Foundation, which shares its expertise in community organizing toward sustainable resources management.

In 1976, UP-MSI began its systematic survey of the status of coral reefs in the country. To date, this initiative has already assessed more than 600 sites. In 1985, this initiative expanded and included seagrass and mangrove ecosystems. Their involvement in the Lingayen Gulf came in 1986 when they decided to broaden their research interest to include resource management of the gulf. Specifically, the project focused on the coral reefs located in the Bolinao-Anda shelf. Through the aid of the Australian Center for International Agricultural Research (ACIAR), UP-MSI began a project on the biology and culture of giant clams. A hatchery and an ocean-based nursery was established.

In 1987, UP-MSI launched its seaweed project which was aimed, in part, at transferring seaweed culture technology to local fishers. The UP-MSI and International Development Research Center (IDRC) also saw the project as an opportunity for members of the local communities where the projects were located to be involved in the management of those resources using the technology that has been established through UP-MSI's scientific studies. The project, however, was met with apathy by local fishers, perhaps, due to the lack of local community involvement in the planning and initial implementation of the project. The limited success of the two projects made UP-MSI realize the need for people's support for and participation in the project implementation. The UP-MSI felt that a socioeconomic study will be most helpful in finding out the best way to proceed with the resource management project.

Hence, in 1992, UP-MSI together with a team from the CSWCD put together a proposal to undertake a participatory action research on CB-CRM. The proposal obtained funding from IDRC of Canada. The main objective of the research project was "to develop a participatory process of generating knowledge and understanding of the communities' resources and social system" in a manner that will draw in community participation in all aspects and at different levels of the project's implementation (Ferrer et al. 1996). The project was initially implemented in four coastal *barangays* of Bolinao, namely Arnedo and Balingasay in the mainland and Pilar and Binabalian in Santiago Island.

Formation of Community Organizations

The CSWCD team, using the participatory approach, gathered information on the social and resource management system prevailing in the selected sites. Together, the project staff and members of the community identified critical issues confronting the community and formulated possible solutions to those problems. Using Participatory Rural Appraisal (PRA), the research team (UP-MSI and CSWCD) made an in-depth examination of the

cultural, legal/institutional and marketing/technology aspects of local coastal resource management systems of communities in the four sites. Also, through the PRA method, the team was able to identify the best way to proceed in organizing the community, the concepts to introduce in environmental education activities, the required skills that community members must learn for livelihood development, skills for actual resource management, and skills that will help build up the community as well as establish and strengthen its links to other groups which are into the same initiatives. After the initial write-up, the result of the PRA was packaged and validated by community members themselves in a workshop. Based on the results of the participatory rural appraisal and its subsequent validation, UP-MSI and CSWCD saw the need to engage the expertise of the Haribon Foundation for the community organizing component of the project. Haribon officially joined the team in October 1993. Immediately, the team set out to form core groups in the selected sites.

The core groups were formed from the contacts who showed great interest in the initial activities of the project. In Barangay Arnedo, one of the sites that was first to be organized, the core group was formed into a “techno-livelihood cell” for the seaweed farming project earlier started by MSI. This project was envisioned as an economically viable and self-sustaining supplemental livelihood activity. To ensure the success of the project, the cell members even went through leadership development sessions and technical training so they could effectively participate in the management of the resource. However, due to technical, economic and social shortcomings in the project’s design, it failed to flourish.

Guided by lessons from their experience with the seaweed project, the team made the shift from a primarily aquaculture program to a community-wide CRMP. Beginning in Barangay Arnedo, the team utilized the initial core groups (techno-livelihood cells) as springboard for the transition. This time the principal goal was the formation of a local organization of fishers that will take the lead in resource management based on the concept of “resource user-manager”. Hence, by the middle of 1994, the project began to focus on the *sitios* (community smaller than the *barangay*) where most of the fishers reside. Eventually, the core groups were also formed in these *sitios*.

Through continuous environmental education, training in livelihood development, resource management and basic leadership formation courses, the core group was finally ready to formally establish their local organization. On 25 June 1995, the first local environmental organization in Bolinao was born—the *Samahang Pangkalikasan ng Arnedo* (SAPA)—with 64 individuals as its initial members. Soon after, local organizations were likewise formed in the rest of the sites—*Samahan ng mga Mangingisda ng Binabalian* (SAMMABI), *Samahan ng mga Mangingisda at Mamamayan ng Balingasay* (SAMMABAL) and the *Samahan ng mga Mangingisda at Mamamayan para sa Kalikasan ng Pilar* (SAMMAKA). By October 1996, these four POs decided to form themselves into a federation and was initially named Federation of Fisherfolk of Bolinao (FFB). Later, the group adopted the name *Kaisahan ng mga Samahan para sa Kalikasan* (KAISAKA). These POs were instrumental in the formulation, later on, of the MCDP of Bolinao. The resource-use maps that they themselves prepared, with the aid of the CB-CRM project technical staff, became the bedrock of the proposed coastal development plan that was eventually approved by the Bolinao municipal government.

During the time that the project team was facilitating the formation of local organizations, a major environmental issue confronted the town. An international consortium submitted a proposal to the Philippine government to build a cement plant complex in Bolinao. The PCC submitted its EIS to DENR to address the potential environmental impacts of the proposed project. On 02 November 1995, the DENR denied PCC's application for an ECC due to lack of information on three important issues in their EIS. Thus, PCC made an additional submission to EMB as their response to the concerns raised by the EIA review committee when it gave its recommendation.

The news spread fast and soon an informal group was formed primarily to oppose the project. The community organizations that were formed through the CB-CRM project that was implemented by the triad were among the active members of the local coalition that opposed the construction of the cement plant. The coalition, led by leaders from the different local organizations in Bolinao, mustered all the resources within their reach, tapping the expertise of the UP-MSI in the area of the physical sciences, especially the marine environment, the expertise of Haribon in advocacy and the CSWCD in development planning. Everything the local fishers learned from the environmental education courses that they attended suddenly became very important in sustaining the campaign and the people's commitment. The local opposition addressed, point by point, all the major claims that were made in the EIS submitted by PCC—something that was never before heard of in the history of the EIA system in the Philippines.

Hence, on 06 August 1996, the DENR denied “with finality” PCC's application for an ECC. Among the reasons cited by DENR for denying the ECC application was land and resource use conflicts. In his letter to Mr. Andrew Wang (dated 06 August 1996), PCC General Manager, DENR Secretary Victor O. Ramos ruled that the cement project will “seriously compete with existing and articulated land, marine and water usage in the area”. Based on the Lingayen Gulf Coastal Area Management Plan (LGCAMP), the preferred activities in the Lingayen Gulf, which includes the town of Bolinao, are fishing and ecotourism. To allow the project to proceed would even add to resource use conflict as the project would have to compete over the use of locally available resources, such as non-saline water and land, which, as it is, is already in very limited quantity. Moreover, in so far as the DENR is concerned, to issue an ECC for the cement project will be a violation of the principles of integrated coastal management. Thus, the DENR made the decision as an “ultimate precautionary measure” since the PCC, even with the additional information that it submitted, failed to satisfactorily address the threat of serious environmental damage posed by the project.

The project team considers the decision on the cement plant as a breakthrough in their CB-CRM efforts. As early as 1994, the idea of formulating a zonation plan for Bolinao was already in the agenda of the CB-CRM project team. But, for a significant period of time, the project was focused on the organization and strengthening of local communities and enhancement of their capability to directly manage their resources within the framework of sustainable community development. Progress in putting together a coastal zonation plan was very slow and participation in the formulation of a proposed

plan have been limited to the groups involved in the project. Needless to say, the local government, then, did not see the need to come up with such a plan until the cement plant issue came in, which brought to fore the long standing conflict on utilization of limited local resources and Bolinao's fragile ecosystem. One of the positive things that happened as a result of the cement plant issue was the hastening of the process that eventually led to the adoption by the local government of the MCDP for Bolinao. What is even more significant about this experience is the fact that the MCDP was formulated through the CB-CRM approach and managed to make the shift and adopt the ICM approach which was particularly crucial to the plan's institutionalization and, eventually, its implementation.

The Bolinao Municipal Coastal Development Plan (MCDP): From CB-CRM to ICM

Draft documentary reports currently being prepared by UP-MSI show that the idea to develop a zonation plan for Bolinao began in 1994. However, it was not until 1996, with the emergence of the cement plant issue, that a breakthrough was achieved which hastened the formulation process of the CDP. Banking on the results of its earlier work coupled with their knowledge and acquired skill in coastal zoning, the CB-CRM project team has offered technical assistance to the municipal government for the preparation of the plan (Yambao, pers. comm). The initial inputs came from the output of the "ad hoc thematic team" earlier formed (March 1996) by the CB-CRM project team. Their consolidated output included the conceptual and operational framework that guided the formulation, later on, of the plan.

In order to influence significantly the formulation of the plan, it became necessary for the CB-CRM project staff to enhance their knowledge and skills in coastal zoning. A seminar course was conducted in April 1996 for the project staff. The output of that activity was a resource use map that captures the different activities that were being undertaken in various parts of the coastal zone.

The same seminar was given (May 1996) to the officers and members of the local community organizations. The participant also came out with resource use maps that were specifically oriented at the marine protected areas in the municipal waters of the barangays of Arnedo, Balingasay and Binabalian and the mangrove rehabilitation area in Pilar and Victory. These maps were refined and later revalidated through a series of inter-PO consultations and consolidated into one map which was refined further by the project team and packaged as a proposed coastal development plan (PCDP).

In the meantime that the CB-CRM was carrying on with their coastal development planning process members of the project team had already begun to orient key individuals in the municipal government about CDP and significance of the role of local government in leading the process forward. The municipal government was informed about KAISAKA's initiative and its version of the CDP and how that initiative can be transformed into a "collaborative effort" between the LGU and the local groups. The municipal mayor, realizing the value of local support and participation in this major undertaking, took up the idea and gave his support to the local people's initiative. As a result, a multi-

sectoral consultation, sponsored by the municipal government, was set. Prior to this, a pre-consultation meeting was convened (November 1996) wherein KAISAKA's version of the CDP was presented, validated and refined. This meeting was attended by representatives of the municipal government, local groups and concerned individuals. During the same meeting, the preliminary results of a study on land evaluation was likewise presented and some portions were integrated into the proposed CDP. The consolidated version resulting from this exercise became the PCDP that was endorsed by the Bolinao municipal government and KAISAKA. This consolidated version was presented during the multisectoral consultation that was held on 05 and 10 December 1996.

According to Alex Yambao, CB-CRM staff, the multisectoral consultation was the first big gathering of local officials and community and PO leaders that took place after the decision on the controversial proposed cement plant project. The consultation was attended by barangay leaders, heads of barangay-based organizations, members of the local media, representatives of the provincial government, members of other local government agencies and concerned individuals. This had the support of the LGCAM Committee (LGCAMC), the regional office of NEDA and the DA, the Provincial Planning Development Office of the province of Pangasinan, and even the support of Congressman Hernani Braganza.

From this consultation, a multi-sectoral committee was formed with the principal task of formulating a CDP for the town. To secure this gain and strengthen its mandate, the municipal mayor signed EO 6 series of 1996 which institutionalized the multi-sectoral committee on the CDP. In addition to the task of formulating the MCDP, it was also mandated to provide to the office of the municipal mayor and the Municipal Development Council (MDC) information that are necessary for policy decisions and actions. The committee was composed of 21 representatives coming from the municipal government, the *Liga ng mga Barangay*, the religious sector, commercial fishers, small fishers, business and tourism, fishpond operators, fish dealers, fishpen operators, ferry boat operators, and environmental advocates. The four POs that formed KAISAKA were also represented in the committee. The CB-CRM Project Team provided technical assistance to the committee, the office of the MPDC provided logistical support, while the mayor set up a seed fund to support the activities of the committee.

The committee, which later became known as the CDP-Technical Working Group (CDP-TWG), formulated its own vision-mission-goal (VMG) statement. Guided by its VMG statement, the committee proceeded to formulate the plan. Several amendments and revisions were made on the draft, referring closely to the documentation of all consultations and meetings conducted with the different stakeholders in order to ensure that their concerns were properly addressed in the proposed plan. After careful editing and packaging by the CB-CRM Project Team, the PCDP was finally approved by the CDP-TWG on 25 October 1997. This was formally submitted to the municipal government on 08 November 1997.

Copies of the proposed plan were subsequently given to the mayor and to the *Sangguniang Bayan* (SB) for appropriate action. Copies of the proposed CDP were also given to other government institutions in the region which expressed interest in the plan. Among them were the LGCAMC, DA, DENR and NEDA. This time, the challenge to the committee was getting the SB to approve and adopt the plan. The first step was to get the approval and endorsement from the MDC. This was a crucial stage since it is the MDC that reviews and approves all proposed local development plans and endorses them for legislative action to the SB.

On 06 December 1997, the MDC passed MDC Resolution Number 2 series of 1997 approving the plan and endorsing its legislation by the SB. The SB immediately set a meeting on 13 December 1997, to discuss the proposed plan and to address some contentious provisions embodied in the plan. That meeting was attended by members of the CDP-TWG and the CB-CRM Project. The SB raised the concern over the matter of the fishpens, the fishcages, the MPAs and the powers and functions of the proposed Bolinao Coastal Development Council (BCDC). The TWG and the CB-CRM Project Team tackled the issues that were raised and gave their response to the questions. All three parties agreed that the issues as well as certain modifications in the plan can be tackled during the preparation of its IRR. The SB, agreeing by consensus, approved the proposed plan in toto. The plan was officially adopted on 19 January 1998 with the passage of SB Resolution Number 6 series of 1998 approving the plan. Immediately, the SB started working on the enabling ordinance. To date, the *Sangguniang Panlalawigan* (SP) of Pangasinan has also approved the resolution passed by the SB of Bolinao.

Local Management Arrangements in Bolinao

When the CB-CRM Project began in 1992, resource use conflict was one of the issues that plagued the fisheries sector and the coastal zone of Bolinao. Fishpen and fishcage operations are the predominant activities in the municipal waters of this town, while a few others are *siganids* and bangus fry concessionaires. In 1997, the municipal government earned some PhP4 million from these activities in the form of local taxes and fees from permits and licenses. This figure shows that there is an intense reliance by the town's economy on its fisheries in generating local income. On the other hand, there are also non-formal resource utilization activities. Under this classification are the subsistence fishers who go out to fish and/or gather other marine products like seashells to meet the family's daily nutritional needs and for supplemental income. Within this subsector, women and children are significant members of the workforce.

Yambao recalled that in order to regulate harvesting and sustain the availability of commercially important fisheries resources, one of the things that the municipal government did was the designation of closed seasons for fishery related activities. However, municipal control over resource utilization has been very limited. Licensing, the imposition of fees and the granting of permits are the other means used by the LGU to control resource utilization (Yambao and Salmo 1997). But, these have shown limited impact in terms of changing the behavior of resource users, according to Yambao.

Prior to the enactment of the enabling ordinance of the CDP, there was no local ordinance or resolution that would have allowed the municipal government greater “flexibility” as well as a clearer direction in its exercise of its devolved functions in coastal and fisheries resources management. Also, the municipal government, in spite of the long presence of the UP-MSI laboratory, had, earlier, failed to avail of the latter’s expertise in coming up with “socially appropriate and scientifically sound” comprehensive management response, said Yambao. This situation was what the CB-CRM program of the consortium aimed to address when it first started in 1993.

The Bolinao Coastal Development Plan: Strengths and Opportunities

The Bolinao Coastal Development Plan (BCDP) (hereinafter referred to as the plan) is perhaps the first municipal development plan to have been formulated in a highly participatory manner and with particular focus on sustainable and equitable coastal resources development and participatory environmental management. This attempts to blend and balance, in a participatory manner, the demands of conservation, protection, equity and sustainable development in pursuing local development for the town of Bolinao.

The plan makes a bold attempt at striking a balance between privilege and responsibility. The plan gives preferential advantage to small and marginal fishers in the utilization and management of local fishery resources even as it also upholds the rights of other user groups to utilize the same. At the same time, the plan also expects local resource users to achieve certain skills and knowledge in order to meet the demand for enhanced capacity in carrying out the major task of keeping both resources and environment healthy and sustainable.

Another important feature of the plan is its emphasis on community participation in management and decision-making processes involving local resource utilization, protection and conservation. The plan is replete with provisions on people’s participation and emphasizes the value of traditional knowledge and technologies in sustainable management, development and conservation of coastal and fishery resources. Also, it promotes the formation of local POs and cooperatives and their participation in the tasks of managing, protecting and developing local coastal and fishery resources.

Under the BCDP, the municipal waters of Bolinao is designated into four zones: (a) Zone 1 is for Ecotourism; (b) Zone 2 is for Multiple Use; (c) Zone 3 is for Fishery Management; and (d) Zone 4 is for Trade and Navigation. This prioritization of use, however, does not preclude the conduct and management of other activities as appropriate within these priority zones (Section 20, BCDP). The plan specifies the boundaries of each zone, identifies particular areas within each of those that have been designated for special uses or activities, and provides regulations and management systems for those activities. For instance, within the Ecotourism zone, there is a designated bangus fry gathering area. Access to this area, including its resource, is limited to duly registered and accredited groups, i.e. cooperatives of municipal fishers and local POs, and that the grant of exclusive gathering privileges is exercised by the SB.

The plan is a comprehensive document that tackles the many and complex issues surrounding the coastal and fishery resources and environment of Bolinao. This deals with the issue of equity, users rights and privileges alongside user responsibilities and group and individual actions that will aid in sustaining local resource benefits. The plan also addresses utilization, development, management and conservation issues both from a scientific and administrative viewpoint and provides general guidelines and elementary mechanisms in addressing those concerns. The plan comes up with a zonation scheme that takes into account the various activities, uses, and needs of the town's economy and population. Also, it even provides guidelines for specific activities in areas that have been designated for special purposes (e.g., bangus fry gathering areas and spawning areas). The second to the last chapter of the plan, which deals with "Prohibited Acts", describes in significant detail the present constraints and issues that confront the fisheries sector of Bolinao which is the context within which the plan will be implemented and upon which the plan's effectiveness can be measured, i.e., whether or not the plan has effectively addressed the problems and issues confronting the town as presented in Chapter 9 of the BCDP.

While the task of implementing the plan falls largely on the municipal government, the plan clearly provides for a more active and direct involvement of civil society in its implementation. There is an implied recognition in the way the plan has been drafted that participation of local fisher groups, organizations in allied activities, communities, and even scientists is essential in achieving its aims. However, it will be unrealistic and unfair to place great expectations on the municipal government considering its many limitations.

The mechanism provided in the plan that will facilitate consultation and coordination in its implementation is embodied in the proposed Bolinao Coastal Development and Management Council (BCDMC). A careful study of this body will reveal that in almost all aspects of the plan, partnership between the LGU and local civil society is strongly encouraged. For one, there are as many number of seats for non-government representatives as there are for the representatives for relevant local government offices. The BCDMC does not have regulatory powers. Basically, it is a recommendatory body that is tasked to coordinate with concerned LGU and local civil society groups in matters concerning law enforcement, dispute management/resolution, and other activities that will promote the aims of the plan. Therefore, the main task of the BCDMC is to facilitate the effective implementation of the town's CDP in a highly participatory manner.

The plan offers so much opportunities for innovation in local sustainable resource utilization and progressive management. The opportunities are presented within the framework of partnership between local resource users, on one hand, and the local government, on the other, which, traditionally, performs the task of managing, developing, rehabilitating and protecting local resources and the environment. The challenge is to make this partnership work, effectively for the environment as well as for building up confidence in this newly forged partnership between and among the different stakeholders.

BATANGAS BAY, BATANGAS

The Batangas Bay Region (BBR) is located in the southern portion of the Province of Batangas, which occupies the southwestern part of Luzon Island. This is one of the three demonstration sites of the GEF/UNDP/IMO¹⁷ Regional Program for the Prevention and Management of Marine Pollution in the East Asian Seas (MPP-EAS) established in 1993.

Coastal Environment Profile¹⁸

The region has a total land area of 1 460.7 km² and a coastline measuring 470 km. This extends to the Municipality of Tingloy in Maricaban Island in the south, while the north, south and west boundaries are delineated by the catchment areas or watersheds that drain into the Batangas Bay. Within this region lies 14 coastal and inland municipalities, including the cities of Lipa and Batangas and portions of Lobo and Verde Island. The bay itself forms a semi-enclosed body of water, with an average depth of about 200 m which renders it ideal for international port and harbor development. This bay has a water area of about 220 km².

The entire BBR is essentially an agricultural area. In 1985, about 60% of its total land area is planted to sugarcane, rice, corn, and coconut with fruits and other crops. Secondary forest occupies only 9% and is almost nonexistent in the coastal areas. Settlement areas constitute less than 5%. Commercial raising of livestock, especially poultry and piggery, is a growing industry in the region, making BBR a primary supplier of poultry and meat products in the Southern Tagalog Region and Metro Manila. Livestock growing has grown phenomenally such that it has encroached on some ricefields and coastal lands. Fishponds cover about 100 ha, mainly in Batangas City. This is about a quarter of the area devoted to aquaculture a decade ago. Fishponds had been converted to commercial, industrial and residential areas.

Batangas Bay is a growing industrial area. The coastline is dotted with industrial firms engaged in oil refinery, chemical, and textile manufacturing and food processing. Each of these firms emits effluent or generates wastes that need preventive and control measures. Batangas City also hosts a major international port, which is the alternative port to Manila. Between 1985 and 1990, the total number of vessels entering the bay rose from 5 052 ships to 6 776. In 1995, an estimated 15 870 ships docked at the port. This raises three interrelated issues for the management of the bay resources—the congestion in sea vessel traffic, the potential of oil spill and ship collision and marine pollution.

¹⁷ Global Environmental Facility/United Nations Development Programme/International Maritime Organization

¹⁸ The MPP-EAS published a Coastal Environmental Profile of the Batangas Bay Region (CEP-BBR) in 1996 which provides a synthesis of all available information gathered from the government and other sources. The study gives a comprehensive description of the region including its natural resources, resource use patterns and socio-economic profile. This also identifies the management issues which need to be resolved.

The Batangas Bay supports varied intensive activities including municipal fishing, shipping, and port development, causing intense competition among these sectors and also endangering the marine environment, its resources, and water quality. For municipal fishing alone, for instance, the ratio of fishing area to fishing boat in the bay stands at only 0.08 (or 0.08 km² of fishing area per fishing boat). The actual number of municipal fishers is estimated to be 8 965, but the families dependent on this sector are 4 335. Some people in the coastal areas participate in fish distribution to market outlets and/or in direct marketing.

Overfishing is a growing concern in the bay. Seventy percent of municipal fisherfolks is solely dependent on small scale (municipal) fishing. The remaining 30% supplements their incomes with seasonal employment such as carpentry and masonry. Compared to the total coastal population of about 360 000 in 1994, about 7% of the coastal residents is dependent on subsistence fishing. The density of fisherfolk in the bay's water area—around 41 per km² of fishing ground—is relatively high, which may indicate a high fishing pressure. At present, there are no available data to assess the impact of such resource-use conflicts on the fishery resources. Even an inventory of fish stock and other marine resources in the bay is limited.

Urban development and industrialization have also brought to the fore another serious problem, that of pollution. The volume of domestic wastes as well as industrial refuse and effluents are considerable. Households generate more than 100 000 t of wastes every year. This is projected to increase to 120 000 t in the year 2000. At present, only about 60% of domestic (household, commercial, and hospital) wastes is collected by the LGU. The remaining wastes are burned or dumped indiscriminately in backyards, streets, and waterways, all of which eventually end up in the bay.

Industrial/commercial pollution is a critical problem. Sources of pollution include oil refineries, power plants, shipyards, chemical manufacturing plants, alcohol distilleries, food processing plants, livestock farms, markets, hospitals and others. These sources contribute pathogenic wastes, nutrients, oil sludge, heavy metals, and others. An inventory in 1995 showed that of the 352 485 t of solid wastes generated by industries, 17% came from oil refineries in the form of oil and chemical wastes, 78% from chemical companies in the form of latex sludge, hydrofluoric tar and paper, 4% from shipyards in the form of paint, grit blasting and copper slags.

In addition to domestic and industrial waste discharges, pollution of marine waters is expected to escalate due to potential oil spill from increased vessel traffic. For the period May 1986 to September 1993, 11 oil spill incidents have been recorded by the PCG, or at least one spill per year. What is alarming is the increasing recurrence of these incidents from an average of one occurrence per year from 1986 to 1990, to two occurrences in 1991 and 1992, and four occurrences in 1993. In the case of Filipinas Shell Corporation, these incidents have been attributed to structural defects (such as unstable foundation of oil tanks) and inadequate internal inspection.

Legal and Policy Framework

Direct management of the resources in the region follows the general sectoral management approach of the national government. The DENR takes charge of the utilization and conservation of land-based resources such as forests, foreshore lands, mangroves, mining and quarrying. Pollution control from industries is also regulated by the DENR through the EMB and the DENR field offices. The PCG, through its Marine Environment Protection Office of the 5th Coast Guard District, is responsible for the enforcement of pollution laws in the bay area, whether the pollution comes from ships or industries along the coasts. The PPA manages the international port in Batangas City as well as the numerous private ports belonging to the major industrial establishments. The MARINA regulates the shipping industry.

The provincial, city and municipal governments have taken an active role in the management of the coastal zone by virtue of the powers granted under the LGC. In 1993, the provincial government initiated a program of environmental awareness focusing on elementary school children. This passed an ordinance in 1994 providing for a continuing "greening" program of maintaining tree nurseries and planting trees. Municipal governments also enacted several ordinances dealing mainly on fishery conservation, anti-littering and solid waste management, and land use/zoning.

Despite the number of national and local laws as well as the numerous regulations issued by the specialized agencies, the region's terrestrial and aquatic environment continues to deteriorate. The general observation is that the government agencies have not been expeditious and effective in performing their roles. Critical factors that contributed to this problem are the lack of coordination among agencies performing related functions and the lack of participation of local communities and the private sector in planning and management.

A study sponsored by the Batangas Bay Demonstration Project (BBDP) showed that a multi-sectoral body may be the appropriate mechanism for the integrated management of the region (La Viña 1997). As a result of this study, the *Sangguniang Panlalawigan* passed an ordinance creating the Batangas Bay Region Environmental Protection Council. The council is composed of the local chief executives, representatives of the national government agencies, industry and fisherfolk representatives. The council is tasked to develop policies and programs to ensure and promote the sustainable development of the natural resources of the region. More importantly, the council serves as the forum where the sectoral concerns of the national agencies as well as the industry, fisherfolks and other economic interests are heard and discussed. The idea is to have a holistic assessment of each issue raised by the stakeholders and a concerted plan of action is adopted by the council which includes the coordinated activities of each participating agency or organization.

In order to facilitate and coordinate the day-to-day implementation and monitoring of the council's activities, the provincial government created the PG-ENRO which also serves as the secretariat of the council.

The Integrated Coastal Management Framework

The BBR was chosen as a demonstration project because it is an area of rapid economic growth brought about by competing activities which are directly or indirectly dependent on the coastal zone. Two key conditions also helped in the choice of the site. First, the enactment of the LGC has opened an opportunity for LGUs to implement an integrated management framework and second, there is an active involvement by stakeholders, especially industry, in environmental management concerns.

As part of the programme for the BBDP, a Strategic Environmental Management Plan (SEMP) was prepared for and adopted by the council which laid down the major management issues that need to be resolved and the plan of action which aims to address these issues.

The SEMP identified the following major management issues: (a) improper solid waste collection and disposal; (b) water and air pollution; (c) declining fish harvest; (d) improper mining and quarrying operations; (e) expanding shipping and port development activities; (f) deteriorating socioeconomic conditions of people in the coastal areas; and (g) lack of multi-sectoral participation in environmental management.

After extensive consultations with stakeholders, an action plan was drafted consisting of six specific components: (a) legal and institutional mechanisms; (b) integrated policy and planning systems; (c) integrated management systems and technical interventions; (d) management and technical capability building; (e) improvement of information base; and (f) sustainable financing.

The first component has been partly met by the creation of the council and PG-ENRO. These bodies are still in their infancy. At present, the roles and responsibilities of the members in the council are not yet optimally played. Perhaps because it is a novel creation, the council has yet to define the extent of its powers and roles *vis-a-vis* the individual local governments and the participating national agencies. In pollution control for example, the ideal situation is for the council to adopt a policy and devise a plan of action where the municipalities, the DENR and PCG would have complementary roles. However, at least one municipality passed an ordinance for inspection and monitoring of pollution in industries without consulting the council. The functions of the local government provided in the ordinance duplicate the regular functions of the DENR.

The problem of defining the role and powers of the council stems from its frail legal foundation. The council was created by virtue of a provincial ordinance only which cannot modify the mandates of the national agencies and local governments that have been set by national laws. The council can only depend on the cooperation of the member agencies and LGUs, but it cannot demand strict adherence to its policies because the agencies and LGUs possess the power to fulfill their own exclusive mandates.

The component on integrated policy and planning systems aims to make sure that the SEMP fits into the broader socioeconomic and development plans, not only of the region, but the country as a whole. Batangas is fast becoming a major player in national development as it is the alternative hub for shipping. Also, it is a major supplier of power for the rest of Luzon.

The challenge to the council is to rise beyond the local concerns of the region and integrate its own planning to the national planning framework. There is an existing mechanism where local concerns are taken up in Regional Development Council (RDC) meetings. Much depends on the cooperation within the Batangas council to prepare and adopt the plans. The planning process may also suffer from the weakness of fragmentation discussed above.

The third component on management and technical interventions aims to generate options for solving critical problems such as municipal wastes and pollution. The key to completing this component is providing the participating local governments with the tools for addressing these problems such as the development of an integrated waste management system, oil spill contingency planning, establishment of sewage treatment facilities, and development of control measures for pollution discharge at point source.

The fourth component aims to develop the management and technical capability of key actors and stakeholders through training programs, community organizing and information dissemination. The objective is to have a common understanding of the issues and the various interests of the stakeholders.

The fifth component aims to support the existing data gathering initiatives and generate other previously lacking information that are critical in making management decisions. Through the demonstration project, a management information system is being established which would collate and relate all the data gathered.

Finally, the last component aims to develop options to finance the other components. The usual excuse of government for its ineffectiveness is the lack of money to implement or enforce policies and laws. Financial mechanisms, such as market-based instruments, are explored as alternatives to taxation and direct appropriation.

“Community-Based” Management

The management of coastal resources in the BBR is not, in the common notion, community-based. In fact, the initiative for establishing the norms for utilization and management came from the local government. However, the experience in Batangas is unique because there is a conscious effort on the part of government to reach out to the stakeholders and involve them directly in the decision-making processes, through the council. In effect, the council serves as the forum where the larger community of different stakeholders, including government, make the plans for the sustainable management of

the region while taking into consideration the various interests of the different stakeholders. In this sense, it is also “community-based.”

Proponents of Integrated Coast Management (ICM) argue that traditional community-based management, where the people themselves take a direct hand in managing the resources, is not appropriate for a complex system such as Batangas Bay because there are so many conflicting/competing interests involved. The BBR, for example, is a major port and shipping center. The management of these sectors need special skills and clear legal mandates, especially because they involve not only local but national and international regulatory measures on shipping routes, maritime safety, and pollution control. The needed skills may not be available in the community and the needed powers cannot be delegated to the community.

SUMMARY OF LESSONS LEARNED

The four case studies presented in this section are only examples of the many experiences and initiatives that have been and are currently being undertaken in the Philippines. Indeed, they were chosen because they represent the range of community-based options available given a particular set of circumstances. The lessons learned from these experiences should therefore be seen in their specific contexts.

The Coron Island experience is that of an indigenous people struggling to maintain their traditional management system in the face of challenges from migrants and from the interventions of the LGU and the national government. The Apo Island case study illustrates an island community’s efforts, in partnership with both academic institutions and government programs, to protect its fisheries and coral reef resources. The Bolinao experience appears to be much more sophisticated given the set of challenges that face the local ecosystem and the community. Finally, the Batangas Bay initiative is noteworthy given the complexity of issues which accompany rapid industrialization and urbanization.

While each case study presents its own observations and insights, a few general themes can be identified as running through all these experiences.

First, whether national law provides for it or not, community-based systems exist. Indeed, as the Coron and Apo Island experiences would show, community-based management systems can survive even in the face of inconsistency with the national legal system.

Second, the reality of conflict—in the use of coastal and marine resources, in economic interests, in political power—is a dominant characteristic in all the case studies. How this conflict is managed, not necessarily resolved, by the different stakeholders is important in determining the success of a community-based approach to coastal management.

Third, an imperative for the sustainability of a community-based system is partnership—partnership among different sectors within a community, partnership with academic institutions, non-government organizations and government agencies as well.

Fourth, the role of local governments is very crucial in community-based resource management. A non-supportive LGU can doom community initiatives.

Finally, the quality and modalities of the interventions of the national government play a central role in ensuring that community efforts are supported and are ultimately successful and sustainable. These interventions, in turn, are influenced by external factors, including global and regional developments.

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Chapter 5

Role of International and Regional Agreements

This section examines the impact on the Philippines, particularly on its policy, legal and institutional frameworks for the management of fisheries, coastal resources and the coastal environment, of a growing body of international principles and norms governing the global environment in general and the marine environment in particular. Regional agreements and arrangements are also included in this examination.

THE RIO DECLARATION AND AGENDA 21

The best summary of general principles of international environmental law are found in the Rio Declaration of 1992 and, with respect to the marine environment, Agenda 21. Both documents were adopted during the United Nations Conference on Environment and Development (UNCED), held in Rio de Janeiro in 1992. While non-binding instruments, the Rio Declaration and Agenda 21 constitute "soft law". These documents do not impose obligations on states, but they will certainly have the effect of legitimizing and encouraging initiatives pursuant to it, and set the agenda for further developments of international law.

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The Rio Declaration on Environment and Development is a non-binding statement of 27 broad principles for guiding environmental policy that emphasizes protecting the environment as part of economic development, safeguarding the ecological systems of other nations and giving priority to the needs of developing countries, the most environmentally vulnerable. While the original intention was to draw up an Earth Charter, at the insistence of developing nations, negotiations were directed toward development concerns. The final product is largely a political and economic document centered almost exclusively on human concerns.

Among others, the Rio Declaration establishes the right of human beings, "who are at the centre of concerns for sustainable development", "to a healthy and productive life

in harmony with nature.” The call is for states and people to “cooperate in good faith and in a spirit of partnership in the fulfillment of the principles embodied in this declaration and in the further development of international law in the field of sustainable development.”

The Rio Declaration confirms the sovereign right of states to exploit their own resources pursuant to their own environmental and developmental policies, which must be fulfilled so as to equitably meet the needs of present and future generations¹⁹. Likewise, it recognizes the key role of stakeholders in the decision-making processes, especially indigenous peoples²⁰. Also, it encourages states to develop national legislation regarding compensation for victims of pollution and other environmental damage, the use of economic instruments to take into account the polluter-pays principle²¹. Furthermore, it stresses the importance of EIA as a tool for planning as well as the adherence to the precautionary approach in deciding on and devising measures to prevent environmental degradation²².

Agenda 21, on the other hand, is a program, also approved in the Rio summit, listing 40 actions that are designed to promote sustainable development on earth. The agenda raises the need for making changes in all human economic activities with a view to improving standards of living as well as to conserving natural resources. However, this is a non-binding 800-page blueprint to clean up the global environment and encourage development in an environmentally sound manner. Among others, Agenda 21 seeks to ensure the protection of oceans, seas, freshwater sources and coastal zones, through a rational use of living resources and of their habitat.

For the marine environment, Agenda 21 is especially relevant. In particular, Chapter 17 entitled “Protection of the oceans, all kinds of seas, including enclosed and semi-enclosed seas and coastal areas and the protection, rational use and development of their living resources”, occupies an important place. The most significant element in Chapter 17 is its call for the adoption of “new approaches to marine and coastal management and development at the national, subregional, regional and global levels, approaches that are integrated in content and are precautionary and anticipatory in ambit”.

Chapter 17 calls for initiatives under several programme areas: (a) integrated management and sustainable development of coastal areas, including exclusive economic zones; marine environmental protection; (b) sustainable use and conservation of marine living resources in the high seas and areas under national; (c) critical uncertainties for the management of the marine environment and climate change; (d) the institutional framework for strengthening international, including regional, cooperation and coordination; and (e) sustainable development of small islands. The chapter also calls on states to cooperate, as appropriate, in the preparation of national guidelines for integrated coastal zone management and development, drawing on existing experience.

¹⁹ Principles 2 and 3, Rio Declaration.

²⁰ Principles 10 and 20, Rio Declaration.

²¹ Principles 13 and 16, Rio Declaration.

²² Principles 15 and 17, Rio Declaration.

Agenda 21 has become a major influence in the development of marine environmental law. Among others, it has resulted in global conferences on Coastal Zone Management (November 1993) and Sustainable Development of Small Island States (1993). This has also been influential in the United Nations-sponsored Agreement on Straddling and Highly Migratory Fish Stocks (concluded August 1995) and the UNEP-sponsored Global Programme of Action on Protection of the Marine Environment from Land-based Activities (now in the final stages of preparation).

In the Philippines, Agenda 21 is being implemented through Philippine Agenda 21, which among others, identifies issues and concerns affecting the coastal and marine ecosystems and proposes strategies and action agenda to deal with such issues and concerns, including specific targets and timetables. Philippine environmental laws have adopted the precautionary principle and the polluter-pays principle in their provisions. The EIA system has been in place since two decades now and is continually being strengthened through more stringent enforcement, while at the same time, clarifying and simplifying procedures in order to facilitate compliance.

THE UN LAW OF THE SEA CONVENTION

The UNCLOS, signed in 1982 and came into effect in 1994, is the international framework agreement that regulates all aspects of the various uses of the world's oceans, including rights of navigation, fisheries conservation and management, marine scientific research, and the regulation of pollution from all sources. With respect to the marine environment, UNCLOS provides the legal basis upon which to pursue the protection and sustainable development of the marine and coastal environment and its resources.

"... UNCLOS provides the legal basis upon which to pursue the protection and sustainable development of the marine and coastal environment and its resources."

Although the obligation to protect and preserve the marine environment is global, the UNCLOS divides the ocean into a variety of jurisdictional zones based on distance from the baseline, generally the low-tide line. These include internal waters; the 12-mile territorial sea; the 200-mile EEZ; and the High Seas. While the UNCLOS grants coastal states' sovereign rights over the natural resources of their EEZ, a coastal states' competence to prescribe and enforce marine environmental pollution standards diminishes with distance from shore. Thus, the marine jurisdictional zones recognized by UNCLOS makes arbitrary divisions in ocean ecosystems thereby hampering an holistic approach to management. This is an important limitation to bear in mind regarding protection of the marine environment from sea-based activities and pollution.

While UNCLOS states that the conservation of marine living resources is a fundamental obligation, fisheries conservation and management measures within the territorial waters of the coastal state are entirely the responsibility of that state. Under UNCLOS, coastal states must ensure, through proper conservation and management measures, that

the maintenance of living resources in the EEZ is not endangered by overexploitation of living resources. States are further obligated to cooperate with each other for the conservation and management of the living resources of the high seas.

Within the EEZ, the coastal state is to ensure the conservation and optimum utilization of fishery resources. To this end, the coastal state is to adopt conservation measures and determine the total allowable catch (TAC) for each stock. The TAC for each stock is to take into account, among others, fishing patterns and the interdependence of stocks, as well as the impacts on associated or dependent species with a view to maintaining or restoring the population of such species above the level where their reproduction may become seriously threatened.

The coastal state can determine both the quantity it will allow to be accessed, as well as to whom it will provide access. The coastal state is therefore the main judge of the conservation measures required. The state also has the legal authority to introduce conservation measures that provide explicitly for the protection of marine ecosystems or species biodiversity within the EEZ. With respect to transboundary fisheries resources, coastal and fishing states are to cooperate with respect to the exploitation of transboundary and associated stocks in two or more EEZ and in EEZ and adjacent high seas areas. The states are also obligated to cooperate with respect to highly migratory species, marine mammals, anadromous stocks and catadromous species.

The UNCLOS calls on states to adopt laws and regulations to prevent, reduce and control land-based pollution, taking into account internationally agreed rules, standards, and recommended practices and procedures. The convention obliges all states to minimize, to the fullest possible extent, the release of toxic, harmful or noxious substances, especially those that are persistent, from land-based sources, from or through the atmosphere or by dumping. Likewise, UNCLOS imposes an important obligation to protect from pollution rare or fragile ecosystems as well as the habitat of depleted, threatened or endangered species and other forms of marine life. Also, it requires states to take all measures necessary to prevent the intentional or accidental introduction of species, alien or new, into the marine environment which may cause significant and harmful changes.

Moreover, UNCLOS calls on states to take action, at the international level, to establish rules and standards to prevent, control and reduce pollution and to promote the use of routing systems designed to minimize the threat of accidents which might cause pollution. The vessel's state of registry (i.e., the flag state) is charged with primary responsibility for implementing and enforcing such rules and standards. A coastal state's competence to take unilateral measures to regulate foreign vessels for environmental purposes (e.g. vessel discharges, routing) is, however, limited by foreign vessels' right on innocent passage and freedom of navigation. Port states may, on the other hand, impose and enforce unilateral requirements, including design, construction, manning and equipment standards, as a condition of entry into its ports, provided it gives due publicity to such requirements. With regard to pollution from offshore structures, states are required to adopt measures designed to minimize pollution that are no less effective than international rules, standards and recommended practices and procedures.

Furthermore, UNCLOS allows states to adopt laws affecting the preservation of the environment and prevention of pollution in their 12-mile territorial sea (other than requirements on the design, construction, manning or requirements on the design, construction, manning or equipment of foreign ships unless they are going to effect generally accepted international standards) provided such laws do not have the practical effect of denying or impairing the right of innocent passage. Within the 200-mile EEZ, coastal states may only adopt laws and standards conforming to and giving effect to generally accepted international rules and standards established through the competent international organization or general diplomatic conference. The “competent international organization” is generally understood in this context to mean the International Maritime Organization (IMO).

The Philippines has ratified UNCLOS and is implementing it through a Cabinet Committee on the Law of the Sea. However, the work of this committee has tended to focus on political issues (i.e., boundary delimitation) and not much attention has been given to marine resource and environmental issues.

IMO CONVENTIONS

A number of IMO conventions are relevant to the utilization and protection of the marine environment. These include:

1. International Convention for the Safety of Life at Sea (SOLAS), 1974;
2. Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (LDC), 1972 and Protocol 1996;
3. International Convention for the Prevention of Pollution from Ships, as modified by the Protocol of 1978 relating thereto (MARPOL 73/78);
4. International Convention Relating to Intervention on the High Seas in cases of Oil Pollution Casualties (INTERVENTION), 1969 and Protocol 1973;
5. International Convention on Oil Pollution Preparedness, Response and Co-operation (OPRC), 1990;
6. International Convention on Civil Liability for Oil Pollution Damage (CLC), 1969 and Protocols 1976 and 1992;
7. International Convention on the Establishment of an International Fund of Compensation for Oil Pollution Damage (FUND), 1971 and Protocols 1976 and 1992; and
8. Convention relating to Civil Liability in the Field of Maritime Carriage of Nuclear Materials (NUCLEAR), 1971.

The Philippines is a party to most of these conventions. Noteworthy, however, among those conventions not ratified by the Philippines, is MARPOL, although ratification is expected in the near future. Despite being a party to many IMO Conventions, implementation is frequently inconsistent and requires extensive effort and attention.

The Convention on Biological Diversity

The Convention on Biological Diversity (CBD) was signed in 1992 and came into force 29 December 1994. The strength of this convention lies in its comprehensive approach to species and ecosystems, promoting both conservation and sustainable use. The CBD applies to waters within national jurisdiction, including the EEZ. This also applies to activities which are carried out under national jurisdiction or control. Thus, CBD extends to fishing and polluting activities occurring on the high seas. States are required to implement the provisions of the CBD consistently with the rights and obligations of states under the UNCLOS. The CBD is potentially a powerful instrument to deal with marine environmental issues because of its comprehensive approach (i.e., terrestrial and marine ecosystems are given equal importance). Indeed, the first conference of the parties of the CBD has prioritized actions to deal with the threats to marine biodiversity.

The Philippines is a party to the CBD and has begun implementing its provisions. Emphasis has been given to marine protected areas such as the Turtle Islands, Coron Island, Apo Island and Tubbataha Reef, which are all protected areas.

Other Agreements

The Wetlands Convention (referred to as Ramsar) obligates contracting parties to designate for conservation at least one wetland of international importance, and to use wisely all wetlands resources under their jurisdiction. Wetlands as defined under the convention may include areas of marine water the depth of which at low tide does not exceed 6 m. If deeper marine water lies within the wetlands, they may also be included. In addition, islands and riparian and coastal zones adjacent to wetlands may be incorporated. As of 30 September 1999, the 116 contracting parties have designated 1 005 sites, which covers more than 71.7 million ha (Ramsar Convention Bureau 1999). At least 270 of these sites have coastal and marine component. Although initially focusing on wetlands of importance for waterfowl, the criteria for listed sites have been expanded to include other features of significance to the marine and coastal environment. This now includes sites of special value for maintaining the genetic and ecological diversity of a region, or as the habitat of plants or animals at a critical stage in their biological cycle.

The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal is important with respect to transboundary movement of hazardous wastes. A system of permits is used to regulate the transport of hazardous materials to and from a contracting state. The Philippines is a party to both the Ramsar and Basel Conventions. This has enacted the RA 6969 to implement the latter.

Regional Agreements

International conventions often set the global framework for action for environmental management. However, regional initiatives provide for a more concrete basis for cooperative action between member countries. Indeed, the UN Secretary General has recognized the importance of setting regional bases of cooperation in the protection of the environment. "A comprehensive and coordinated approach at the global level must be complemented by comprehensive and integrated strategies at the regional and national levels. Regional goals which concentrate on key stresses can encourage harmonized rules

"International conventions often set the global framework for action for environmental management."

and standards at the regional level for individual sources of stress..." (United Nations 1997). Furthermore, Article 197 of UNCLOS provides that "states shall cooperate on a global basis and, as appropriate, on a regional basis, directly or through competent international organizations, in formulating and elaborating international rules, standards and recommended practices and procedures consistent with this convention, for the protection and preservation of the marine environment, taking into account characteristic regional features."

Also, UNCLOS encourages states bordering enclosed or semi-enclosed seas to cooperate on a regional basis regarding the management and conservation of marine living resources, and the protection and preservation of the marine environment. Regional conventions and associated action plans have since been developed in 12 regions, at least 2 are in development, and 1 has failed to progress beyond the action plan phase. Most of these Regional Seas Program were developed under the auspices of UNEP. Other than the Mediterranean, however, these regional initiatives have not progressed to the stage where they develop common regulatory or other implementing measures. This is true for South-east Asia.

In the Association of Southeast Asian Nations (ASEAN) region, the importance of cooperation is borne by the fact that they are enjoying the use of a shared resource. The adjacency of ASEAN member-countries around a semi-enclosed sea and their extension of maritime jurisdiction dictate that some of actual or potential coastal resources management issues will be transnational, as will their resolution. Such transnational issues include transboundary pollution effects from land-based sources, spills from oil wells, and oil and hazardous cargo spills from vessels; sealane siting; transboundary pollution control-harmonization policies and regulations; transboundary fisheries management of migratory species, shared stocks and illegal foreign fishing; conservation-coordination of national and regional conservation schemes; cooperation or harmonization of monitoring, surveillance and enforcement; and management of islands and marine areas of uncertain jurisdiction.

The maritime states of the East Asian region have one third of the world's population and it's coastal zones are heavily populated with more than half of the population concentrated along coastal areas. These coastal areas are also characterized by diversified

economic activities. This is explained by the fact that natural resources in the coastal areas are vast and varied consisting of productive ecosystems such as coral reefs, seagrass beds and mangroves with numerous coastal landforms such as estuaries, beaches, deltas, tidal flats, embayments and islands. Economic activities to meet the growing demand for food, employment and shelter of these increasing populations have resulted in enormous pressures on the region's coastal and marine environments. Diversification and intensification of these activities, among others, have resulted in pollution which, in turn, has degraded valuable and productive ecosystems.

Marine pollution is only one of the consequences of economic and development pressures. The coastal waters, including estuaries, bays, gulfs and congested straits and semi-enclosed subregional seas in the region are relatively polluted compared to open seas and oceans. Among others, the coastal waters of the region are contaminated by untreated sewage, garbage, sediments, oil, pesticides and hazardous wastes from land-based and sea-based activities. While the open seas and oceans are, by comparison, cleaner, increasing maritime activities such as offshore exploration and production activities, make these waters vulnerable to pollution, especially oil and chemical spills and discharges.

Growing awareness of the state of the marine environment, coupled with the realization that pollution has severe effects on the sustainability of economic development, have convinced many maritime states in the East Asian region to pay closer attention to the management of their coastal and marine resources as well as to invest in their protection and conservation. For example, there are efforts in China and the ASEAN states to develop and implement Integrated Coastal Zone Management (ICZM) programs. On the legal side, most nations have enacted the necessary laws and regulations to control or prevent discharges into the marine environment. A number of countries have also established the regulatory and organizational structures to implement these rules.

Unfortunately however, because of lack of financial resources as well as inadequacy of technical capacity, and also because of political sovereignty issues such as boundary disputes, many countries in the region remain unable to adequately address the marine pollution problems within their territorial jurisdiction. The lack of resources frequently make it impossible to formulate and install environmental programmes to manage and mitigate marine pollution. For example, many countries have not yet established effective pollution assessment and monitoring stations, although ad hoc surveys and studies have been undertaken in some coastal waters. And on the international side, at present, only a few countries in the region have ratified and are implementing the relevant IMO conventions and other marine pollution agreements.

While there is a seeming dearth of regional conventions on the protection of the marine environment in the region, this should not be taken to mean that there is a dearth of regional cooperation in the area. Countries in the region prefer guidelines of action instead of mandatory obligations imposed by conventional law. This is less intrusive to the sovereignty of member countries but also compatible with the preference of Asians for subtlety. This preference against the possibility of a model statute on the marine

environment is borne out “by the diversity of the ASEAN member-nations and the past success of coordination policies”.

Various initiatives have been undertaken in the region. Some are purely regional in nature. Others are joint undertakings between the region and another country or between the region and an international organization.

In the early 1980s, ASEAN recognized that there was continued depletion and degradation of the environment through the misuse and indiscriminate exploitation of resources. Hence, ASEAN came up with the an integrated and coordinated ASEAN Environment Program (ASEP). ASEP sought to achieve ecological, technological, and sanitary security in the region. The program was laid down to create a holistic and comprehensive outlook of the ecological system rather than to treat resources separate and distinct from each other. This approach to environmental management and utilization was believe to be the key to sustainable development.

In 1981, ASEAN member-states identified a number of priority actions to be implemented under the ASEP, including a sub-program for sustained development and protection of marine environment and coastal area involving pollution control, resource management, institutional management, information exchange and training; integration of environmental management with development planning using EIA; and nature conservation and protection of the natural resources

In 1985, ASEAN adopted the ASEAN Agreement on the Conservation of Nature and Natural Resources. The agreement provided a framework for the protection of environment as well as specific obligations such as the prohibition of the taking of the enumerated endangered species. Moreover, the agreement provided very specific guidelines in the establishment and regulation of these protected areas.

In 1990, the fourth ASEAN ministerial meeting on the environment, held in Malaysia, adopted the Kuala Lumpur Declaration on Environment and Development and a common ASEAN stand on global environment issues. The ASEAN environment ministers agreed to initiate efforts leading towards concrete steps pertaining to environmental management including: the formulation of an ASEAN strategy for sustainable development and a corresponding action program; the harmonization of environmental quality standards; the harmonization of transboundary pollution prevention and abatement practices; the initiation of efforts leading towards concrete steps pertaining to natural resource management, including the harmonization of approaches in natural resource assessments and the development of joint natural resources management programs.

In 1993, the Asia-Pacific Memorandum of Understanding on Port State Control was signed by eighteen states. It set up a system to ensure that foreign ships comply with the regulations of MARPOL (73/78), the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (1978), the Convention on International Regulations for Preventing Collisions at Sea (1972) and the ILO - Minimum Standards for

Merchant Ships (1976). A Traffic Separation Scheme (TSS) was also developed in the Straits of Malacca and Singapore to reduce accidents in the area.

International organizations also initiate the development of regional schemes. The GEF/UNDP/IMO Regional Program for the Prevention and Management of Marine Pollution in the East Asian Seas has been very active in stirring cooperation in the region for coastal and marine resources management. Among others, the development and establishment of regional networks for environmental management, by facilitating South-South and regional cooperation, is a goal of the regional program. The network approach is justified so that there is cross-fertilization of disciplines, concepts and experiences as well as the formulation and adoption of regional legal and policy initiatives, where appropriate, such as harmonization of standards. Among others, under the program, four interlinked regional networks are established. These are:

- ❖ **The Network of Local Governments for ICZM Demonstration Sites:** This network is composed of participating local governments and is intended to ensure political commitments and to promote institutional and organizational arrangements for the planning and implementation of ICZM programs.
- ❖ **The Network of Research/Academic Institutions:** This network will provide technical inputs for policy, management and technological interventions.
- ❖ **The Pollution Monitoring and Information Management Network:** This network will ensure regular monitoring of environmental changes as well as the efficient use of information for management interventions.
- ❖ **The Network of Legal Experts on Marine Pollution:** This network is intended to serve as a catalyst to country and regional efforts to develop, enact and effectively implement international and national laws on marine pollution.

Other regional initiatives include:

- ❖ **ASEAN Committee on Science and Technology (COST)** with Canada, US, EU, Japan, etc. The project seeks to develop a program to manage the pollution in the region.
- ❖ **The ASEAN Expert Group on Environment** has projects dealing with oil pollution and health. They initiated an oil spill contingency plan as early as 1970.
- ❖ **ASEAN-Australian Marine Science Project** dealing with ocean dynamics and living resources.
- ❖ **ASEAN-Canada Marine Pollution Project** to determine the criteria for the protection of marine resources and monitoring pollution.
- ❖ **ASEAN-US Coastal Resources Management Project** aimed at developing a multidisciplinary coastal area management plan.
- ❖ **APEC** has working groups concerning marine environmental issues.

- ❖ UNEP-Regional Seas Program set up the Coordinating Body of the Seas of East Asia (COBSEA) which is developing pollution prevention programs.
- ❖ ASEAN Council on Petroleum (ASCOPE) which was created to address environmental issues related to oil and natural gas exploration.
- ❖ ASEAN Senior Officials in the Environment (ASOEN) was formed in 1990 to ensure that a regional oil spill contingency plan is developed and implemented.
- ❖ Oil Spill Response Plan (OSPAR) initiated with Japan to provide technical assistance and equipment to ASEAN to combat oil spills.

The ongoing territorial disputes in the region has also pushed for the creation of the South China Sea Workshop on Conflict Resolution. The workshop is divided into four technical working groups of varying official nature: (1) legal; (2) safety of navigation; (3) marine research study; and (4) marine environment protection. While initially, it has been seen as a mechanism to settle territorial issues, the scope of concern of the group has widened to include areas of cooperation in marine environment protection. For example, there is currently a proposal for a project on ecosystem monitoring in the region.

SUMMARY

The threat of environmental degradation to the vitality and biodiversity of the coastal zones of the region cannot be overestimated. At present, many of the estuaries, lagoons and bays in the region have been proclaimed to be biologically dead or severely depleted of aquatic life. Indeed, ensuring a cleaner and safer coastal and marine environment in the future is one of the most difficult of the challenges facing states and policymakers in the region.

While there are numerous initiatives being implemented, it remains to be seen whether these will be effective and whether they can be sustained. For example, a review of the impact of these initiatives on the Philippines does not, except in a few instances such as the Batangas Bay project and some bilateral initiatives such as the Philippines-Malaysia project on the Turtle Islands, appear to have much of an impact on the ground. Perhaps, it is too early to evaluate the success of these initiatives but clearly more efforts are needed.

With respect to the role of community-based resource management, there is a clear recognition of this principle in the more recent international environmental agreements such as the Rio Declaration and Agenda 21. However, this is not reflected in most of the regional initiatives which, with a few exceptions, are centered mostly in the role of national governments. A few do emphasize local government participation but clearly this is not enough. In this sense, regional initiatives and programs, if it does not incorporate the experiences of community-based approaches in their design and implementation, may result in perverse consequences leading to further inequity and environmental degradation in the marine and coastal zones of the region. This is certainly true for the Philippines.

Chapter 6

The State of Play in the Philippines: Integrating Community-Based Resource Management in the Management of Fisheries, Coastal Resources and the Coastal Environment

The strategy of community-based resource management (CBRM) has been proposed as a better alternative to command and control or free market approaches to environmental regulation. The strategy is based on the insight that, contrary to the widely-held belief that all communally-held resources are doomed to suffer, it is now known that a wide variety of sustainable community resource management systems does exist. This recent rediscovery of communal institutions as an effective solution to the commons problem is significant in a variety of ways. These institutions may have a valuable role to play in sustainable use planning but have usually been overlooked or underutilized in the planning process. This has happened because of over-emphasis on the kinds of resource management practices dominant in the Western industrialized world in which the significance of common property institutions have declined over time.

The CBRM systems can range from the right of the community to be consulted before any development project is imposed on it to actually recognizing community control and management of natural resources. Recognizing these systems would also mean developing and accepting common property regimes in international and national legal regimes, among others, by recognizing communal title to lands, ceding the control and management of rainforests to the communities that occupy them, protecting the intellectual property rights of indigenous and local communities to their traditional knowledge, and in institutionalizing community participation in environmental risk and impact assessment.

From a policy point of view, with respect to the letter of the law, one finds enough text to justify that the Philippines gives due consideration and emphasis to the principle of CBRM, indeed not only in the management of coastal and marine resources but of all natural resources. The Philippine law on protected areas, the policy which enshrines

community-based forestry as the strategy for forest management, the concept of social acceptability in environmental impact assessment, the principle of prior informed consent in bioprospecting and mining, and the recently enacted law on the rights of indigenous peoples are all examples of the acceptance, perhaps one can even say dominance, of this principle. With respect to marine and coastal areas, two important policy texts also reflect acceptance of CBRM—Philippine Agenda 21 (PA 21) and the new Fisheries Code.

At the outset, PA 21 recognizes that basic sectors can serve as managers and controllers of community resources. This acknowledges that communities residing within or most proximate to an ecosystem of a bio-geographic region will be the ones to most directly and immediately feel the positive and negative impacts of environmental degradation and should, therefore, be given prior claim to the development decisions affecting their ecosystem, including management of the resources. Thus, PA 21, among others, called for the following:

- ❖ The passage of a fisheries code that recognizes the primacy of fishing communities in the management and access to marine resources;
- ❖ The preparation of a comprehensive coastal zone management plan at the national, regional and local levels with genuine participation of communities;
- ❖ The development of mechanisms that provide equity in access to coastal resources;
- ❖ The promotion of the active participation of all sectors in planning for the management of coastal resources/ecosystems; and
- ❖ Capacity building and information support measures that would enable communities to participate in the management of the coastal and marine ecosystem.

The Philippine Fisheries Code of 1998 adopts as a state policy the protection of the rights of fisherfolk, especially of the local communities with priority to municipal fisherfolk, in the preferential use of the municipal waters. In access to fishery resources, preference is given to resource users in the local communities adjacent or nearest to the municipal waters. Indeed, according to Section 68 of the code, fisherfolk and their organizations residing within the geographical jurisdiction of the barangays, municipalities or cities with the concerned local government units shall develop the fishery/aquatic resources in municipal waters and bays. The provision of support to municipal fisherfolk through appropriate technology and research, credit, production and marketing assistance, etc. is mandated by the code. Incentives for municipal and small-scale fisherfolk are also provided for.

The most significant community-based mechanism in the Fisheries Code is the creation of FARMCs. These shall be established in the national level and in all municipalities and cities abutting municipal waters and shall be formed by fisherfolk organizations/cooperatives and NGOs in the locality and be assisted by the LGUs and other government entities. Before organizing FARMCs, the LGUs, NGOs, fisherfolk and other concerned

organizations shall undergo consultation and orientation on the formation of FARMCs. At the national level, a National Fisheries and Aquatic Resources Management Council (NFARMC) is created while barangay, lakewide, municipal and city FARMCs shall be created at the local level. Essentially, the local FARMCs perform an advisory and assisting roles to government bodies in the preparation of fishery development plans, the enactment of legislative measures and the enforcement of fishery laws, rules and regulations.

While the new fisheries law clearly recognize community-based approaches in fisheries management, it represents in many ways the continuing inadequacies of national law and policy.

First, and this is true for many other policy issuances, there are, within the same law or policy, inconsistencies between what is articulated as policy and the details of specific provisions. For example, under Section 18 of the code, all fishery related activities in municipal waters, defined generally as 15 km from the coastline, are supposed to be utilized solely by municipal fisherfolk and their organizations. However, under the same section, the law also provides that the municipal or city government may, through its local chief executive and acting pursuant to an appropriate ordinance, authorize or permit small and medium commercial fishing vessels to operate within the 10.1 to 15 km area from the shoreline in municipal waters under certain conditions. This exception, which was a compromise between those who wanted exclusive access for small fisherfolk and those who wanted unrestricted entry by the commercial fishing industry, may effectively destroy the preferential rights given to small fisherfolk.

A second inadequacy of national law and policy is its failure to fulfill the promise of its policy rhetoric. While the creation of FARMCs can be considered as a progressive step, for many advocates, this new mechanism does not go far enough in ensuring community-based resource management. After all, the FARMCs are merely advisory and recommendatory. The real powers are still lodged in the local and national government agencies. On the other hand, as many experiences in the Philippines would attest, the FARMCs, under certain conditions, may acquire "lives of their own" and may yet prove to be good starting points for effective and sustainable CBRM. The challenge is on communities to maximize the opportunities provided for by this mechanism.

Another inadequacy is the continuing characteristic of sectoralization and lack of integration. While the Fisheries Code contains some provisions on the prevention of marine pollution and the protection of marine biodiversity, the approach that it takes is centered mainly on fisheries. In this sense, the new law is a step backward as it does not incorporate the principle of integrated coastal management.

Finally, it remains to be seen whether national law and policy can and will be implemented in a manner consistent with its spirit and intention. The reality is that it will take time before one can conclude that CBRM has been truly integrated into the policy, legal and institutional framework of managing the fisheries, marine resources and coastal environment of the Philippines.

Chapter 7

Conclusion

As pointed out in this study, the Philippines is home to pioneering work in establishing community-based management. This approach, as practiced, is a people-centered approach which relies on indigenous knowledge and expertise in the development of management strategies. The aim is to ensure wise and equitable use of resources on a sustainable basis through proper exploitation and protection. It requires maximum participation of coastal communities to ensure that benefits will accrue to the majority of the people.

The premise of CBRM is that local communities have the greatest interest in the conservation and sustainable use of coastal resources and thus should have incentives, resources and capacity for marine and coastal ecosystems conservation. The CBRM calls for: (a) community empowerment; (b) recognition and enforcement of community property rights over local fishing grounds and other resources; (c) provision of environmentally-sound technologies and financing; and (d) the reform of national policy and legal framework.

The range of experiences in the Philippines of community-based systems illustrates that no one community-based approach can be a model for all communities. Indeed, as the case studies show, the role of communities change depending on the state and condition of the ecosystem, the characteristics of the marine and coastal resources, the profiles of the stakeholders and the nature of the relationships among the key actors, and the like. Thus, national law should provide only for a legal and institutional framework in the management of marine and coastal resources. Such a framework should include principles of utilization and management (such as sustainable development, integrated coastal management and recognition of community-based systems). The framework should also establish democratic and participatory processes for, among others, policy-making and conflict resolution.

"The aim is to ensure wise and equitable use of resources on a sustainable basis through proper exploitation and protection. It requires maximum participation of coastal communities to ensure that benefits will accrue to the majority of the people."

An important insight is that community-based approaches is applicable not only to small-scale coastal resources and traditional artisanal communities but can play an important role as industrialization and urbanization sets in. On the other hand, as society changes rapidly and pressures mount and become more complex, integrated coastal

management becomes imperative. Indeed, under such circumstances, traditional management systems, even community-based ones, are no longer adequate. The danger, and potential tragedy, is to disregard completely the community-based approaches and rely completely, once again, on command and control or market based strategies. The challenge is how to build on local experiences and integrate them into the national management framework as it evolves through time and circumstances. Developing a community-based integrated coastal management is, therefore, imperative.

EQUITY AND JUSTICE

The CBRM supposes that the solution of the common problems start with the control of the access to the resource; increasing production from a common property resource depends on the conservation of the resource base; the sustainable utilization of a resource is closely connected to the use of simple and appropriate technology for the harvest of that resource; and that local level management through community organization improves prospects for the sustainable use of a common resource.

"The challenge is how to build on local experiences and integrate them into the national management framework as it evolves through time and circumstances.

... the rationale for CBRM is equity and justice.

...CBRM should, therefore, be understood in the context of the socioeconomic and political development of societies.

Ensuring equity and justice do not necessarily result in environmental sustainability, but at least in the Philippines, these are necessary conditions for its attainment."

Thus, the democratization of access to the resources lies at the core of an effective CBRM approach. A truly effective management framework for fisheries and coastal environment management must be consistent with this underlying philosophy and should not be grounded merely on the improvement of management of the resources by reinforcing control and enforcement mechanisms through greater participation. Above all, however, it should be remembered that the rationale for CBRM is equity and justice. So that it can be supported and sustained, CBRM should, therefore, be understood in the context of the socioeconomic and political development of societies. Ensuring equity and justice do not necessarily result in environmental sustainability, but at least in the Philippines, these are necessary conditions for its attainment.

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**Management of Fisheries, Coastal Resources and the Coastal Environment in the Philippines:
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