CHAPTER 3

ECUADOR: ESTABLISHING A COASTAL MANAGEMENT PROGRAM IN AN UNSTABLE SYSTEM

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DESIGNING THE FIRST PILOT PROGRAM

Ecuador and Sri Lanka were selected by the U.S. Agency for International Development (USAID) as the first pilots to be sponsored by the new Coastal Resources Management Project (CRMP). In 1983, the USAID Ecuador mission and government of Ecuador had assembled a persuasive case that featured the promise of 50 percent matching funds from an enthusiastic, pro-environment mission, and commitments for high-level collaboration with several important Ecuadorian governmental agencies. The mission's proposal built upon a high-profile workshop on coastal management sponsored by the Ecuadorian Navy and the United Nations in 1981. This had prompted discussion of an approach to natural resource management that spanned the usual sector-by-sector planning and decisionmaking, and reviewed the issues posed by the explosive growth of shrimp farms. An approach to coastal management


Ecuador
Showing the coastal region (Provinces)
and ZEMs sponsored by CRMP
SOUTH AMERICA
ECUADOR
Esmeraldas ZEM
ESMERALDAS
COLOMBIA
Quito ★
Bahia ZEM
MANABÍ
Galapagos Islands 1,046 km.
ECUADOR
Manglaralto ZEM
Guayaquil
GUAYAS
Playas ZEM
Machala ZEM
EL ORO
PACIFIC OCEAN
GALAPAGOS ISLANDS
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that integrated across the major forces of change was appealing to a progressive government and to a USAID mission that had previously focused its attention on issues in the highlands. (See Box 1).

By 1985, the long delays in selecting the lead U.S. institution to implement the CRMP project had produced a far less receptive setting. The expectation of USAID was that the CRMP Cooperative Agreement would be in place in six weeks. Instead, crafting the Joint Project Agreement that defined the objectives, the implementing strategies of the pilot, and the roles and responsibilities of USAID, the University of Rhode Island Coastal Resources Center (CRC), the USAID Ecuador mission and the government of Ecuador required 13 months of intense negotiations.

What had changed? In the U.S., President Ronald Reagan had been elected to his second term. His administration had little sympathy for environmentalists and no interest in exporting "environmental" programs overseas. Similarly, in Ecuador the liberal administration of Oswaldo Hurtado and been succeeded by President Leon Febres-Cordero, a right-of-center former mayor of Guayaquil—Ecuador's largest city—who was referred to in the press as a "Reagan clone." The USAID mission's primary objective was to encourage exports—particularly non-traditional exports—such as the shrimp produced by a new farmed shrimp industry along the coast. Only one member of the team that had prepared the mission's response to the USAID solicitation in 1983 was still present.

For the new mission leadership, CRC's experience in cross-institutional resources management, building constituencies through public participation in planning and decisionmaking, and investments in public education was of little interest. Within Ecuadorian government, there was also no top-level support for the concept of a comprehensive approach to both the development and the conservation of the coast. But, there was vigorous competition over what agency would benefit from the funds that the project would bring. Ultimately, the choice was the Office of the

BOX 1: THE IMPORTANCE OF ECUADOR'S COASTAL ECOSYSTEMS

Ecuador's coastal region, when defined to include the western provinces that encompass the lowlands between the Pacific Ocean and the Andes, has emerged as the stronghold of progress and development for the country. Ecuador's future economic development in large measure depends upon how its coastal ecosystems are utilized and managed.

The recent boom in shrimp mariculture along the coast has made this the largest private sector activity in the country—second only to petroleum—in the value of goods exported. The estuaries provide critical habitat for fish and shellfish populations that support more than one hundred thousand artisanal fishermen who produce a critically important source of protein for the region's rapidly growing population. Ecuador's coastal ecosystems contain the nation's best farmland and produce virtually all of the nation's agricultural exports. The condition of Ecuador's coastal ecosystems is, today, more important than ever since the population in these lowland provinces has more than doubled since 1950. The growth is most rapid in coastal cities where birth rates are the highest in the nation. Guayaquil, the nation's largest and most quickly growing city, is the center for banking, industry and a thriving seaport.

It is of the utmost importance that the resource base that could indefinitely produce a rich bounty of agricultural products, lumber, fisheries and cultured seafood is not needlessly degraded and loses its ability to produce the goods and benefits that are of central importance to Ecuador's economy and political stability.

Today, both the opportunities and problems posed by how the coast is managed has reached a critical juncture. Once-luxuriant coastal forests that supported a booming shipbuilding and lumber export trade a century ago have virtually all been replaced by low-yielding, frequently eroding, pastures. The construction of over 120,000 hectares of shrimp ponds has brought the almost complete eradication of mangroves in many estuaries.

Conflicts among incompatible activities—such as fish processing and tourism—poor siting of coastal structures and the ill-conceived

development activities that abound along coasts around the world are also all too apparent along Ecuador's 3,000 kilometer shoreline. Not only are such mistakes expensive and avoidable, but they threaten to undermine the potential for tourism that is attempting to capitalize on the sandy beaches and scenic bays of this extraordinarily diverse coastline. The situation is further complicated by major new activities such as the search for petroleum hydrocarbons in the Gulf of Guayaquil and in some areas of the continental shelf.

From: Matuszeski, Perez and Olsen, 1988

Environment (DIGEMA) in the Ministry of Energy and Mines, a small agency concerned primarily with oil drilling in the Amazon and with little experience and few contacts along the coast. The agreement, however, was that DIGEMA would open an office in Guayaquil, and would hire a full-time director who would be the counterpart of the resident project manager provided by CRMP I. The DIGEMA co-manager was Dr. Luis Arriaga, a person with several decades of experience in fisheries and former director of the Southern Pacific Commission. Two years later he became CRMP I's in-country director, and served in that capacity until the USAID-supported phase ended in 1995.

Initial visits to the coast and many meetings with officials in a variety of agencies in Quito, Ecuador's highland capital, repeatedly reinforced to the CRC team that they were embarking on a journey into the unknown. What could a pilot program hope to accomplish in four years? CRC invited the DIGEMA director, who had just earned a Ph.D. at Vanderbilt University in the U.S., to observe U.S. coastal zone management (CZM) programs in action. He recognized the benefits of the state CZM model. The planning phase for U.S. state programs was targeted at not more than four years and he thought this a reasonable timeframe to establish a

comparable program in Ecuador—a country about the size of West Virginia—with a coastline of approximately 4,500 kilometers. Thus, the Joint Project Agreement followed the U.S. model and defined as its objective the establishment of an inter-agency working group that would review major development proposals and oversee a permit program for specified forms of coastal use. Permit decisions would be based upon environmental impact statements. Other objectives called for zoning the coast for different intensities of use, and for enforcing construction standards for major shorefront developments.

The CRMP team had no basis for judging whether such objectives were realistic. None of the team members had worked in a developing nation or in Latin America. But the U.S. experience had taught that establishing such procedures where they have not previously existed is always an uncertain, and often a very difficult, process. CRC, therefore, argued that the Joint Project Agreement would not detail how these objectives would be achieved. This, CRC proposed, would be defined incrementally through annual workplans, each of which would be constructed on a thorough assessment by the program and its partners of what had been accomplished and learned in the preceding year. This rolling design was a novel idea for both the USAID mission and CRMP's Ecuadorian counterparts. It was met with considerable resistance but eventually the signatories to the agreement settled on this approach. There were two immediate consequences that were to prove essential to the program's future success. The first was that no commitments were made to U.S. "experts" to be contracted for pre-defined activities during the project. The second was that the annual in-house self-assessment and workplan development process soon gave the Ecuadorian-American project team a strong sense that they were shaping their own program for the nation.

In retrospect, the overtly adaptive approach structured around self-assessments and annual workplans formally approved by the program's partners was the single most important feature of this program's design. As set forth in Box 2, the goals, strategies and organizational structure of the program evolved through four distinct iterations over eight years.

BOX 2: THE EVOLUTION OF THE STRUCTURE OF ECUADOR'S PROGRAMA DE MANEJO DE RECURSOS COSTEROS (PMRC)

1984. The University of Rhode Island proposal to USAID Washington drew from an analysis of institutional arrangements for coastal management (Sorensen et al., 1984). The proposal detailed an eight-step process that began with assembling all pertinent information on the condition of coastal resources and their management, and proceeded to form a working group drawn from governmental and academic institutions that would analyze priority coastal management issues. The process emphasized the need to "scope down" on a few key issues and then assess the options for how a governmental response could be structured. The process culminated in a national dialogue by which Ecuador would decide whether to opt for a "networked" national program, or create a single agency vested with the authority to set policy and regulate coastal activities.

1986. The Joint Project Agreement called for the creation of a Policy Board composed of the representatives of six ministries to establish project policies and coordinate among the ministries involved. A Steering Committee would guide the technical work of the project and working groups would be formed to address selected priority issues. The national program would feature a water and shoreline use classification scheme, shoreline development and protection standards, and a review process for all major construction proposals.

1989. Executive Decree 375 formally established Ecuador's coastal resources management program (PMRC). Policy setting, reviews of progress and approval of annual workplans were made the responsibility of an inter-ministerial national commission chaired by the Office of the President. Program administration and technical oversight became the responsibility of a program office in Guayaquil. At the community level, Executive Committees within each of five special management areas (Zonas Especiales de Manejo, or ZEMs) were charged to develop detailed plans that addressed management issues considered to be of national concern. Advisory Committees in each ZEM brought together representatives of user groups and other non-governmental organizations (NGOs) to advise on the scope and content of each ZEM plan. A Ranger Corps led by naval port captains integrated the monitoring and regulatory actions of local representatives of national agencies with regulatory authority.

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1993. Executive Decree 3399 details the administrative procedures that govern the program and combine the two ZEM-level committees into a single Comite Zonal. These adjustments were requested by the Inter-American Development Bank in preparation for the loan-supported phase of the program.

Each design was widely debated within the project team and appeared at the time to be optimal. Nearly 20 years later, the formulation of an operationally and politically viable institutional design remains a central and unsolved problem.

The first annual workplan was approved as an attachment to the Joint Project Agreement. The mission requested that the project devote a major portion of its resources to the farmed shrimp industry. The industry had entered what would later prove to be only the first in a series of crises. This was caused by a shortage in the wild shrimp post-larvae that were used to stock the ponds. This supply "bust" came after a decade-long boom that had created many millionaires and produced a major new source of the foreign earnings that the country so urgently needed to pay down its foreign creditors and boost the Gross Domestic Product. CRMP I, with the support of DIGEMA, argued for a similar investment in an analysis, drawn from existing sources, of trends in the condition and use of the entire coast and its resources. CRC believed such "findings" should be the basis for consultations and an inclusive dialogue on the other issues that a coastal management program should address. This had been the first step of all coastal management programs in the U.S., and the CRC team was convinced that it was the best way to begin the process of building a foundation of constituencies for a long-term coastal planning and decisionmaking program. The objective was to prepare a document that would engage the interested public, and that would be objective and describe out how current issues and condi-

tions had evolved. Profiles were constructed around the issues of potential concern to a coastal management program. A historical perspective on these issues was important since the selection of actions that can shape a desirable future must be rooted in an understanding of the history of the place. Simple graphics and maps gave visual expression to the major points of the story. Profiles were drawn from existing sources of information and were widely distributed and discussed when still in draft form, so that other sources of information and interpretations of the facts could be discussed and considered for inclusion.

H. T. Odum, the famous ecologist, was an early advisor to the project. He had flown over coastal Ecuador many times in the 1940s when he was a meteorologist in the U.S. armed forces. Staring out of the widow of a single engine plane that took him from the Peruvian border in the south to the remnant of primary coastal forest on the Colombian border to the north, he sadly remarked, "Well, this place has been pretty much stripped." Where 40 years before he had seen uninterrupted expanses of coastal forest, there now lay a denuded landscape that could only support a few cattle. The few remaining, least accessible patches of forest were being logged. Equally dramatic were the vast patterns of shrimp ponds around the Gulf of Guayaquil. These had been built by bulldozing low dikes around shallow ponds of up to 100 hectares each. The majority were in publicly owned sand flats and mangrove wetlands. By 1984, 90,000 hectares of ponds had been built and had been producing more than 22,000 tons of shrimp worth US $160 million. There had been a similar re-engineering of every lagoon and river estuary along the ocean coast. The only estuaries still in their natural state were in the as yet inaccessible northern reaches of Esmeraldas on the northern border with Colombia.

Building Constituencies for a Program

How could a participatory and inclusive profiling process be undertaken in Ecuador? The first challenge was to find a local partner with whom CRMP could work. The Fundacion Pedro Vicente Maldonado, a small and incipient NGO in Guayaquil composed of members of the faculty of

FIGURE 1. POPULATION GROWTH AND URBANIZATION OF THE COASTAL REGION

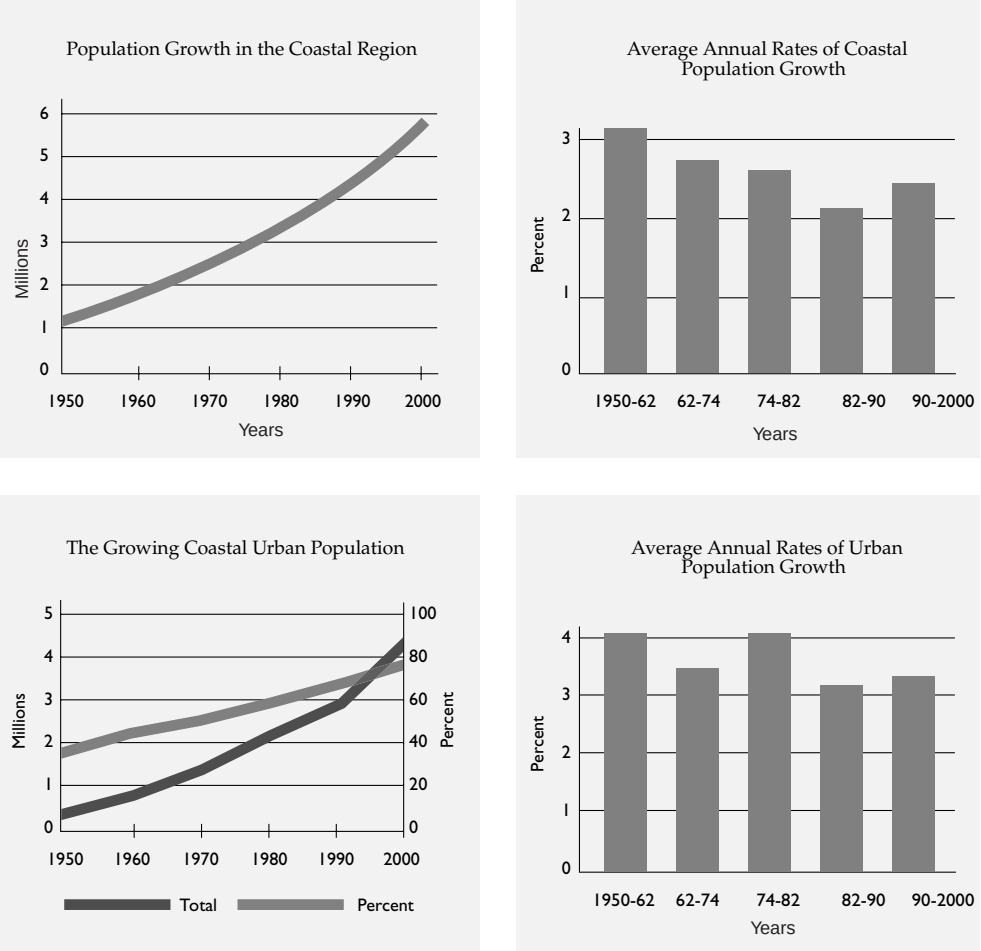
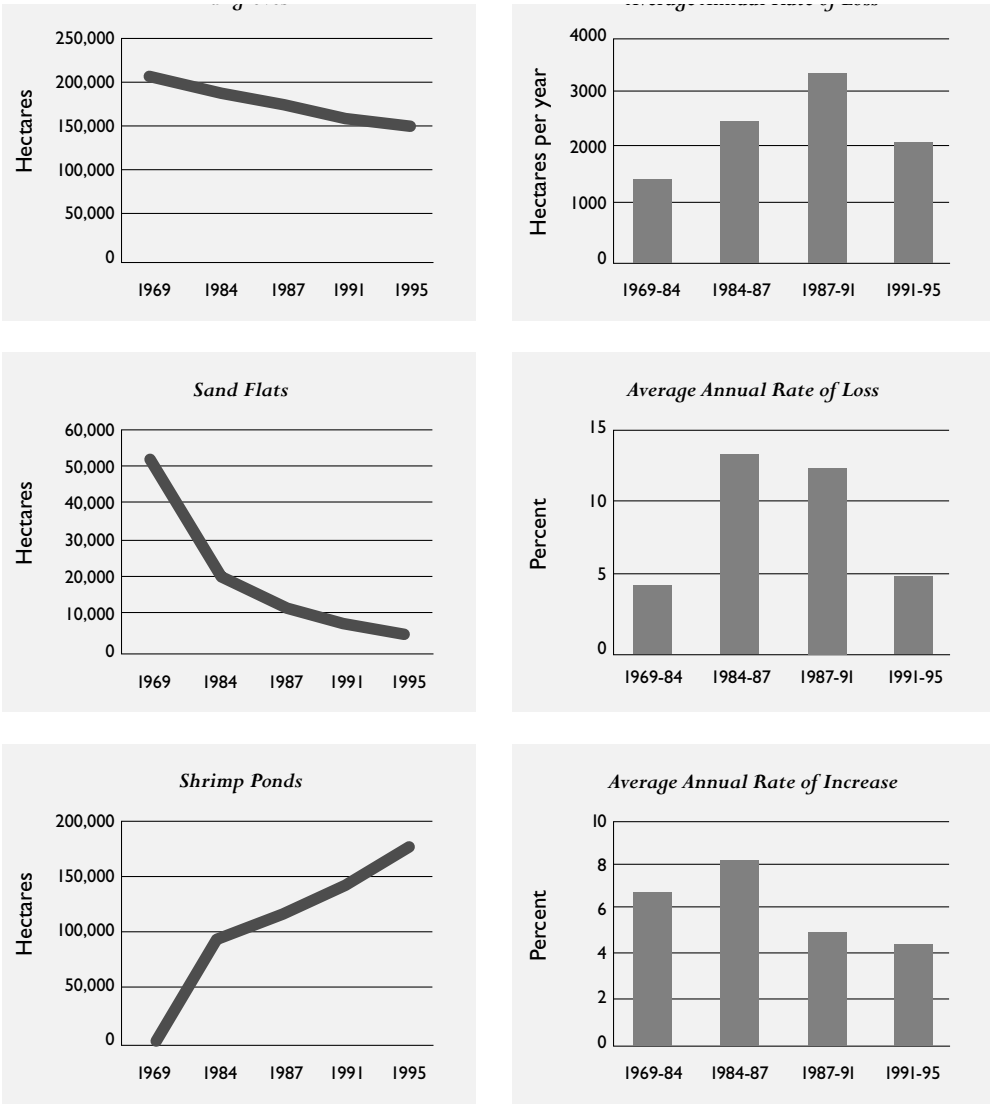


FIGURE 2. AREAS OF MANGROVES, SAND FLATS AND SHRIMP PONDS, 1969-1995, AS REVEALED BY AERIAL SURVEYS CONDUCTED BY CLIRSEN (THE MILITARY CARTOGRAPHIC INSTITUTE)



From: Olsen, 2000

the principal coastal university, the Polytechnic Institute of the Coast (ESPOL), was selected. The Fundacion was intrigued by CRC's belief in participation and the need to build a broad-based constituency for a coastal management program. Reflecting back on the situation several years later, Washington Macias (1995), who co-led the Fundacion during its initial years wrote:

"Before the inception of Ecuador's Coastal Resources Management Program, coastal communities in Ecuador had little exposure to environmental education, and no role in environmental decisionmaking. Technical experts working on coastal issues seldom consulted residents and resource users; coastal communities were not given the opportunity to express their views on decisions affecting coastal resources. The Coastal Program recognized from the outset that public education on environmental issues and participation in decisionmaking was critical to both launching and sustaining coastal resource management initiatives."

By mid-1986, the Fundacion's teams had compiled the available articles, data and books on Ecuador's coastal resources. This secondary information had three principal characteristics: the information was scattered, it was incomplete and it was not very reliable. The challenge was to organize what was known so that it could be a tool for understanding the economic and social development processes underway in the four coastal provinces, and to highlight the major social and environmental trends that had emerged since 1950. Much of what was known did not exist in printed documents but could be pieced together from the observations and experience of the older members of coastal communities and from the personal files and the institutional memory of the business people involved in such activities as agriculture, fishing, tourism and mariculture. Two techniques were used in a major effort to integrate these sources into the analysis. The first was "talking maps," which were used with community elders, who in most cases were illiterate or had very little schooling. This called for organizing gatherings in communities along the coast that brought together finfishers, shellfish collectors, charcoal makers, mangrove wood sellers, and those involved in the

tourism-related activities. A base map with an outline of that section of the coast was taped to a wall and the areas and activities being discussed were noted on the map with colored markers. These discussions centered on such questions as:

- What resources existed before and what resources are important to your livelihood now?
- When did big changes in the resource occur?
- What were the economically important activities before and now?
- When and where did new activities related to your livelihoods develop?
- When did your techniques for using the resource change?
- What have been the principal social, environmental, and economic impacts caused by the new activities and techniques?

A parallel set of interviews and workshops with business leaders and provincial experts were structured so that they could comment on the quality and completeness of the existing secondary sources compiled by the Fundacion, and present their perspectives on a similar set of questions.

When, in 1987, a full draft of both a regional overview and profiles of each province had been prepared, seminars were scheduled in each province to verify the content of the profiles and discuss the resource management issues that they revealed for each province. Where the reports and the perceptions of knowledgeable people differed, and where there were substantial differences in people's recollections and opinions on what had happened, the draft noted such differences. The participants represented the private sector, technical experts, authorities and user groups. The draft was distributed to the participants in

BOX 3: COASTAL MANAGEMENT PRINCIPLES FOR ECUADOR

- The focus of the program must be on issues and conflicts that are truly coastal in nature—that is, in matters related to the sea and the adjacent land areas. Coastal management should not be expected to deal with all the education, health and infrastructure problems of the coastal provinces, or it will simply duplicate the missions of other government agencies, and become lost in the complexities.

- There is no massive critical problem or problem common to all coastal areas. Rather, there are specific issues and problems in each sector of the coast, and some identifiable geographic areas where serious conflicts among users are either present or likely to emerge in the near future if no action is taken.

- There are already in place sufficient laws and authorities to properly manage coastal resources. New laws are not necessary. What is required is better coordination and enforcement of existing legislation.

- There is a serious shortage of adequately trained enforcement personnel in nearly all agencies; also, their salaries and logistic support are inadequate. The result is a high level of frustration on the part of those seeking to have the laws enforced, and a general attitude on the part of the public that the government does not really expect the laws will be obeyed.

- There are many overlapping areas of jurisdiction in government entities. In the case of coastal resources management, it would be more productive to improve coordination among government entities than to try reorganizing the existing distribution of responsibilities.

- The private sector does not have a high level of confidence in the ability of the government to simplify procedures, expedite decisions, or enforce regulations on coastal resources. This attitude cannot be expected to change until real improvements can be shown.

- An important element of coastal resources management must be an extensive education program at all levels to create a civic consciousness about coastal resources and the critical role they will play in the future of Ecuador.

- Recognition and support of the management programs must come from presidential and ministerial levels. This support will allow (a) that the different government entities improve their cooperation and the enforcement of policies; (b) that the regional and local entities become more concerned about solving conflicts affecting their areas; and (c) that public sector and general public opinions be considered in areas that are important to their interests.

From: Olsen, 2000

advance and each seminar began with a panel of presenters and commentators who addressed elements of the analysis and its conclusions. By the end of each daylong session, a consensus was reached on the modifications that should be made to the text. The final version of the document was produced as a single volume entitled *Ecuador: A Profile of its Coastal Resources*.

The volume was widely distributed and was the subject of many articles in the local and national press. Its release coincided with local elections for mayors, congressional representatives and city council presidents. Many politicians used the book as a source of information in formulating their political platforms, and for the first time the environmental management issues raised became an important element of the political discourse. A second printing of the profile was funded by a local bank and presented to each student upon his or her graduation from high school.

While the profiling process was underway along the coast, a two-person team was entrusted with the task of formulating a proposal for the institutional structure of a national coastal management program. This work was centered in the highland capital, Quito, where all national agencies of government have their headquarters. This team was composed of one of Ecuador's preeminent legal scholars and an American who had been deputy administrator of the National Office of Coastal Zone Management during the period when federal approval of many state CZM programs had been successfully negotiated. In contrast to the public debate and workshops that characterized preparation of the profile, this element of the program was carried out quietly. Its purpose, however, was the same—to build a constituency for the program within government agencies in Quito and to shape an institutional design that drew on the experience and views of recognized leaders. Sequences of meetings were held with individual agency heads and political figures to discuss the principles that should govern the design and operation of the coastal management program and an institutional design that would integrate across several ministries.

As a consensus emerged, another round of meetings was organized to comment and refine recommendations on how a national coastal management program should be structured. The result was a 20-page proposal that became known by the color of its cover as the "Yellow Book" (Matuszeski et al., 1988).

The Yellow Book gave a brief rationale for the need of a national program, set forth the principles that had emerged from the discussions, and suggested the major features of the institutional structure by which a first generation program could be implemented. (See Box 4.) These featured the development of detailed plans and actions for selected special management areas (Zonas Especiales de Manejo, or ZEMs), one in each coastal province, that would be selected as representative of the range of conditions and issues along the coast. Each ZEM plan would be prepared under the direction of an Executive Committee composed of the local elected authorities and representatives of government agencies, with the advice of an Advisory Committee made up of representatives of

Box 4: PMRC Strategies on the Principal Management Issues

Degradation of Mangrove Ecosystems

Strategy 1: Increase public awareness of the benefits produced by mangrove ecosystems; document and analyze the implications of trends in their condition and use.
Strategy 2: Develop and test mangrove management techniques that promote community-level stewardship and sustained use.
Strategy 3: Improve awareness and enforcement of mangrove laws and regulations.
Strategy 4: Work with the national agencies responsible for mangrove management to prepare a proposal for a new approach that emphasizes planning and sustained use at the community level.
Strategy 5: Foster monitoring and research in support of management.

Sustained Artisanal Fisheries

Strategy 1: Assist selected artisanal fishing communities to develop and sustain the infrastructure and services required to produce quality products in a cost-effective manner.
Strategy 2: Document the status and trends of selected fisheries known to be of critical importance to coastal livelihoods, and currently under several pressures from human activities.

Sustainable Mariculture

Strategy 1: Prepare and promote a vision for a sustainable mariculture industry for Ecuador.
Strategy 2: Bring international experience to bear in addressing priority mariculture issues.
Strategy 3: Take actions at the local level to protect the environmental base of the mariculture industry.

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SHOREFRONT DEVELOPMENT

STRATEGY 1: Map and analyze hazards and development issues posed by the use of the shore; promote good development practices.
STRATEGY 2: Prepare and implement shore use plans and zoning in selected ZEMs.
STRATEGY 3: Examine the economic and marketing potential of recreation and tourism development, especially in terms of its link to good environmental quality.

ENVIRONMENTAL SANITATION

STRATEGY 1: Utilize investments in environmental sanitation as a means to mobilize small communities that are not qualified to receive funding for sanitation services from other sources.
STRATEGY 2: Design and implement an intercalibrated water quality sampling program focused on issues related to shrimp mariculture.

From: Olsen, 1986

the various user groups and business interests in each ZEM. The Yellow Book also proposed that the various enforcement officers connected to the permit granting institutions along the coast be organized into seven Ranger Corps, each of which would be led by the naval Port Captain responsible for that stretch of the coast. Finally, the Yellow Book proposed that the program should be administered by the Director of Public Administration in the Office of the President. This representative of the president would chair a National Commission composed of the ministers with major coastal responsibilities. The National Commission would shape the program's policies and have oversight of the program office in Guayaquil, the Ranger Corps and the ZEM process.

Like the profile, the Yellow Book attracted considerable positive press. At the time of its release, Ecuador was approaching a presidential election. Fundacion Maldonado drafted a manifesto urging that the presidential candidates commit to the formal creation of a coastal management program. The Fundacion obtained the signatures of 66 prominent leaders in education, business and the church. The manifesto was printed with its signatures in local newspapers. Never before, and not since, have the coastal provinces come together to produce a regional statement of needs and presented these to the national government. All the major presidential candidates stated in televised debates that they supported the coastal management initiative. Indeed, in 1989, within six months of assuming office, the winner, President Rodrigo Borja, signed Executive Decree 375 that formally created the program with the features suggested by the Yellow Book. One could claim that the program had, within four years, built a broad-based constituency for a new form of coastal management and had secured a legal mandate for a national coastal program. The task of preparing the plans of the actions that such a program would work to implement was the next priority.

For CRMP I, the formal creation of Ecuador's coastal management program through Executive Decree 375 was the equivalent of a state governor in the U.S. signing off on a state CZM program. In America, had this coincided with approval from the federal Office of Coastal Zone Management, the result would have been a secure flow of annual federal funds to support the program's implementation. Although Ecuador is comparable in size to many states in the U.S., the next higher level in the governance hierarchy has no such mechanisms to reward and sustain a coastal management initiative. In essence, Executive Decree 375 had given the program a mandate and an institutional structure authorized by the highest executive authority—the president. But, as of 1989, the PMRC had neither the detailed policies and plans nor the funds to begin a full-fledged period of implementation. This situation was later diagramed (see "Introduction to CRMP I") as a "seed generation," recognizing that it generated the formal mandate and an initial base of constituencies for digging down into the negotiations and planning that

could shape the future trajectory of coastal change. It was becoming increasingly obvious that sustained funding for the PMRC once USAID support ended was a critical unknown. At the time, optimism prevailed. CRMP staff were buoyed by the fact they had already accomplished much of what observers had assured them was impossible. Surely funds to sustain the effort would materialize once a more detailed agenda for action had been negotiated. The Ecuadorian members of the team pointed to the Inter-American Development Bank (IDB) as a likely prospect once a detailed plan of action that had the full support of the government in Quito had been negotiated.

Can Community-Based Management Be Made Operational?

The coastal profile documented extraordinarily rapid processes of change that showed every sign of accelerating. The pattern of boom and bust was dominant in agriculture, fisheries and mining. The crisis in the mariculture industry was but another example of a well-established pattern, familiar to all that had characterized booms and busts in lumber, coffee, cocoa, fisheries and bananas. How could one hope to break such entrenched patterns of resource overuse and misuse? The layers of dysfunctional relationships and procedures within government and the business community convinced CRMP I staff that any attempt to tackle the issues identified by the profile at the national scale would get nowhere. The solution was to draw from CRC's experience with "special area management" in Rhode Island to focus the program's efforts on selected areas that illustrated conditions typical of the coast as a whole. The selection of these ZEMs (Ochoa, 1995) became a focal point of the concluding workshops in the profiling process and was shaped by the following criteria:

- Likelihood that positive results could be generated in a short timeframe

- Likelihood that actions could be undertaken successfully with a limited financial investment

- Likelihood that a resource management initiative would benefit a large number of people

- A positive climate was present for working with both government and the private sector

- There was the presence of local issues that reflected national concerns

- Likely relevance of planning techniques and management actions to other coastal areas

Once the first Decree was signed, it was time to detail the process by which planning and capacity building at the community level could be launched—an effort that would shed light on the following questions (Ochoa, 1995):

- Is it possible to use participatory methods for planning and decisionmaking in a country that has had no prior success in environmental planning in the coastal region?

- Can local resource users be convinced that coastal resources management is desirable and useful?

- Can existing laws and regulations serve as the basis for an effective approach to coastal management?

- Will local and national governance institutions be able to respond effectively if there is pressure in favor of plan implementation?

The Yellow Book proposed that each ZEM would be given two years in which to engage in an open planning process that would actively involve local residents, resource users and authorities in addressing future use of coastal resources. It had been decided that responsibility for preparing the plan had to rest with the existing local authorities including the mayor or mayors of the communities involved—if these

were present—and the designated representatives of governmental agencies with responsibilities within that ZEM. The Yellow Book visualized the responsibilities of the Executive Committee as:

- To detail the scope of the planning and coordination effort and invite other national agencies to participate as necessary

- To review the key projects and activities causing conflicts or abuse within the ZEM and develop a detailed timetable for discussing them in open forums

- To expedite decisions on the issues identified

- To develop a "one stop" permit system for actions within the ZEM

An Advisory Committee composed of representatives of the various user groups and business interests would assist the Executive Committee by generating ideas and by reacting to the proposals that might be put forward. A full-time coordinator would be hired by the project to organize the necessary meetings and provide the link between each ZEM and the project staff in Guayaquil. These coordinators would be hired from within the local communities and selected for their local knowledge, their contacts, and their potential to play a leadership role in what promised to be a complex process of a kind that had not been attempted before.

The expectation was that the five ZEMs would all address the priority issues that had been identified by the profiles and that the ZEMs would provide a variety of contexts and a range of social, political and economic dynamics that would generate the experience and ideas that could at some future date be applied more broadly. The project assembled a two or three-person technical team for each of the five priority issues:

- Destruction of mangroves
- Declines in fishery resources
- Water quality and sanitation

- ❖ Shoreline development
- ❖ Mariculture

Each team was to detail the issues in each ZEM and identify options for improved management responses. The technical teams were to consult within each ZEM and then present their findings and conclusions to the ZEM committees before presenting their reports to the program staff in Guayaquil. This was one of many examples of establishing feedback loops within all components of the program.

It was a novel experience for both the technical teams and ZEM communities to meet together to review and discuss the accuracy and potential usefulness of the findings and recommendations of external "experts." It soon became evident that this process was going to produce a multitude of ideas on what might be done to address the various issues. How could one decide which ideas had the most promise? This question dominated the annual self-assessment at the end of the first year of the ZEM process in 1991. The conclusion was that the program should establish a fund for "practical exercises." This provided modest funds—usually in the vicinity of US $100—for the implementation of selected initiatives at a pilot scale. This proved to be a successful strategy for engaging the communities in a process that went beyond issue analysis and planning. The practical exercises generated excitement, interest and vigorous debate on why a given effort succeeded or failed. They focused the efforts of the technical teams, the coordinators and the committees, and shaped the management actions that subsequently became the major features of each ZEM plan.

Without exception, the Executive Committees were a complete failure. Although their members came to the initial opening ceremony and accepted the congratulations of the representative of the President's Office and the program, they had little desire to experiment with a consultative approach to planning and management that involved the interested public. What benefits might such novel behavior bring them? Despite the energetic efforts of several of the coordinators, the Executive Committees were abandoned after the first year. For the CRC members

of the team, the first five years of the experience in Ecuador were teaching that the differences in the social and institutional contexts between the U.S. and a small Latin American nation were indeed profound. In Ecuador the roles and authorities of government in shaping the process of societal and ecosystem change were astonishingly limited. Yet the energy, creativity and desire of the impoverished people in each ZEM and the personal commitment of many individuals scattered through the government to engage and support a more effective form of planning and decisionmaking was inspiring. The foreseen journey into the unknown was proving to be exciting, full of surprises and highly rewarding.

The response to the Advisory Committees was entirely different from that of the government representatives appointed to the Executive Committees. The Advisory Committee meetings attracted so many participants that an initial concern within the program was that the efficiency of each Advisory Committee would be undermined by its sheer size. Attendance varied, but not infrequently drew more than 100 people to any given meeting. Fears about size leading to inefficiency proved to be unfounded as the ZEM coordinators and Advisory Committee presidents moved quickly to establish procedural rules that protected democratic principles, maintained order, and made sure that the at least a portion of the discussions at a given meeting addressed the announced topic. To U.S. observers, the Advisory Committees had characteristics remarkably similar to those of a New England town meeting. The Port Captain and some of the local officials that had been appointed to the Executive Committee began attending Advisory Committee meetings. When it came time to adjust the program's design in preparation for a full-scale phase of implementation through a loan from the IDB, it was obvious that the two committees should be merged into a single "ZEM Committee."

Usually absent from the ZEM Advisory Committees were representatives of the wealthy segments of society—most typically the owners of shrimp farms. Like those appointed to the Executive Committees, these

people seldom saw any benefits to participating in a new planning and decisionmaking process. For them, the existing system worked well enough, and actions that might encroach upon their freedoms and prerogatives were regarded with suspicion, if not as an outright threat. During this initial period, the PMRC became known in some circles as "the poor people's project," since the enthusiasm of the participatory process and the interest raised by the ZEM events (the practical exercises, school painting contests and workshops on a wide diversity of topics) appealed principally to the poor and the disenfranchised. At the time, this label was, for some, a source of embarrassment. For the project's critics it was evidence that the project was failing to meet its goals because it was not engaging those with the greatest power to influence the coastal development process.

The difficulties of working with the wealthier segments of coastal society—particularly those represented by the shrimp farmers—and the differences between CRMP's approach and the usual "project" had nearly derailed the program at the end of its first year. The program's greatest single investment in Year One was a symposium that brought world experience to bear on the crisis within the shrimp industry. An interdisciplinary team of shrimp mariculture experts, resource economists, estuarine ecologists and shrimp biologists met with representatives of the industry, local university specialists, and governmental agencies to assess the situation and develop a multi-faceted strategy to address problems posed by disease, the collapse of the wild shrimp stock, and the shortages of post-larvae needed to stock the ponds, as well as taxation policies, and the permit process. Focusing the program on the farmed shrimp industry had strong advocates within the CRC team and was seen as the top priority by the USAID mission. At the end of Year One, the mission argued forcefully that the program should be redesigned into a technical assistance program to the industry. The conflict resulted in the termination of some members of the CRC team and the mission refused to approve visits by the CRMP international director for several months. Subsequently, representatives of the farmed shrimp industry made it clear that they had no interest in participating in activi-

ties that could not be shown to produce an economic return to their members within two years. Nonetheless the crisis was weathered and, with the agreement of DIGEMA, Dr. Arriaga left his post with that agency to become CRMP's in-country director. He retained the position until the USAID-supported phase ended in 1995. His statesmanlike leadership became another central reason for the program's success. For the remaining years of the USAID-funded phase, strategies to foster a less volatile shrimp industry were addressed within the ZEMs and focused on actions that would protect and restore the environmental qualities upon which the industry depends.

The "Two-Track" Approach

The design set forth by the Yellow Book calls for a "two-track" approach in which experiments in community-level governance would be endorsed and overseen by a National Commission. The central idea was that the absence of successes in resource management along the coast gave little basis for making judgements on what actions would be most likely to produce positive outcomes. The ZEMs were presented to the National Commission as experiments, which could be undertaken with little or no risk to the existing allocation of resources and authorities among government agencies.

The project team soon learned that there were great benefits to scheduling some meetings of the National Commission in a ZEM. In such cases, the first part of the agenda was open to the public and devoted to hearing firsthand about the problems being addressed and, as the process matured, the ideas that were emerging from the practical exercises. The second part was an executive session on a pre-defined agenda. These meetings were typically held in a school classroom or an equally dilapidated meeting hall. The energy and the passion of the locals was always inspiring and on several occasions, the commissioners endorsed activities that according to the letter of the law were illegal or counter to established governmental procedures. For example, the commissioners granted a group of shellfisherwomen the responsibility for the stewardship of a mangrove area in which they harvested. This was not a "con-

cession" like those granted to shrimp farmers, but the right to manage a wetland for the benefit of the group that had traditionally utilized it, and to maintain it as a mangrove wetland rather than convert it to some other use. This became one of several actions that were seen by all as experiments "sponsored by the Office of the President." The fact that it departed from the established permit process was recognized by the local Port Captain and acceptable to all.

While the Executive Committees were failures, the idea of organizing local level enforcement officers into a Ranger Corps proved to be another experiment that quickly began to produce positive outcomes. As mentioned earlier, Executive Decree 375 established seven Ranger Corps, each of which was led by the naval Port Captain responsible for a designated stretch of coast. The Port Captains are recognized as the most professional and the most powerful representatives of the national government along the coast. They issue one of the three permits that should be obtained before constructing a shrimp pond. The other permits are issued by the forestry authority and the fisheries authority. In the 1970s and 1980s, it was universally accepted that these permits, if they were issued at all, were obtained in exchange for "informal payments" to officials in the various agencies (Meltzoff and LiPuma, 1986). Gathering these inspectors into teams and then assisting them in obtaining the resources with which to make joint inspections and joint patrols proved to be effective in making a corrupt system more accountable. A succession of admirals with oversight over the Port Captains strongly supported the program. Gradually, the quality of the officers selected to serve as Port Captains improved and the Navy training academy developed courses on coastal management and the proper functioning of a Ranger Corps. The process of change was gradual, but it was sustained.

Learning to Apply Adaptive Management to the Four Priority Issues

Once the ZEM process was underway, the program became overwhelmed by the need to provide sound technical guidance to the many

initiatives being implemented or considered in the five ZEMs. The program had a modest budget for so ambitious an undertaking and a primary goal was to build capacity within the Ecuadorian partners to respond effectively to these needs. There were two demands on the technical staff. One was to work with the ZEM Advisory Committees and coordinators to prepare a management plan for each ZEM. The plans would then be submitted to the National Commission for approval, and would frame a five to 10-year agenda of actions for each ZEM. The second demand on the technical staff was to support and evaluate the practical exercises as a body of experience that would shape the content of those plans.

The first CRMP I in-country director, and a person with years of experience in rural development in Latin America, suggested a strategy of nurturing informal teams on selected topics (Merschrod, 1989). The idea was to avoid the usual practice of inviting institutions to designate a representative to a committee. Unless there was the prospect of capturing significant financial or technical resources, this invariably resulted in the appointment of a low-level functionary who often had little interest or expertise in the topic and no decisionmaking authority. Such committees quickly become a *pro forma* exercise. Indeed, this was the fate of the Policy and Steering Committees that had been formed from national agency representatives with much effort in the first months of Year One. The alternative was to let it be known that the program was forming a working group on a given topic and invite those interested and with known capabilities to join and to serve in their individual capacity. The incentive was that the working group would be advised by a respected international expert. Also, the program would allocate modest funds to support initiatives put forward by the working group that responded to the program's needs. This approach proved to be particularly fruitful on two topics—mangroves and water quality.

The mangrove working group drew together specialists from the universities and the governmental agencies and was led by a member of the program's resident staff, with the advice from an American expert in

mangrove ecology. One of this group's priorities was to make the destruction of this feature of the coast a central theme in PMRC's public education efforts. Over the years these have featured school programs and parades involving thousands of schoolchildren, and have gained numerous news spots on TV and radio. In some ZEMs, the destruction already approached 80 percent of the mangroves present in 1969, when the first aerial photographs of the coast were taken. The working group noted that the official response to the widespread destruction was to adopt ever more stringent regulations forbidding any cutting and increasing the penalties for those who were caught doing so—both the traditional charcoal makers and those bulldozing new shrimp ponds. Yet, the regulations were having no discernible impact on the annual losses. The working group, impressed by the desperate conditions of the traditional "mangrove people," began to advocate for strategies that would promote the sustained utilization of mangroves and "put the people back into the wetlands." This cast the traditional users and environmental groups into an alliance against the shrimp pond builders and those condoning the advance of urban slum communities into these "wastelands." Practical exercises that produced trails and observation points in mangrove wetlands, and community efforts in reforestation and stewardship contacts with groups of shellfish and crab harvesters, all generated interest and press coverage. Another strategy was to support the Ranger Corps in their efforts to apprehend those constructing illegal shrimp ponds. The joint patrols and coordinated enforcement actions of the Ranger Corps increased steadily and produced over 200 enforcement actions in 1998 alone. Unfortunately, judges refused to treat the infractions as serious and very few produced jail sentences or penalties for those with influence and connections.

Parallel efforts on water quality, community sanitation, post-larvae handling and shorefront development created a sense of excitement and the wide perception that the program was developing a novel approach to old problems. The alliance of a foreign "project" involving both an NGO and governmental agencies was unusual. How could the effort be sustained? The USAID Ecuador mission had become a strong supporter of

PMRC, and it worked with USAID Washington to extend the project first from the original four years to six years, and then to eight.

The Transition to a New Funder

In 1993, at the annual high-level meeting between the government of Ecuador and the IDB, the government stated that funding for the implementation of the coastal program had become a national priority. The IDB responded with a project design process for which, at the government's request, CRC was contracted as the Bank's lead consultant. USAID agreed to extend its support yet again to sustain the project's core staff, including the five ZEM offices. The program staff worked quickly to complete the ZEM plans, shepherd them through the formal approval process, and to develop the activity descriptions and cost estimates that the IDB requires to process a loan.

The principal focus of the loan design had to be "bankable projects." One-third of the loan funds had to have detailed multi-year budgets as "final designs," and the remainder had to be designed to a level of detail sufficient to make the case that the economic benefits would outweigh the economic costs entailed through executing the loan. For CRMP I staff, this was a novel requirement—one that demanded following criteria that seemed inappropriate to a program directed at greater social equity and safeguarding environmental assets. The IDB team was sensitive to these concerns and shared the program's belief that it was essential to protect the program's unusual rolling design process and decentralized ZEM planning and decisionmaking procedures. The Bank's approach to capacity development was to make a large, one-time investment that would establish a sufficient threshold of financial and technical sophistication within the project office in Guayaquil at the start of the loan.

Since the IDB's instructions were that the loan could not be for less than US $15 million over four years, it posed challenges in project administration that were well beyond what either CRC or its Ecuadorian partners had experienced. It would require administering expenditures 10 times

greater than the program had previously spent in any year. Similarly, the designs for full-scale implementation of the more promising practical exercises jumped from a maximum of a few hundred dollars to a minimum of US $10,000. CRC was told repeatedly that a smaller loan was not worth the Bank's trouble. Many concerns were assuaged by the IDB's agreement that the rolling design—centered on annual self assessments and workplans—would be continued and that "el proceso PMRC," the decentralized and participatory processes for which the program was known, would be codified in a "Reglamento Operativo" that would guide all administrative decisionmaking. The in-country director, who had administered the program for almost a decade, was to be the author of the Reglamento, and he would stay on as the program's technical advisor during the entire loan period. Most innovative of all, the loan would not be implemented by the government. Instead, activities carried out with loan funds would be contracted out to three pre-selected partners in the private sector. The sanitation projects—the most familiar to the Bank, and readily "bankable"—would be the responsibility of CARE International. The Fundacion Maldonado would assume responsibility for expanded ZEM offices, each of which would have a resident team of extension officers. The ZEM coordinators and their staffs would be Fundacion employees. Continued investments in training would be provided by ESPOL. Technical oversight would be provided by a small team of specialists retained by PMRC headquarters in Guayaquil with continued support from CRC. The assumption was that the program's resident specialists would include the core team assembled and trained during the USAID-funded phase. At the time, these arrangements seemed to take all reasonable steps to protect the continuity of both the core staff and the program's unique traditions of management.

The Return to Business As Usual

The loan design was completed in 1992. Despite all the compromises in the loan design, CRC nonetheless withdrew with considerable misgivings. Six months later, the IDB approved the loan. But its approval came with a set of "conditionalities" that had not been previously discussed—

during neither the prolonged process of designing the loan nor the negotiations between the government of Ecuador and the IDB on the details of the budget. The most startling, Special Condition 4.02(e), stated that before any disbursements, the Government had to demonstrate that the PMRC had begun to implement "mechanisms for the coordination and the application of technical standards" to govern the approval or renovation of shrimp farm concessions. These permitting mechanisms and standards were to be developed jointly by the Bank and the PMRC and had to be approved by the IDB. Condition (e) required that these new permit procedures had to be widely advertised and announce that the evaluations of all such permit applications would be made available to the public.

This "conditionality" placed the PMRC in an impossible situation. The PMRC had maintained from the beginning that it had no intention of claiming for itself the regulatory powers vested in the Navy or the national agencies responsible for fisheries or forestry resources. The refinements to the PMRC's mandate that had been carefully negotiated with the IDB as a second Executive Decree signed in 1992, made no provisions for regulatory authority. Furthermore, such a "power grab" would fulfill the worst suspicions the shrimp industry had from the beginning, in 1985, believing that eventually a coastal management program would become another excuse for taxation and regulatory procedures designed to shackle the initiative of entrepreneurs. In one step the program's carefully garnered trust with established government agencies and the coastal populace was in question. Was the program about to become yet another regulatory agency now that it had US$ 15 million to pass around?

The PMRC had neither the power nor the desire to meet conditionality (e). Gradually, the remaining USAID bridge funding evaporated, as did the grant funds provided by the IDB for pre-loan capacity building activities. Most of these funds went to keeping the offices open and paying the salaries of the core staff. The team in Guayaquil began to look for

employment elsewhere. Several ZEM coordinators worked for more than a year without paychecks.

The impasse was broken in 1996, nearly three years after the loan was approved. It was spurred by an argument put forward by the IDB's Ecuador office. This contended that the "spirit" of condition (e) had been met and that the disbursements should begin. The basis of this claim was that reforms had been made to the notoriously corrupt forestry authority and even more stringent regulations had been adopted to protect mangrove wetlands.

Between 1993 and 1996, the program saw several PMRC directors come and go. By the time the impasse was resolved, a new president had been elected and Ecuador was on the threshold of one of the most traumatic periods in its history. The new director of Public Administration in the Office of the President called for a reassessment of the loan design and set about reducing costs on many activities—most notably the salaries for ZEM teams and investments in capacity building. A particularly destructive decision made at this time was that the program's three pre-selected partners (CARE International, Fundacion Maldonado and CRC) would have to negotiate new contracts for each annual workplan. Rather than program partners, they became mere contractors. Ecuador's highly complex public contracting procedures meant that this delayed new activities from six to 11 months, leaving little or no time to implement whatever that year's workplan had called for.

A major rift developed between the program's head office, the Direccion Ejecutiva, and Fundacion Maldonado over the supervision of ZEM office staff. The newly hired team of specialists in the head office argued that such supervision lay with them and not the ZEM coordinators hired by the Fundacion—even though the specialist team had no previous experience with the program and many had scant knowledge of the activities that were to be undertaken by equally green staff hired at low salaries in each ZEM. Fundacion Maldonado pointed out that their role had been reduced to that of a personnel contracting service. CRC's effort to provide technical assistance languished when new staff showed little inter-

est in the approaches and activities that the Center promotes. During the long gap before the first loan disbursement, the PRMC technical director worked to secure new sources of funding for new projects. These included a sixth ZEM, funded by Italian foreign assistance, and an effort to designate one of the remaining coastal freshwater wetlands as a Ramsar Wetland of International Importance site. Rather than attending to the needs of the ZEMs, the new staff put much of their efforts into these new, independently funded projects.

Late 1997 was the time for the first self-assessment and preparation of the Year Two workplan under the IDB-supported phase of the program. Dr. Arriaga, as the PMRC's senior advisor, consulted with the five ZEMs and the program partners. His reports documented unequivocally that the Reglamento Operativo had been abandoned. Expectations in CRC or the Fundacion Maldonado that this highly critical set of findings would catalyze discussion and a response within the IDB and the government proved to be unfounded. Nothing changed. To observers, the program had simply become another externally funded "project."

In 1999, before the loan-supported phase entered its final year, the IDB arranged for a mid-term evaluation conducted by a Danish consulting firm. The assessment lasted four months and involved a large team of international specialists. Their findings confirmed that only a fraction of the activities called for and funded by the loan had been undertaken or completed, and that the quality of the projects left much to be desired. Investments in sanitation had been particularly expensive and dysfunctional. The mangrove trails had blossomed into expensive walkways and public education centers, but were attracting few visitors and were beyond the capabilities of the local volunteer environmental groups to administer or maintain. There were some successes, and the evaluators were intrigued by what they could see of the program's approach and emphasis on participation in governance.

The Status of the Program in Mid-2003

The reversals and misfortunes of the program are to Ecuadorian observers only a reflection of the many difficulties and disasters that have haunted the nation in the past decade. Beginning in the mid-1990s the shrimp industry lurched from one crisis to another as a sequence of diseases swept through the ponds, reducing yields and idling many farms. In 1997, as the loan disbursements began, the country was hit by El Nino storms and floods that surpassed the 1982-1983 events in both their drama and the damages produced. Roads and bridges were washed out, crops ruined, and coastal erosion, flooding and landslides made life more precarious for coastal communities. Political turmoil matched these natural disasters. The presidency of Abdala Bucaram was truncated by impeachment and the escape of the president and senior members of his staff to Panama. At one point in the ensuing crisis, there were three people claiming to be president. In 1998, Jamil Mahuad, the former mayor of Quito, was elected by a slim margin. Soon thereafter the long simmering territorial conflicts with Peru over potentially oil-rich lands in the Amazon ignited into war. President Mahuad negotiated a treaty with Peru's President Alberto Fujimori that accepted Peruvian claims to the disputed territory, thereby ending a decades-long drain on Ecuador's military budget. The next challenge was to deal with an economic crisis that had eroded the value of the national currency from 50 sucres to the U.S. dollar when the project began in 1985, to 12,000 to the dollar in 2002. The president decided that the best option was to "dollarize" the economy—even though this would cause great hardship on all, particularly the poorest members of society. Indeed, the reaction was so violent that the president had to resign. In the process, many lost their life savings and unemployment rose sharply. In Guayaquil, there were riots over proposed increases in bus fares.

In this context, the government of Ecuador and the IDB agreed in 2002 to embark upon the design of a second IDB loan in support of the program. Yet, the process of delays and disintegration that marked the transition from the USAID-supported phase to the first IDB loan appears—at the

time of writing this chapter in late 2003—to be repeating itself. The IDB's procedure is to advertise internationally for a contractor to undertake the mandatory extensive loan design process. The contractor selected will not be likely to have any experience with the program or with coastal management. The contractor will have no role in the implementation of whatever design it puts forward. In July of 2003, the skeleton staff of long-term government of Ecuador employees assigned to the PMRC barricaded themselves into the project offices in Guayaquil demanding that they be paid the many months of back wages owed them. The second team of PMRC specialists hired in 1994 had sought employment elsewhere.

Any future investment in the PMRC will have to recognize the remarkable differences in the environmental and societal context in which the program would operate if it is reactivated. Ecuador is a poorer country in 2003 than it was in 1985 or 1992. Malnutrition was rare along the coast when the program began, but it has become increasingly prevalent in the succeeding 15 years. Violence and piracy have become common. Wealth continues to be concentrated in a small portion of the population and one impact of this is a proliferation of high-end, gated residential compounds along previously undeveloped stretches of the coast. Investments in resorts catering to well-heeled Ecuadorians and international visitors promise to be large. One consequence of these developments is that the poor have less access to the coastline and the resources of its beaches, wetlands and nearshore waters. The rapid growth in coastal settlements has resulted in the designation of many more municipalities. While portions of only two ZEMs lay within municipalities in 1989, today municipal governments with elected mayors and salaried staffs have the potential to offer a form of governance that was not present a decade before. Is there an appropriate role for ZEM Committees where municipal governments exist?

What Did the PMRC Accomplish During the USAID-Supported Phase?

First Order Enabling Conditions (See Chapter 1) were achieved in three phases. The first four years culminated in gaining a formal mandate for the necessary collaborative inter-institutional planning and policy formation. This was achieved by the signing of Executive Decree 375 in 1989. The second phase was to develop the goals and the detailed plans of action that are an expression of place-based management. In this case, the first generation of the program decided to focus this work on five ZEMs, leaving a coastwide program to a subsequent generation of the program. The greatest challenge during a third phase was to secure a source of funds to support the full-scale implementation of a first generation national program.

Thus, in terms of the ICM cycle, the PMRC had by the end of 2000 limped through the last two steps of an initial generation of a national coastal management program. A total of US $3.2 million had been invested by USAID and the government of Ecuador had added US $15 million to its foreign debt to support the initial phase of implementation. Unfortunately, by the end of this initial cycle neither the institutional capacity nor the funds for a second generation were present and the full suite of enabling conditions that had briefly existed in 1992 and 1993 were no longer present.

Second Order Behavioral Changes. The most remarkable achievements of the PMRC lie in the evidence that the changes in behavior within institutions, user groups and the public at large could indeed be achieved simultaneously at several scales in a relatively short period of time.

Changes in the behavior of institutions occurred at both the national level and among the local institutions operating along the coast. At the national level, the Technical Committee and Steering Committee called for by the Joint Project Agreement in 1985 proved to be dysfunctional and were disbanded. The institutional design adopted in 1989 made the

Office of the President the lead agency of the program. The ministers appointed to the National Coastal Management commission discussed issues of policy, made decisions and provided the PMRC with a top-level sounding board. They became eloquent advocates for the program. The support for the Ranger Corps by the commissioners during the Borja administration set in motion an unprecedented collaboration among the inspectors and permit-granting officials operating along the coast. Because they are government employees, the practice of joint patrols and collaborative permit granting has been more successfully sustained than the elements of the program funded by external sources. The participation of Port Captains in ZEM Committee meetings produced linkages between the public and enforcement officers that had not previously existed.

At the community level within the ZEMs, the Advisory Committees, and later the combined Zonal Committees, became an incubator for participatory planning, goal-setting and self-help actions that had not previously been seen along the coast. The ZEM Committees repeatedly demonstrated their ability to respond positively and effectively to local issues and crises. They provided the forums where the goals and priority actions to be incorporated in each ZEM plan were debated and voted upon, where disputes among competing user groups could be resolved and where the results of practical exercises were examined and debated. This expression of participatory management and transparent dealing was also unprecedented, and was greeted with disbelief by many who observed the program in its initial years.

The working groups on priority coastal management issues were another departure from the usual manner in which technical specialists related to one another and to the public. With the exception of the ZEM coordinator, who received a modest payment for his or her administrative duties, the incentives for working group members were not financial. They served because they had a personal interest in the topic and not because they were assigned to the group by their institution. They benefited from interactions with an international expert in their field and by

being associated with what was widely perceived to be a winning team. The members frequently commented that they felt that their participation gave them an opportunity to serve their country.

Finally, the PMRC itself signaled a significant shift away from the traditional behavior of government-sponsored institutions in Ecuador. A program without regulatory authority that freely distributed the information it generated and devoted its efforts to collaborative behavior among traditionally competing—and not infrequently antagonistic—institutions itself modeled a form of behavior from which many drew inspiration.

Other behavioral change can be seen in those most directly involved in the use and alteration of the coast and its resources. The PMRC invested heavily in each ZEM in organizing scores of "user groups" among the poor and subsistence communities that make up the majority of their resident populations. Wealthy segments of society, such as hoteliers and shrimp farm owners, have long had similar status, usually as members of Chambers of Commerce. Once formally organized, these user groups can, under Ecuadorian law, file as a civic organization and thereby obtain the *personalidad juridica* that enables them to assume group responsibility for an asset (such as a boat, a dock or a mangrove walkway), receive grants, and speak as an organization and not just as individuals. More than 50 organizations of low-income users achieved this status during the USAID-supported phase. These formally organized user groups assumed responsibility for most of the practical exercises. They undertook a wide diversity of self-help activities that were novel and incipient expressions of collaborative action to protect public assets.

Such expressions of stewardship were also seen among wealthier members of society. Most notably, during the long delays between the IDB loans, the Shrimp Growers Association in Guayas province provided substantial funds to the Ranger Corps to support their patrolling activities. This signaled a major change in the attitude of shrimp growers toward the program.

Third Order Harvests represented by improved societal and environmental conditions were modest during the USAID-funded phase. The biggest, but unquantified, achievements were undoubtedly in the generation of hope and empowerment—important indicators when assessing quality of life—that the PMRC process brought to the poorer segments of coastal society. The practical exercises also generated modest gains in earnings and employment for some user groups. Presumably, the collection of garbage and the building of latrines brought some undocumented health benefits. The actions of the ZEM Committees protected—or in the case of the Machala ZEM—reestablished access to mangroves adjoining shrimp farms for artisanal shellfishers who had previously been expelled as presumed poachers. The eco-tourism experiments provided occasional employment to otherwise unemployed members of some communities.

In terms of improvements in environmental quality, the Third Order Harvest during the first phase was small. There were some examples of mangrove replanting. More importantly, a number of actions that would have destroyed more mangroves were avoided by the joint efforts of ZEM committees and the Ranger Corps. Nesting colonies of seabirds and "the highest mangroves in the world" in Esmeraldas province were recognized as important assets and protected. Unfortunately, the larger-scale outcomes expected during the loan phase did not materialize.

What Can We Learn From the PMRC?

All the Americans involved in the Ecuador program were impressed by the warm reception that greeted the values and processes of participatory governance. As the project began, anyone familiar with the culture and traditions of the Ecuadorian coast assured the CRC team that public meetings and open debate over issues and alternative courses of action would be pointless, or dangerous, or both. In the mid-1980s participation by stakeholders in the governance process was looked upon with suspicion or hostility in many quarters—reminiscent of the reaction 15 years before as state coastal management programs got underway in the U.S. It was, however, essential that the practices of such participation

were given an Ecuadorian expression. The strategies selected and the many adjustments made along the way were the fruit of much reflection and debate within the project team. The leadership and the experience of the Fundacion Maldonado in these matters was central to the project's success.

A major lesson is that it remains difficult to sustain the changes in behavior achieved by the PMRC. In Ecuador, there is no equivalent, as the federal government provided to the individual coastal states in the U.S., of a higher level of governance that is structured to encourage sustained effort with appropriate incentives and accountability requirements. The conditionalities attached to the loan contradicted the fundamental strategies of the program, put carefully nurtured relationships at risk, and proved impossible to meet. If new approaches to coastal governance are to take root and flourish in contexts like those that exist in Ecuador, the international system of incentives to support such efforts will need to be retooled.

Another conclusion is that discovering the optimal institutional design for a PMRC-like program in a politically unstable nation remains a work-in-progress. A coastal management program must operate with the authority of government. Yet, it must be protected from the frequent turnovers in those holding high-level governmental posts that is characteristic of many Latin American countries. The answer probably lies in a para-statal institution that can operate within the administrative and financial rules that govern the private sector, but receive financing from government and international institutions. Here again, the biggest challenge lies in securing a stable source of core funding that can maintain the institutional capacity of a program that is demonstrating its effectiveness and its ability to progress towards its stated goals.

Finally, one can conclude from this effort that the challenges addressed by such a program are primarily the issues of governance. Governance is not synonymous with "economic development" or "biodiversity protection" or "democratization." It integrates among all of these, and the

attributes of goal-setting, planning and decisionmaking that address the full complexity of ecosystems in which people are the dominant force of change.

Crafting Coastal Governance In A Changing World

Stephen Bloye Olsen, Editor

December 2003

Coastal Management Report #2241
ISBN #1-885454-50-3

The Coastal Resources Management Program is a partnership between
the U.S. Agency for International Development
and the University of Rhode Island Coastal Resources Center

This publication was made possible through support provided by the U.S. Agency for International Development's Office of Environment and Natural Resources Bureau for Economic Growth, Agriculture and Trade under the terms of Cooperative Agreement
No. PCE-A-00-95-0030-05.

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Acknowledgments

The relationship between the U.S, Agency for International Development (USAID) and the Coastal Resources Center (CRC) at the University of Rhode Island has been a true partnership. Together we have faced the difficulties, surprises and successes that mark any attempt to apply new ideas to old problems. The knowledge that we are a single team working for the same goals, and defining together the changes in strategy required by our own learning and the changing circumstances in each country and the world at large, has been central to success of the Coastal Resources Management Program.

A great many people in USAID, in CRC and in the countries where we have worked have contributed to what has been achieved and learned. The authors of this volume thank everyone involved for their creativity, their energy and their leadership in addressing the complex issues in coastal regions. Most especially we thank our in-country teams and our partner institutions who taught us how what was being learned elsewhere could be appropriately applied to their own cultures and the needs of their countries. We have not attempted to list all those that have contributed to the ideas and the experience presented in this volume. To do so would require several long paragraphs.

While so many contributors to the program, one name stands out: Lynne Hale, former associate director of CRC. Lynne left CRC in the last year of the program—but only after setting in motion the drafting and redrafting that has resulted in this volume of reflections, experience and future directions. Lynne was CRC's point person with USAID. She led the design of the CRMP II field programs and made sure that they capitalized on what had been learned from the first set of filed programs. Throughout the 18 years of the program Lynne's passion, perseverance and perception made it the success it became. All who have contributed to this volume thank her and wish her well in the next stage of her career.

Preface

Oceans, Coasts, Water, and the Evolving USAID Agenda

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Since 1985, the U.S. Agency for International Development (USAID) has partnered with the University of Rhode Island Coastal Resources Center (CRC) in carrying out the Coastal Resources Management Program (CRMP). CRMP is a pioneering initiative working with developing countries around the world to advance the principles and practices of integrated coastal management (ICM). During this 18-year partnership, USAID and CRC, together with partners in the field, have learned a great deal about the complexities and challenges of better managing our coasts. This has included learning how to balance the need for ecologically healthy coasts with the need to promote a better quality of life for those who live and work there. Throughout this process, CRC has been an instrumental force in promoting a "learning agenda" for (ICM). In the selected CRMP stories included in this book, you will share in some of that learning. Let me summarize here some of the key principles that underlie the ICM learning agenda.

Advance Integrated Water and Coastal Resources Management for Improved Environmental Protection and Management

It is essential that ICM and integrated water resources management (IWRM) be mainstreamed into sustainable development efforts. ICM and IWRM are essential foundations for improvements in health, food security, economic development, democracy and governance, and biodiversity conservation. We must recognize the interdependence of these development goals. The interdependence of human health, food security, governance and the other human activities is obvious. How development objectives are pursued in these sectors can have dramatic impacts on biodiversity, and on the biosphere. The biosphere is currently in free-fall, so the significance of these impacts is not trivial. Conversely, biodiversity conservation programs, properly conceived, can significantly support CRMP objectives in economic development, food security, governance and other areas. The challenge to development assistance organizations is to ensure that they move beyond single sector responses to more integrated, cross-sectoral approaches that do justice to the exceedingly complex and interrelated factors that shape our world. Principles of integration as practiced in ICM and IWRM must be given the commitment of time and resources that they deserve.

Create Strong Governance at All Levels

Good governance is more than just good government. It encompasses a range of processes in which public, private and civil societies organize and coordinate with each other to make decisions, and distribute rights, obligations and authorities for the use and management of shared coastal resources. A central operating principle of the CRMP has been that effective governance systems are what create the preconditions for achieving sustainable environmental and social benefits. We have learned that good coastal governance functions best when it exists as part of a nested system—that is, one that operates simultaneously at scales ranging from the local to the global. For example, sub-national and community-based management efforts stand the best chances to be effective and to be sustained

over the long term when they are supported by policies and institutional structures at the national level. Meanwhile, national-level initiatives build capacity for ICM governance across spatial and sectoral scales, providing support to local initiatives while addressing coastal development and conservation of more wide-ranging national interest.

Promote Private and Public Partnerships

Participatory approaches to conservation are now recognized as one of the few means to ensure sustainable management of ecosystems and natural resources while also meeting local peoples' livelihood needs. This participation is most effective when it includes both the public and private sectors. ICM and IWRM are too complex for one institution or group of constituencies to "go it alone." Forging carefully selected, strategic private-public partnerships can help.

Eco-tourism is just one of the issues around which coastal programs are testing such partnerships. The hope is that by partnering with the private tourism sector, chances improve for achieving environmentally sound, financially sustainable, and culturally appropriate coastal tourism development. When these partnerships succeed, eco-tourism can have significant, positive impacts on local economies and can provide strong incentives for sound environmental protection and management. A caution is that "environmentally sound" and "culturally appropriate" cannot be throwaway lines. They need to be taken seriously. Not all eco-tourism is very "eco," and unless there is true and transparent participation—i.e. the local community is fully engaged, not simply consulted—the impact of tourism on local communities can be destructive economically, socially, and culturally, and the impact on the environment catastrophic and permanent. It is not easy to do this right—but it is essential to do so.

Empower Coastal Communities to Self-manage Their Resources

This must be done while promoting alternative livelihood and food security objectives. In cases where local social and economic networks are

already well established and thriving, even at relatively low income levels, poorly conceived outside interventions can be extremely and negatively disruptive. Since poverty is not solely a function of income, but also of control of assets, empowerment, and control over one's fate, even the most well-intentioned efforts at poverty reduction or economic growth can have the opposite effect on people if existing arrangements are not taken fully into account. This is especially worthy of consideration in the case of indigenous communities. In such cases, poverty prevention, rather than poverty reduction, may be the appropriate goal. In this way, intact communities with essentially sound traditions of resource management may best be assisted by simply strengthening and supporting their control over local resources. Only modest, incremental initiatives aimed at ensuring continued food security and additional income streams may be called for; but here again, full engagement of the community, not simply consultation, must be the norm.

Advance Institutional Strengthening and Capacity Building at Both the National and Local Levels

Inadequate capacity to practice ICM and to design and implement strategies that lead to more sustainable forms of coastal development remains a primary factor limiting progress in ICM. Too often, development projects bring in external expertise and funding without a parallel effort to build and strengthen in-country partner organizations—leaving partner organizations and the larger ICM effort vulnerable to failure when outside assistance ends. CRMP has used a different approach. Its preference has been to strengthen institutions over extended periods of time and to transfer the skills and the responsibilities for implementation to CRMP collaborating organizations. This approach is grounded in the belief that long-term collaborative relationships with partners maximizes learning and increases the probability that productive efforts will be sustained over many years.

The CRMP experience has also demonstrated the value to be derived from cross-portfolio learning. For example, we have seen how communities in the Philippines that developed community-based marine sanctuaries were able to provide useful insights to Indonesian practitioners attempting to

establish their own marine reserves. Similarly, experience in Ecuador and Sri Lanka in the development of shoreline management guidelines helped CRMP undertake the process more efficiently in Tanzania.

While USAID, through its overseas missions, presently supports coastal and marine activities in over 40 countries, only a small handful of those USAID missions have been able to invest in a more comprehensive ICM approach, with broad attention to all of the general principles cited above. The challenge remains to enhance the dialogue between development agencies and national governments on the economic, social and environmental values of marine and coastal resources, and the proper level of investment to maintain these resources as national and local assets. These priority challenges, which must be faced, and which will help guide USAID's future directions include the need to:

- Mainstream applied fisheries research and management into ICM programs, and promote effective governance of commercial, artisanal, and subsistence capture and culture fisheries. Science and technology advances must influence decisions on coastal resource management in a context of good governance. Both are crucial.

- Establish networks of marine protected areas with substantial ecological reserves in all regions, while ensuring the sustainability of these activities through the development of alliances and partnerships. Conservation groups and their allies in government and the private sector have made good progress over the past 20 years in establishing parks and reserves to preserve terrestrial biodiversity. The scientific basis for defining these reserves, and managing and linking them, has grown more sophisticated. The number and variety of partners supporting these efforts has grown as well. Coastal and marine reserves need to catch up. Strong partnerships among conservation groups, government, the private sector, and local communities will be essential.

- ❖ Enhance coastal and nearshore water quality through partnership programs to control both point and non-point sources of marine pollution, while addressing the impact of the growing number of coastal megacities. There has been little meaningful engagement in a significant way with the challenges of coastal resource management in the context of megacities. This is a huge challenge that needs to be confronted for reasons of human welfare and environmental quality.

- ❖ Reduce the vulnerability of coastal populations and their infrastructure to the growing threat of flooding, storm surge, and coastal erosion due to climate change and rising sea levels. Mitigation efforts are essential. A great deal remains to be done that has not yet been done. But serious—even drastic—efforts in mitigation do not eliminate the need to undertake, simultaneously, ambitious initiatives in adaptation because sea level rise and other effects of global climate change seem inevitable.

What is next? Clearly, coastal and freshwater management challenges and needs will not abate in the foreseeable future. World leaders reaffirmed at the 2002 World Summit on Sustainable Development in Johannesburg the central role that these resource issues will continue to play in the sustainable development agenda. USAID is in full agreement with that affirmation and remains committed to full engagement on these issues.