Community-Based Approaches to Marine and Coastal Resources Management in the Philippines: A Policy Perspective

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Abstract

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.

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 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. In identifying these elements and trends, a historical perspective is provided focusing on both the development of law and policy as well as practices on the ground. Case studies of community-based practices in coastal management are also presented to further illustrate these elements. In both the historical analysis and the case studies presented, the author gives particular focus to identifying and understanding the role of stakeholders and interest groups in the use of fisheries and other coastal and marine resources. The

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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.

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), have adversely affected amenities that should have been allocated to coastal communities. There is also degradation of the landscape as a result of 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 that threaten important cultural, historic and anthropological sites in the coastal zone. Mariculture and aquaculture developments located in nearshore waters and which require high water quality have affected other uses that diminish water quality, such as agriculture. They also compete with fishing, conservation and ecotourism which have similar requirements.

Emphasis on the conflict over control of resources, between modes of use and among stakeholders and interest groups is the focus of this paper. This context of conflict 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 author explores solutions, some of which are now bearing fruit from recent efforts in the Philippines, to ensure the sustainable development of marine and coastal resources. Efforts in the Philippines are also examined in the context of global and regional cooperation and 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. The analysis, many of the conclusions, and 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).

Uses of Coastal Resources

The Philippines is situated in the center of marine biodiversity brought about by various geological and evolutionary processes. Rich and diverse natural ecosystems like coral reefs, mangrove swamps, estuaries, seagrasses, sandy beaches, embayments and sheltered coves abound. These areas contain natural resources of socioeconomic, 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 and municipalities are located in the coastal zone. In 1997, the Coastal Environment Program (CEP) reported that more than 60% of the 60 million population resides in some 10 000 coastal *barangays* (smallest political unit) and major urban centers.

The uses of coastal resources may be classified as extractive and non-extractive. The former may be further classified according to the resource being extracted, which may be either living (e.g., fisheries, forest products) or non-living (e.g., minerals). Non-extractive uses include tourism, recreation and designation as protected areas. Other major activities in the coastal zone that impact on coastal resources include shipping and ports development, industrial and urban development, waste disposal, security and military activities.

Fishing and Aquaculture

Fish is a vital part of the Filipino diet and the cheapest source of protein. The per capita consumption of fish is among the highest in Southeast Asia at 36 kg per yr (FAO 1997). A significant number of people living in coastal areas depend on fishing for their livelihoods 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 manu-

facture, 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 fishers in the past two decades. In 1975, there were about 1.26 million fishers and fish farmers, but in 1994, there were only about 1 million. The decrease was among both full-time fishers 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, discouraging small-scale fishers from continuing their activities (Menasveta 1997).

In 1990, there were about 430 000 vessels in the fishing fleet, mostly open craft. About 3 300 were officially classified as commercial vessels with a tonnage of 155 GT (Labon 1991). About 85% of the municipal waters (up to 15 km from the shore) are considered overfished. This is supported by data that show a steady decline in the contribution of municipal fisheries to overall fish production (Figure 4.1).

Aquaculture posted a significant share in fish production since the 1980s. This has grown steadily due to its increased productivity and economic viability. By 1994, aquaculture contributed 30% to the total fish production (Figure 4.1).

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 PhP 1.6 billion in revenue in 1996 (BAS 1997).

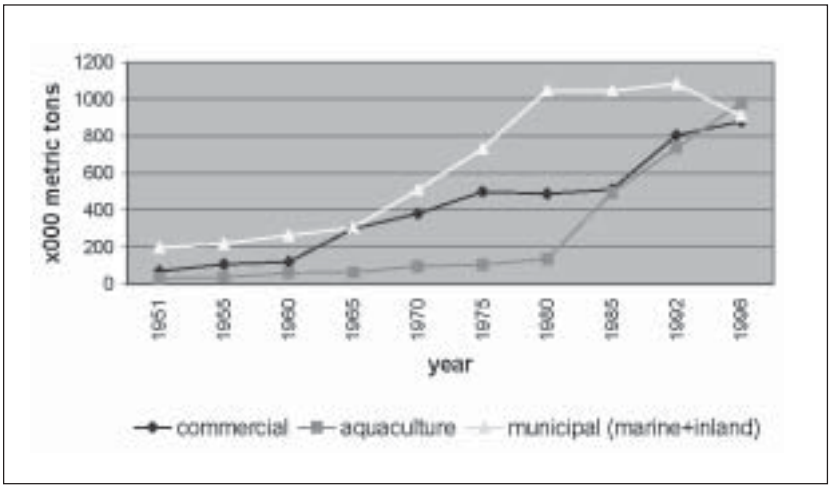
Marine products are also harvested for medicinal, commercial and industrial uses. There are several ongoing studies on bioactive compounds found in sponges and tunicates for anti-cancer properties. Despite an existing ban, corals are harvested for sale as decorative items or as construction materials. There is also a growing market for aquarium fishes which spurs fishers to gather them in large quantities, often through destructive means.

Agriculture and Forestry

The islands composing the Philippines are typically mountainous or hilly in the central area, with fertile flatlands extending to the sea. The width of flatlands best suited for agriculture varies. 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 growing cereals (e.g., rice, corn). Agricultural lands are being lost to urbanization at an increasing rate.

Mangrove forests are also threatened. The reduction of the mangrove forests in the country is largely a result of conversion to fish ponds. It is estimated that there were approximately 500 000 ha of mangroves in 1918. The area of the Philippine mangrove forest has decreased at an alarming rate. In 1984, only about half remained. A decade later, 60% of the original cover had been lost. Mangrove fish pond conversion almost tripled from 1952 (> 88 000 ha) to 1988 (224 000 ha). Figure 4.2 clearly shows the link between mangrove loss and fish pond expansion (Aliño 1997). Between the years 1952 and 1987, fish pond coverage increased at an average rate of 3 600 ha per yr. Other factors which have contributed to the depletion are conversion to

Figure 4.1 Fish catch by sector (BAS 1997).



industrial and urban uses and exploitation for forest products such as timber, firewood, charcoal, tannins, tanbark, *nipa* sap and shingles.

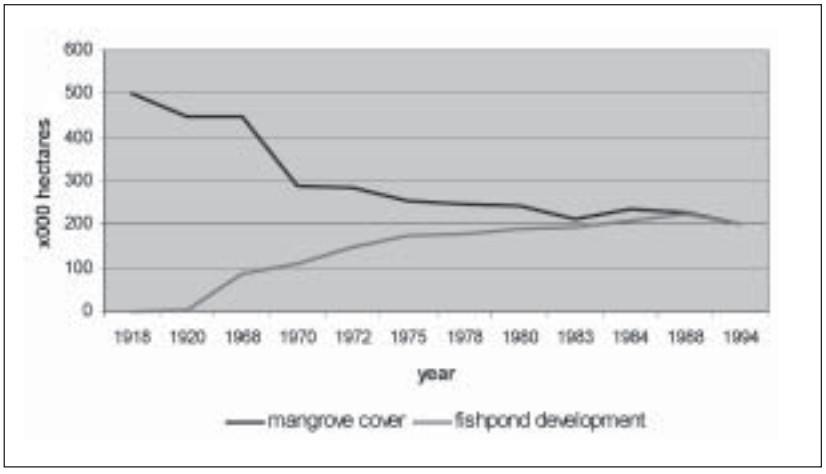
Mining

Mining in the coastal zone generally involves quarrying of sand, stone and rock used in the construction sector. White sand and silica are 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 (erosion, siltation) and mine tailings from the more sophisticated mining operations inland have considerable adverse impacts on the coastal environment.

As of 1994, there were 8 large scale 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 away or carried to bodies of water, ultimately to the sea. Mine wastes peaked in 1991 at 47.44 million t. Mine tailings 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.

Figure 4.2 Mangrove cover vs. fishpond development (BAS 1997).



Protected Areas

There is a full 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 (PAWB 1998). In addition, there are numerous small fish sanctuaries and reserves established by the Bureau of Fisheries and Aquatic Resources (BFAR), local governments, people's organizations and NGOs.

Tourism

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

Eighteen of the top 25 tourist destinations are coastal. 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 visited for their scenic beauty and because of the recreational activities they offer. Tourist arrivals in the country has reached almost two million per year.

Shipping and Ports Development

In 1995, the Philippines had a total of 10 072 vessels classified as merchant or fishing vessels. The merchant fleet included passenger ferries, cargo containers, and

barges. 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 do not take into account the more than 400 000 small open boats.

Berthing and storage facilities mainly serve domestic vessels engaged in fishing and coastal commerce. 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 were small shipyards, 10 were medium shipyards and 14 were 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 a location near low cost water transportation and inland transportation systems;
- Industries that derive power from or use water for processing or cooling;
- 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.

In 1983, industrial development density is a minimum of five industries per 1 000 km^2. Approximately the same proportion applies in the coastal areas (EMB 1996).

Urban Development

Settlement includes shelter and all other necessary infrastructures such as roads, water supply, energy sources, transportation, community buildings and other facilities. To date, population density 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 *barangay*s, including some larger urban centers (CEP 1997).

A number of subdivisions are situated in coastal zones. Some foreshore areas are being reclaimed to house residential, commercial and industrial establishments in order to address the increasing demands of urbanization. A recent 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 increase in the number of coastal communities is the need for transportation facilities. Natural landforms influence the major road networks of the country's coastal provinces. Roads run along the coastlines which branch out as minor arteries leading inland.

Waste Disposal

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 per day. This is expected to increase to 13 300 t per day by the year 2014. The current collection efficiency in Metro Manila is 85%. Fifteen percent or 900 t of wastes is burned, thrown in canals and *esteros* or deposited in rivers that flow to the sea (EMB 1996).

In 1992, about 76% of the population had access to sanitary toilets. The rest of the population relies mostly on onsite disposal or septic tanks that drain directly into 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 and 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 of opportunities that coastal and marine environments offer. Families depend on coastal and offshore waters for their livelihoods.

However, driven by purposes other than subsistence and survival, various types of activities now flourish there, many 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. Constant and heavy exposure to numerous artificial and natural pressures have taken their toll on the ecosystem.

These pressures have caused the rapid depletion of mangroves, destruction of coral reefs and drastic declines 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, and 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 increase is a major concern. Point sources include industrial effluents, water runoff from urban areas and sewage discharges. Non-point sources arise from activities such as land clearance, livestock production and agricultural activities, including the use of fertilizers and pesticides. The effects are the loss of seagrass beds from coastal lagoons, bays and estuaries and the recurrence of algal blooms. In Manila Bay, total fecal coliform counts were shown to be over the standards set by the DENR.

Industrial wastes were also detected at alarming levels (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, they increased again in 1995. At a national level, 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 and is caused by 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, release of sediments from mining, and organic compounds (e.g., anti-fouling paints, ballast water discharges and sewage from vessels). Three oil spills were reported from 1973 to 1975. One of these was a result of the sinking of the LUSTEVECO barge in August 1975. From 1978 to 1980, four more oil spills were reported. During 1990-1995, 75 oil spill incidents were noted. Of these, 71% were caused by accidents such as sinking, collision, and grounding. The remaining 29% were due to cargo handling operations such as loading, bunkering and discharging (EMB 1996).

Mining is one cause of soil erosion and sedimentation of coastal waters. The adverse effect of mining on the coastal environment may be from *in situ* mining operations on the beach zone or from direct or indirect disposal of mine wastes or tailings into marine waters. Sedimentation from mining activities covers wide 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 habitats.

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

Based on the number of water rights permits granted by the National Water Resources Board, a generally increasing trend in groundwater and surface water use is noted. There was an increase of 11.4% over a six-year period from 129 777.75 million m^3 in 1990 to 144 622.50 million m^3 in 1995. In terms of water usage by sector, only 0.3% and 0.03% are attributed to fisheries and recre-

ational purposes, with power generation as the biggest user of water followed by the agricultural, domestic and industrial sectors (EMB 1996).

Philippine marine, coastal resources and environment are at risk. Foreshore areas are being reclaimed for residential, commercial and recreational uses. Ports and other similar structures are built near these areas to support the transportation system and to promote trade. Continued use at the current rate and scale may create irreversible impacts.

Overview of the Legal and Policy Framework

In this section, the existing legal and policy framework formulated and enforced by the government and changes over time are discussed. This section does not include the rules developed and practiced by some local communities which are not part of the formal legal system. Local norms are considered in the next section which deals with community-based management.

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

Historical Perspective

In earlier times, the *barangays* (villages) had jurisdiction over coastal resources (Kalagayan 1990). The *barangays* defined their own fishery limits that were exclusive of other *barangays*. The traditional rights of *barangays* over their fishing grounds were eroded during the Spanish period when all fisheries and natural resources were held for the Crown (known as the *jura regalia* or Regalian Doctrine). Rights 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 been adopted as the norm. The 1987 Constitution of the Republic of the Philippines claims full control and supervision over all aspects of use and protection of marine and coastal resources.

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 1990). Still, policy formulation and general management remained with the central government. Since then, policy formulation and regulation has 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 not only evolved as a centralized system, but also a sectional one. Specific laws were passed to address particular issues and the use of coastal resources and activities is 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 that were administered by a different agency.

There have been attempts to solve these problems through a holistic approach by recognizing the interconnection of the various component ecosystems. Major laws were enacted in the 1990s that moved 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.

In 1991, Congress passed the Republic Act (RA) 7160, also 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 non-government organization (NGO) sectors. The devolution of certain management and allocation decisions to the community may be more effective than the management efforts provided by distant, understaffed and underfunded agencies (Carlos and Pomeroy 1995). In 1998, Congress passed two significant laws: the new Fisheries Code (RA 8550) and the Agriculture and Fisheries Modernization Act or AFMA (RA 8435) which incorporate measures to curb overexploitation and manage 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 in 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 a Royal Decree in 1866 (Peña 1997). The decree declared that the shores, coasts and coastal seas were part of the national domain, though open to public use. As early as 1598, Antonio de Morga demanded that a regulation size net be prescribed for use and complained that fishing with too closely-knit nets was killing small fry (de Morga 1971). Fisheries regulation remained relatively unchanged during the Spanish period.

During the American occupation starting 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 resources such as the declaration of open and closed seasons, protection of fry or fish eggs, prohibition on the use of noxious or poisonous substances and explosives in fishing and prevention of water pollution. The law also contained special provisions for gathering mollusks, sponges and hawksbill turtles. The main regulatory or management strategy implemented was the selective granting of licenses or permits to qualified persons. The license was coupled with limits on access to the resource such as setting minimum sizes for fish, shellfish or turtles that could be caught or restricting certain fishing practices to certain places or times of year.

Goodman (1983) noted that the Fisheries Law of 1932 was meant 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 powerful fishing boats in Manila Bay and 36 deep sea vessels in the Gulf of Davao. They had brought into the Philippines such innovations as swift powered fishing vessels, the beam trawl, 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 could participate only by investing in corporations 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 in name only. The impetus for the passage of the law was for some people to profit by serving as fronts (Goodman 1983).

In the ensuing years, Japanese interests in Philippine fisheries were 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. Under this treaty, the Philippines supplied Japan with tuna, shrimp and other marine commodities, while Japan exported canned mackerel and sardines to the Philippines.

In 1947[1], Congress created the Bureau of Fisheries (BoF) under the Department of Agriculture (DA) and Commerce (DAC) to promote further

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

development of the fishing industry (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. These added powers pertained mainly to increasing fish production by encouraging more fishing activities and increasing efficiency through better technology. The commission was a collegial body with representatives from the private sector.

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 fishery products. The government committed to help by providing 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 that have remained largely untapped due to unnecessary constraints by existing laws and regulations and by a failure to provide an integrated development program for the industry. In the declaration of policy, the acceleration of development of the fishing industry is tempered with the policy of keeping the fishery resources in optimum productive condition through conservation and protection as expressed in the provisions on establishment of fish sanctuaries and prohibitions of destructive fishing methods.

A more significant impact of the Fisheries Code of 1975 was on foreign involvement in Philippine capture fisheries. The code paved the way for the reintroduction of Japanese investment and Japan became the dominant partner in joint fishery ventures.

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

The new code emphasizes food security, prioritization of local fishers in the allocation of privileges and benefits and sustainable development, among others. It provides for limiting access to resources through quotas, closed seasons, restrictions on the use of destructive fishing gear, and designating fishery reserves and sanctuaries. A significant change in the new code is the devolution of management to local governments. Municipal waters, extending up to 15 km offshore, are under the control of municipal and city governments. The national government retains control 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 environmental protection, but especially control over the coastal areas within their jurisdictions. The LGC, however, focused on permits and fiscal matters. Now, with the Fisheries Code, general management and development powers are given to the local governments. 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 and ensures the equitable sharing of benefits among stakeholders. The act aims to provide financial and technical support to the agro-fisheries industry in its modernization effort.

Management of the Coastal Environment

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. In the Philippines, an EIA system was first adopted in 1977 when the National Environmental Protection Council (NEPC) was created and given the power "to review environmental impact assessments of projects submitted by government agencies"[2].

Under PD 1586, environmental impact statements were required only for undertakings or areas that were declared by the President as environmentally critical. However, the NEPC was authorized to require non-critical projects or undertakings to provide additional environmental safeguards as it may deem necessary[3].

In 1981, Presidential Proclamation 2146 was issued, identifying environmentally critical projects as 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 value and areas often hit by natural calamities. The most important features of the Philippine EIA system are:

- The distinction made between environmentally critical projects and projects in ECAs;
- The decentralization of EIA system decisions to regional offices for non-critical projects in environmentally sensitive areas;
- The incorporation of the principles of environmental risk assessment in the system; and
- 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 require an ECC. Indeed, the history of the implementation of the EIA system would reveal a continuing process of addition to the list of projects requiring an ECC. Operation of a ferry system in Laguna de Bay and the dumping of wastewater in the sea are two recent examples of new activities that have been added to this list. By decentralizing 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 a potent tool for decision makers. Lack of environmental risk assessment was perceived to be one of the reasons that 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 towards avoiding a repetition of such a 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 that generated serious concern, in many cases outright opposition, among affected communities. By requiring social acceptability[4], the expectation is that most negative environmental consequences of a project are avoided or, at the very least, mitigated.

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

As a rule, environmental pollution is regulated by the DENR. 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

[2] PD 1121, Section 2(e).

[3] PD 1586. Section 5.

[4] DAO 96-37, Section 3 (cc).

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 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 PD 984 and PD 600, there is an apparent overlap. Both laws address the issue of discharge of pollutants into the waters and seas, whether from a land-based or ship-based source. 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

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.

Assessment of Agencies Involved in Coastal Management

To simplify the distinction between different government agencies with marine and coastal management functions, four categories may be considered:

- Policy-making and general management

  (a) The DENR which has overall responsibility for environmental protection and management of both marine and coastal environment;
  (b) The Department of Agriculture (DA) which has jurisdiction over the conservation and proper use of agricultural and fishery resources. Under its Fisheries Sector Program (FSP), now Fishery Resources Management Program, the DA has implemented a management system known as Coastal Resources Management Project (CRMP) that was pilot tested in 12 priority bays; the LGUs, 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; and
  (c) The National Economic Development Authority (NEDA) coordinates various social and economic plans, policies, programs and projects on a national and sector basis.

- Scientific Research

  (a) 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;
  (b) The DA-BFAR, which is the main coordinating body for research conducted by the DA;
  (c) The DENR-Ecosystem Research and Development Bureau (ERDB), which is DENR's research coordinating unit; and
  (d) The University of the Philippines-Marine Science Institute (UP-MSI), which is the national center of excellence in the marine sciences.

- Law enforcement and coordinating functions

  (a) The Department of the Interior and Local Government-Philippine National Police (DILG-PNP), which has the responsibility of crime prevention and the apprehension of violators;
  (b) The Department of National Defense (DND)-PCG, which has the primary role in the prevention and control of marine pollution;
  (c) The Presidential Commission on Anti-Illegal Fishing and Marine Conservation (PCAIFMC) or the *Bantay Dagat* Committee (BDC), which is the main law enforcement agency in coastal waters;
  (d) The Inter-Agency Task Force on Coastal Environment Protection (IATFCEP), which coordinates the departments and agencies enforcing coastal environment protection; and
  (e) 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, use, 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, been recognized as the agency with the mandate over natural resources use and management, including marine and coastal resources. The department has the mandate 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 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 was retained in the MNR. The split between use 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. Through its forestry programs, the department has control over mangrove and watershed resources. The department also supervises the NIPAS that 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 industrial activities. 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 an 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. Policymaking and research functions are performed by staff bureaus. In 1993, the DENR launched the Coastal Environment Program (CEP) that 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 assures equal access to, coastal resources and upgrading the capabilities of all DENR personnel in the management of coastal environments[5] .

Fisheries, marine and aquatic resources were not included in the jurisdiction of the DENR under the department reorganization in 1986 (EO 192). However, under EO 292 (Administrative Code of 1987), which was promulgated 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.

Under the Administrative Code of 1987, the DA is mandated to promulgate and enforce all laws, rules and regulations governing the conservation and proper use 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 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 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 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 its history, BFAR has moved from a science office focusing on research to a commerce office focusing on trade, to a natural resources office dealing with conservation, to an agriculture office focusing on food production, not to mention its stint as an independent commission. In every transfer, its focus changed as influenced by the mandate 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.

In an attempt to create a holistic approach to coastal resources management, the DA spearheaded a new management system under its FSP, now known as Fisheries Resources Management Program, that was 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 department's

[5] DAO 93-19.

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

Devolution to Local Governments

While LGUs have limited jurisdictions individually, their collective impacts have national implications. Local governments play a major role in coastal resources management by virtue of the devolution of functions under the LGC of 1991 (RA 7160).

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 has significant environmental impact.

Local governments have the capacity or the potential to develop a total approach to coastal resource management within their jurisdictions. While the laws do not provide for comprehensive or detailed provisions on coastal resources management, the general provisions can serve as basis 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 with central government agencies. Few LGUs are equipped with the financial and technical capabilities to carry on a sustainable program of coastal resources management.

To be effective, environmental management programs must manage ecosystems that seldom correspond to political boundaries making it imperative that local governments jointly manage common resources. The LGC has provided for instances where LGUs may cooperate to achieve common goals[6].

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. 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 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 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 that 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.

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 making it a multi-sector body. Such a body can serve as the policymaking forum where all stakeholders can participate.

In the case of the BBR, it was determined 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

[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".

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 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, 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 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 only focuses 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 a year.

Both IATFCEP and PCAIFMC 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. 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 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 *barangay*s, cities and municipalities. The executive issuance was met with much support from fishers and proved promising. The FARMC concept has been institutionalized and integrated into the new Fisheries Code.

Community participation is crucial to the success of any regulatory program. There is a higher probability of success when the community is involved at the earliest stages of developing the regime. The shaping of the regulations should take into account existing practices and inputs from the community.

In Bolinao, Pangasinan (discussed in the case study in the next section), the community itself worked to develop the management program for their coastal zone. The scientists and community

organizers provided the guidance to ensure that the management plan had 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 has proven to be ineffective in abating the degradation and depletion of marine and coastal resources. There are telling examples of past and present management failures. A considerable amount of legislation has been passed, many regulatory mechanisms have been used, 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 strategies that would move away from command and control approaches to community-based and market-based strategies needs to be explored. 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. The existing institutional set-up is complex, confusing, sectoralized and fragmented. Fragmentation is the major systemic hindrance to more effective management. There is an urgent need for sectoral integration and coordination.

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 become more attractive. These include community-based systems of management.

Historical Perspective

Before the arrival of the Spanish, 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 sector, endeavors reflective of this communal tradition survived into the Spanish period. In some 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 and sell 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 to thank the saints for their kindness, and invoke blessings 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 in 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 by the peasant class in Philippine society is the intentional disregard of state regulations that 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. Thus, non-compliance may become a social norm. There are also instances of vocal resistance by 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 fish pen industry. Two fishers were caught fishing in the prohibited area by the park warden. The two fishers hacked the warden to death when he refused to allow them to continue (Bautista and Anigan 1978).

Rationale for Community-based Resource Management

Historically, community management developed independent of and even preceded governmental regulations and persisted even after formal regulatory norms were set in place. Years of experience in community-based resource management (CBRM),

from forestry to fisheries, show the common reasons why such approaches are desirable. Batongbacal (1991) summarizes these in the context of coastal resource management as:

- The communities' dependence on the coastal zone;
- Inadequacy of traditional systems of centralized government management;
- Greater efficiency in planning and implementation;
- Democratization of access to resources;
- More prospects of success; and
- Failure of previous cooperative activities.

CBRM is 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. CBRM emphasizes that environmental problems have both social and technical aspects. Therefore, CBRM is about letting people make their own rules and decisions and enforce them. 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. 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 society. 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 a new environmental agenda emphasized community-based models of resource management (Batongbacal 1991). The initial successes of these models in community-based forestry projects were applied to 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 options as the pressures of modernization and industrialization begin to prevail.

Coron Island, Palawan[7]

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 and the other in Banwang-Daan, where most of the town's *Tagbanuas* congregate. The official population data of the Coron Municipal Planning and Development Office (CMPDO) shows 4 888 *Tagbanuas* (18% of total municipal population) living in the municipality[8]. The *Tagbanuas* have been on the island since time immemorial and consider the land and a portion of the sea as their ancestral domain[9]. The *Tagbanuas* exercise indigenous resources management practices anchored mainly in their culture and beliefs.

Environmental Profile

Coron Island is part of the Calamianes Island Group located in Northern Palawan. The island is

[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 use of their ancestral waters ad the natural resources found therein.

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 natural resources and a natural landscape that makes it very attractive for tourism related development activities. There are eight brackish lakes and three 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 to the sea have allowed the entry of giant barracudas and octopuses, giving one of the lakes its name "Barracuda Lake." Climate is dry from December to April and monsoonal the rest of the year[10].

About 5 000 ha of the total land area of the island are made up of rocky cliffs, which is why the *Tagbanuas* do not depend primarily on agriculture for their subsistence (IPC 1996). For their livelihood, they depend on fish and other aquatic resources such as *tekbeken* (small octopus), *balat* (sea cucumber), *latuk* (edible seaweed); and 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 with upland rice and corn. A typical *kuma* is good for one harvest of rice which is barely enough to tide over a typical *Tagbanua* household to the next harvest. To supplement income and food supply, most families plant cashew trees in backyard lots and the nuts are sold in exchange for rice[11]. 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 includes 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 along the coast.

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

The *Tagbanuas* harvest more from the sea than from the forest. They vigorously fought for government recognition of their claim over ancestral waters as an integral part of their ancestral domain claim. Both land and sea are vital for the daily subsistence of the *Tagbanuas* and 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 this is for their exclusive use. They believe that the sea is a communal property. They "allow" access by outsiders as long as the fishing methods are legal and are not done in sacred areas.

The *Tagbanuas*' resource use and management system is operational 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 observance of traditional laws, especially the imposition of sanctions and 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 that bring harm on anyone who trespass the area. The same belief governs the *amlaran* and the *amuyuk* (sacred lakes), which the *Tagbanuas* believe to be inhabited by spirits in the form of octopuses. 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 in the restricted zones, the individual must strictly observe certain behaviors, silence or limiting one's speech or using an entirely different language so as not to disturb or offend the spirits. Failure to do so would surely bring misfortune, even death, to

[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.

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

the individual. In such a situation, the only way to appease the spirits is for the *albularyo* to perform traditional rituals. The reason why the *Tagbanuas* prohibit fishing or gathering of resources in the *panyaan* or sacred areas for both *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 areas[12]. Their Certificate of Ancestral Domain Claim (CADC) application calls for the respect of all these sacred areas.

The *panyaan* may be likened to the modern day marine reserves or marine sanctuaries while the *amuyuk*, the sacred lakes, are a 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. Forest 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 practice has been handed down from generation to generation and it has been traced back to the coming of the Chinese traders before Magellan. 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 swiftlets[13]. 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).

Others seek a livelihood elsewhere through fishing or diving. The *Tagbanuas* traditionally use the waters around the island for subsistence fishing, swidden farming, and other land-based livelihood activities. The amount of resources they extract is limited to their own sustenance. They do not engage in commercial harvests. 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 gathered are seaweeds (*lato*), shellfish, lobsters (*banagan*), eels (*indong*), mackerels (*tanguigue*), and anchovies. Seaweed farming has been recently introduced to the *Tagbanuas*.

Interviews[14] 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 spears (*sibat*), bow and arrow (*pana*), hook and line (*kawil*) and other 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 modern and more invasive fishing methods used by outsiders, which yield more catch and sometimes are over efficient. 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 illegal and these include blast fishing, the use of

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[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.

[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.

cyanide, Danish Seine (*hulbot-hulbot*) and the use of compressors. They believe these kinds of fishing practices deplete the fishing stock and destroy the environment.

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.

Seaweed farming has been recently introduced to the *Tagbanuas*. Women are mostly 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 was jeopardized when migrants gained control of some of the prime farmlands, which displaced the *Tagbanuas* to move to higher, steeper slopes and to expand the scope and frequency of swidden methods beyond what is traditionally practiced. 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, sweet potatoe, pigeon beans (*kadios*), rice and millet. A number of the root crops growing in the forests have been domesticated and are now planted on level lands.

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

Cutting trees near streams, springs, wells and the coast is prohibited. The *Tagbanuas* recognize the value of these resources as watersheds which ensure irrigation of their crops and prevent soil erosion. *Tagbanuas* recognize the value of the mangrove ecosystem to their marine environment. They know 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 including 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 except for mature pigs.

Based on unpublished research done by 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 a parcel of land within the *Tagbanua* territory has 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 TCFI said 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 roots in order for the plant to regener-

ate. The *Tagbanuas* have a concept of succession incorporated with the concept of ownership and private property [15].

Issues in Resource Use and Management

Conflict over access, use and management of natural resources in Coron Island, especially 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. The struggle for control over the resources of the island involved the municipal government, the indigenous people, and private vested rights (individuals, families and 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 for TFCI is to develop an ancestral domain management plan that will 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 use or extraction, or recognize private claims based on tax declarations (municipal government) in the *Tagbanuas*' ancestral domain.

The problems are not confined to the terrestrial aspect of the *Tagbanuas*' claim. Pearl farming has been allowed to operate in the surrounding waters of the island without prior notice to the *Tagbanuas*. 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 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 coincide with the government's plan to promote Coron, especially 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 have alleged that the CENRO, the local DENR office tasked to receive and process CADC applications issued certain licenses and permits such as pasture lease agreements within ancestral domain claims. Such actions contradict and undermine its decision to endorse for approval the CADC application of TFCI and the still existing CFSA 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 secure title over areas which are allegedly forest lands and within ancestral domain claims. Illegal fishing operators are allegedly able to influence municipal leaders and to evade arrest and prosecution[16].

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[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.

[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.

Managing Conflicts and Decision-Making Processes

The *Tagbanua* communities on Coron Island are collectively governed by a council of elders responsible for the observance of indigenous laws and the enforcement of customary laws, including imposition of penalties and sanctions for infractions. In the past, the system of *panglaw*, or corporal punishment was used against *Tagbanuas* who willfully committed serious crimes. Over time, the use of *panglaw* has diminished as the roles of mediators (*mepet*) and keepers of traditional laws were slowly replaced by the *barangay* structure. The *barangay* organization and the community council of elders add a modicum of structure. A number of *Tagbanuas* serve as *barangay* leaders as well.

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*, municipal and national laws.

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

In the recent past, the elders started to exercise control over 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 also had to ensure 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 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 using 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, personal communications).

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 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 a 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 a 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 habitats;
- Provision of areas for environmental and ecological research, education, and training; and
- Provision of areas for tourism and recreation.

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. 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*. These areas 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 *hulbot-hulbot, lintig, baby muro-ami, norway*, and other destructive fishing methods within the municipal waters of Coron, Palawan;
- Ordinance Number 3, Series of 1995 - Requires all fishing operators engaged in the live fish trade to accredit with the community fisheries board or its duly authorized representative in the municipality; and
- Ordinance Number 6, Series of 1996 - Makes it unlawful for any person to construct houses and other 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 markets, ports and the like. Tourism related establishments are also exempt from the rule.

The recognition of the traditions of the *Tagbanuas* was 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 in mid-1998, the DENR issued a CADC recognizing the *Tagbanuas*' claim to the island of Coron and the surrounding waters.

The *Tagbanuas*' 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. Tenure to the land and waters, which the *Tagbanuas* and their ancestors consider their home since time immemorial, is threatened by current legal regimes and external actors. Until now, their ancestral domain rights had not been recognized by the government. Their indigenous management system is now the subject of incursions by external forces such as the local government and the tourism and fishing industries.

Elders and the leaders of the TFCI explained in interviews that coastal management is all about finding a balance among the different users of the resources. They claimed they have never excluded other users from their ancestral domain claim. Other users, however, must learn to respect their indigenous ways and management system, which is 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 under the political jurisdiction of the Municipality of Dauin, Negros Oriental.

The highest peak is approximately 200 m high on 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 southeastern side. Little of the original vegetation remains except in some steep, rocky areas. About one-third of the island has rich soil and is flat enough for cultivation. A narrow but diverse fringing coral reef surrounds the island.

The coastline consists of steep rocky cliffs and small white sandy beaches. Two principal beaches are located on the southwestern and southeastern shores. Live corals are extensive on 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 20-40º 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 flows in a southwest direction at both 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, n.d.).

Resource Status and Demographics

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

The reef condition on the sanctuary side changed significantly over a 13-year period with a total coral cover of 68% in 1983 to 78% in 1995. From 1992 to 1995, hard coral cover increased from 41.3% to 53% while total sediment decreased from 32% to 16%. The total coral cover of Apo Island increased from 64% in 1983 to 70% in 1995. The 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, n.d.).

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, surgeonfishes, parrotfishes and jacks were found in abundant numbers. Twenty-two species of butterfly fish were recorded. In terms of fish yield, 16.8 t per km^2 per yr was recorded in 1981. During 1985-1986, the fish yield for reef fishes was 31.8 t per km^2 per yr and 4.9 t per km^2 per yr for non-reef fishes. In 1995, the total catch recorded was 273.99 t per km^2 per yr indicating an almost eight fold increase from 1985-1986 levels (Silliman University Marine Laboratory Site Description Report, n.d.).

Land use in the island includes approximately 4 ha for residential use, 4 ha for agricultural or multiple use, and about 46 ha as a 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% part time, and 2% fish occasionally. Others engage in retail businesses. Average monthly income per household is PhP 1 450 or US $33. About 38% of the population has a secondary income such as vending, hollow block making and hat/mat-weaving. Fishing involves the use of outrigger canoes or motorized pump boats. The most common fishing method is the hook and line. Other methods are gill netting 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 was converted into a milkfish pond by a group of local fishers in July 1995 (Silliman University Marine Laboratory Site Description Report, n.d. DENR-CENRO Dumaguete 1995). Apo Island has become a significant dive tourism destination.

The island has approximately 250 households with an average family size of seven. Most of the parents have only an elementary education. Sixteen percent of fathers and 11% of mothers went to high school. Four percent of the mothers went to college. Illiteracy among adults is about 4%. Among the children, 60% have gone through or are undergoing elementary education, 20% in secondary, 7% in tertiary and 13% are not enrolled in classes. 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 close-knit traditional fishing community (Silliman University Marine Laboratory Site Description Report, n.d.; DENR-CENRO Dumaguete 1995).

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

Resource Use

Illegal fishing methods such as dynamite fishing and *muro-ami* were observed in 1977. Dynamite use was introduced by outsiders from Cebu. Dynamite fishing by outsiders in the southwest reef was stopped in 1985, but *muro-ami* still occurred occasionally (Calumpong 1997).

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 on the island in collaboration with the residents and the LGU. The entire marine habitat surrounding Apo Island to 500 m 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 with buoys. In 1985, the community education center was established. It provided a venue for community meetings, workshops, seminars and lectures, and a tourist shelter. A core group called the Marine Management Committee, 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, n.d.).

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 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, 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 Mr Dado Suan, a *barangay* official, 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 the sanctuary could be disestablished if it did not benefit the community. Information and education activities were held 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 knowledge brought to the area by the university. The project was later to serve as the model for other CBRM projects of the local government (Calumpong 1997).

With the establishment of the marine reserve, the 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 to 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 (Suan and Briones, personal communication).

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 that 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 and the island's management.

A final component of the project was assistance in alternative livelihoods. Training was 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 them to the weekly market at Malatapay. A consumer's cooperative was formed in 1986 initially with 46 members. It now has 80 members and runs a retail store (Omilig, personal communication).

The Resource Management Division (RMD) of the province 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 tasked to deliver a lecture on stewardship and uses biblical teachings to increase the environmental awareness of the community. There are also attempts at integrating resource management efforts by including upland *barangay* officials in resource management seminars where they are informed how their activities affect the coastal area.

The MMC is responsible for the upkeep of the sanctuary as well as collecting donations from those using the 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. Violators are approached, given a warning, and assessed a fine. Community support and successful enforcement over a 10-year period resulted in very few incidents of violation according to *Bantay Dagat* members.

According to Omilig and 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 DENR's more important projects was its reforestation program that contributed to the desalination of the water supply in the island. The people of Apo Island previously brought their drinking water from the mainland at a significant cost. Now their water is potable (Omilig and Suan, personal communication).

The Legal Framework

Local and national laws contributed 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 within 300 m of the high tide mark. The prohibited activities were already covered by national laws e.g., dynamite fishing, *muro-ami* and cyanide fishing. 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 are allowed in this sanctuary. 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 (issued on 9 August 1994) established 691.45 ha of marine area around and including the island 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 to the environment. Destruction of the coral reef or other activities that would disturb or destroy the ecosystem was prohibited.

As of 1997, there were still no PAMB regulations that would provide 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 that they seldom do. The proposal is to limit the number of divers in the sanctuary to 10 at any given time.

Suan said a legal question that confronts the community of Apo Island is security of tenure over the land. The existing regime of land ownership on the island is described as traditional rather than formal. People inherit land from their ancestors and it can be tilled by others if the owner is not capable of tilling the inherited property.

There have been efforts to title their properties but they were advised it is not worth the effort because the whole procedure would be costly. Land can be sold but as much as possible such transactions are limited to 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 has become a threat to reef quality. The problem began to attract attention in 1993 when about 200 divers visited the island in November and December (Vogt 1996).

The role of the foreign-owned tourist diving school and shop on the island 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 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 ecosystem (Vogt 1996).

The community and LGU, through the PAMB are developing regulations and guidelines for scuba diving at Apo to ensure that the community benefits from the activity and that it can be maintained at a sustainable level. The financial benefits of transporting tourists to the island are substantial. In the resort and dive shop, 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 most from tourism on the

island. As was the case in commodity resource extraction, fishpond development, and export oriented fisheries development, the community was always the last to benefit. With this latest pattern of resource exploitation, the dive resort and tour operators exploit a resource largely owned by the community. According to Omilig, they get well paid by the tourists yet pay only token fees to the community, PhP 100 per day for big pump boats, PhP 50 per day for *bancas*, and PhP 50 per tourist. Suan said that another issue which has tested the patience of Apo residents is the larger lagoon on the island being acquired by an outsider through a fishpond lease agreement with the DA. Aside from depriving access to the whole community, 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 go to the national government for the NIPAS administration, and another portion to the PAMB for disbursement to the protected area superintendent. There is no provision in the law that states that 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 the government came in to share in its success.

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

Omilig (personal communication) pointed out that some alternative livelihood projects suffer setbacks. The objectives of the agroforestry projects are not on schedule because of late disbursement of funds by the DENR. The reason is that the DENR runs out of money and the salary for laborers of the reforestation program are not paid. The hog-raising project of the DENR-CEP was not successful because the hogs died of disease, temporarily suspending the project.

The influx of government interventions also created confusion about the roles and responsibilities of stakeholders 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 administrative body in charge of the protected area. However, the real powers are vested in the DENR secretary and the local Protected Areas and Wildlife Division (PAWD) of the DENR.

Even with its tradition of community-based decisionmaking, 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 policymaking. The NIPAS law provides the DENR Secretary with the power to adopt a program of gradual resettlement off the island of the tenured community, 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 ecosystem, the present set-up still brings to the fore the lack of legal mechanisms to strengthen community-based resource management institution.

At present, the role of the community under the law is limited to participating in the decisionmaking of the PAMB. The law does not distinguish between the major role they play and the supporting role of the other represented sectors in the PAMB. The present PAMB is reactive in the conduct of its management functions. They respond to problems instead of establishing guidelines to head off problems.

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. Capability building initiatives consist of seminars on environmental

protection and coastal resources management. Their extension service to Apo Island consists of a municipal health employee. 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 was initiated during the incumbency of Governor Socrates. The problem of institutionalizing resource management remains an issue because the present staff are population officers 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) that deals with production rather than conservation and resource management. 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. It is feared that its functions will overlap with those of the existing RMD.

The enforcement of national laws and the lack of policy on territorial use rights are a concern. Outside fishers are the major users of 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.

Bolinao, Pangasinan

On 6 August 1999, the DENR denied "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. It was a decision that spelled victory for the environment and advocates of sustainable development. To the project proponent, DENR's decision was seen as anti-development. But the public saw it as a reaffirmation and advancement of 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.

Environmental 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).

Agriculturally productive land is 47% of the total land area. This is made up of irrigated, rainfed and upland or hilly lands. The rest of the area is classified either as built up (470 ha), pasture, forestland, institutional or infrastructure (2 529 ha), fish pond (641 ha), open range (1 888 ha), or rivers and creeks (430 ha). Farmlands are mostly planted to rice, with some corn, cassava and other root crops, coconut, fruit trees, fuel wood and others (Yambao and Salmo 1997).

The town of Bolinao is composed of 30 *barangay*s, with 22 located along the coast. The topography of the town is characterized by rocky and hilly terrain. About 40% (9 099 ha) of the area is flat while the rest is sloping. Limestone is abundant and phosphate is common 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, and along the northwestern coast of the mainland, 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 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

largely due to blast fishing and the use of sodium cyanide. The condition of the coral reef is further reflected in the small number of adult fish 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 30% of the country's aquarium fish exports (LGCAMC 1996).

Seagrasses are dominant in 27 km^2 of the reef flat, interspersed with a few square kilometers of inter-tidal sand flats. Rabbitfishes and cardinalfishes abound in these areas. Cardinalfishes are known to depend on corals for cover during the day. Substantial change in the seagrass fish community is expected if the coral cover of the area continues to deteriorate.

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

Bolinao had a total population of 52 701 (1992) or 9 944 households, composed of Bolinaoans, Ilocanos and Bisayans. About 3 000 of the local population are small-scale fishers who depend on the highly diverse coral reef fishery. Analysts project that the population could double in the next 30 years (Juinio-Menez et al. 1995) which may potentially lead to increase pressures on coastal resources as 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.

Incomes in Bolinao fall below the poverty level. Based on 1990 data from the DAR (Bolinao office), 49% of the population engaged in farming and 31% worked in the fishery. The rest of the population engaged in trade and industry (4%), commerce (3%), or services (11%). It was observed that with the poor performance of agriculture in generating significant income more households are expected to turn to the fishery in order to supplement family income. By itself, fishing provides the lowest average monthly income at PhP 1 830. This is substantially below the 1990 poverty level (PhP 2 650) set by the DA (McManus et al. 1992).

In 1992, the combined production from offshore fishing activities by motorized and non-motorized boats totaled 1 595 t, mostly tuna. In the same year, inland fishponds, which are spread over 642 ha, had a harvest of 1 339 t. Taken together, these generated 2 934 t which, at PhP 50/kilo, is a gross sale of PhP 146 700 000. Despite these figures, there is an occupational immobility among the local marginal population.

One-third (35%) of the local population did not go to school while 7% received training beyond high school. Given the poor condition of existing educational facilities or their complete absence, there is little incentive for a family to send their children to school. Employing their children in the gathering of marketable reef organisms supplements family income.

Nearshore, fishing is another popular fish gathering activity and it is undertaken all year round. Fishers usually use 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. Deep-sea fish also abound in the market and these are especially popular with tourists. Fish catch includes yellowfin tuna, skipjack, *tanguigue* and blue marlin. These fish are highly profitable and 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 catch to concessionaires who dictate the price per 1 000 pieces of fry. Thirty percent of the price goes to the concessionaire. At one time, the price per 1 000 fry was PhP 900 but was reduced to PhP 700. Gatherers have opted not to harvest during months when prices are relatively low (McManus et al. 1992).

The shellcraft business is the most lucrative, among the fishery-related activities, providing PhP 1 350/month (Juinio-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 diet of local subsistence communities. Sea urchins also abound in Bolinao. The growing local demand for sea urchin roe has led to greater harvesting and improvisations in harvesting gear.

A study conducted by the UP-MSI revealed the reefs of Bolinao were overexploited and deteriorating because of destructive fishing methods and other 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. This and the use of sodium cyanide in aquarium fish gathering contribute to the degradation of Bolinao's coastal and marine ecosystem and the rapid depletion of resources. This situation is now taking its toll on the livelihoods of the local people, threatening the sustainability of the community. Against this background, three development-oriented organizations undertook various initiatives. Initially working independently from each other, they eventually forged a tripartite partnership to undertake a community-based coastal resources management project. 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 has the combined expertise of the UP-MSI (physical sciences), the UP-College of Social Work and Community Development (social sciences) and the Haribon Foundation (community organizing).

In 1976, UP-MSI began its systematic survey of the status of coral reefs in the country. 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 began in 1986 when they decided to broaden their research interests to include resource management of the gulf. Specifically, the project focused on the coral reefs located on the Bolinao-Anda shelf. With funds from 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 were established.

In 1987, UP-MSI launched its seaweed project to transfer seaweed culture technology to local fishers. UP-MSI and International Development Research Center (IDRC) also saw the project as an opportunity for members of the local communities to be involved in the management of those resources using the technology established through UP-MSI's scientific studies. However, the project was met with apathy by local fishers. This was perhaps due to the lack of 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 project implementation. UP-MSI felt a socioeconomic study would be helpful in finding the best way to proceed with the resource management project.

In 1992, UP-MSI, together with a team from CSWCD, put together a proposal to undertake 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 on the mainland and Pilar and Binabalian on 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 made an in-depth examination of the cultural, legal/institutional and marketing/technology aspects of local coastal resource management. The team was able to identify the best way to organize the community was

to introduce concepts in environmental education, skills community members must learn for livelihood development, skills for resource management, and skills that will help build up the community, establish, and strengthen its links to like-minded groups. Based on the results of the PRA and its subsequent validation by community members, 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. The team set out to form core groups in the selected sites.

The core groups were formed from those who showed interest in the initial activities of the project. In *Barangay* Arnedo, the core group was formed into a "techno livelihood cell" for the seaweed farming project started earlier 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 went through leadership development sessions and technical training so they could participate in the future management of the resource. It failed to flourish due to technical, economic and social shortcomings in the project's design.

Guided by lessons learned from the seaweed project, the team made the shift from primarily an aquaculture program to a community wide CRMP. Beginning in *Barangay* Arnedo, the team used the initial core groups as springboards for the transition. This time the principal goal was the formation of a local organization of fishers that would take the lead in resource management. Based on the concept "resource user manager," the project began to focus on the *sitios* (communities smaller than *baranga*y), where most of the fishers reside, in the middle of 1994.

Through continuous environmental education, training in livelihood development, resource management and basic leadership 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) began with 64 individuals. 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 Fishers of Bolinao (FFB). Later the group adopted the name *Kaisahan ng mga Samahan para sa Kalikasan* (KAISAKA). These POs were instrumental in the formulation of the MCDP of Bolinao. The resource use maps they 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 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 2 November 1995, the DENR denied PCC's application for an ECC due to lack of information on three important issues in their EIS. The PCC made an additional submission to EMB addressing the concerns raised by the EIA review committee.

The news spread quickly and soon an informal group was formed to oppose the project. Everything the local fishers learned from the environmental education courses became very important in sustaining the campaign and the people's commitment. The local opposition addressed all the major claims that were made in the EIS submitted by PCC. This was the first time for such advocacy before the EIA system.

On 6 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 (6 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 add to resource use conflict, as the project would have to compete for locally available resources such as non-saline water and limited land availability. Moreover, as 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. 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 considered the decision on the cement plant as a breakthrough in their CB-CRM efforts. As early as 1994, the idea of formulating a zoning plan for Bolinao was already on the agenda. The project was focused on the organization 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 zoning plan was very slow and participation in the formulation of a proposed plan had been limited to the groups involved in the project. The local government did not see the need for such a plan until the cement plant proposal. 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 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 its implementation.

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

Draft reports prepared by UP-MSI in 1997 show that the idea to develop a zoning plan for Bolinao began in 1994. But it was the cement plant issue that hastened the process of formulation. Banking on the results of its earlier work coupled with their knowledge and acquired skill in coastal zoning, the CB-CRM project team offered technical assistance to the municipal government for the preparation of the plan (Yambao, personal communications). The initial inputs came from the "ad hoc thematic team" formed earlier (March 1996) by the CB-CRM project team. Their consolidated output included the conceptual and operational framework that guided the formulation of the plan.

In order to influence the formulation of the plan, the CB-CRM project staff enhanced their knowledge and skills in coastal zoning through a seminar conducted in April 1996. The same seminar was given (May 1996) to the officers and members of local community organizations. As with the first group, the participants produced resource use maps that were specifically oriented to the marine protected areas in the municipal waters of the *barangays* the 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 further refined by the project team and packaged as a proposed coastal development plan (PCDP).

In the meantime, 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 the significant role local governments play in leading the process. The municipal government was informed about KAISAKA's initiative and how that initiative could be transformed into a collaborative effort between the LGU and the local groups. The municipal mayor took up the idea and gave his support to the local people's initiative. 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 were 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 multi-sector consultation that was held on 5 and 10 December 1996.

According to Alex Yambao, CB-CRM staff, the multi-sectoral consultation was the first large gathering of local officials, 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 the support of Congressman Hernani Braganza.

From this consultation, a multi-sector 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-sector committee on the CDP. In addition to formulating the MCDP, it was also mandated to provide the offices of the mayor and the Municipal Development Council (MDC) information needed for policy decisions. The committee was composed of 21 representatives from the municipal government, the *Liga ng mga Barangay*, the religious sector, commercial fishers, small fishers, business, tourism, fish pond operators, fish dealers, fish pen operators, ferry boat operators, and environmental advocates. The four POs that formed KAISAKA were also represented on the committee. The CB-CRM Project Team provided technical assistance to the committee, the office of the MPDC provided logistical support, and the mayor set up a fund to support the committee.

The committee (later known as the CDP-Technical Working Group) formulated its own vision-mission-goal statement. Several amendments and revisions were made to the draft based on the documentation from consultations and meetings conducted with the stakeholders. After editing and packaging by the CB-CRM Project Team, the PCDP was approved by the CDP-TWG on 25 October 1997. It was formally submitted to the municipal government on 8 November 1997.

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

On 6 December 1997, the MDC passed MDC Resolution Number 2, Series of 1997, approving the plan and endorsing its legislation by the SB. The SB set a meeting 13 December 1997 to discuss the proposed plan and address some contentious provisions. That meeting was attended by members of the CDP-TWG and the CB-CRM Project. The SB raised concerns about fish pens, fish cages, 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 raised. All three parties agreed that issues and modifications to the plan could be tackled during the preparation of its IRR. The plan was officially adopted on 19 January 1998 with the passage of SB Resolution Number 6, Series of 1998. The SB started working on the enabling ordinance. The *Sangguniang Panlalawigan* (SP) of Pangasinan has also approved the resolution passed by the SB of Bolinao.

Local Management Arrangement 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. Fish pen and fish cage operations are the predominant activities in the municipal waters. Others are *siganids* and bangus fry concessionaires. In 1997, the municipal government earned PhP 4 million from these activities in the form of local taxes, fees, permits and licenses. This figure reflects the heavy reliance of the town's economy on its fisheries. There are also non-formal resource use activities including subsistence fishers who fish to meet the family's daily nutritional needs and for supplemental income. Within this sub-sector, women and children are significant members of the workforce.

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

The enactment of the enabling ordinance of the CDP gave the municipal government greater "flexibility" and a clearer direction in its exercise of its devolved functions of coastal and fisheries resources management. 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 a "socially appropriate and scientifically sound" comprehensive management response, according to Yambao. This situation was what the CB-CRM program aimed to address when it started in 1993.

The Bolinao Coastal Development Plan: Strengths and Opportunities

The Bolinao Coastal Development Plan (BCDP) 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 resource development and participatory environmental management. 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 use and management of local fishery resources even as it upholds the rights of other user groups. 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 task of keeping both resources and environment healthy and sustainable.

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. It also 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 are designated into four zones:

- Zone 1 for Eco-tourism;
- Zone 2 for Multiple Use;
- Zone 3 for Fishery Management; and
- Zone 4 for Trade and Navigation.

This prioritization of use 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 Eco-tourism Zone, there is a designated bangus fry gathering. Access to this area 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 issues surrounding the coastal environment and fishery resources of Bolinao. It deals with equity issues, user rights and privileges as well as user responsibilities. It also provides guidelines for specific activities in areas that have been designated for special purposes as well as prohibited acts. While the task of implementing the plan falls largely on the municipal government, the plan clearly provides for an active and direct community involvement in its implementation. There is an implied recognition in the way the plan has been drafted with the participation of local fisher groups, organizations in allied activities, communities, and scientists helping to achieve its aims.

The mechanism provided in the plan that facilitates consultation and coordination in its implementation is embodied in the proposed Bolinao Coastal Development and Management Council (BCDMC). A careful study of this body reveals that in almost all aspects of the plan, partnership between the LGU and local community is strongly encouraged. There are as many seats for non-government representatives as there are for

representatives of local government offices. Although BCDMC does not have regulatory powers, it is a recommendatory body tasked to coordinate with concerned LGU and local groups on matters concerning law enforcement, dispute resolution, and other activities that promote the plan. The plan offers many opportunities for innovation in local sustainable resource use. The challenge is to make this partnership work effectively for the environment as well as for building confidence in this newly forged partnership.

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 three demonstration sites of the GEF/UNDP/IMO[17] Regional Program for the Prevention and Management of Marine Pollution in the East Asian Seas (MPP-EAS) established in 1993.

Environmental Profile[18]

The region has a total land area of 1 460.7 km^2 and a coastline of 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 watersheds that drain into the Batangas Bay. The region has 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 making it ideal for international port and harbor development. This bay has a water area of about 220 km^2.

The entire BBR is essentially an agricultural area. In 1985, about 60% of its total land area was planted with sugarcane, rice, corn, coconut and fruits. 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 pigs, is a growing industry making BBR a primary supplier of poultry and meat products in the Southern Tagalog Region and Metro Manila. Livestock growing has grown such that it has encroached on some ricefields and coastal lands. Fish ponds cover about 100 ha, mainly in Batangas City. This is about a quarter of the area devoted to aquaculture a decade ago. Some fishponds have been converted to commercial, industrial and residential use.

Batangas Bay is a growing industrial area. The coastline is dotted with companies engaged in oil refining, chemicals, textile manufacturing and food processing. All of these companies generate effluents or wastes that need treatment. Batangas City is an alternative port to Manila. Between 1985 and 1990, the total number of vessels entering the bay rose from 5 052 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 for oil spills and ship collision, and marine pollution.

The Batangas Bay supports varied intensive activities including municipal fishing, shipping, and port development, causing intense competition among these sectors and endangering the marine environment. For municipal fishing alone, the ratio of fishing area to fishing boats in the bay stands at 0.08 km^2 of fishing area per fishing boat. The actual number of municipal fishers is estimated to be 8 965.

Overfishing in the bay is a growing concern. Seventy percent of municipal fishers are dependent solely on small-scale fishing. The remaining 30% supplement their incomes with seasonal employment such as carpentry and masonry. Compared to the total coastal population in 1994 of about 360 000, 7% of the coastal residents are dependent on subsistence fishing. The density of fishers in the bay is 41 persons per km^2 of fishing ground. At present, there are no available data to assess the impact of such resource use conflicts on fishery resources. Inventory of fish stock and other marine resources in the bay is limited.

[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 that need to be resolved.

Urban development and industrialization have also brought serious pollution problems. 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 by the year 2000. At present, only about 60% of domestic waste is collected by the LGU. The remaining waste is burned or dumped indiscriminately in backyards, streets, and waterways.

Industrial and 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, 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, 78% from chemical companies, and 4% from shipyards.

In addition to domestic and industrial wastes, oil spills from increased vessel traffic are of concern. From May 1986 to September 1993, 11 oil spills were recorded by the PCG. The increasing occurrence of these incidents is alarming from an average of one per year (1986 to 1990), two in 1991 and 1992, and four occurrences in 1993. In the case of Filipinas Shell Corporation, these incidents have been attributed to structural defects and inadequate internal inspection.

Legal and Policy Framework

Direct management of the resources in the region follows the sectoral management approach of the national government. The DENR takes charge of the use 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, both from ships and 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. They passed an ordinance in 1994 providing for a program of maintaining tree nurseries and planting trees. Municipal governments also enacted several ordinances dealing with fishery conservation, anti-littering and solid waste management, and land use and zoning.

Despite the number of national and local laws and numerous regulations issued by specialized agencies, the region's terrestrial and aquatic environment continues to deteriorate. The general observation is that 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 by 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 might be the appropriate mechanism for the integrated management of the region (La Viña 1995). 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 sector concerns of the national agencies as well as the industry, fishers and other economic interests are heard and discussed. The idea is to have an assessment of each issue raised by the stakeholders and a concerted plan of action 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 implemen-

tation 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 opened an opportunity for LGUs to implement an integrated management framework and second, there is an active involvement by stakeholders in environmental management concerns.

As part of the program for the BBDP, a Strategic Environmental Management Plan (SEMP) was prepared and adopted by the council, which laid down the major management issues and plan of action, which aims to address these issues. The SEMP identified the following major management issues:

- Improper solid waste collection and disposal;
- Water and air pollution;
- Declining fish harvest;
- Improper mining and quarrying operations;
- Expanding shipping and port development activities;
- Deteriorating socioeconomic conditions of people in the coastal areas; and
- Lack of multi-sectoral participation in environmental management.

After extensive consultations with stakeholders, an action plan was drafted consisting of six specific components:

- Legal and institutional mechanisms;
- Integrated policy and planning systems;
- Integrated management systems and technical interventions;
- Management and technical capability building;
- Improvement of information base; and
- 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-à-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 stem from its frail legal foundation. The council was created by a provincial ordinance, which cannot modify the mandates of the national agencies and local governments that have been set by national laws. The council depends 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. In addition, it is a major supplier of electricity for the rest of Luzon. The challenge to the council is to see beyond local concerns and integrate its planning with 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 players 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 previously lacking information that is critical in making decisions. Through the demonstration project, a management information system is being established which would collate and sort the data. 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. The initiative for establishing the norms for use 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 decisionmaking process. In effect, the council serves as the forum where the larger community of stakeholders, including government, make the plans for the sustainable management of the region. In this sense, it is "community-based".

Proponents of Integrated Coastal 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 and 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 as they involve not only local but also 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 examples of the many experiences and initiatives that have been and are currently being undertaken in the Philippines. 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 interventions of the LGU and the national government. The Apo Island case study illustrates an island community's efforts, in partnership with 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 the issues which accompany rapid industrialization and urbanization. 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. As the Coron and Apo Island experiences show, community-based management can survive 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, and 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 a partnership among different sectors within a community, including academic institutions, non-government organizations and government agencies. Fourth, the role of local governments is crucial in community-based resource management. A non-supportive LGU can doom community initiatives. Finally, the quality of the interventions of the national government play a central role in ensuring that community efforts are supported in order to succeed and be sustained. These interventions are influenced by external factors including global and regional developments.

Role of International and Regional Agreements

This section examines the impact on the policy, legal and institutional frameworks for the management of fisheries, coastal resources, and the coastal environment in the Philippines due to 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 is 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 and set the agenda for further development of international law.

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 center 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 to equitably meet the needs of present and future generations[19]. Likewise, it recognizes the key role of stakeholders in the decision-making processes, especially indigenous peoples[20]. In addition, 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 principle[21]. 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 degradation[22].

Agenda 21 is a program also approved at 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 economic activities with a view to improving standards of living and conserving natural resources. This is a non-binding 800-page blueprint to clean up

[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.

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 their habitats.

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, sub-regional, regional and global levels, approaches that are integrated in content and are precautionary and anticipatory in ambit".

Chapter 17 calls for initiatives under several program areas:

- Integrated management and sustainable development of coastal areas, including exclusive economic zones and marine environmental protection;
- Sustainable use and conservation of marine living resources in the high seas and areas under national jurisdiction;
- Critical uncertainties for the management of the marine environment and climate change;
- The institutional framework for strengthening international, including regional, cooperation and coordination; and
- Sustainable development of small islands, calls for state cooperation (as appropriate) in the preparation of national guidelines for integrated coastal zone management and development, drawing on existing experience.

Agenda 21 has become a major influence in the development of marine environmental law. It has resulted in global conferences on Coastal Zone Management (November 1993) and Sustainable Development of Small Island States (1993). This has 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 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 for two decades 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

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 to pursue the protection and sustainable development of the marine and coastal 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 state's competence to prescribe and enforce marine environmental pollution standards diminishes with distance from shore. Thus, the marine jurisdictional zones recognized by UNCLOS make arbitrary divisions in ocean ecosystems thereby hampering a 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 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 resources in the EEZ are not endangered by overexploitation. 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 use 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 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 the quantity it will allow to be accessed and to whom it will provide access. The coastal state is 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 fishery resources, coastal and fishing states are to cooperate on 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.

UNCLOS calls on states to adopt laws and regulations to prevent, reduce and control land-based pollution by 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. It also requires states to take all necessary measures to prevent the intentional or accidental introduction of species, alien or new, into the marine environment that 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 that 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 to 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 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 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 use and protection of the marine environment. These include:

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

Other Agreements

The Convention on Wetlands (Ramsar, Iran, 1971) 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, 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 components. 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 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 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 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." In addition, 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 two are in development, and one has failed to progress beyond the action plan phase. Most of these Regional Seas Programs 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 also true for Southeast 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 jurisdictions 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 its coastal zones are heavily populated with more than half concentrated along coastal areas. These coastal areas are also characterized by diversified economic activities. The natural resources in these 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 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 sub-regional 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 and 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, due to a lack of financial resources, an inadequate technical capacity, and political sovereignty issues such as boundary disputes, many countries in the region remain unable to adequately address marine pollution problems within their territorial jurisdiction. The lack of resources frequently makes it impossible to formulate and install environmental programs 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. On the international side, 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 lack of regional conventions on the protection of the marine environment in the region, this should not be taken to mean that there is little regional cooperation. 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 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 integrated and coordinated ASEAN Environment Program (ASEP). ASEP sought to achieve ecological, technological, and sanitary security in the region. The program was designed to view the ecological system in a holistic and comprehensive way rather than to treat resources as separate and distinct. This approach to environmental management and use was believed to be the key to sustainable development.

In 1981, member-states identified a number of priority actions to be implemented under the ASEP, including sub-programs for sustained development and protection of marine environments and coastal areas 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 the environment as well as specific obligations such as the prohibition of the taking of the listed endangered species. 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 environmental issues. The ASEAN environment ministers agreed to initiate efforts on 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 18 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 encouraging cooperation in the region for coastal and marine resources management. Among others, the development and establishment of regional networks for environmental management 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. Under the program, four interlinked regional networks are established. These are:

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

Other regional initiatives include:

- ASEAN Committee on Science and Technology (COST) with Canada, US, EU, and Japan developing a program to manage regional pollution;
- The ASEAN Expert Group on Environment has projects dealing with oil pollution and health. They initiated an oil spill contingency plan in 1970;
- ASEAN-Australian Marine Science Project deals 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 aims to develop a multidisciplinary coastal area management plan;
- APEC has working groups concerning marine environmental issues;
- UNEP-Regional Seas Program set up the Coordinating Body on 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) formed in 1990 to ensure a regional oil spill contingency plan is developed and implemented; and
- 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 have initiated the creation of the South China Sea Workshop on Conflict Resolution. The workshop is divided into four technical working groups of varying official nature:

- Legal;
- Safety of navigation;
- Marine research study; and
- 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 overstated. At present, many of the estuaries, lagoons and bays in the region have been proclaimed biologically dead or severely depleted of aquatic life. 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 CBRM, there is a clear recognition of this principle in the more recent international environmental and agreements such as the Rio Declaration and Agenda 21. However, this is not reflected in most of the regional initiatives that, 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 they do not incorporate the experiences of community-based approaches in their design and implementation, may result in adverse consequences leading to further inequity and environmental degradation in the marine and coastal zones of the region. This is certainly true for the Philippines.

Integrating Community-Based Resource Management: The State of Play in the Philippines

The strategy of 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 do exist. The recent rediscovery of communal institutions as an effective solution to the commons dilemma 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 underused in the planning process. This has happened because of overemphasis on the kinds of resource management practices dominant in the Western industrialized world in which the significance of common property institutions has declined over time.

CBRM systems can range from the right of the community to be consulted before any development project is imposed 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 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 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 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 has 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 coastal management plan at the national, regional and local levels with genuine participation of communities;
- The development of mechanisms to provide equity to coastal resources;
- The promotion of the active participation of all sectors in planning for the management of coastal resources and ecosystems; and
- Capacity building and information support 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 fishers, especially of the local communities with priority to municipal fishers, 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. According to Section 68 of the code, fishers and their organizations residing within the geographical jurisdiction of the *barangays*, municipalities or cities with the concerned local government units shall develop the fishery and aquatic resources in municipal waters and bays. The provision of support to municipal fishers through appropriate technology and research, credit, production and marketing assistance, etc. is mandated by the code. Incentives for municipal and small-scale fishers are also provided.

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

fishers and those who wanted unrestricted entry by the commercial fishing industry, may effectively destroy the preferential rights given to small fishers.

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 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 for communities to maximize the opportunities provided for by this mechanism.

Another inadequacy is the continuing 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 environments of the Philippines.

Conclusion

The Philippines has done pioneering work in establishing community-based management. This people centered approach 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:

- Community empowerment;
- Provision of environmentally sound technologies and financing;
- Recognition and enforcement of community property rights over local fishing grounds and other resources; and
- The reform of national policy and legal framework.

The range of experiences of community-based systems in the Philippines illustrates that no one community-based approach can be a model for all communities. The role of communities changes 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 players. 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 use and management (such as sustainable development, ICM and recognition of community-based systems). The framework should also establish democratic and participatory processes for policymaking and conflict resolution.

An important insight is that community-based approaches are applicable to not only 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, ICM becomes imperative. 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 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 ICM is therefore imperative.

The CBRM assumes that the solution to the common problems start with:

- control over access to the resource;
- increasing production from a common property resource depends on the conservation of the resource base;
- the sustainable use of a resource is closely connected to the use of simple and appropriate technology for the harvest of that resource; and
- local level management through community organization improves prospects for the sustainable use of a common resource.

Thus, 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 resources by reinforcing control and enforcement mechanisms through greater participation. Above all, it should be remembered that the rationale for CBRM is equity and justice. So that it can be supported and sustained, CBRM should 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.

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 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 Agsaoay, 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 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.

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