

PD - ABF - 275  
ISN 80938

**Midterm Evaluation  
Ecuador Pilot  
Program**

**A.I.D. Coastal  
Resources  
Management Project  
No. 936-5518**

Prepared for the U.S. Agency for International Development under contract number  
PDC-5451-1-11-1027-00.

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December 1992

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## **EXECUTIVE SUMMARY**

The purpose of the Ecuador Pilot Program of the A.I.D Coastal Resource Management Project (CRMP) is to establish an institutional capacity in Ecuador for integrated management of the country's coastal resources.<sup>1</sup> This evaluation was undertaken to assess project accomplishments and make recommendations for the future.

Evaluation methodology consisted of interviews, field visits to project sites, review of project documents, and extensive review by project participants of a draft evaluation document. The evaluation was made by a four-person multidisciplinary team.

## **FINDINGS AND CONCLUSIONS**

The purpose of the pilot program or PMRC (Programa de Manejo de Recursos Costeros) is to guide Ecuador in the long-term management of resources in the entire coastal region. However, building a constituency for coastal resources management in selected small areas or Special Management Zones (ZEMs) that make up only 7 percent of the coast has come to dominate project activities. To have significance, the experience in the ZEMs must be applied to the development of national plans for the sustainable management of coastal resources. The final result of the project must be government adoption and funding of coastwide integrated resources management as a national priority.

The original focus on one of the most important economic development issues in Ecuador, the development and future of the shrimp mariculture industry and the associated clearing of mangrove forests, has been replaced by a wider range of issues in the ZEMs. The Project Paper, the Cooperative Agreement, and the Joint Program Agreement all emphasized the importance of the issue of cutting mangrove forests to build shrimp ponds. Clearly, the shrimp mariculture and mangrove-estuary modification issue was of national concern. The issue is a complex problem, involving many stakeholders, resource values, and impacts. Although the project did organize a Shrimp Mariculture Conference in 1986, it has not given special emphasis to this issue since then. Instead, the focus has been on the preparation of the Coastal Profiles, which identify many (mostly local) issues without much ranking as to importance, and on organization and planning in the ZEMs. During project implementation, project issues have been selected in a public consultation process according to the interests of local participants, rather than because of the national economic importance of the issues. The project has not succeeded in affecting significantly the rate of mangrove forest clearing.

The process of public consultation has begun to form a constituency of poor, local resource users. To influence the national, regional, and local government institutions over the long term to devote attention to coastal resource management, this constituency must also include major decision makers in the private and public sectors. Without continuation of the project over the long term, this broader constituency cannot be achieved and the existing local project participants (primarily in the ZEMs) will have no lasting influences on national policies.

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<sup>1</sup> CRMP is the A.I.D./University of Rhode Island Coastal Resources Management Project (worldwide); PMRC is Ecuador's in-country Pilot Program of CRMP (Programa de Manejo de Recursos Costeros).

CRMP (or its local counterpart in Ecuador, PMRC) depends almost entirely on funding by A.I.D. A.I.D. funding terminates at the end of 1994 and has already been reduced. USAID/Ecuador provided less than 50 percent of the funds that it had committed (during project design) as part of overall A.I.D. funding, significantly reducing the activities the project could undertake. Integrated management of coastal resources is not a USAID/Ecuador Strategic Objective, so additional funds are unlikely.

A principal project activity during 1992 has been negotiations to receive a \$15-20 million loan (to the Government of Ecuador) from the Inter-American Development Bank. It is likely, but not assured, that the loan will be approved during 1993. The loan from the Inter-American Development Bank will be used to implement the management plans that have been prepared for five Special Management Zones, and some special projects in community sanitation. The team is concerned that this may continue the present focus on only 7 percent of the coast, and not lead to coastwide management plans.

The project has succeeded in establishing integrated coastal resource management as a topic of concern for the national government, as reflected in Executive Decrees creating the Coastal Resources Management Program in the Office of the President. However, regional and local government agencies, and even local representatives of national agencies, have proved incapable of responding to this national concern, leading the project to focus most attention on the Special Management Zones and local constituencies. Consequently, coastal resource issues that can be resolved only at the regional or national level have not received the attention they merit.

Research needs have been defined during project implementation through public participation, not necessarily in response to specific information requirements for resource management. But regional and national policies for sustainable use of resources must be based on sound understanding of the resources in question. The project must determine research needs for the development of national plans, and work with local, regional, and national governments to establish priorities for immediate collection of essential long-term data.

## **RECOMMENDATIONS FOR PMRC AND ITS CONTINUATION**

1. During the next two years, the project should give principal attention to planning the transition to the use of the loan funds from the Inter-American Development Bank.
2. As preparation for the Inter-American Development Bank project continuation, the project staff should create a model for a coastal resources management program that combines the strengths of the Special Management Zones with the need to deal with issues that can be resolved only through regional or national action such as shrimp mariculture and mangrove clearing, road and dam construction, oil transportation, and pollution.
3. Given the substantial economic significance of coastal Ecuador, USAID/Ecuador should consider making coastal resources management a Mission Strategic Objective. It would then be possible to build on the eight years of experience with the pilot project, in cooperation with the Inter-American Development Bank and in coordination with other Mission natural resources activities.
4. USAID/Ecuador should review the experience of the project with the new Ecuadorian government, emphasizing the project's economic, ecologic, and social significance.

5. Project staff should define long-term research that is necessary to provide adequate solutions to Ecuador's coastal resource problems.

### **LESSONS LEARNED**

1. Cooperative Agreement and Joint Program Agreement mechanisms can be effective in introducing a new area of activity into a USAID country program with the technical and financial assistance of A.I.D.

2. Joint Mission and A.I.D. financing should be carefully discussed and agreed upon and then built into the Cooperative Agreement, so that additional project activities can be carried out with continuity and stability.

3. Institution building requires long, patient effort and the development of political support, perhaps as much as, or more than, the typical program of training, technical assistance, and equipment provision.

4. Pilot projects should always work within the context of an overall, long-term development strategy even though funds may not be immediately available to carry out the whole strategy.

## **MIDTERM EVALUATION**

### **PURPOSE AND STUDY QUESTIONS OF THE EVALUATION**

#### **Purpose**

The purpose of the evaluation according to the Scope of Work (Appendix 1) is to "assess project accomplishments and make recommendations for the future."<sup>1</sup>

The evaluation objectives stated in the Scope of Work are to:

- Assess design and implementation of the project in relation to the U.S. Agency for International Development and USAID Mission sector policies and strategies;
- Assess project progress towards the goal of assisting the Ecuadorians in managing their coastal resource base more effectively through integrated approaches to local and national planning and development;
- Determine how effectively the project design incorporates local needs, concerns, and resources;
- Identify major accomplishments and implementation problems, and compare these achievements to those proposed in project proposal and annual work plans;
- Assess the adequacy of project design and the continuing applicability of the project's purpose;
- Assess the need for and, if warranted, make recommendations for adjustments in project design, implementation during the balance of the life of the project, and for future project directions;
- Assess existing and potential linkages between the Coastal Resource Management Project (CRMP) and other USAID/Ecuador initiatives in natural resources management;
- Identify quantitative and qualitative criteria to assist in the final evaluation of the entire project; and
- Assess the relevance of the Ecuador pilot CRMP to other A.I.D. nations facing similar issues.

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<sup>1</sup> The project is the Ecuador Pilot Program of the A.I.D./University of Rhode Island Coastal Resources Management Project (worldwide) or CRMP. The Ecuador program is called the Programa de Manejo de Recursos Costeros or PMRC.

## **Study Questions**

The Scope of Work lists the following as the major questions:

- What are the assumptions and issues upon which the Ecuador pilot project is based?
- Is the Ecuador program currently being implemented consistent with those assumptions and issues. For example, are the project accomplishments, products, and processes related to the specific assumptions and in what manner?
- With respect to the implementation of the program, assess the effectiveness of A.I.D./R&D/ENR, the University of Rhode Island (URI) contractor, the cooperating country institutions, and the USAID/Ecuador field Mission.<sup>2</sup>
- To what extent has the Ecuador project been successful in independent institutionalization of Ecuador's national CRM program and continuance of the actions in coastal resources management initiated by the A.I.D./R&D/ENR CRM project?
- To what extent do the design and implementation of the CRM project support relevant A.I.D. sector policies and, in particular, the intersectoral aspects crucial to implementation of comprehensive natural resources management programs by field Missions such as USAID/Ecuador?
- Determine the extent and form of local participation in project planning, implementation, benefit distribution, and ongoing monitoring and evaluation. Identify which community members have participated in particular project activities.
- For different user and social groups, identify changes in access to coastal resources. Assess how the project has affected residents of neighboring noncoastal areas.

## **ECONOMIC, POLITICAL, AND SOCIAL CONTEXT OF THE PROJECT**

USAID/Ecuador identified the conservation and management of Ecuador's natural resources as a critical component of its development program. CRMP is the Mission's oldest natural resource activity. It therefore merits careful evaluation for lessons that can be applied to other USAID/Ecuador natural resource activities.

The larger project and the Ecuador pilot project were undertaken because of the economic importance of coastal resources and the threat of their degradation. The Project Paper and Cooperative Agreement both say: "Coastal resources are of major economic significance in developing countries." The Joint Program Agreement says that the project will "define a sustainable mix of activities for Ecuador's coastal areas that is responsive to the needs and desires of the affected society." A concept paper of June 1988, "Structure and Objectives of a Coastal Resources Management Program for Ecuador," says "Ecuador's coastal region . . . has emerged as the stronghold of progress and

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<sup>2</sup> A.I.D./R&D/ENR (formerly AID/S&T/FENR) is the acronym for the A.I.D./Bureau for Research and Development/Environment and Natural Resources Office, Washington, D.C.

development for the country. Ecuador's future economic development in large measure depends upon how its coastal ecosystems are utilized and managed." It continues: "The recent boom in shrimp mariculture along the coast has made this the largest private sector activity in the country. . . . 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." During the project, the economic importance of Ecuador's coastal region has increased; its population has grown at a faster rate than other parts of the country and the shrimp industry has become one of the three most valuable national exports.

The Ecuadorian economy has been in crisis throughout the life of the project. Import substitution policies, the El Niño disasters of 1982-83, the debt crisis, the fall in oil prices, the earthquake of 1987, and the fall in coffee and cacao prices have all contributed to this crisis. Inflation has been high over the period, reaching a peak of almost 100 percent per year in 1988, and the economic growth rate has been low. The economic crisis has meant that the project has had to function through periods of substantial government budget austerity.

The political context of the project is described in the Project Paper: "Typically coastal development has evolved in response to the pressures of individual sectoral interests that plan development independently and do not adequately consider the effects of one form of exploitation upon another development activity." The project has had to strive to maintain neutrality between political groups and sectoral interests.

The project was conceived in 1983 and 1984 during the center-left Osvaldo Hurtado government. The Joint Program Agreement was signed in 1986 during the rightist Leon Febres Cordero government. The greatest activity has taken place from 1988 through 1992 under the social democrat government of Rodrigo Borja. The transition to the more conservative Sixto Duran Ballen government was under way during this evaluation effort. The project has had to negotiate with each government to convince them of the necessity of continuing project activities.

The coastal region shows extreme disparities in socioeconomic levels. These disparities are marked not only in economic differences, but also in education, lifestyle, reproductive rates, and so on. The project has had to try to bridge these disparities to achieve cooperation toward the common goal of managing coastal resources. However, the project has chosen to give more attention to involving small-scale coastal resource users, primarily poor, as direct beneficiaries, rather than the wealthy or powerful individuals that make the major decisions regarding uses of resources (for example, politicians, bankers, shrimp-pond owners, and tourism developers).

## **TEAM COMPOSITION, SCHEDULE, AND METHODOLOGY**

### **Evaluation Team**

- **Bruce Kernan. Team Leader.** Quito; Consultant Forester; Resident in Ecuador since 1983.
- **Jens Sorensen.** Brookline, Massachusetts; International specialist in integrated coastal resource management.

- **Howard L. Clark.** Quito; Ecologist; A.I.D. Regional Environmental Advisor for South America.
- **Thomas Hourigan.** Washington, D.C.; Marine Biologist; AAAS Fellow, A.I.D./LAC/DR/E; Environmental Policy Analyst, A.I.D./POL/IDP.

### **Evaluation Schedule**

Aug. 17	Team Leader begins organizational work.
Aug. 20	Full team assembles. Briefing in USAID/Ecuador.
Aug. 21	Team visits project office and Fundación Maldonado in Guayaquil. Discussion on all aspects of the Project.
Aug. 22	Chartered flight to the Machala-Puerto Bolivar-Jambelí Special Management Zone (or Zonas Especiales de Manejo, ZEMs). Interviews with ZEM participants and field trip.
Aug. 24	Team interviews representatives of national institutions in Guayaquil involved in CRMP.
Aug. 25	Team drives to Playas-Posorja-Puerto Morro ZEM. Interviews with ZEM participants. Field trips.
Aug. 26-27	Chartered flight to Bahía-San Vicente-Canoa ZEM. Interviews with ZEM participants. Field trips.
Aug. 27-28	Chartered flight to Esmeraldas. Field trips in Atacames-Súa-Muisne ZEM; interviews with participants.
Aug. 29	Preparation of draft evaluation report, review and comments
Sept. 14	on draft by USAID/E Project Liaison officer and the URI Director of the Programa de Manejo de Recursos Costeros or PMRC.
Sept.15-Dec.15	Review and comment by USAID/Ecuador, A.I.D, URI, and PMRC.
Dec.16-31	Preparation of final report.

### **Evaluation Methodology**

The team interviewed project staff and direct and indirect project beneficiaries, visited field sites, overflew approximately 70 percent of the Ecuadorian coast, and reviewed project documentation. The list of documents referenced in this evaluation report is found in Appendix 3; this list does not include all documents consulted by us. It should be noted that the team did not have the opportunity (with two exceptions) of interviewing anyone not previously selected by PMRC or by the ZEM coordinators.

### **EVIDENCE AND FINDINGS OF THE EVALUATION**

The following section consists of the evaluation team's response to the 23 questions given in the Scope of Work (see Appendix 1). Some questions are ambiguous and many overlap.

**1. Clarity and consistency of directions and guidance from the A.I.D. Project Manager and the USAID/Ecuador Mission Liaison Officer to the contractor, URI.**

*Directions from A.I.D./R&D/ENR have been clear and consistent, except for the emphasis to be placed on mangrove clearing associated with shrimp mariculture. USAID/Ecuador has been erratic in its participation in the Ecuador Pilot Program of CRMP.*

Figure 1 shows the Ecuador Pilot Program organization and lines of communication. At times, USAID/Ecuador (USAID/E) did not designate a Mission Liaison Officer and was only indirectly involved in the project. Dr. Fausto Maldonado, however, provided continuity in direction and guidance from USAID/E, even when he was not the official Mission Liaison Officer for this project.

The Cooperative Agreement gives clear direction and guidance to URI while providing for flexibility in project implementation (see Question 3). The Cooperative Agreement does not clearly define the USAID/E management and financial contribution.

The principal inconsistency in direction and guidance to URI involved the relative importance of shrimp mariculture in project activities. This resulted from contradictory internal USAID/E and A.I.D. opinions. The USAID/E Agriculture and Natural Resources Office (and the Government of Ecuador) wanted the project to emphasize technical advice to shrimp farmers. A.I.D./R&D/ENR and the USAID/E Mission Director supported a broader project that would address diverse issues. The direction taken was institution building and the creation of a constituency for integrated coastal resources management. Support for both directions can be found in the Cooperative Agreement and the Joint Program Agreement. The disagreement resulted in inconsistency and lack of clarity in direction and guidance to URI during 1987, and less financial and managerial participation by USAID/E during the project. (Also, see responses to Questions 5 and 7.)

**2. Coordination among the A.I.D./R&D/ENR Project Manager, the LAC Regional Bureau, USAID/Ecuador, and URI.**

*Coordination among A.I.D./R&D/ENR, A.I.D./LAC,<sup>3</sup> and the University of Rhode Island has been excellent, especially considering the number of institutions and people involved in the many components of the Ecuador Pilot Program. There has been a lack of communication among the three country pilot programs of CRMP. Coordination by USAID/Ecuador has been erratic.*

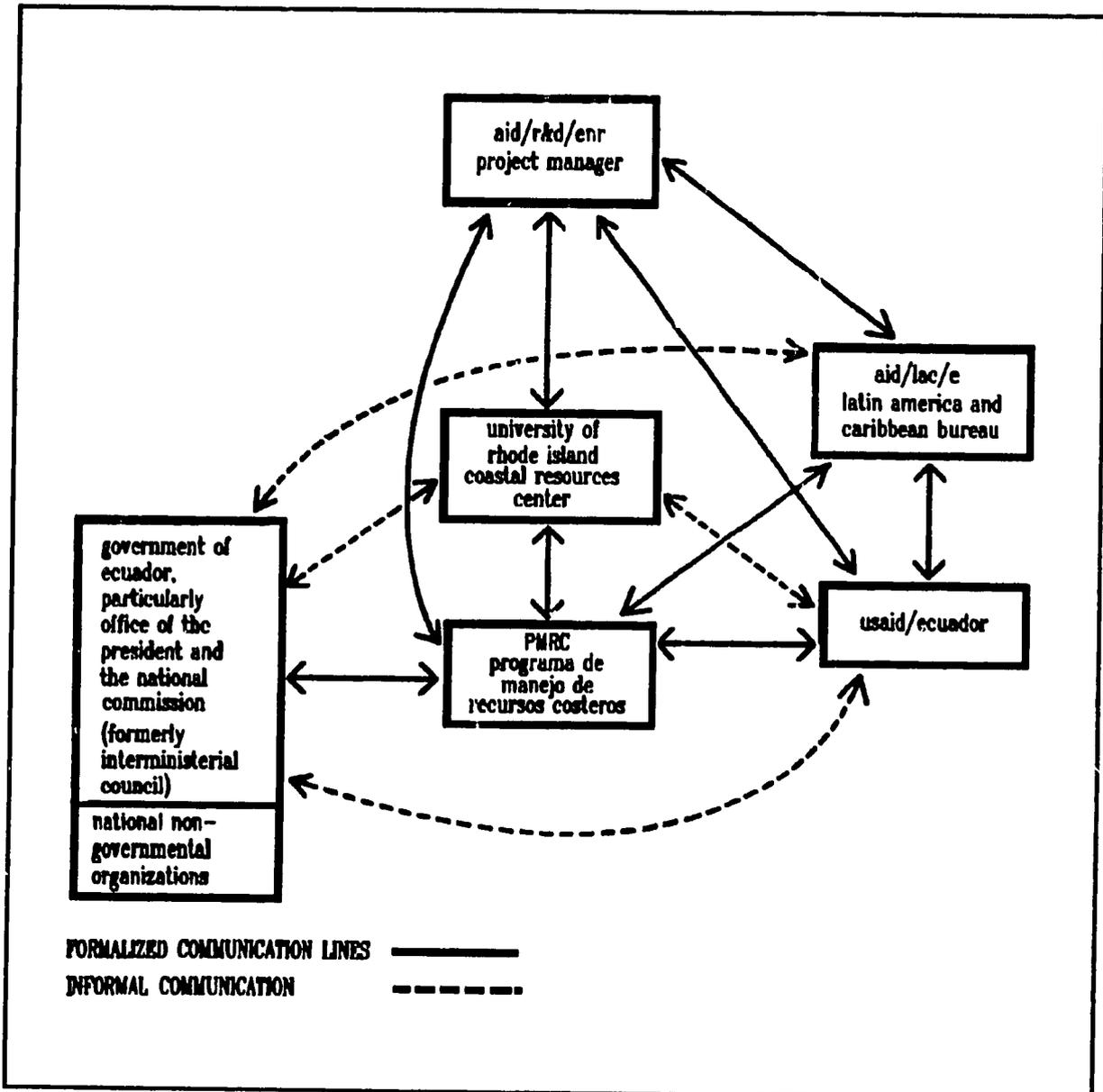
The relationships among these entities are shown in Figure 1. The A.I.D./R&D/ENR Project Manager is responsible for project management, with most implementation coordinated through URI. Communication between the A.I.D./R&D/ENR Project Manager and URI appears to have been good, particularly given the project's complexities. This was due, in part, to active coordination effort by the A.I.D./R&D/ENR Project Manager and the URI project officer and his assistant. The Project Manager did not change during five and one-half years, the URI project officer has not changed, and most in-country PMRC lead personnel have not changed. Such continuity contributed to good coordination, as have frequent trips to Ecuador by A.I.D. and URI personnel.

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<sup>3</sup> A.I.D./LAC is the acronym for the A.I.D. Bureau for Latin America and the Caribbean.

FIGURE 1

THE A.I.D. ECUADOR PILOT PROJECT'S ORGANIZATIONAL ARRANGEMENT  
AND LINES OF COMMUNICATION FROM 1986 TO 1991



The Cooperative Agreement states that:

The success of the pilot projects [pilot programs] will depend upon significant involvement of the Missions in supporting the Country Program Manager with funds and with political support.

USAID/E has given the project some political support, but less financial and management support than had been planned (see responses to Questions 1 and 3).

The A.I.D./LAC Bureau was active in project design and in selection of Ecuador as one of the countries for pilot programs. The Cooperative Agreement says: "The Regional Bureaus will be substantively involved in a number of key points of Project and pilot project [pilot program] implementation."

Amendment 11, Section IV-A, reduced the role of the A.I.D./LAC Bureau to participation in an A.I.D. Project Advisory Committee. However, the bureau has always been kept informed of project progress. In 1991, it participated in the annual coordination meetings held at URI. A.I.D./LAC was the only regional bureau to include coastal resources management as a Bureau Strategic Objective. The A.I.D./LAC South America Regional Environmental Advisor has played an important advisory and liaison role with CRMP, PMRC, and USAID/E.

We recommend that CRMP ensure that each of the three pilot programs (Ecuador, Thailand, and Sri Lanka) have copies of all pertinent documents (translated, if appropriate) produced for the other countries, and future budgets should include one- to two-week visits, annually or biennially, by each country program manager to the other two countries to learn from each other.

3. **Effectiveness of project structure, and management and financial arrangements (in other words, cooperative agreement or Convenio between the Government of Ecuador, A.I.D./Washington, and URI; the Cooperative Agreement between A.I.D. and URI; pilot country agreements (the in-country URI Office for Coastal Resources Management and the Foundation Pedro Vicente Maldonado, annual work plans, and assessment cycles).**

*Project structure and management have evolved over time and have been generally effective. The complex financial arrangements have occupied an undue amount of administrative time.*

### **Cooperative Agreement**

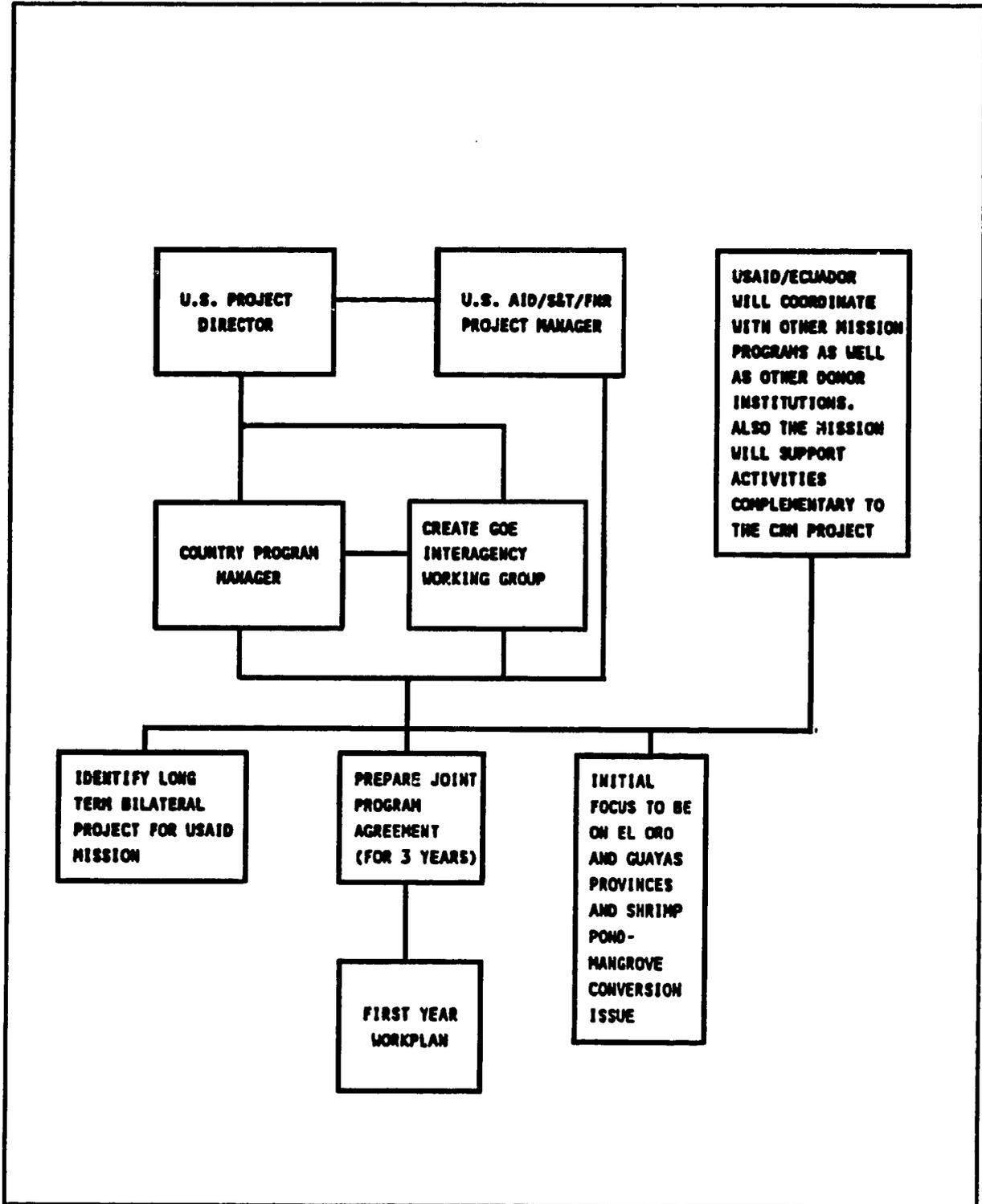
The Cooperative Agreement (1985) established the overall structure and the pilot program structure, diagrammed in Figure 2, for the transfer of the integrated coastal resource management experience of URI to Ecuador. The Joint Program Agreement requirement inserted CRMP into the process of forming an Ecuadorian administrative framework for integrated coastal resource management.

Section II of the Cooperative Agreement emphasizes flexibility in project implementation: "The pilot programs will be individually designed to meet host country conditions and should be managed in an open-ended way that allows them to evolve throughout the LOP [Life of Project]."

This flexibility has allowed the project to adjust rapidly to changing counterpart agencies and unforeseen problems and opportunities.

The Cooperative Agreement did not adequately discuss USAID/E management and financial participation. Perhaps as a result, both have fallen short of Project Paper expectations.

FIGURE 2  
COOPERATIVE AGREEMENT, MAY 1985



### **Joint Program Agreement (JPA)**

The JPA was signed in March 1986 by USAID/E, A.I.D./R&D/ENR, URI, the Ecuadorian Ministry of Foreign Relations, and the Ministry of Energy and Mines. The organizational structure of the JPA is shown in Figure 3.

The JPA intentionally did not include the details about research, training, USAID/E participation, scheduling, and coordination with other donors that were specified in the Cooperative Agreement. More specificity might have built a clearer in-country pilot program structure, but could have reduced the adaptability of the project design to changing conditions.

### **The Foundation Pedro Vicente Maldonado**

CRMP contracted with the Foundation Pedro Vicente Maldonado (FPVM) in 1986 to prepare profiles of the coastal provinces and to run public education programs. The Foundation Maldonado also prepares plans for the ZEMs and helps carry out the "practical exercises" in the zones. The foundation's dedicated, enthusiastic, and knowledgeable staff have contributed greatly to pilot program activities.

### **Technical Assistance**

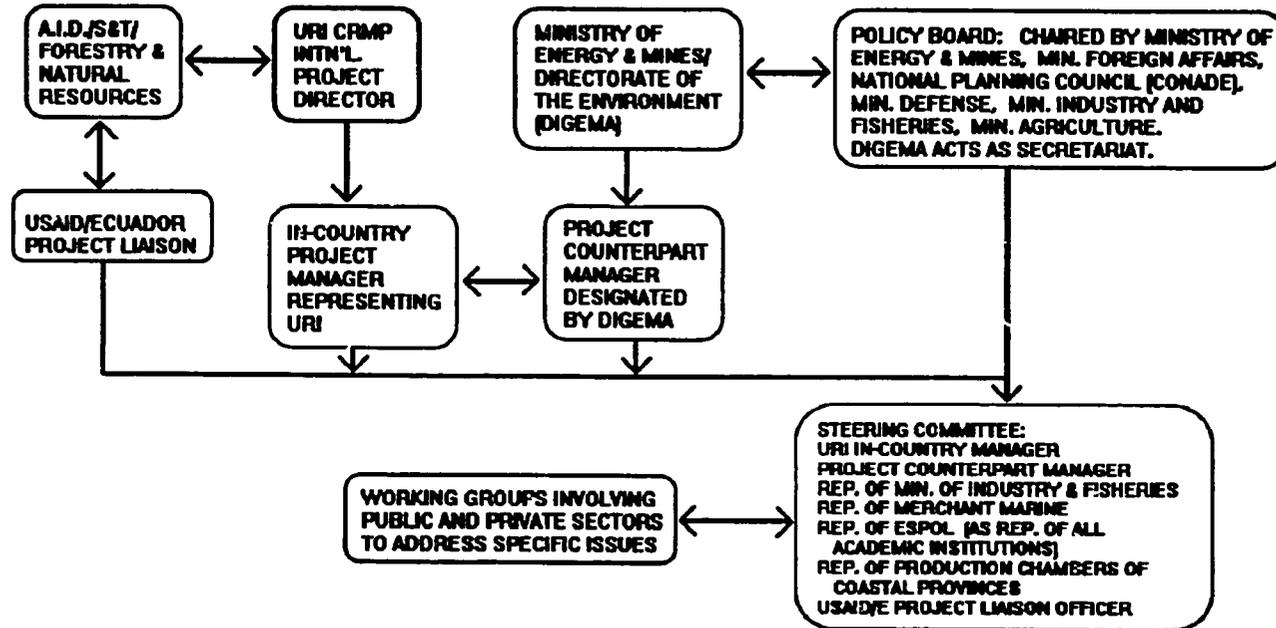
The Cooperative Agreement with URI included the mechanism for providing CRMP with experienced technical assistance. The Cooperative Agreement implies that technical assistance needs would be defined according to URI and A.I.D. perceptions. The shrimp conference in 1986, for example, brought together experts chosen primarily by URI. The Ecuador Pilot Program changed its approach, however, and now tries to define technical assistance needs through a participatory process involving the working groups and the ZEMs of PMRC. Thus, technical assistance needs have been defined by the decision to have working groups on mangroves, mariculture, and water quality, and the emphasis on the ZEMs. The working groups have provided counterparts to the technical advisors and provided continuity to their work. The participatory method of choosing and utilizing technical advisors has apparently been effective.

### **Design and Management of Research Activities**

The Project Agreement indicates that research will be organized through a program of "research grants" to "capable host country institutions" (Project Agreement, p. 12). The emphasis has shifted to a participatory definition of research needs arising out of field experiences. Research has been defined by working groups and carried out by contracted technical advisors paired with individual Ecuadorian counterparts, an approach that apparently concentrated scarce research funds on the most critical field problems. No Ecuadorian university has received a research grant as an institution. The flexible project structure and management in this case perhaps allowed the research aspect of the project to be changed rather substantially from that envisioned in the Cooperative Agreement and Joint Program Agreement.

FIGURE 3

THE INSTITUTIONAL STRUCTURE, JOINT PROJECT AGREEMENT, 1986-1990



### **Design and Management of Public Education and Training Programs**

Public education has been an important component of the Ecuador Pilot Program. It was contracted to the Foundation Pedro Vicente Maldonado, which, apparently, has done an excellent job. The public education component has included numerous meetings with resource user groups, and the publishing of a variety of useful educational materials (from the Profiles to ZEM-specific comic books). With no formal evaluation of the public education campaign, the effectiveness of the campaign is, in part, indicated by the fact that the government established PMRC directly under the Secretary for Public Administration.<sup>4</sup> This resulted from the Manifesto, which the Director of ESPOL or the Poly Technica University in Guayaquil (and future Vice-President) supported. We noted the high level of awareness about the integrated nature of problems of coastal resources management on the part of the people who were interviewed in the ZEMs.

Training of PMRC personnel and counterparts has been through short courses and workshops, and through the longer-term working relationships of the counterparts with PMRC technical and administrative staff.

### **Financial Arrangements**

Project financial arrangements are complicated, as indicated in Figure 4. The Project Paper mentions financing from A.I.D./R&D/ENR, USAID/E, and the Government of Ecuador. The proposed USAID/E contributions included funds from PD&S and USAID/E/ANRO projects. Expenditures from USAID/E are shown in Figure 5. They include GOE, PL-480, a debt-swap financed by A.I.D., ILANUD, the Tinker Foundation, URI, USAID/E, and A.I.D./R&D/ENR. Diversity of funding complicates project implementation, by requiring more management time. (See also, response to Question 5.)

The funds from USAID/E and A.I.D./R&D/ENR were usually available only late in the fiscal year, because of delays in U.S. Congressional appropriations, further complicating the continuity of funding.

### **Good Fortune and Timing**

The July 1988 Manifesto to the President and Vice-president of Ecuador from individuals in all social and economic levels of the coastal region demanded that GOE establish a national program for the integrated management of coastal resources. One of the supporters of this Manifesto was the Rector of ESPOL, who subsequently was elected as the new Vice-President of Ecuador and, fortuitously, was in the perfect position to implement the Manifesto. After a few months in office, criticism had started in the press that the newly elected officials were slow in starting any new programs. The new government of President Borja supported this coastal initiative, and was able to put PMRC in place (by Executive Decree No. 375), at no real cost to the government, while also showing support for the coastal region (from a government predominantly from the sierra region). The timing of the Manifesto, encouraged by

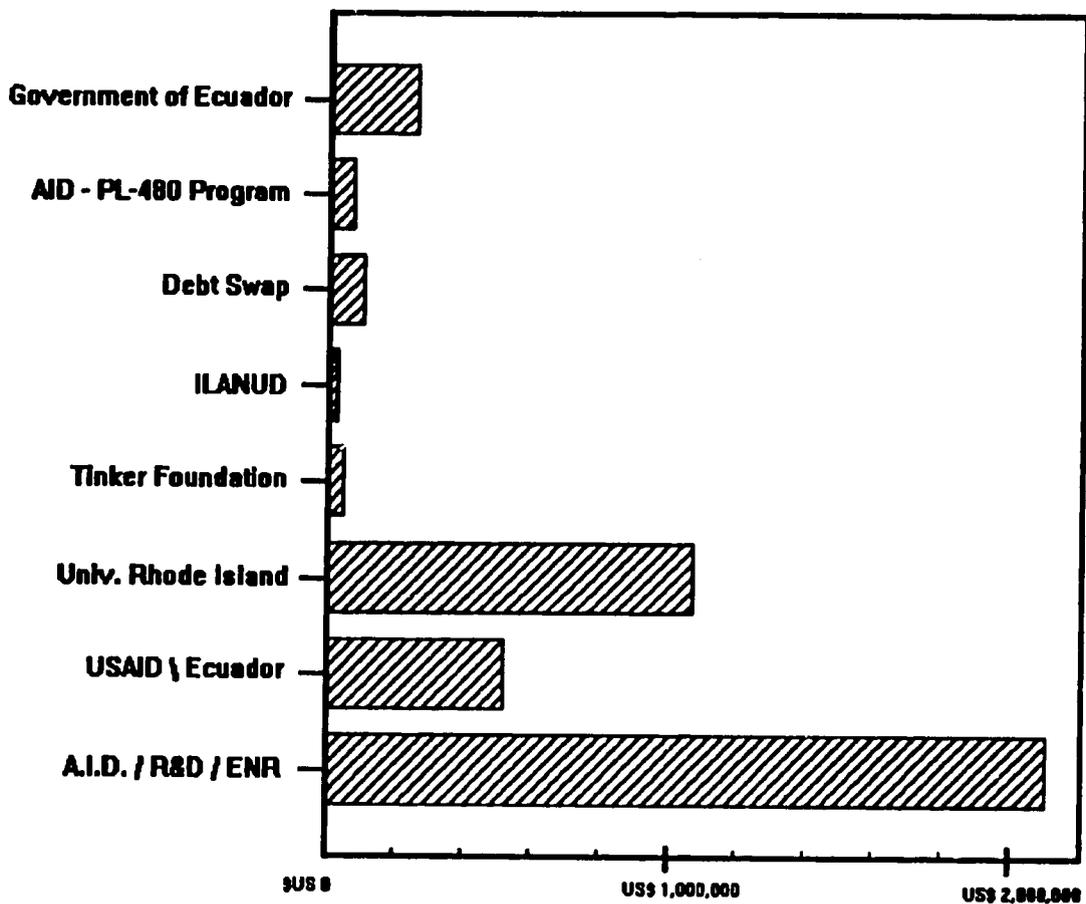
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<sup>4</sup> Robadue (in Olsen memo, 2 October 1992) notes: "An evaluation survey of the public education program was conducted in the [ZEMs] in 1992, and has been used to help design the Year 8 work plan, for example by noting that more than half of community members learn about the CRMP through local radio programs." The results of this survey were not seen by the evaluation team.

FIGURE 4

FINANCIAL SOURCES OF PMRC-ECUADOR, FIRST SEVEN YEARS

<i>FUNDING SOURCES</i>	<i>AMOUNT (US\$)</i>
A.I.D./R&D/ENR	2,098,854
USAID/Ecuador	517,561
URI contributions	1,069,573
Tinker Foundation	41,984
ILANUD	10,000
Debt swap	100,000
USAID/E PL-480 Program	70,000
Government of Ecuador	255,000



**Figure 5: Use of USAID/E Funds  
Expenses by Type, Years 1 - 7  
Coastal Resources Management Ecuador Pilot Project**

Ecuador	5/85-9/86	10/86-9/87	10/87-9/88	10/88-9/89	10/89-9/90	OYB 10/90-9/91	10/91-9/92	(*) TOTAL	(*) %
532J22 Mission	Año 1 AF'86	Año 2 AF'87	Año 3 AF'88	Año 4 AF'89	Año 5 AF'90	Año 6 AF'91	Año 7 AF'92		
<b>Personal</b>	2,000	13,311	18,770	43,469	0	85,890	56,462	261,462	50%
Personal PMRC/URI	0	0	6,613	4,763	0	4663	7,537	23,576	
Beneficios adicionales	0	0	1,400	1,336	0	1021	1,020	4,777	
Profesores URI	0	0	6,404	9,897	0	0	0	16,301	
Consultores	2,000	13,311	4,353	26,852	0	80205.98	47,905	174,627	
Subcontratos	0	0	0	0	0	0	41560	41,560	
Estudiantes URI	0	0	0	621	0	0	0	621	
<b>Matrícula</b>								0	0%
<b>Operación</b>	500	500	14,220	16,349	0	9259.9	71,490	112,319	22%
<b>Viajes</b>	2,185	17,604	2,967	25,700	0	23,440	24,703	96,799	19%
Internacionales	1,750	6,783	2,852	10,948	0	6573.77	18,135	47,042	
Nacionales	435	5,934	115	7,335	0	16866.34	6,568	37,253	
Otros/Domésticos	0	5,087	0	7,417	0	0	0	12,504	
<b>Equipamiento</b>	0	0	0	0	0	0	0	0	0%
<b>Overhead</b>	687	3,677	2,907	8,647		7496	23,785	47,199	9%
<b>Total</b>	7,557	53,096	41,831	119,865		149,526	201,143	517,779	100%
<b>TOTAL (*)</b>	5,372	35,292	38,864	94,165	0	126,086	218,000		
<b>Notas:</b>									
•Years 1&2 have been estimated as the funds were mingled w/ the S&T account before we knew better.									
The budget figures are as stated in the first Ec buy-in amendment no.4.									
•Year 3 figures are taken from the 9/30/88 URI records (FBMO90s)									
•Year 4 figures are taken from the 1/31/92 URI records prior to the year 7 Dean's Pledge being input									
Also, year 4 was spent over the course of 2.75 years but is being shown as spent in year 4 for illustrative purposes									
•No year 5 Mission buy-in funds were received									
•Year 6 OYB figures are taken from OMNIS, the CRC database because the URI records for 10/31 did not accurately reflect spending due to a back log of in-country spending/advance clearings									
•Year 7 are budgeted figures not spent-the assumption is the funds will be spent in total according to plan.									

(\*) Totals and percentages calculated by the Evaluation Team. Chart prepared by URI/CRMP.

CRMP, was more than propitious. As stated in Olsen's memo (memo on Draft Evaluation, to Kernan and Clark, 2 October 1992): "The potential usefulness of a presidential election was recognized early on in the profiling process and the timing of products and the pace of work [were] managed so that we would be reaching a maximum amount of public involvement and debate in the press on coastal issues and the need for a CRM program just before and during the campaign."

**4. Effectiveness of PMRC in carrying out the objectives of the Ecuadorian National CRM Program as set forth in the 1989 Presidential (Executive) Decree for a National CRM Program.**

*CRMP has been effective in establishing the institutional arrangements of Executive Decree 375. CRMP has supported these institutions, but some (for example, ZEM Executive Committees and Units for Conservation and Patrol [UCVs]) have not functioned adequately for reasons outside the control of the project. It is too early to determine whether PMRC will achieve its overall objective of integrated management of all coastal resources of Ecuador.*

Executive Decree 375 arose directly from the program design of the CRM pilot program in Ecuador. The decree set up a structure of six Special Management Areas or ZEMs and the national-level administrative and coordinating institutions. Several articles in the Decree set forth the functions and objectives of the pilot program. These are discussed in detail in Appendix 2.

CRMP has been effective in establishing and supporting the institutional arrangements of Executive Decree 375. The National Commission for the Management of Coastal Resources was established; it approves annual work plans and Special Management Zone Plans. It does not do much to coordinate policies among government ministries. The Technical Secretariat of the Coastal Resources Management Program has been established. Special Management Zones have been designated in all four coastal provinces and the Galapagos. Special Management Zone Executive Committees were established, although they now have been replaced by Advisory Committees. UCVs have been established in the Special Management Zones.

These institutional arrangements are still new, so their effectiveness is limited. It is too early to determine whether CRMP will achieve its overall objective of integrated management of all coastal resources of Ecuador.

**5. General project monitoring, coordination and guidance, including scheduling, obligations, pipelines, and so forth.**

*Pilot program monitoring, coordination, guidance, and scheduling have been good. Obligations have occurred late in the fiscal year for reasons attributable to the U.S. national budget process, making it necessary to give undue attention to finances. There has not been a pipeline of any consequence.*

The Project Manager has received all reports required in the Cooperative Agreement. Amendment 11 of the Cooperative Agreement extended the project through September 1994, and reduced the reporting requirements to quarterly reports and annual reports. The evaluation requirements were also reduced: separate midterm evaluations of the pilot programs were replaced with a midterm evaluation of the overall CRMP. The midterm evaluation (TR&D, 1989) included a brief evaluation of the Ecuador Pilot Program, the only section that we reviewed. This evaluation was not detailed enough

to use as a base for programming decisions. A.I.D. funding for the project now continues through September 1994.

We reviewed the annual reports for years 5-8 and the quarterly and semiannual reports for these and previous years. They include discussions of policy and implementation and indicate the dedication with which project staff at all levels have worked on the project.

The annual work plans have served to coordinate and guide the pilot program. They lay out the objectives for each year, assign responsibilities to PMRC staff, list reports that will be produced, and include a detailed budget. They include a discussion of PMRC status and accomplishments. The annual work plans include evaluations of the previous year's work. They would be easier to evaluate if they were to systematically compare the previous year's planned activities with the actual results in chart form (such as a matrix). USAID/E has an internal reporting system that has tracked the project since its initiation. These reports are meticulously prepared and detail the principal events of the Ecuador Pilot Program.

Coordination also occurred through telephone conversations, letters, memoranda, field visits to Ecuador by the A.I.D./R&D/ENR Project Manager, and visits to field sites by the Mission Liaison Officer and the Regional Environmental Advisor (see Question 1). The most substantive and important coordination mechanism was the preparation of the annual work plan.

**6. Function and adequacy of host-country lead agency since 1989 Presidential (Executive) Decree, in implementation structure and organizational ability and stability.**

*The host-country lead agency (the Technical Secretariat of PMRC), the Ecuador Pilot Program (PMRC), and the A.I.D./URI Coastal Resources Management Program (CRMP) have been almost indistinguishable in their personnel and work programs in Ecuador. The function and adequacy of the host-country lead agency is, therefore, impossible to judge separately from the project itself.*

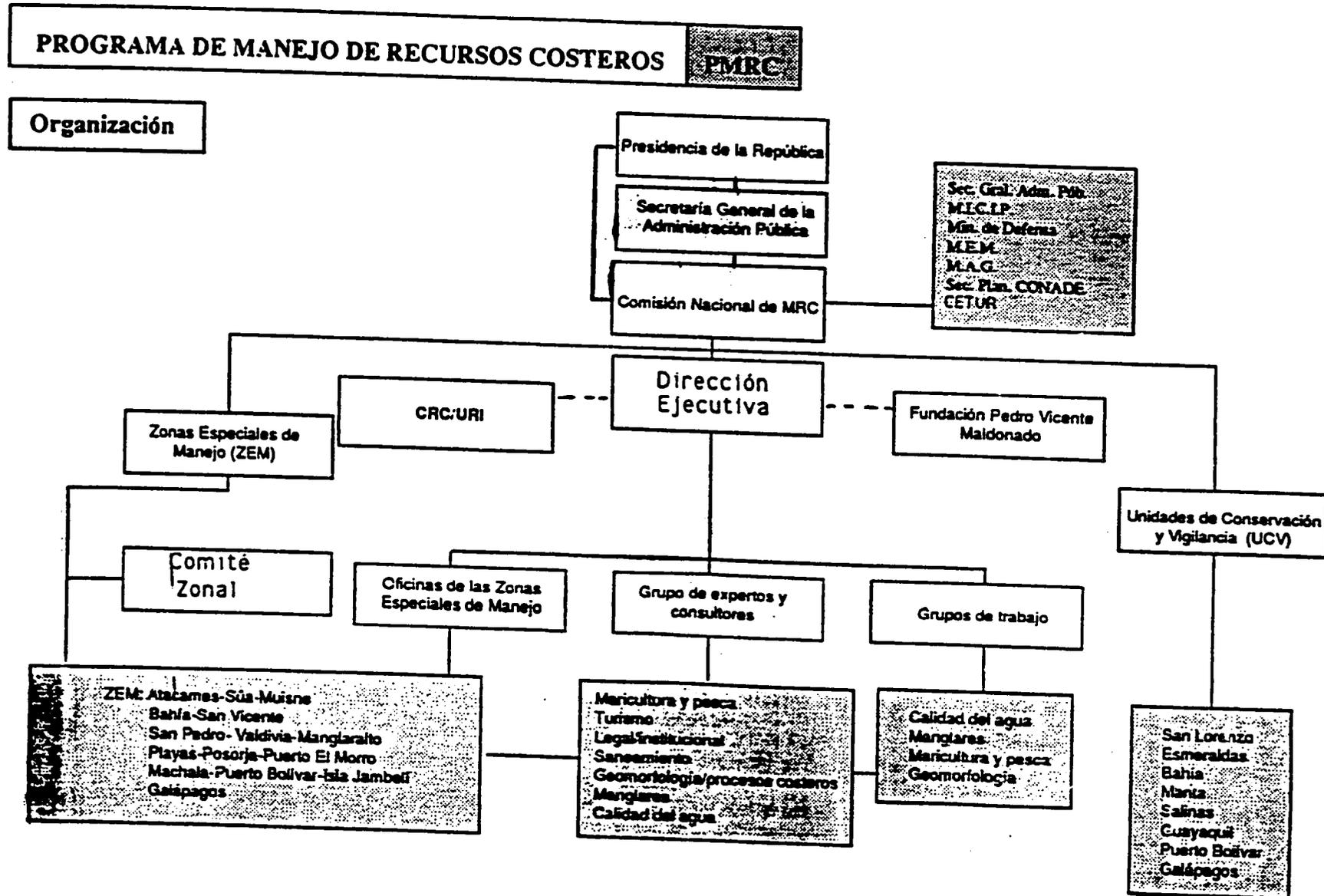
The response to Question 4 describes the major components of the PMRC structure. Executive Decree 375 established the institutional structure of PMRC (Figure 6).

The Technical Secretariat is the executing body of PMRC (the counterpart agency of CRMP). It was under the Secretary of Administration until the 1992 Executive Decree (3399) placed it directly under the Office of the President. Its position gives it more status and flexibility than a ministerial department. The location in the Presidency is appropriate for an organization whose aim is to coordinate public agencies that are working at cross purposes. The location is perhaps risky, however, as it depends to some extent on the priorities and interest of each new President. The Secretariat's role primarily is coordination of public institutions. It has focused its attention on the Special Management Zones comprising about 7 percent of the coast.

The project and the Technical Secretariat work closely together. The annual work plans, for example, barely distinguish between CRMP and the Secretariat. Executive Decree 3399, of June 1992, gave stronger authority (subject to approval by the Secretary of Administration) to the Technical Secretariat of PMRC to hire personnel, sign contracts, and manage budgets (under the GOE Convenio with A.I.D.). At the local level, the Technical Secretariat and the project are represented by the ZEM coordinators.

FIGURE 6:

ORGANIZATIONAL ARRANGEMENTS OF THE CRMP AS ESTABLISHED BY EXECUTIVE DECREE 375 OF 1989 AND MODIFIED BY EXECUTIVE DECREE OF 3399 OF 1992.



As previously mentioned (in the response to Question 4), Decree 375 established Executive Committees in the ZEMs, to be formed by local representatives of national ministries and local government. These committees were to negotiate the resolution of coastal resource management conflicts. With little tradition of working together, lack of independence, and no budget, the members of the Executive Committees did not carry out their role. By this measure, therefore, the Technical Secretariat has not succeeded in its role as a coordinating institution.

The ZEM Advisory Committee meetings, by contrast, were generally frequent, well-attended, and dynamic. Although members of these committees were originally appointed by PMRC from important members of the local communities, membership has evolved (with concurrence of PMRC) so that the Advisory Committees have become open community meetings. The committees offered private citizens a way of resolving problems jointly and of gaining access to government officials. PMRC emphasis moved to the Advisory Committees and away from the Executive Committees.

As discussed above, under Question 4, Executive Decree 3399 replaced the Advisory and Executive Committees with a Zonal Management Committee. Members of the Zonal Committee must be delegates from legally recognized organizations. The Zonal Committee has responsibility for promoting the cooperation of public and private institutions, preparing and approving ZEM management plans, and assuring their implementation. The Zonal Committees will meet for the first time in October 1992.

The ZEM plan must be approved by the Zonal Committees. If the Zonal Committees also must approve financing for specific projects, public officials may be stimulated to participate. Perhaps the mechanism will lead to local negotiation and resolution of some coastal resource management issues.

**7. Effectiveness of financial participation and follow-on activities by USAID/Ecuador, and initiation by other donors for follow-on implementation.**

*USAID/E could have contributed more financially to the success of the Ecuador Pilot Program if the overall amounts had reached the levels of commitment in the Cooperative Agreement, particularly if the annual amounts had been less erratic. USAID/E does not plan any follow-on activities after 1994. The Inter-American Development Bank (IDB) is considering a follow-on coastal resources management project, concentrating on implementation of the ZEM plans.*

The financial history of the Ecuador Pilot Program is summarized in Figures 4 and 5. Once obligation authorization had been received by A.I.D./R&D/ENR, obligation occurred during the fiscal year. USAID/E buy-ins to CRMP occurred within the fiscal year after authorization had been received, except for FY 1989 when, according to a note on p. 16 of the Project Paper Supplement, the intended USAID/E contribution of \$75,000 was not obligated by the end of the fiscal year.

USAID/E contributed less funds to the pilot program than were indicated in the Project Paper and Cooperative Agreement. Note 2, Attachment 2, of the Cooperative Agreement, says: "USAID/Quito has made a commitment to contribute in the range of \$900,000—1,600,000 to complement CRM activities in the areas of short-term TA, research, training, and regional outreach. Exact figures will be agreed to in the JPA."

The total budget for FYs 1985-1988 for the Ecuador Pilot Program, therefore, was projected to be \$1,053,000 from A.I.D./R&D/ENR, plus \$900,000-\$1,600,000 from USAID/E, for a total program budget of \$1,953,000 to \$2,653,000. The USAID/E contribution was therefore planned to be 46-60

percent of the total budget. Actually, through FY 1988, the USAID/E contribution was \$173,495 (Figure 5). This amounted to only 10 percent of the total budget for these years. During FY 1988-1992, the USAID/E contribution (including \$70,000 of PL-480 funds) totaled \$414,086. This amounted to 16 percent of total pilot program costs during that period.

The Cooperative Agreement specifies that URI and allied institutions would contribute \$626,600 to the program (for all CRMP activities, not just Ecuador) during FYs 1986-1990. During these years it contributed \$590,351. In FYs 1991 and 1992, URI and allied institutions contributed \$344,086. According to S. Olsen (memorandum, 2 October 1992), URI also waived significant overhead on the Ecuador Pilot Program (\$444,170 during the first seven years of CRMP), as well as an additional \$625,000 for URI Coastal Resources Center core staff working on the Ecuador program.

USAID/E provided approximately \$587,000 through September 1992. The funds were used for personnel, including consultants, and travel, as shown in Figure 5. The evaluation team did not examine which consultants were financed from USAID/E funds as distinct from other project funds. USAID/E funds were used in year 5 for the small projects in the ZEMs, mariculture technical assessments, and the public education program (using PL-480 funds). In year 6, USAID/E paid for the practical exercises, the national expert team, the Mangrove Working Group, and most of the public education program. In year 7, it supported the practical exercises, technical assistance for public education, implementation activities under mangrove and mariculture management, and the UCVs.

USAID/E funds, therefore, have financed a portion of the technical advisors and personnel that have implemented PMRC. Clearly, without USAID/E financial participation, less would have been done. The effectiveness of USAID/E financial participation is, therefore, inseparable from the effectiveness of the Ecuador Pilot Program itself, the subject of this evaluation.

The effectiveness of USAID/E financial participation would have been increased if (1) the amounts per year had been fixed so that annual budget planning would have been easier; (2) the total amount had been closer to that indicated in the Project Paper and the Cooperative Agreement; (3) other USAID/E natural resource projects had participated in financing (as planned for in the Project Paper), thus creating reinforcing links between different USAID/E natural resource activities; (4) USAID/E had been more involved in the pilot program (see response to Question 1); and (5) USAID/E had planned a follow-on CRM project, or integrated part of the project into one of its other natural resources projects.

Integrated management of coastal resources is not a USAID/E Strategic Objective. USAID/E has no plans for funding follow-on activities after the conclusion of CRMP in September 1994.

CRMP will have reduced funding from A.I.D. for FY 1994; the programmed \$267,000 from A.I.D./R&D/ENR is about half the FY 1992 budget and is perhaps sufficient for close-out activities if no other funding becomes available. Funding from the Inter-American Development Bank is not assured, and would only start in FY 1995, at the earliest.

### **Other Donors**

#### **Tinker Foundation:**

A \$50,000 grant from the Tinker Foundation to URI funded the establishment of the Galápagos ZEM and an economic analysis of tourism in the islands. GOE requested URI to prepare the grant

proposal. The Galápagos ZEM is not currently functioning, as this funding was to be used only for planning, not for plan implementation. The evaluation team did not visit this ZEM, and is unable to evaluate this effort.

**United Nations Regional Institute for Administration of Justice (ILANUD):**

This \$10,000 grant was used to develop training materials, principally a compilation of relevant laws and regulations, for government officials of the UCVs. UCV members told us that this compilation was of great use to them in understanding the specific functions and authority of their government positions. However, UCVs still lack effective enforcement and monitoring capabilities. A.I.D. initially was prohibited by U.S. law from participation in activities with the police or armed forces, but subsequent changes have been made in U.S. laws to allow cooperation in specific cases such as the UCVs.

**Inter-American Development Bank:**

IDB is considering a loan of \$15-20 million to GOE for coastal resources management. The project components will implement the ZEM plans that have been prepared by CRMP, install sanitation systems, develop research and technology, and strengthen coastal resource management institutions.

The IDB project will continue the activities of PMRC, with emphasis on implementing the ZEM plans. The IDB project is planned to start in 1993 or 1994, so its effectiveness is only conjectural. Questions 8 and 11 discuss the effectiveness of the ZEMs in detail.

To be effective, the ZEM plans will have to be amplified to include land-use maps and zoning, impact assessment, and coordination of sizeable investments in public and private development projects (particularly, multilateral bank-supported public works, such as highways, dams, and flood-control structures in watersheds of the coastal zone).

**8. Effectiveness of PMRC in accomplishing the local-level objectives of user and social groups.**

*PMRC has concentrated on assisting local user groups to develop practical objectives, and on developing a process that allows these groups to resolve conflicts. These objectives are incorporated into Special Area Management Plans. However, some important user groups, such as shrimp farmers, and tourism and residential developers, have been only marginally involved. PMRC has not advanced to the stage of accomplishing most of the local objectives. Support from the Inter-American Development Bank follow-on project will be needed to accomplish most of these objectives.*

PMRC identified local objectives through involving and organizing local user groups (stakeholders) in the planning of ZEM programs. This clearly was a URI and PMRC innovation, as neither the Project Paper nor Joint Project Agreement includes involvement of local user groups in the planning and management of coastal resources. In fact, the Project Paper (p. 22) states that "the people who live, work or visit in the coastal zone, particularly those who depend on coastal resources for their livelihood, food and health are considered as indirect beneficiaries."

By contrast, one of the major assumptions of URI and PMRC has been that the local stakeholders in the use of coastal resources and environments should be involved in the planning and management process from the outset. The program designers at URI identified and involved stakeholders at the local level — such as artisanal fishermen, shrimp pond owners, mollusc collectors, owners of tourism businesses — who have most to gain or lose in the allocation of coastal resources among the competing users.

The first expression of including local interests was the Conference on Shrimp Mariculture in August 1986. Given the topic of the conference and the location in Guayaquil, the local involvement was confined to shrimp pond owners and investors who could afford the time and money to attend the five-day meeting.

The second expression of including local stakeholders was the process of compiling the Coastal Profile, published in September 1987. The preface to the profile states that it is a "collective work that resulted from the active participation of specialists in different disciplines and more than anything with the support of representatives in the coastal provinces."

The ZEMs are the third, and most intensive, effort to define and achieve local objectives. According to the designers of the ZEM program, the Profile:

revealed a commonality of themes but a considerable difference in the relative importance of these issues depending on the locality. Secondly, the basic ideas of the new program, such as combining resource development and management efforts, and greatly increasing the level of local involvement in planning and implementation, required careful testing [of] small sections of the coast before applying them province or nation wide. Ecuador has had virtually no prior experience with resource management and public participation in the coastal zone (Robadue 1990).

One can only guess if and when the objectives stated in the five ZEM plans (recently approved by the National Coastal Resources Management Commission) will be achieved. There are at least three reasons for this. First, the five ZEM plans were completed and adopted in the last few months, so there has not been sufficient time to achieve implementation. More importantly, there are not sufficient funds in existing CRMP or GOE budgets to fund the preparation of methods and administrative processes required for implementing the ZEM objectives. Third — and most important — most of the objectives articulated in the five ZEM plans cannot be achieved because the plans are incomplete regarding necessary implementation arrangements.

The ZEM plans lack the process and set of procedures for translating the policies into a clearly designed system that government units can use to make decisions on how to allocate coastal resources, environments, and land uses among the competing interests (stakeholders). For example, common objectives in the ZEM plans are to:

- Provide order to the development process and ecosystem changes in all the coastal front through the design and implementation of plans and regulations and a system of permits;
- Reduce the economic, environmental, and social costs resulting from inappropriate location of highways, buildings, and protection structures along the coastline;

- **Preserve and, where possible, restore the important natural habitats and the distinctive characteristics and qualities of the coastal region, which are prerequisite for sustainable tourism; and**
- **Secure public access to all of the coastline.**

**To achieve these and most of the other objectives, the following implementation procedures still need to be prepared and adopted:**

- **Land use and zoning plans;**
- **Zoning and performance standard regulations;**
- **Regulations on the submission and review (including impact assessment) of development proposals for permits; and**
- **Programs for public works improvements, timing, and financing.**

**Presently, all the plans end with lists of specific activities the program participants want to occur sometime in the future. For example, the ZEM plan for Atacames-Súa-Muisne has a list of 53 activities, including:**

- **Zoning and assignment of uses in the coastline for locations in Atacames, Súa, and Muisne;**
- **Coastal roads;**
- **Tourist guides;**
- **Installation of sanitary facilities along the coast;**
- **Rational exploitation of black coral;**
- **Buffer zones of mangroves for shrimp pond operations;**
- **Reduction of soil erosion; and**
- **Reforestation in the watersheds.**

**To the extent that the A.I.D. project's eight years of work do not establish and implement the plans for each of the ZEMs, and develop national plans based on the success or failure of pilot activities in the ZEMs, then either IDB or GOE will have to fill the gap — otherwise most of the ZEM objectives will not be achieved.**

## **9. Changes needed to help ensure better overall project management.**

*Changes needed to ensure better project management are discussed in the section on Conclusions and Recommendations, below.*

**10. Underlying assumptions and issues, with special attention to identifying whose interests are represented.**

*The underlying assumptions and issues, as described in the Project Paper, the Cooperative Agreement, and the Joint Program Agreement, have generally not been tested. Less attention has been given to the issue of converting mangrove, salt flats, and estuary waters into shrimp ponds than was planned for in these documents.*

Underlying assumptions of CRMP, worldwide, listed in the evaluation Scope Of Work are discussed in Appendix 2. Essentially, the Ecuador Pilot Program has not been able to test most of these broad assumptions, because it has remained at a preliminary level of constituency building in the ZEMs, and not yet been implemented along the entire coast or produced a plan for national management of coastal resources.

According to the Scope Of Work, the Ecuador Pilot Program assumptions were:

- Technical assistance can strengthen the institutional capacity to manage the use of coastal resources;
- An integrated system of CRM involving interagency cooperation can improve the resources management process;
- The host country will create or strengthen a permanent CRM program; and
- U.S. expertise is available and relevant to key CRM issues in the countries.

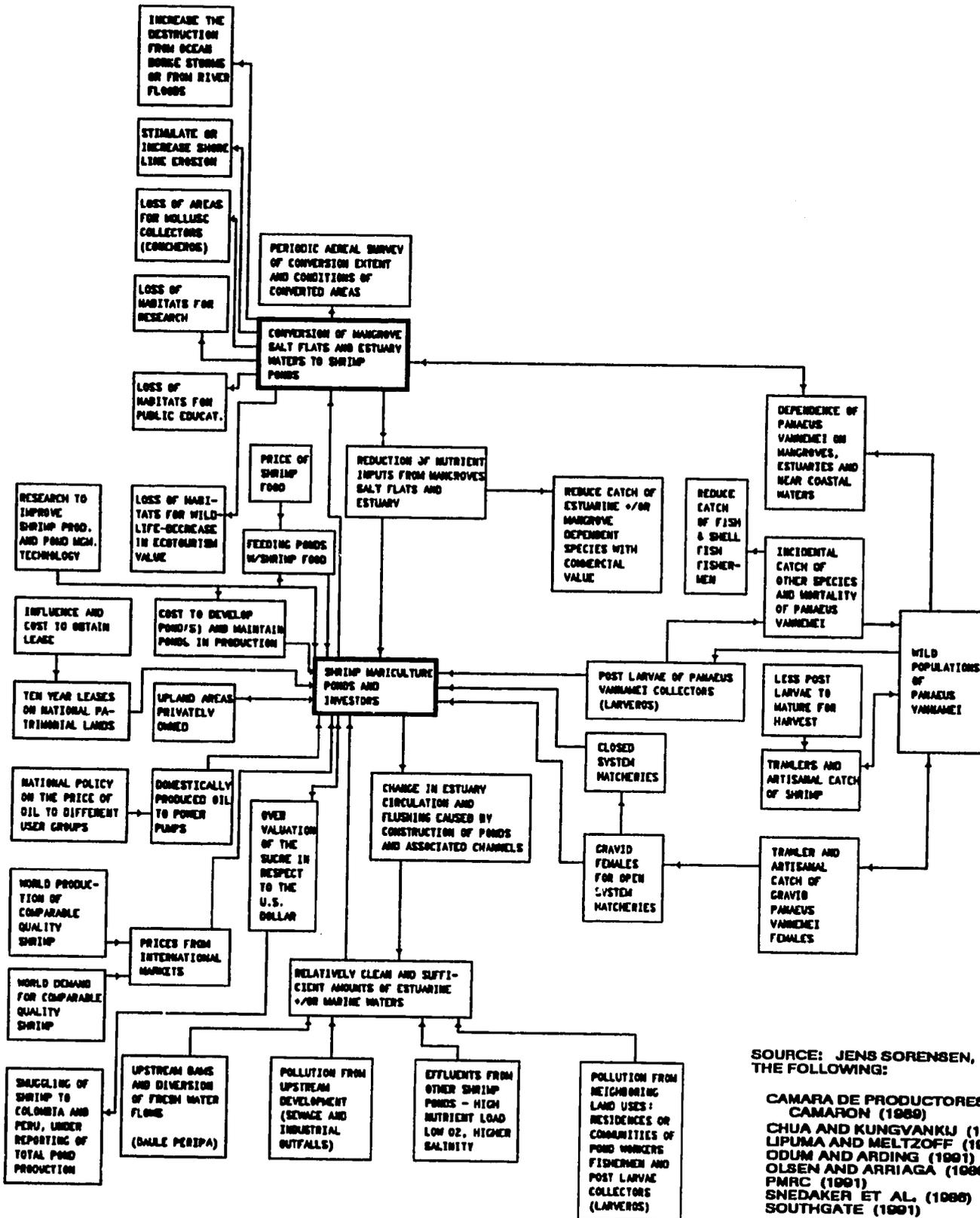
Technical advisors from the University of Rhode Island have helped to strengthen Ecuador's "institutional capacity to manage the use of coastal resources." That "an integrated system of CRM involving interagency cooperation can improve the resources management process" is self-evident, scarcely an assumption. UCVs should show that interagency cooperation can lead to law enforcement, but they are scarcely functioning. Ecuador did "create and strengthen a permanent CRM program," proving that assumption to be correct. U.S. project advisors have proved that "U.S. expertise is available and relevant to key CRM issues" in Ecuador, but this has been utilized primarily in the ZEMs, not tested in coastwide issues.

The Project Paper, the Cooperative Agreement, and the Joint Program Agreement all emphasized the importance of the issue of cutting mangrove forests to build shrimp ponds. Clearly, the shrimp mariculture and mangrove-estuary modification issue was of national concern. However, as Figure 7 demonstrates, the issue is a complex problem, involving many stakeholders, resource values, and impacts. Although the project did organize a Shrimp Mariculture Conference in 1986, it has not given special emphasis to this issue since then. Instead, the focus has been on the preparation of the Coastal Profiles, which identify many (mostly local) issues without much ranking as to importance, and on organization and planning in the Special Management Zones.

The original JPA emphasis involving shrimp mariculture and mangrove loss implied a necessary focus on the owners of shrimp ponds. The shift to the Special Management Zones moved the project towards the interests of generally poorer groups; the direct users of resources such as shellfish, timber, firewood, artisanal fisheries, and potable water supplies; and more general community problems. This narrowing of focus to small geographic areas (the ZEMs), thus actually expanded greatly the range of issues dealt with by PMRC.

FIGURE 7

THE SHRIMP MARICULTURE ISSUE: INTERCONNECTIONS AMONG THE VARIOUS COMPONENTS AND THE STAKEHOLDERS



SOURCE: JENS SORENSEN, BASED ON THE FOLLOWING:  
 CAMARA DE PRODUCTORES DE CAMARON (1989)  
 CHUA AND KUNGVANKU (1990)  
 LIPUMA AND MELTZOFF (1986)  
 ODUM AND ARDING (1991)  
 OLSEN AND ARRIAGA (1989)  
 PMRC (1991)  
 SNEDAKER ET AL. (1989)  
 SOUTHGATE (1991)

**11. Validity of the approach used in project implementation to achieve the stated Project Paper goals.**

*The implementation approach used remains to be proved valid for Ecuador, to achieve the single project goal.*

The Project Paper has one goal: "To contribute to the economic development of LDCs [less-developed countries] by assisting them to develop and manage their coastal resources on a sustainable basis."

The project implementation approach described in the Project Paper focused on research, national level planning, and the transfer of U.S. experience and technology to Ecuador. Rather than this, the project has used an incremental approach with focus on constituency building in Special Management Zones, rather than on either the entire coast or the shrimp mariculture issue. This emphasis on the social and organizational aspects of resource management differentiates the Ecuadorian approach from that of many other countries where the focus has been on research and national planning, relatively removed from distinct local concerns and problems.

The approach may be valid and perhaps is the only one that will eventually lead to the achievement of the Project Paper goal. Its validity, however, as judged by its success in achieving the Project Paper goal, remains to be proved. So far, the project has not achieved the sustainable management of coastal resources even in the Special Management Zones, let alone the other 93 percent of the Ecuadorian coast. Indeed, the deterioration of coastal resources probably has accelerated during the life of the project; more mangrove forest was cut down between 1985 and 1990, for example, than in the previous 15 years.

(Note: The evaluation team interprets the meaning of "approach used in project implementation" to mean the systematic process and set of procedures used to prepare and implement a plan for the integrated management of Ecuador's coastal resources and environments. In the USAID/E pilot program files, we found a figure prepared by URI-Coastal Resources Center that identifies a general process for developing and implementing a coastal resources management program [Figure 8].)

**12. Function of original project design in achieving the Project Paper objectives.**

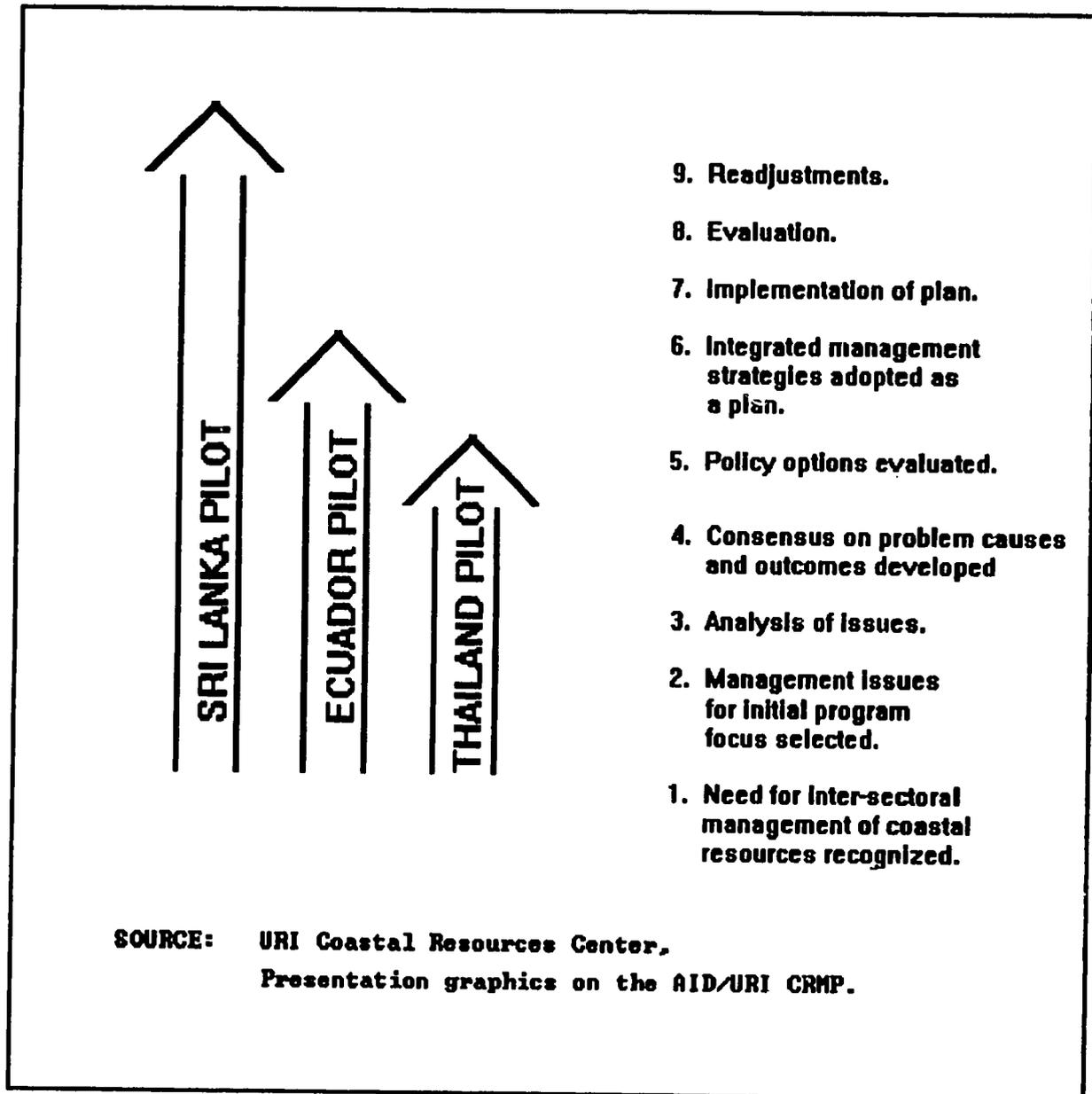
*The original CRMP design has achieved the Project Paper objectives, especially through its mechanism of making a Cooperative Agreement with an experienced U.S. institution, the inclusion of the Joint Program Agreement requirement, and provisions for flexibility in implementation. Questions 3, 4, 8, 10, and 11 also respond to this question.*

The Project Paper does not list a set of objectives but does list tasks that an integrated system of coastal resource management will undertake. These are:

1. "Identify current and potential resource conflicts among coastal resources."
2. "Explore institutional and technical solutions to resource use conflicts."
3. "Identify and support research on topics that can resolve resource management issues."
4. "Promote private and public sector coordination."

FIGURE 8

THE PROCESS OF DEVELOPING AND IMPLEMENTING A  
COASTAL RESOURCES MANAGEMENT PROGRAM



5. **"Lay the groundwork for developing an integrated system of coastal resource management involving the line agencies, environmental agency, and planning authority responsible for coastal resources."**

**These objectives were to be reached through research, training, and institutional strengthening. A Cooperative Agreement between A.I.D. and a U.S. institution with experience in coastal resource management would provide the organization for carrying out these activities in three pilot countries. The Cooperative Agreement provided for flexibility in project implementation. Government officials were to be primary project beneficiaries; coastal resource users were secondary beneficiaries. The project design provided for the preparation of a Joint Program Agreement between A.I.D., the U.S. institution, and the host country.**

**The project design thus provided the mechanisms for a flexible, incremental approach, based on U.S. experience in coastal resources management, to achieving the Project Paper objectives. The University of Rhode Island had been working for 20 years on coastal resource management as distinct from coastal resource research. Based on its U.S. experience, and faced with the social, political, and economic situation in Ecuador (as described briefly in the first section), the University of Rhode Island decided that the Project Paper objectives would not be achieved through training of government officials, research isolated from resource users, and strengthening of established government institutions.**

**The University of Rhode Island, therefore, used the flexibility built into the project design and the Cooperative Agreement to design the Ecuadorian pilot project to move incrementally toward more and more emphasis on resource user participation in planning, research, and implementation. Resource user participation began during the consultative process used to prepare the Coastal Profiles. Because this method requires detailed consultations with and full participation by coastal resource users, it requires limiting the process to certain areas, given time and budget limitations. The designation of the Special Management Zones with geographical limits reflects the need to reduce the consultative process to manageable proportions. The Special Management Zones did not arise, therefore, out of ecological criteria but more from managerial criteria.**

**The Ecuador pilot project is now attempting to achieve the Project Paper objectives as listed above through involving resource users. The identification of "current and potential resource conflicts," for example, takes place at the local level, in discussions between resource users, as does the exploration of "institutional and technical solutions to resource use conflicts." Likewise, the pilot project asks resource users to "identify and support research." If they are involved, then the results might "resolve resource management issues" rather than be isolated from management issues.**

**The pilot project promotes "private and public sector coordination" by forming or supporting united resource user groups who can perhaps gain the attention of public sector officials. Finally, by developing constituencies for coastal resource management at the local level, the pilot is laying the "groundwork for developing an integrated system of coastal resource management" although including the resource users as the essential component of that system as well as the "line agencies, environmental agency, and planning authority."**

**13. Progress towards meeting the overall pilot project (pilot program) objectives according to Attachment A (of the Scope of Work).**

*CRMP has met the Ecuador Pilot Program objectives, at least in part, which were very general. Questions 3, 4, 6, 8, 10, 11, and 14c also address this question.*

The pilot program objectives (according to Attachment A of the Scope of Work) are:

- Analyze priority CRM issues within the context of the nation's historical development trends and socioeconomic characteristics. This objective was addressed in the responses to Questions 8, 10, and 11.
- Incrementally develop and test approaches to improving how priority CRM issues are dealt with. The responses to Questions 11 and 14c address this objective.
- Select institutional arrangements for CRM. Institutional arrangements for various components of the Ecuador Pilot Program have been addressed in the responses to Questions 3, 4, 6, 8, 11, and 14c.
- Draft policies and plans targeted at specific issues. This objective is the sequential step after achieving objectives a and b, above, and accordingly this topic has been addressed in the responses to Questions 8, 10, and 11. This topic is also addressed in the response to Questions 14c and 14d.
- Train host country professionals. This objective is a component in the response to Question 3.
- Expand awareness of the benefits of integrated CRM initiatives. The expansion of awareness of CRM benefits should be divided into two groups, Ecuadorians and non-Ecuadorians. The latter group is in turn divisible into three other groups, USAID/Ecuador, coastal LDCs, and international assistance institutions (in addition to A.I.D.) that have, or may support, integrated CRM programs in LDCs. The responses to Questions 8, 10, and 11 address expanding Ecuadorian awareness of the benefits of CRM. The responses to Questions 17a and 17b outline expanding awareness of benefits to USAID/E and to other coastal LDCs.

The pilot project has met (at least in part) all of the objectives listed in Attachment A. More could always be done. The analyses of "priority CRM issues," for example, contained in the Coastal Profile, the shrimp mariculture strategy, and the mangrove strategy could be expanded upon.

The pilot project has followed a process to "incrementally develop and test approaches to improving how priority CRM issues are dealt with." After the initial years, however, the project staff decided to concentrate on the Special Management Zone approach involving intensive participation by resource users. Other approaches, such as concentration on a specific issue like shrimp mariculture, have perhaps not been tested as thoroughly as they could have been with more funds.

Institutional arrangements have been selected and modified as the project has progressed. Figure 3 shows the institutional structure of the Joint Project Agreement. This has been modified by Executive Decree 375 in 1989 and Executive Decree 3399 in 1992.

The objective of "drafting policies and plans targeted at specific issues" has received perhaps less emphasis than the preparation of management plans for the Special Management Zones. The Shrimp Mariculture Conference, however, did result in a document that lays out some policies and plans for shrimp mariculture. Likewise, the project has produced a strategy for mangrove management.

The "training of host country professionals" has occurred in numerous in-country workshops, some short study trips to the United States, and in one-on-one training given to counterparts by short- and long-term project advisors. The project has provided no long-term professional training.

To "expand awareness of the benefits of integrated CRM activities," the project contracted with the Pedro Vicente Maldonado Foundation to carry out a public education and consultation program. This has consisted of radio talks, newspaper and other articles, and workshops. The meetings of the Special Management Zone Committees and the implementation of the "practical exercises" have also served to "expand awareness."

**14. Effectiveness of the approach used to implement the Ecuador pilot, including:**

**14a. Selection criteria for pilot project issues, and process of the policy, legal, and institutional analysis.**

*Issues have been selected at various stages during the design and implementation of the Ecuador Pilot Program (or "pilot project" in Question 14a), with selection criteria varying from issues of national economic importance during the Project Paper design, to local importance for nongovernment associations and resource user groups during project implementation. The pilot program produced policy, legal, and institutional analyses.*

The response to Question 10, on the issues, traced the history of how and why the various problems and opportunities were selected and prioritized. The process followed in the policy, legal, and institutional analysis was laid out in the response to Question 10, on the approach used in project implementation. Broader discussions of these topics are also in the Appendices.

Two of the most notable achievements of the pilot program were the legal analysis of Ecuadorian laws and institutions pertinent to the management of coastal resources and environments (Pérez, 1988), and the follow-on production of a manual on the application of coastal laws and regulations (Pérez y Asociados, 1990). The manual was intended to inform all the individuals and their respective institutions or groups on the relevant legislation in regard to each type of resource use and to demonstrate the interconnections among the multitude of applicable laws. The manual was also intended to be used in the field to guide government officials, as well as ZEM participants, on how to manage coastal resource users and use activities by applying and enforcing the relevant laws and regulations in a systematic and coherent manner. The manual has been used extensively for this purpose and its value in resource management was mentioned by many of the people we interviewed in the ZEMs.

The production of a manual on how to apply the existing laws and regulations on the use of coastal resource and environments is an accomplishment of the Ecuador Pilot Program that should be communicated to all LDCs who are considering initiating an integrated CRM program, or that are just engaged in preparing an integrated CRM program.

A dissimilarity between the U.S. approach (as well as other countries) and the Ecuadorian approach is planning designed to manage large-scale biogeographic units. It is fairly clear from a review

of the literature — and reinforced by our overflights along the coastline — that the coast zone of Ecuador is divided into two distinct parts, the Guayas estuary system and the coastal zone of the Pacific Ocean. The dividing point is Punta Arenas and the Canal del Morro. The Pacific Ocean coastal zone can be subdivided into two parts. The southern part, from the Salinas Peninsula to Punta Súa, is backed by a continuous series of coastal mountain ranges. The northern subdivision of the Pacific coastal zone is dominated by two watersheds: the Esmeraldas River and estuary (with a watershed of 21,418 km<sup>2</sup>) and the San Lorenzo estuary. A 60-kilometer stretch of small estuaries and cliffed coast divides these two systems. These three biogeographic divisions are depicted in Figure 9.

There is a notable absence (in the literature provided to the evaluation team, as well as materials in the USAID Mission files) in respect to considering the coastal zone as an aggregation of large-scale biogeographic units, such as depicted in Figure 9. If a nationwide plan for the coastal zone of Ecuador is to be realized, programs for the management of the coastal resources and environments of these biogeographic units will have to be prepared and implemented.

**14b. Resource-user involvement in project activities, specifically determining which interest groups have contributed which resources (such as time and labor) to project planning, implementation, monitoring and evaluation. What resources or actions are required of project participants and who is excluded by these requirements?**

*The project has involved the resource users at the poorer end of the social spectrum. Most of these resource users have had little or no control over the future of the coastal resources upon which their livelihood depended.*

A principal method used by the project has been to involve resource users in planning for the management of coastal resources. Resource users have been the focus of public education campaigns and workshops. They have participated in the ZEM Advisory Committees.

The ZEM Advisory Committee has been most successful in involving small-scale coastal resource users. In all four ZEMs that we visited, artisanal fishermen, crab and shell collectors, collectors of shrimp larvae, and operators of small restaurants and hotels had participated in PMRC activities. In Atacames-Muisne, for example, 33 different groups were represented on the ZEM Advisory Committee. Emphasis has been placed on building a constituency of stakeholders who were not previously represented in the decision- and policy-making processes — who are mainly poor and were unorganized. Most have been adversely affected by changes in coastal resource uses. The ZEM coordinators (all of whom are men) have taken care to include women, such as shell collectors (who are mostly women) and other women's associations (for example, groups producing hand-crafted articles for the tourist market) in planning and activities. Several assistant ZEM coordinators and Foundation Maldonado education extensionists are women.

In contrast, certain resource users whose activities seriously affect the coastal zone, such as large-scale shrimp pond or tourism investors, have not been sufficiently involved in ZEM activities and planning tasks. This has proved to be a major weakness of the Ecuador Pilot Program. For example, each of the ZEMs has identified the conversion of mangroves to shrimp ponds as a major concern, but the shrimp farmers have not been adequately involved in the planning process in any of the ZEMs. Individual shrimp farmers are members of several ZEM Advisory Committees, but they do not represent shrimp pond operators as a group. This partly reflects a lack of strong local associations of shrimp farmers, as well as their general lack of interest. The perception among local shrimp farmers appears to be that the costs outweigh the benefits of participation in the ZEM process. As mentioned in response



to question 6, shrimp farmers can be represented in the new Zonal Committees only as delegates from legally constituted and recognized associations. Whether this requirement will increase or preclude the participation of the shrimp farmers is not now known. PMRC, at all levels, should make a concerted effort to ensure increased shrimp farmer participation.

At the national level, PMRC made an early effort to address issues of importance to the shrimp mariculture industry. This resulted in an international shrimp mariculture conference held in August 1986. Following this initial effort, however, the shrimp farmers' associations have not been adequately involved. The executive director of the Guayaquil *Cámara de Productores de Camarón* said his group was not involved with the program nor had they been asked to review and comment on relevant documents prepared by CRMP (for example, Chua and Kungvankij's 1990 report that evaluated shrimp mariculture in Ecuador and proposed a strategy for development and diversification of mariculture).

ZEM coordinators have made an effort to include all resource users in the ZEM Advisory Committee process and, to our knowledge, no one has been purposefully excluded. The new Executive Decree, No. 3399 (June 1992), however, specifies that only legally recognized groups will be able to join the new ZEM Coastal Zone Committees. The ZEM Coordinators are actively helping groups receive legal status, but care must be taken that this bureaucratic requirement not be allowed to exclude certain groups. On the positive side, the new requirement may spur shrimp pond operators to come together in stronger local associations, thereby taking a greater and more appropriate role in the ZEM process. In the Estuario Caráquez (Río Chone), there are an estimated 40 medium- to large-scale shrimp farm owners. To the extent that the ocean-fronting estuaries and lagoons have somewhat the same manageable number of shrimp pond owners as Estuario Caráquez, it appears feasible and desirable to organize the industry into associations for the management of each discrete estuary or lagoon system.

**14c. The relevance of U.S. experience as applied through technology transfer activities relating to improving the technical information base, and resource management techniques.**

*The original design and implementation of the project was based largely on the structure and experience of the U.S. coastal zone management program. Many assumptions and procedures were adapted directly from the U.S. program, particularly its application in Rhode Island. There are, however, a number of differences between the Ecuadorian and the U.S. approach to coastal zone management.*

The original argument in the Project Paper for initiating pilot programs in three or four coastal countries was to build on the U.S. experience. The Project Paper states that: "The U.S. has a leadership role internationally in the field of coastal resources management as a result of the practical experience gained following passage in 1972 of the Coastal Zone Management Act. As a result, the U.S. possesses expertise in both technological and institutional solutions to CRM transferable to LDCs."

Clearly, both the structure and the process of preparing and implementing integrated coastal resources management plans in Ecuador — as well as in Sri Lanka and Thailand — were based to a large degree on the U.S. experience. One of the primary reasons why the Coastal Resources Center at the University of Rhode Island was selected for the Cooperative Agreement was its experience with the U.S. Coastal Zone Management (USCZM) Program — particularly in applying the national program to the state level (Rhode Island), local units of government, and local user groups.

There are several similarities as well as dissimilarities in the Ecuadorian approach compared with the USCZM program. These are discussed in more detail in Appendix 2.

**14d. Institution building efforts aimed at Improving the country capacity for resource management to sustain economic development.**

*The Ecuador Pilot Program has both formed new institutions and coordinated existing institutions at the national and local levels for the integrated management of coastal resources. No such institutions existed before PMRC. The effectiveness of this institutional framework will be tested when international assistance organizations withdraw or scale down their financial and technical support for PMRC.*

The Project Paper and the Cooperative Agreement do not lay out a specific approach to institution building, other than providing for technical assistance and research. The JPA, Article 2.2.1, describes institutional building efforts, other than research and technical assistance, as follows: "May include facilitating networking among public and private entities, studies of existing and potential governance arrangements for developing and implementing a coastal program, analyses of processes followed in policy-making, and national or regional planning."

The JPA facilitated networking among public entities by forming the Policy Board and Steering Committee. We could not find, however, any record of the effectiveness of these two groups in networking among public and private entities.

PMRC was originally connected to the Directorate for the Environment (DIGEMA) in the Ministry of Energy and Mines, but apparently did not strengthen DIGEMA as an institution for coastal management. Executive Decree 375 created PMRC under the Secretary for Public Administration. The effectiveness of PMRC is specifically discussed under Questions 3, 4, 5.b, 5.c, 6, 8, and 11 as well as being the overall topic of this evaluation.

Training activities that involved institution building occurred at various levels. Individual professors and students from national and regional coastal universities have participated in research activities of PMRC, but universities, as such, have not been involved. Therefore, the project has not significantly strengthened higher education on the coast. The JPA (Article 2.3.8) describes training to be given only to CRM personnel. It says that "the usefulness of short courses, study tours, and degree programs will all be evaluated." We cannot determine the effectiveness of the public education activities, as we found no survey or other data determining the public or other impacts of the information disseminated. The public information campaign appears to have been extensive.

Some laws and regulations must be changed before Ecuador's institutions can actually manage resources for economic development of the coastal region. The forestry law, for example, prohibits the cutting of mangroves for any reason — legally, therefore, mangroves cannot be harvested and used for production of charcoal. Such contradictions between national laws and the actual use of resources must be resolved before Ecuador's institutions can function effectively.

**14e. Improving the capacity of local institutions and social organizations to sustainably manage coastal resources.**

*The Ecuador Pilot Program has focused on improving the capacity of local social organizations to manage coastal resources on a sustainable basis with some success. Its attempts at improving the planning and managerial capacity of local government institutions have been less successful,*

*for reasons largely not under the control of PMRC, such as lack of adequate financing, lack of local independence, and no tradition of local government coordination. Ecuadorian Universities have not been involved, as cooperating institutions, in PMRC.*

The pilot program has attempted to improve the capacity of government organizations to manage coastal resources sustainably, mainly by promoting coordination between different governmental units which have usually operated in isolation. The first attempt to do this was through the establishment of the Executive Committees, consisting of representatives of government agencies and the UCVs. The Executive Committees did not function and have been disbanded and replaced by the Zonal Committees. Therefore, the capacity of local government agencies was evidently not increased by the mechanism of Executive Committees. The UCVs have increased coordination somewhat, but have not greatly improved the capacities of individual member authorities to enforce laws.

PMRC has strengthened the organizational structure of some user groups through encouraging them to organize legally and participate in the Advisory Committees. We do not have information available to analyze the exact effect of PMRC on their operation. The project has probably not operated long enough to have developed much capacity in the user groups.

Ecuador has regional universities in all four coastal provinces. Individuals from these universities have occasionally been involved in PMRC activities. PMRC has not strengthened the universities as institutions for teaching or conducting research on the integrated management of coastal resources and environments.

#### **15. How project implementation has differed from the initial Project Paper design.**

*Project implementation has concentrated more on creating and strengthening Ecuadorian institutions involved in coastal resource management than was contemplated in the Project Paper. More emphasis has also been placed on the participation of local resource users and the creation of a coastal constituency for CRM.*

The Coastal Resources Management Project was designed primarily as a "technology transfer" and "policy dialogue and reform" project. Originally, the Ecuador Pilot Program was to last three years and was to "create an Ecuadorian interagency working group to identify existing coastal resource use conflicts, explore solutions, promote public and private sector cooperation, and lay the groundwork for creation of an integrated system of managing coastal resources." To reach this goal, the Project Paper established the following tasks:

- To inventory the available information on coastal natural resources, economic pressures on the coast, management issues, and the present legal-institutional framework for coastal resource management;
- To focus on the development problems and opportunities of Guayas and El Oro Provinces where the shrimp pond industry is concentrated; and
- Ultimately, to develop national policies that would guide development along the entire Ecuadorian coast.

In plan and practice, the project has shown a great deal of flexibility, allowing it to change the tasks while retaining the primary goals and objectives. As outlined in the timeline table (Appendix 5),

the first major activity of the Ecuador Pilot Program was the *Workshop for Sustainable Development of Shrimp Mariculture Industry in Ecuador*, held in 1986 in response to strong Mission and GOE interest. Initial inventories of coastal resources were begun in 1986 and completed in 1987.

PMRC's focus was not limited to the southern provinces. Some of the first activities were in the northern province of Esmeraldas. Development of public awareness and education materials by the Foundation Maldonado began in late 1987.

Based on these initial activities, in mid-1988 the emphasis of the project was changed to reflect public participation in the Special Management Areas. This change in orientation made PMRC more responsive to the needs of local resource users. It also resulted directly in national policies formalizing the ZEM participatory process (the Executive Decrees of 1989 and 1992). The emphasis on ZEMs, however, has taken attention away from regional coastal zone issues that are beyond local purview.

Working groups on mangroves, water quality, and, more recently, mariculture and coastal processes have proceeded parallel with ZEM activities. Although these activities are meant to feed into ZEM activities, they have not had a measurable impact except in the Atacames-Muisne ZEM, where subprojects of the Mangrove Working Group are active.

- 16. Recommendations on how to determine when the project should move into a second phase of implementation for the coastal area in general, using the lessons learned in successful pilot activities of the project, either as redesign of the existing project or as an initiative of local governmental units or the GOE PMRC directorate with assistance from the project.**

*The project should immediately begin developing plans for the entire coastal zone, especially the important estuaries and lagoons, as the ZEM plans are implemented and an assessment has been done of the lessons learned from the ZEM experience. This "second phase" (a management model of the Ecuador coastal region), should not await the full implementation of all the ZEM plans. This process should have been ongoing from the beginning of the project, without losing the "bottom-up" emphasis of the ZEM pilots.*

As to "when the project should move into a second phase," we feel that this should have been an ongoing process since the project began. PMRC should start determining what lessons have been learned in the ZEMs and in other project activities, and apply these to draft plans for coastwide resource management (in other words, a working model of the Ecuador coastal region), regularly revising the plans when additional lessons are learned through ongoing implementation of the PMRC and the ZEM pilots and input from coastal resources users in general. We recommend a working group, similar to the present technical sector groups, be responsible for starting this phase. This working group will need to focus on individual areas such as an important estuary or a section of cliffed coast, and develop local plans (based on a draft coastwide plan that includes recommendations for national and local government policy changes). The groups should start this refocus using the existing ZEMs, or single estuaries which have the most obvious conflicts in resource uses or are in immediate danger of deterioration of important resources. The Guayas estuary is distinct from the rest of the coast, with more complex problems than smaller estuaries, but PMRC should attempt to coordinate with CEDEGE (the GOE agency charged with development of the Guayas) to apply some PMRC experience to CEDEGE projects, and to learn from the experience of CEDEGE in their projects.

PMRC is a pilot project to guide Ecuador in the long-term management of resources of the coastal region. The ZEMs are subprojects that were designed to test methodologies for resolving conflicting

issues in the management of selected resources. The ZEMs should be used as microcosms for establishing self-supporting (in other words, continue after CRMP support) management of all resources in relatively small coastal areas. This implies a necessary evolution of each ZEM from developing community support through education and organization of resource users, resolution of conflicting uses of resources (generally, through cooperation with local government authorities), recognition and prioritization of local problems, zoning or other legal measures to avoid degradation of resources, and establishment of a coastal resources management plan implemented by local authorities with the support and oversight of resource user groups. These local plans can then serve to refine a model for the management of the remaining 93 percent of the coastal zone of Ecuador.

The team is concerned that PMRC may be concentrating on the short-term resolution of specific problems of the ZEMs (a "first phase" of CRMP), and not keeping in perspective the overriding goal (the "second phase") of applying specific lessons learned in the ZEMs and basic information from research to broader regional issues of resource management.<sup>5</sup> Apparently PMRC still does not have any models for effective management of coastal resources, but only short-term resolutions of specific conflicts in unregulated use of resources of economic or ecologic importance. The final phase (or "third phase") of PMRC in Ecuador should be that the government adopt and fund integrated coastal resources management as a national priority.

A complementary concern is that some of the activities funded in the ZEMs may not directly reflect complex issues of conflicting uses of resources, but only establish PMRC rapport with a group of local users. For example, the purchase of boats for a transport cooperative to move tourists to Jambelí, a beach resort, may have some impact on the success of the Jambelí tourist industry, but does not show direct interactions with other resource uses or any resolution of coastal resource conflicts; this purchase was funded by separate funds of USAID/E, not by CRMP. An example of an activity that could better test resolution of conflicting resource uses could be improvement of a village sewage disposal system, when the present disposal simultaneously is contaminating estuarine waters used for shrimp ponds, shellfish harvested in nearby mangroves, drinking water for a tourist resort, and bathing in local beaches. PMRC should take care that all of the small projects they fund can resolve complex questions arising from conflicting uses of resources, and not only build a very local constituency that can work with PMRC in the future. If all international funding for CRM in Ecuador ends after the proposed funding from IDB, small local groups are not likely to make major changes in the ways Ecuador conserves its coastal resources.

**17. How the project experience can be:**

**17a. . . . used by other USAID/Ecuador natural resources projects.**

*Other USAID/Ecuador projects that could benefit from studying the lessons learned by CRMP are the SUBIR, IDEA, and EDUNAT projects. All the projects would benefit from more coordination of activities so as to form a single USAID/E natural resource program rather than a collection of individual projects.*

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<sup>5</sup> Basic information and lessons learned might include, for example, catch statistics of the artisanal fisheries, the biology and ecology of commercially important coastal species, the comparative effectiveness of PMRC training programs, and the predictable impacts of El Niño climate-change events.

The Sustainable Uses for Biological Resources (SUBIR) Project of USAID/E should study the PMRC experience in working with local resource-user groups. The ZEM model could apply to activities of SUBIR in buffer-zone communities around national parks. Particularly complementary and useful would be for SUBIR to include Machalilla, the only coastal national park (excluding the Galapagos), in project activities, and PMRC to include a part of this area as an additional ZEM. The activities of the SUBIR project and the Cotacachi-Cayapas Ecological Reserve might be combined in some way with PMRC activities on the coast of Esmeraldas, especially given the interest of the Governor in a province-wide PMRC model in resource management planning.

Foundation IDEA has much to contribute to PMRC in the development of national policy initiatives that can complement the long-term goal of PMRC to develop national plans for the management of all of coastal Ecuador. IDEA also has strengths in analyzing the effects of national policies and economic trends that affect the utilization of natural resources. The CRMP initiative leading to the Executive Decrees and development of a GOE PMRC should be studied by IDEA for future initiatives in GOE policy changes for the conservation of natural resources.

The Foundation Pedro Vicente Maldonado has had some contact with the EDUNAT projects (funded by USAID/E) of Fundación Natura for environmental education. We recommend increased cooperation between PMRC and Fundación Natura.

**17b. . . . used as a model for other Latin American/Caribbean nations.**

*Many aspects of CRMP can provide models for LDCs in the Latin American and Caribbean region as well as most coastal LDCs in the other regions of the world. In some developing nations, the entire Ecuador model appears to be transferable, but, for the majority of coastal LDCs, only component parts of the Ecuador model appear to be readily transferable.*

CRMP has made a number of efforts to inform other nations in the A.I.D./LAC region about the Ecuador program, and is planning more. These efforts include the following.

- A chapter on the Ecuador Program in the special issue of the *Coastal Management Journal* on coastal zone management in Latin America. (1987)
- Production of a quarterly newsletter, *Costas*, to disseminate information about the activities and results of CRMP. The number of copies distributed is 1,500 with approximately 100 copies being distributed internationally.
- Participation in the Organization of American States workshop (1988) in Miami on the management of coastal environments and resources in Latin America.
- A chapter on the Ecuador Program in the book produced by the Organization of American States, entitled, "*El Manejo de Ambientes y Recursos Costeros en America Latina y el Caribe.*" (1990).
- Organization of a regional workshop in Guatemala City on coastal resources management in Central America (1991).
- Assistance to the Government of Belize in designing its national coastal zone management plan (1991).

- **Distribution of technical reports and working papers (without charge?) to individuals and institutions in the A.I.D./LAC region on a request basis.**
- **Also since 1987, the Coastal Resources Center at URI, with support from CRMP, has been publishing *InterCoast, The International Newsletter on Coastal Management*. It is distributed three times a year. At the present time there are approximately 350 recipients in the A.I.D./LAC region.**

According to the year 8 work plan, one of the central elements will be: "Assessing the experience in Ecuador PMRC through its first seven years in terms of its implications for other coastal nations in Latin America, and for national policy development in Ecuador."

There is no particular reason to limit the lessons learned to the Latin America and Caribbean region, except that most of the documents are in Spanish. It appears that most coastal lesser-developed countries all over the world can benefit to some extent from the Ecuador experience as a whole or as a set of discrete component parts. Few coastal LDCs can take the entire PMRC approach as a model and transfer it directly to their country. There are four reasons for this conclusion.

1. **A number of A.I.D./LAC nations already have their own integrated coastal resources management programs. These include Belize, Brazil, Venezuela, Costa Rica, Barbados, and the Turks and Caicos Islands. Expanding beyond the A.I.D./LAC region, approximately 15 developing nations have already initiated and designed integrated CRM programs. It is unlikely that countries that have already developed their own tailored approaches for preparing plans and have embarked on plan preparation will switch horses in midstream.**
2. **Many small island nations in the Caribbean — as well as the rest of the world — have found that national environmental and land use planning is a more efficient and effective model to use to resolve coastal resource and environmental issues than a separate coastal zone management program.**
3. **Many LDCs do not have the institutional capacity or the political stability to initiate, prepare, and implement an integrated CRM program, even if substantial international assistance were to be provided.**
4. **Coastal resources in many LDCs are relatively insignificant factors in national economic development.**

If one disassembles the Ecuadorian model into component parts that have proved to be successful in their own right, the potential for transferability is much greater. Some examples of successful component parts that can readily be transferred to numerous LDCs are:

- **The preparation and implementation of special area management programs;**
- **The identification and involvement of stakeholders (particularly at the local level) in the process of plan making and implementation;**
- **The process used for the identification of issues along the entire coastal zone, and the published documents produced; and**

- The process for analyzing laws and regulations relevant to the management of resources and environments and transforming this information into a manual that can be easily used by the people given the responsibility for managing the resources.
- 17c. . . . can be applied to changes or improvements in A.I.D. sector policies for management of coastal resources or broader components of the environment and natural resources, including tropical forestry, biological diversity, agriculture, rural development, and other relevant policy sectors.**

*The CRMP experience, especially its emphasis on institution building, its implementation mechanisms, and its emphasis on local-level constituency building should be applied to changes or improvements in A.I.D. sector policies for environment and natural resources.*

The "degradation and depletion of water and coastal resources" is one of the four major problems identified in the A.I.D. Environmental Strategy. Nearly 70 percent of the world's population lives within 80 kilometers of the coast and, as in Ecuador, urban centers near the coast are growing rapidly. PMRC exemplifies the complexities of working in this zone, but also provides distinct indications that workable mechanisms exist for coordinating solutions to such problems. In addition, the project's applicability as a model process goes well beyond coastal resource management.

The following lessons can be applied to A.I.D. projects and policies.

- The process of community participation and empowerment is time consuming. It has been almost four years since the presidential decree establishing the ZEMs, but many activities remain nascent. A.I.D. projects that truly aspire to treat local people as active collaborators, rather than passive beneficiaries, must schedule sufficient time for development of this participation. This is likely to require a greater management burden and slower cash flows, at least at the outset.
- Successful natural resource management projects must involve all stakeholders. A.I.D. projects have often tried (or been forced) to concentrate on working with NGOs and communities to the exclusion of local or national authorities or of powerful private sector interests. This is likely to be unsuccessful and undermine the goal of integrated resource management. Alternatively, projects that concentrate on government authorities (such as many MDB projects) could learn from the project's successes in motivating communities to take responsibility for their own resources and improve communication with authorities.
- The concentration on a specific zone and its problems has particular application to a large number of integrated conservation/development projects. These are often associated with a specific geographic area (for example, buffer zones surrounding conservation areas). The project's three-pronged approach — information gathering; coordination at the national level; and information dissemination, coordination, and public participation at the local level — is clearly applicable to other integrated projects.
- The linkage between community development projects and resource management must be explicit. The most successful ZEMs (such as Esmeraldas) have made this linkage in their practical exercises better than others.

## **CONCLUSIONS AND RECOMMENDATIONS**

### **Project Design and Structure**

The original project design and structure allowed U.S. experience in coastal zone management to be adapted in a flexible way to the economic, social, and political conditions of Ecuador. However, the planned structure assumed that existing Ecuadorian government institutions would be capable of, and interested in, coordinating the resolution of coastal resources management problems. This assumption was wrong. Therefore, the project has concentrated on creating awareness and interest (through coastwide education and promotion of coastal resources management) at the level of the Ecuadorian presidency, resulting in a national Decree on Coastal Resources Management and a coordinating agency at the national level. The continuing weaknesses and lack of interest of GOE agencies required the project to concentrate on creating local constituencies to support the process of resource management, postponing the Project Paper focus on the selected issue of national economic importance: mangrove clearing associated with shrimp mariculture. Creation of these constituencies has required intensive work with local groups and individuals, and inclusion of all their interests. Available funds and personnel have had to be focused on restricted geographic areas, selected as Special Management Zones. As a result, the project has become oriented to a multitude of local issues in the ZEMs, which comprise 7 percent of the coast, rather than focusing on an issue of coastwide economic and social importance. We are concerned that the project will remain concentrated on these geographically limited issues and not produce a coastwide system for integrated management of resources.

We recommend that, in the final two years of the A.I.D.-funded PMRC, emphasis be given to adaptation of the lessons learned in the ZEMs to identification of national management issues that can be addressed in the continuation of PMRC through IDB or other funding.

### **Management, Coordination, and Communication**

Project structure and management have been generally effective. The complex financial arrangements (many resulting from legal or other requirements of the existing bureaucracies involved with this project) have occupied an undue amount of administrative time. Obligations have occurred late in the fiscal year, for reasons attributable to the overall U.S. national budget process (a recurrent problem, which should have been planned for in contingency plans), making it necessary to give undue attention to finances. There has not been a pipeline of any consequence. URI, indeed, has had to advance funds to the project at times. USAID/E financial participation could have contributed more to the success of the Ecuador Pilot Program if the overall amounts had reached the levels of commitment in the Cooperative Agreement and if the annual amounts had been less erratic.

Coordination among A.I.D./R&D/ENR, A.I.D./LAC, and the University of Rhode Island has been excellent, especially considering the number of institutions and people involved in the many components of the Ecuador Pilot Program. Directions from A.I.D./R&D/ENR have been clear and consistent, except for a period when it was unclear how much emphasis was to be placed on mangrove clearing associated with the shrimp mariculture industry. USAID/Ecuador has been more erratic in its management and financial support for the project.

The system of monitoring and evaluation — as laid out in the Project Agreement and the JPA — is repetitive, time consuming, and produces paperwork of marginal value. There should be one system for preparation and evaluation of the quarterly work plans. This system should result in improvement

of the transfer of information among ZEMs and to the central PMRC office in Guayaquil. The "bottom-up" consultation process has worked very well at the level of the ZEM. In contrast, issues that impact the ZEM but could not be solved at that level did not seem to be raised effectively at the PMRC office in Guayaquil, and from there to the government. For example, when changes in regulations by the Merchant Marine in Guayaquil would benefit local ZEMs, this information could be transmitted up via PMRC. Likewise, ZEM coordinators had not visited other ZEMs to share experience. Future meetings of ZEM coordinators should rotate to each ZEM, with time allotted for consultation with the communities.

The Ecuador program has not benefited as much as it might have from the experience of the other two pilot CRM programs, in Thailand and Sri Lanka. It is important to compare the country programs in a project final evaluation, which could examine how and why the national programs functioned differently and what lessons could have been learned.

### **Institution Building**

The Ecuador Pilot Program has been faced with far weaker government institutions than were foreseen in the Project Paper. As a consequence, it has had to devote more attention to creating and coordinating institutions than to research or technology transfer. Many institutions, however, such as the ZEM Executive Committees and the UCVs, have not functioned adequately.

The Ecuador Pilot Program has focused on improving the capacity of local resource user associations to manage coastal resources sustainably. These efforts have had some success. The program's attempts at improving the planning and managerial capacity of local government institutions have had limited success for reasons largely not under the control of PMRC, such as lack of adequate financing, lack of independence, and no tradition of government coordination. UCVs could play an important role in enforcing existing laws and regulations affecting coastal resources, but have not mobilized the resources that should be applied to conservation and vigilance. Perhaps, the necessary resources could be found through the reassignment of existing GOE funds, personnel, and equipment.

We recommend that the National Commission be asked to establish a policy for assigning resources to the activities of UCVs as soon as possible.

The project has also not improved national institutional capacities for research on topics of importance for the management of coastal resources (for example, shrimp and shellfish reproduction patterns, effects of water pollution on mangrove regeneration, coastal erosion effects of El Niño events, and economic and social impacts of projected investments in shrimp mariculture). Limited research has been undertaken by the PMRC working groups (mangroves, water quality) and by individual studies (coastal geology), but Ecuadorian universities have not been involved, as cooperating institutions, in PMRC. No permanent research or educational program has been established for coastal resources. Research will have to be considered an integral and necessary component of Ecuador's coastal resources management.

We recommend that the project determine the institutional arrangements necessary for training researchers and carrying out research as an important component of institutional strengthening. In the continuation of PMRC after A.I.D. funding, attention should be given to establishing institutional and financing mechanisms for training researchers and carrying out research.

The effectiveness of the institutional framework that the project has created will be tested when international assistance organizations withdraw or scale down their financial and technical support for PMRC. It is too early to determine whether PMRC will achieve its overall objective of establishing national policies and institutions capable of integrated management of Ecuador's coastal resources.

### **The Preparation and Implementation of the National CRM Plan**

The participatory, local approach is an important component being used to prepare and implement the national coastal resources management plan for Ecuador, given the ineffectiveness of government organizations and the continual series of budget crises in the GOE. This local approach should not be allowed to become the end goal, however, and should not replace a national system for management of coastal resources.

We recommend that the project define clearly the roles of the ZEMs as "pilot" activities, leading to integrated management of the entire coast and including local and regional governments, developers, industry, and so on.

CRMP has met many of the Ecuador Pilot Program objectives. The pilot program has produced policy, legal, and institutional analyses. PMRC has not advanced to the stage of accomplishing most of the local objectives. Support from the Inter-American Development Bank follow-on project will be needed to accomplish most of these objectives.

The public consultation and public education and awareness programs among a segment of the coastal zone population have apparently been successful (although the impacts of these programs have not been measured). Many local resource users have been included in discussions and planning for the use of resources within the ZEMs. However, some important groups, such as shrimp mariculture investors and pond owners, coastline developers, regional politicians, and middle-level bureaucrats have not been effectively involved in policy formulation and implementation of ZEM plans. As a consequence, some major issues have not been adequately addressed such as the destruction of mangroves for shrimp ponds, which was identified in the A.I.D.-URI Project Agreement as a crucially important factor. Participation of such economically and developmentally important sectors would have increased the effectiveness of the project in reaching its overall objectives.

We recommend that the project make a special effort to include these groups in the planning and implementation of an extended PMRC, starting with specially targeted education and awareness programs.

The practical exercises have helped to create the local organizations, provided an impetus to the formation of local constituency groups, and provided the opportunity to test solutions to specific coastal resource problems. To continue their cohesion, the groups need to establish mechanisms to finance resource management at the local level.

We recommend that the ZEMs include analysis of financing for the continuation of the practical exercises that prove successful as an integral part of their design. These practical exercises should be related to resource management.

The process of environmental impact assessment is not well understood or practiced in Ecuador. A model impact assessment methodology is an essential procedure for analyzing adequately the effects of development on coastal resources, environments, and user groups. The project has not created a model process for assessing the impacts of coastal development. Nor has the project been involved in

the preliminary design of major development projects that affect coastal resources, such as the Daule-Peripa Dam, petroleum exploration on the Santa Elena peninsula, or the construction of new roads to and along the coast.

We recommend that the Technical Secretariat develop a capacity to analyze the potential effects of coastal projects and become involved in recommending appropriate mitigation measures.

The ZEMs cannot achieve their objectives without the substantial additional financial and technical support of A.I.D. or other international assistance institutions such as the Inter-American Development Bank. However, for the ZEMs to become self-supporting institutions, local and state units of government must gain the capacity, capability, and interest to incorporate the ZEM process and outputs into their own institutions. At the national level, the institutional capacity to incorporate the ZEM process and outputs does not exist. Even if it did exist, the ZEM process was intended to be primarily a local and provincial expression of governance — not a national governance arrangement.

The project should analyze the extent to which its efforts (such as the Mangrove Working Group, pamphlets, workshops, documents, and ZEMs) to conserve mangrove, salt flat, and estuary ecosystems have reduced or stopped conversion into shrimp ponds. These efforts by PMRC should be distinguished from those nonproject influences that have also had the effect of reducing or stopping conversion into shrimp ponds — such as the market forces of the increasing prices of post larvae, pollution contamination of ponds, decreased prices offered by international markets for shrimp products, anticipated increases in the price of fuel for the pumps, or the simple scarcity of suitable areas remaining for clearing. Such policy and economic analyses could best be undertaken by groups outside of the project, such as Fundación IDEA.

### **Future of PMRC**

In Ecuador, as in many other developing countries, economic growth is disproportionately concentrated along the coast. The process of integrated management of coastal resources for sustainable development remains highly relevant to A.I.D. and should be part of agency and USAID/Ecuador sector policies and strategies in natural resources, environment, biological diversity, and economics.

A.I.D. does not plan any follow-on activities after September 1994. The Inter-American Development Bank, however, is planning a follow-on \$15-20 million loan to the government for coastal resources management, mostly to fund the implementation of the ZEM plans. It is, therefore, the design and implementation of the IDB project that will determine, to a large degree, the eventual effectiveness of the USAID/URI project.

The ZEM process, which is to be continued by the IDB project, is a central component of PMRC, but probably should only be an experimental management component that contributes to development of a more comprehensive coastal program. The ZEM pilot activities, however, have not yet been objectively evaluated in detail. Such an evaluation should be done before the A.I.D. funding ends and before IDB commits itself to the implementation of the ZEM plans.

PMRC needs to balance and integrate its work at many levels. If only to respond adequately to the demands of the local resource users in the ZEMs, PMRC will have to provide technical answers that are based on scientific research, some of it long term. Economic analyses will be necessary to analyze trade-offs between different implementation options. PMRC also must establish a dialogue with powerful coastal economic interests such as shrimp farmers and tourism and residential developers if it is to

influence their use of coastal resources. Finally, the Technical Secretariat has to become involved in the design and mitigation of large coastal projects such as dams, petroleum production, and roads, or risk becoming marginally relevant to the future use of coastal resources and environments.

For the continuation of PMRC, we recommend the following:

- PMRC should define clearly its longer-term role to establish the management of all resources of coastal Ecuador, and determine how to manage these resources within the sociopolitical context of the country.
- PMRC and IDB (or other funding agencies) should determine how the transition will be made from a small-scale, experimental project to a nationally significant program with substantial financing.
- Given the economic, social, and political importance of coastal Ecuador, USAID/Ecuador should make the management of coastal resources one of the Mission Strategic Objectives, assigning at least limited funds to support the project during the transition to other funding sources. In this way, the eight years of A.I.D. funding will be more likely to have long-term impacts, as these limited funds, at least, can be utilized in leveraging the design of project continuation by the government, IDB, or other donors.

#### **Use of Project Experience by A.I.D. and Other Developing Countries**

Other USAID/E efforts that could profitably study the lessons learned by CRMP are the SUBIR, IDEA, and EDUNAT projects. These projects would benefit from more coordination to form a single USAID/E natural resource program rather than a collection of individual projects.

The success of the CRMP approach to institution building, its implementation mechanisms, and its emphasis on local-level constituency building should be applied to changes or improvements in A.I.D. sector policies for environment and natural resources.

Many aspects of CRMP provide model processes and methods for other coastal nations in the Latin American and Caribbean region, as well as most coastal regions of the world, but, for many countries, only component parts of the Ecuador model appear to be readily transferable.

**APPENDIX 1**  
**SCOPE OF WORK**

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## **APPENDIX 1**

### **SCOPE OF WORK**

**BUREAU FOR RESEARCH AND DEVELOPMENT  
OFFICE OF ENVIRONMENT AND NATURAL RESOURCES**

**COASTAL RESOURCES MANAGEMENT PROJECT  
(PROJECT NO. 936-5518)  
INTERIM EVALUATION OF THE ECUADOR PILOT PROGRAM  
AUGUST, 1992**

### **INTRODUCTION**

**This interim evaluation of the Coastal Resources Management Project (CRMP) is designed to be summative and informative. It will assess project accomplishments and make recommendations for the future.**

### **OBJECTIVES**

**This evaluation is initiated to:**

- **Assess design and implementation of the project in relation to A.I.D. and local Mission sector policies and strategies, including regulations on natural resources, environment, tropical forests, biological diversity, agriculture, rural development, and other relevant policy sectors;**
- **Assess project progress towards the goal of assisting Ecuadorians in managing their coastal resource base more effectively through integrated approaches to local and national planning and development;**
- **Determine how effectively the project design incorporates local-level needs, concerns and resources (including gender- and socioeconomic-based variables), while effectively integrating these with the interacting social, environmental and economic variables affecting the sustainable utilization of all coastal resources;**
- **Identify major accomplishments and implementation problems, comparing these achievements to those proposed in project proposal and annual work plans;**
- **Assess the adequacy of project design and the continuing applicability of the project's purpose;**
- **Assess the need for, and, if warranted, make recommendations for adjustments in project design and implementation during the balance of the project, and for future project directions;**

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- **Assess existing and potential linkages between the CRMP and other USAID/Ecuador initiatives in natural resources management;**
- **Identify quantitative and qualitative criteria to assist in the final evaluation of the entire project;**
- **Assess the relevance of the Ecuador pilot CRMP to other A.I.D. nations facing similar issues; and**
- **Assess the utility of continuation or expansion of the Special Area Management Zones (ZEMs) as pilot areas for solving general problems in coastal zone resource management, with suggestions for when and how it will be appropriate to apply lessons learned in the ZEMs to regional or national policy initiatives.**

**The evaluation will assist USAID/Ecuador and the Bureau for Research and Development/Office of Environment and Natural Resources (R&D/ENR) in determining the effectiveness of project implementation and any need for modification. Specific attention in the evaluation will be given to the following major questions:**

- **What are the assumptions and issues upon which the Ecuador pilot project is based?**
- **Is the Ecuador program currently being implemented consistent with those assumptions and issues: For example, are the project accomplishments, products and processes related to the specific assumptions, and in what manner, and are the pilot activities resulting in clear solutions to coastal management issues?**
- **With respect to the implementation of the program, assess the effectiveness of R&D/ENR, the University of Rhode Island (URI) contractor, the cooperating country institutions, and the USAID/Ecuador Mission.**
- **To what extent has the Ecuador project been successful in independent institutionalization of Ecuador's National CRM Program and continuance of the actions in coastal resources management initiated by the R&D/ENR CRM project.**
- **How can results of the pilot project and the pilot ZEMs be used for broader regional or national programs in resource management?**
- **To what extent do the design and implementation of the CRM project support relevant A.I.D. sector policies, and in particular, the intersectoral aspects crucial to implementation of comprehensive natural resources management programs by Missions such as USAID/Ecuador?**
- **Determine the extent and form of local participation in project planning, implementation, benefit distribution and on-going monitoring and evaluation. Identify which community members have participated in particular project activities.**
- **For different user and social groups, identify changes in access to coastal resources. Assess how the project has affected residents outside of the ZEMs and of neighboring non-coastal areas.**

## **STATEMENT OF WORK**

### **Pilot Project Design, Management and Implementation**

The CRM Project is a multifaceted project involving multiple agencies and contractors within the country. The evaluation team is to review the overall management structure and institutional development, and assess the following:

1. Clarity and consistency of directions and guidance from the A.I.D. Project Manager and the USAID/Ecuador Mission Liaison Officer to the URI contractor.
2. Coordination among the R&D/ENR Project Manager, the LAC Regional Bureau, USAID/Ecuador, and URI.
3. Effectiveness of project structure, management and financial arrangements (i.e., cooperative agreement or Convenio between the Government of Ecuador (GOE), A.I.D./Washington, and URI; the Cooperative Agreement between A.I.D. and URI; pilot country agreements [the in-country URI Office for Coastal Resources Management (PMRC) and the Fundación Pedro Vicente Maldonado (FM)], annual work plans and assessment cycles). For example:
  - a. Short-term technical assistance;
  - b. Design and management of research activities;
  - c. Design and management of public education and training programs;
  - d. Institutional strengthening; and,
  - e. Overall project and regional outreach, including information dissemination activities.
4. Effectiveness of the PMRC in carrying out the objectives of the Ecuadorian National CRM Program as set forth in the 1989 Presidential Decree for a National CRM Program.
5. General project monitoring, coordination and guidance, including scheduling, obligations, pipelines, etc.
6. Function and adequacy of host-country lead agency since 1989 Presidential Decree, in implementation structure and organizational ability and stability.
7. Effectiveness of financial participation and follow-on activities by USAID/Ecuador, and initiation by other donors, etc., for follow-on implementation.
8. Effectiveness of the PMRC in accomplishing the local-level objectives of various user and social groups.
9. Changes needed to help ensure better overall project management.

The evaluation team shall assess the following for the Ecuador pilot program in CRM:

10. Underlying assumptions and issues, with special attention to identifying whose interests are represented.
11. Validity of the approach used in project implementation to achieve the stated Project Paper goals.
12. Function of original project design in achieving the Project Paper objectives.
13. Progress towards meeting the overall pilot project objectives according to Attachment A.
14. Effectiveness of the approach used to implement the Ecuador pilot, including:
  - a. Selection criteria for pilot project issues, and process of the policy, legal, and institutional analyses;
  - b. Resource user involvement in project activities, specifically determining which interest groups have contributed which resources (e.g. time, labor, etc.) to project planning, implementation, monitoring and evaluation. What resources or actions are required of project participants and who is excluded by these requirements?
  - c. The relevance of U.S. experience as applied through technology transfer activities relating to improving the technical information base, and resource management techniques;
  - d. Institution-building efforts aimed at improving the country capacity for resource management to sustain economic development; and
  - e. Improving the capacity of local institutions and social organizations to sustainably manage coastal resources.
15. How project implementation has differed from the initial Project Paper design.
16. Recommendations on how to determine when the project should move into a second phase of implementation for the coastal area in general, using the lessons learned in successful pilot activities of the project, either as redesign of the existing project or as an initiative of local governmental units or the GOE PMRC directorate with assistance from the project.
17. How the project experience can be used (a) by other USAID/Ecuador natural resources projects, (b) as a model for other Latin American/Caribbean nations; and (c) can be applied to changes or improvements in A.I.D. sector policies for management of coastal or broader components of the environment and natural resources, including tropical forestry, biological diversity, agriculture, rural development, and other relevant policy sectors.

A list of questions to facilitate the assessment of pilot project implementation is found in Attachment B.

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## **METHODOLOGY AND PROCEDURES**

This scope of work does not mandate a specific methodology for the evaluation team to use to achieve these tasks. However, the team should utilize an evaluative methodology during the site visit that is sensitive to the adaptive, flexible approach to program operation that has characterized implementation of the Ecuador pilot project.

PMRC and/or URI personnel will assist in travel logistics and contacts/appointments for the evaluation team, but interviews and other data-gathering activities will be conducted by the evaluation team without the presence of PMRC or URI personnel, except when PMRC or URI personnel are the individuals being interviewed.

The following general approaches shall be followed:

1. **Interviews:** Qualitative and quantitative information should be gathered to determine the levels of stakeholder participation and contribution to the program. In addition to assessments of project progress and effectiveness, the evaluation team should solicit suggestions for improved project effectiveness in the future. Interviewees should include local users and social groups (both participants and non-participants in the program), officials from local institutions such as national and provincial government, local and national non-governmental organizations (e.g. Fundacion Maldonado), the private sector, officials from cooperating country government agencies, ZEM (Zonas Especiales de Manejo) coordinators, project staff within Ecuador and at URI (including managers, experts and contractors), USAID/Ecuador staff and the R&D/ENR Project Manager.

2. **Visits to Host Country Institutions:** Cooperating government agencies and institutions shall be visited in order to assess their technical capabilities, management of the project, and coordination within the contract of the Convenio between the GOE, A.I.D., and URI.

3. **Reports, Documents and Correspondence:** Written Project and pilot project documentation shall be reviewed to ascertain the quality, substance, and relevance of services being rendered. The evaluation team will have access to the following reports as preliminary information:

- a. Project Paper and the 1990 Project Paper Supplement;
- b. Convenio and Amendments between the GOE, A.I.D., and URI;
- c. Cooperative Agreement between A.I.D./Washington and the University of Rhode Island;
- d. Subcontracts;
- e. URI and Subcontractor reports; and
- f. Country Program Director's Reports.

## **SCHEDULE**

It is anticipated that this evaluation will require up to three weeks. Approximate times in this itinerary do not include travel, holidays or Sundays. The evaluation team is expected to work six days a week. The tentative schedule, including lists of people to be interviewed, is provided below. The evaluation is anticipated to begin August 17, 1992.

**Monday, 8/17: p.m.** Travel from Washington, D.C. to Rhode Island.

**Tuesday, 8/18:** Roundtable and Interviews at URI with Nora Berwick, the A.I.D./Washington CRM Project Officer and URI Coastal Resources Center Staff.

**Wednesday, 8/19:** Travel U.S. - Quito, Ecuador.

**Thursday, 8/20: a.m.** Briefing meeting at the USAID/Ecuador Mission with Deputy Director, H. R. Kramer; ANRO Director, D. Alverson; ANRO Natural Resources Officer, R. Ruybal; ANRO CRM Liaison Officer, F. Maldonado; and the A.I.D. Regional Environmental Advisor for South America, H. L. Clark.

**p.m.** Interviews with Project Officers dealing with Natural Resources Management, at USAID/Quito. (R. Ruybal, F. Maldonado and H. Clark).

Travel to Guayaquil

**Friday, 8/21: a.m.** Visit to CRMP Office in Guayaquil: General presentation on the CRMP, including reports, publications & other documents. Visit to the Pedro Vicente Maldonado Foundation Office: general presentation on activities, reports, teaching materials, recordings, video programs, press releases, etc.

**p.m.** Roundtable with representatives of CRMP staff, Fundación P.V. Maldonado, ZEM Coordinators and Technical Teams' Leaders (Geomorphology, Fisheries, Tourism, Mangroves, Coastal Agriculture, Water Quality).

**Saturday, 8/22: a.m.** Flight from Guayaquil to Machala (0800). Field visit to the Machala - Puerto Bolivar — Jambelí Special Area Management Zone (ZEM). Field observations.

**Interviews:**

Port Captain and Puerto Bolivar Ranger Corps Unit members.

ZEM Advisory Committee members.

Shrimp Producers (Hatchery and Pond Owners).

Authorities: Governor, Provincial Council, Mayor.

Resource Users and Community Leaders.

**Sunday, 8/23: p.m.** Return to Guayaquil by car.

**Monday, 8/24: Interviews in Guayaquil:**

Sergio Flores, Rector, Escuela Politecnica del Litoral.

Gabriel Cabezas and Victor Mendoza, CEDEGE.

Undersecretary of Fisheries.

Shrimp Producers' Chamber.

Director General of the Merchant Marine (DIGMER).

National Institute of Fisheries.



**Tuesday, 8/25:** Visit to the Playas-Posorja-Puerto El Morro ZEM area. Interviews with community members and resource users. Return to Guayaquil at about 1800.

**Wednesday, 8/26:** **a.m.** Flight Guayaquil-Bahia-San Vicente (0800). Visit to the Bahia-San Vicente-Canoa ZEM, including interviews with community leaders.

**p.m. Interviews:**

Port Captain and authorities of the ZEM Ranger Corps Unit.  
President of the Municipality of Sucre.  
President and Members of the ZEM.  
Hotel Entrepreneurs.

**Thursday, 8/27:** Midday, flight to Atacames-Súa-Muisne.

**Friday, 8/28: Interviews:**

Authorities: Port Captain, Governor.  
Entrepreneurs: Hotel owners, Shrimp Producers.  
Communities and resources Users' Groups.  
Field visit to the Atacames-Súa-Galera-Bunche ZEM, including interviews with community leaders and resource users' groups.

**Saturday, 8/29:** Flight from Esmeraldas to Quito

**Sunday, 8/30:** Sunday Free

**Monday, 8/31:** Writing evaluation report

**Tuesday, 9/1:** Writing evaluation report

**Wednesday, 9/2:** Report Review (USAID/Quito)

**Thursday, 9/3:** Completion of Final Report

**Friday, 9/4:** Completion of Final Report

**Saturday, 9/5:** Return to Washington, D.C.

The length of the evaluation period is 19 days. An additional 4 days will be required by the evaluation members if USAID/Ecuador requests changes after the team has left the field. The Mission must request changes within 30 days.

**Documents Available in Ecuador.** A list of publications and other documents of the CRMP/Ecuador will be prepared and made available to the Evaluation Team. The following will be included:

**(1) Agreement and other administrative documents**

A.I.D./GOE/URI Agreement and Addenda, GOE Decree 375, Acts of the CRM National commission; Consultants' contracts (Fundacion Pedro Vicente Maldonado, independent consultants, etc.); Draft new Executive Decree of CRMP; URI/FPVM Agreements; interagency agreements (MBS, CEDEGE).

**(2) Workplans and reports**

Annual Workplans; Activities reports, Evaluations

**(3) Publications and Technical Reports**

All publications; ZEM Profiles, Technical working groups' reports, Consultants' reports (Ayón, Pérez, Parra, Montaña, Vicuña, Coello, etc.); papers presented in seminars and other national or international meetings.

**(4) Educational Materials for Dissemination**

Educational school booklets contest results (children painting or reading); materials prepared for campaigns (environmental sanitation, mangrove protection, etc.); posters, video and radio programs (samples), press releases, etc. (This will be prepared by the Pedro Vicente Maldonado Foundation).

**EVALUATION TEAM COMPOSITION**

To ensure a balance of expertise in the evaluation process, the team should consist of the following technical areas:

- An Evaluation Specialist with experience in environmental and natural resources management program evaluation.
- A Senior U.S. Specialist with direct experience in U.S. coastal zone policy, management, and implementation.
- A U.S. specialist with experience in coastal/marine resource management and A.I.D. policy and programs.

The Regional Environmental Advisor for South America, Howard L. Clark, will work directly as a member of the evaluation team, as his schedule permits. It is the consensus of the Mission and A.I.D./Washington that individuals with previous project involvement, by having been contracted by URI or PMRC for services involving the CRMP, will not qualify to be evaluation team members.

Final selection of the evaluation team members will be subject to the approval of USAID/Ecuador and the R&D/ENR Project Manager.

## **REPORTING REQUIREMENTS**

The Agency's required format for the evaluation report is as follows according to the A.I.D. Evaluation Handbook (April, 1987):

- **Executive Summary;**
- **Project Identification Data Sheet (see Attachment C);**
- **Table of Contents;**
- **Body of the Report; and**
- **Appendices.**

The **Executive Summary** states the development objectives of the activity evaluated; purpose of the evaluation; study method; findings, conclusions, and recommendations; and lessons learned about the design and implementation of this type of development activity. (See Attachment D for more detailed instructions.)

The body of the report is to include discussion of: (1) the purpose and study questions of the evaluation; (2) the economic, political, and social context of the Project; (3) team composition and study methods (one page maximum); (4) evidence/findings of the study concerning the evaluation questions; (5) conclusions drawn from the findings, states in succinct language; and (6) recommendations based on the study findings and conclusions. The page limit for the body of the report is to be no more than 20 pages, single-spaced.

**Appendices** will include a copy of the evaluation scope of work, the most current Logical Framework as pertinent, a list of documents consulted, and individuals and agencies contacted. Additional appendices may include a brief discussion of study methodology and technical issues if necessary.

**SOW, ATTACHMENT A**

**GOALS, ASSUMPTIONS AND OBJECTIVES**  
(from PROJECT PAPER, p. 24)

**A. Overall assumptions**

1. Trends in the condition and use of coastal resources indicated the need for CRM.
2. The political and institutional climate is favorable for a CRM initiative.
3. Technology transfer and research can improve resource management practices.
4. If a CRM program is developed by host country institutions, national policy and programs are likely to apply the new techniques and information.

**B. Pilot project assumptions**

1. Technical assistance can strengthen the institutional capacity to manage the use of coastal resources.
2. An integrated system of CRM involving interagency cooperation can improve the resources management process.
3. The host country will create or strengthen a permanent CRM program.
4. U.S. expertise is available and relevant to key CRM issues in the countries.

**C. Pilot project objectives (Project Paper, p. 2)**

1. Analyze priority CRM issues within the context of the nation's historical development trends and socio/economic characteristics.
2. Incrementally develop and test approaches to improving how priority CRM issues are dealt with.
3. Selection of institutional arrangements for CRM.
4. Drafting of policies and plans targeted at specific issues.
5. Training of host country professionals.
6. Expand awareness of the benefits of integrated CRM initiatives.

**SOW, ATTACHMENT B**

**LIST OF SUGGESTED CORE QUESTIONS  
FOR USE IN DISCUSSING PILOT PROJECTS**

**1. Selection of issues and the policy dialogue process**

- a. Which critical CRM issues have been the focus of pilot project activities and why? Whose interests are represented by these particular foci?
- b. What information was utilized to define and understand the issue? Who provided the information?
- c. What strategies have been employed by the pilot project to gain attention for, and influence policies and decisions? Why were these particular strategies selected?
- d. What activities have been undertaken to carry out this strategy?
- e. How have these activities contributed to stimulating an in-country policy dialogue, shaping policy, etc., or have they focussed on specific community development projects (e.g., potable water, latrines, bridges) not yet integrated to solving broad problems in the management of coastal resources?
- f. Is there evidence which links the implementation of policies to concrete on-the-ground CRM issues?

**2. Resource user involvement**

- a. How did the project involve these groups in the definition of the problem and the assessment of its significance. Which resource users were included/excluded from problem definition and significance assessment?
  - b. To what extent did these groups participate and contribute to the process of developing and implementing the coastal resources management program? What are the comparative differences in these processes in the various ZEMs.
  - c. What is the resource user judgment as to the progress of the project toward intended goals? What indicators do local people use to assess the progress of the project toward these goals? How do different local user groups vary in their criteria and indicators of project progress?
  - d. How do different groups of resource users benefit from the project and why? What are the tangible material benefits from the project and how are they distributed amongst different types of resource users? Which groups or individuals do not benefit from the activities of the project (e.g. women, the poorest residents, temporary residents, etc.)?
  - e. What are the roles, participating activities and initiatives of the private versus the public sector regarding coastal issues and their solutions?
- 



**SOW, ATTACHMENT C**

**OUTLINE OF BASIC PROJECT IDENTIFICATION DATA**

1. **Country:**
2. **Project Title:**
3. **Project Number:**
4. **Project Dates:**
  - a. **First Project Agreement:**
  - b. **Final Obligation Date: FY (planned/actual?)**
  - c. **Most recent Project Assistance Completion Date (PACD):**
5. **Project Funding: (amounts obligated to date in dollars or dollar equivalents from the following sources)**
  - a. **A.I.D. Bilateral Funding (granting and/or loan) US\$**
  - b. **Other Major Donors US\$**
  - c. **Host Country Counterpart Funds US\$**

**Total: US\$**
6. **Mode of Implementation: (host country or A.I.D. direct contractor?) Include name of contractor/cooperative agreement participant.**
7. **Project Designers: (organizational names of those involved in the design of the project, e.g., the Government of Ecuador USAID/Ecuador, and R&D/ENR, independent contractors, etc.)**
8. **Responsible Mission Officials: (during the full life of the project)**
  - a. **Mission Director(s):**
  - b. **Project Liaison Officer(s):**
9. **Previous Evaluation(s):**

**Source: A.I.D. Evaluation Handbook (April, 1987).**

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**SOW, ATTACHMENT D****EXECUTIVE SUMMARY OUTLINE\***

The Executive Summary is a two-to-three page, single-spaced document containing a clear, concise summary of the most critical elements of the report. It should be a self-contained document that can stand alone from the report. The summary should be written in such a way that individuals unfamiliar with the project can understand the project's basic elements and how the findings from the evaluation are related to it without having to refer to any other document.

1. **Name of A.I.D./Washington Office** initiating the evaluation, followed by title and date of full evaluation report.
2. **Purpose of the Activity or Activities Evaluated.** What constraints or opportunities does the activity address; what is it trying to do about the constraints? Specify the problem, the solution and its relationship, if any, to overall ENR Office strategy. State the purpose and goal from the Logical Framework, if applicable.
3. **Purpose of the Evaluation and Methodology Used.** Why was the evaluation undertaken and, if a single project or program evaluation, at what stage--interim, final, ex post? Briefly describe the types and sources of evidence used to assess effectiveness and impact?
4. **Findings and Conclusions.** Discuss major findings and conclusions based on the findings as related to the questions in the scope of work. Note any major assumptions about the activity that proved invalid, including policy-related factors. Cite progress since any previous evaluation.
5. **Recommendations for this Activity and its Offspring** (in USAID/Ecuador and in the R&D/ENR Office program). Specify the pertinent conclusions for R&D/ENR in design and management of the activity, including recommendations for approval/disapproval or for fundamental changes in any follow-on activities. Note any recommendations from a previous evaluation that are still valid but were not acted upon.
6. **Lessons Learned** (for other activities and for A.I.D. generally). This is an opportunity to give A.I.D. colleagues advice about planning and implementation strategies: how to tackle a similar development problem, key design factors, and factors pertinent to management and to evaluation itself. There may be no clear lessons. Do not stretch the finding by presenting vague generalizations in an effort to suggest broadly applicable lessons. If items 4-5 above are succinctly covered, the reader can derive pertinent lessons. Conversely, do not hold back clear lessons even when they seem trite or naive. Address particularly the following issues:
  - **Project design implications.** Findings/conclusions about this activity that bear on the design or management of other similar activities and their assumptions.

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- **Broad action implications.** Elements that suggest action beyond the activity evaluated and that need to be considered in designing similar activities in other contexts (e.g., policy requirements, procedural matters, factors in the country that were particularly constraining or supportive).

\* Adapted from the A.I.D. Evaluation Handbook, April 1987.

**APPENDIX 2**

**BACKGROUND INFORMATION: QUESTIONS 4, 5, 10, 11, 14**

## APPENDIX 2

### BACKGROUND INFORMATION: QUESTIONS 4, 5, 10, 11, 14

**4. Effectiveness of the PMRC in carrying out the objectives of the Ecuadorian National CRM Program as set forth in the 1989 Presidential [Executive] Decree for a National CRM Program.**

*The following Articles of Executive Decree 375, of 1989, define the objectives and structure of the PMRC.*

**Art. 2 & 3.** Establish a National Commission for the Management of Coastal Resources that will recommend new coastal resource policies to the President, approve annual work plans and ZEM Management Plans, and coordinate policies and actions among government ministries.

The National Commission for the Management of Coastal Resources has approved work plans and ZEM Management Plans, and proposed at least one important policy change leading to Executive Decree 3399 (June 1992). This new Executive Decree 3399 effects changes in the National program that respond to problems encountered in the original Decree. The PMRC has been less successful in raising other issues to the National Commission for coordination of policies and actions among government ministries. It appears that the primary purpose of forming the National Commission was to avoid rivalry and maintain accord among ministries more that to take an active role in resolving problems. As stated in Olsen's comments on the Draft Evaluation (memorandum to Kernan and Clark, 2 October 1992), "*The comment here is accurate, but does not recognize that we have been involved in a gradual process of building recognition for the significance of a coastal management initiative in the top levels of Ecuadorian government. . . . In Thailand we made the bad mistake of establishing a top level national committee at the beginning of our pilot project. It took two years to find our feet and we had nothing for such a high level group to do. They therefore quickly lost interest and were not there when we did have specific significant proposals requiring evaluation and a decision.*"

**Art. 5.** Establish the Technical Secretariat of the PMRC that will administer and execute the Program, provide technical assistance, present the National Commission with annual work plans and develop studies and plans in areas that affect the coastal zone.

This is the formal coordinating office of the Project, and has served as the host-country counterpart to the A.I.D./URI CRMP (PMRC, in this evaluation document, includes the technical Secretariat and the Ecuador in-country Pilot Program of the CRMP). The CRMP has focussed on making the PMRC Secretariat a decentralized unit of the GOE. This major effort (initially led by the PMRC lawyer, Efraín Pérez) has achieved far greater autonomy for the Secretariat than is customary for a government agency.

**Art. 6.** Establish ZEMs in the provinces of Esmeraldas, Manabí, Guayas (2 ZEMs), El Oro, and Galápagos.

ZEMs were established with A.I.D. Project funding in each of the provinces except Galápagos. The Galápagos ZEM was funded by a grant from the Tinker Foundation. This ZEM has not been effective because these funds were only for planning, not implementation. For lack of funding,

Galápagos is currently the only ZEM without a coordinator and active programs. The Manglaralto ZEM is funded by the GOE and A.I.D./ENR (not USAID/E). A.I.D./E did not support the formation of the Galápagos or the Manglaralto ZEM.

**Art. 8 & 9.** Establish ZEM Executive Committees composed of regional and local authorities to determine priorities for coastal management, propose plans to the National Commission, elaborate projects, promote local coordination, oversee implementation of management activities by its component authorities, and inform the ZEM Advisory Committees of Plans and activities related to the ZEM.

The ZEM Executive Committees have been the least successful component of the Ecuadorian National PMRC (see also response to Question 6). They have met only a few times since the 1989 Decree, resulting in poor coordination of PMRC activities with local and regional authorities. Some of the individuals who were members of the organizations comprising the Executive Committee have, however, been active in the ZEM Advisory Committees. The problems of integrating authorities led to the present development of a single Coastal Zone Committee that combines the functions of the Executive and Advisory Committees (Executive Decree 3399, June 1992). This demonstrates that the PMRC has been successful in responding to problems arising from the original Decree. The Coastal Zone Committees will first meet in October 1992, so their effectiveness cannot be judged at this time. Some background of this evolutionary process in ZEM Committees is given by Olsen (memorandum, 2 October 1992), that *"It is worth noting that the URI [CRMP] advisors argued against forming two ZEM committees. We lost this argument, however, in the many discussions and strategy sessions with high level authorities in several ministries in 1988. They simply could not conceive of mixing public officials with representatives of user groups in a process designed to formulate actions on important topics. . . . I feel that it would have been inappropriate to try to force a single committee three years ago.*

**Art. 10.** Establish ZEM Advisory Committees composed of representatives of resource users and other organizations and entities with interests in the management of coastal resources within the ZEM.

The ZEM Advisory Committees have been established with the help of the Project-funded ZEM Coordinators. They have played the principal role in developing the ZEM Management Plans and in educating and involving many of the stakeholders in decisions concerning particular coastal resource management issues (see the response to Question 10).

**Art. 12.** Establish a Conservation and Vigilance Corps (Unidad de Conservación y Vigilancia, UCV) in the jurisdiction of each Port Captain, to apply laws and regulations that relate to the management of coastal resources.

Three UCVs have been established in Bahía, Puerto Bolivar, and Esmeraldas. The PMRC is not directly responsible for the administration, coordination, or financing of the UCVs; these responsibilities are assigned to the participating agencies and the Technical Secretariat of the PMRC.

The geographic coverage of a UCV is defined to be the same as the jurisdiction of the Port Captain (of DIGMER, the Ecuadorian Navy Merchant and Coastal Marine branch), who is designated by the 1989 Decree to head each UCV. The individual Port Captains remain in office only one year, reducing continuity in UCV leadership, but the PMRC employs a full-time assistant for each UCV.

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The UCVs have improved communication between the primary national agencies with responsibilities for regulating many coastal activities, namely the Merchant Marine (DIGMER), the Forestry Directorate (DINAF), and the Subsecretariat for Fisheries Resources. The UCVs have been generally unsuccessful in coordinating, monitoring and enforcing existing laws and regulations, prosecuting violations, or gathering information on coastal resource use and misuse. There have been some recent exceptions (in Esmeraldas) in patrolling and censusing shrimp ponds and arresting individuals cutting mangroves. The agencies composing the UCV have not dedicated the personnel or funds needed to effectively execute these tasks. UCV has been translated in English as a "Ranger Corps" in some CRMP documents, but does not have the authority and responsibilities that name implies.

A Mid-Term Evaluation (TR&D 1989) for the CRMP noted:

"The current challenge for the CRMP is implementation of the management strategies in the ZEMs under conditions of ineffective enforcement. This is likely to be the critical aspect influencing whether or not the Pilot Project [Pilot Program] in Ecuador, now well-established in the government, will deliver a useful coastal resource management program."

This observation continues to be pertinent, given the lack of effectiveness of the UCV's thus far.

**5. General project monitoring, coordination and guidance, including scheduling, obligations, pipelines, etc.**

*Pilot Program monitoring, coordination, guidance, and scheduling, including funding sequences, are discussed in detail below.*

The Cooperative Agreement includes requirements for Project monitoring, coordination, and guidance, including scheduling, obligations, and pipelines. Amendment 11 extended the Project through September 1994, and reduced the reporting requirements to quarterly reports and annual reports. The evaluation requirements were also reduced: separate mid-term evaluations of the Pilot Programs were replaced with a mid-term evaluation of the overall CRMP. The Mid-Term Evaluation (TR&D 1989) included a brief evaluation of the Ecuador Pilot Program, the only section that we reviewed. It recommended: 1) continued funding for the Ecuador Pilot Program through September 1992, and 2) incorporation of coastal issues in the broader context of natural resource management programs. A.I.D. funding for the Project now continues through September 1994.

URI reports directly to the A.I.D./R&D/ENR Project Manager. The Project Manager has advised the Evaluation Team that all reports required in the Cooperative Agreement have been received in Washington. We presume all reports in the Project Manager's files are also in the USAID/E files, which we have reviewed.

We reviewed the Annual Reports for years 5-8 and the Quarterly and Semi-Annual Reports for these and previous years. They include discussions of policy and implementation and indicate the dedication with which Project staff at all levels have worked on the Project.

The Annual Workplans have served to coordinate and guide the Pilot Program. They lay out the objectives for each year, assign responsibilities to PMRC staff, list reports that will be produced, and include a detailed budget. They include a discussion of PMRC status and accomplishments. The Annual

Work Plans include evaluations of the previous year's work. They would be easier to evaluate if they were to systematically compare the previous year's planned activities with the actual results in chart form (such as a matrix).

USAID/E has an internal reporting system that has tracked the Project since its initiation. These reports are meticulously prepared and detail the principal events of the Ecuador Pilot Program.

Coordination also occurred through telephone conversations, letters, memoranda, field visits to Ecuador by the A.I.D./ENR Project Manager, and visits to field sites by the Mission Liaison Officer and the Regional Environmental Advisor (see Question 1). The most substantive and important coordination mechanism was the preparation of the Annual Work Plan.

**10. Underlying assumptions and issues, with special attention to identifying whose interests are represented.**

*The underlying assumptions and issues, as described in the Project Paper, the Cooperative Agreement, and the Joint Program Agreement are discussed in detail below. We considered it important to include further discussion of these fundamental aspects of the background and structure of the CRMP.*

### **ASSUMPTIONS**

According to the Scope Of Work, the Ecuador Pilot Program assumptions were:

- Technical assistance can strengthen the institutional capacity to manage the use of coastal resources.
- An integrated system of CRM involving interagency cooperation can improve the resources management process.
- The host country will create or strengthen a permanent CRM program.
- U.S. expertise is available and relevant to key CRM issues in the countries.

We have no disagreement with these overall assumptions. We concluded that technology transfer was implied to include institutional transfer. If this was not the case, then the overall assumption should be added that institutional transfer from the governments that have engaged in integrated coastal resources management programs can improve resource management practices in Ecuador. This must be an overall assumption, since the two primary institutional arrangements used to develop the Ecuador CRM program, the inter-ministerial council to establish policy and the ZEMs, both have been used by other governments, in both developing and developed nations. We believe that one more assumption should have been stated. If national CRM policies and programs are demonstrated to be successful in resolving the issues, the host country will eventually support the CRM program entirely, with their own resources. This added assumption is a logical follow-on to the fourth assumption, above.

**We agree with these assumptions, which were also applied to the Pilot Programs in Sri Lanka, and Thailand.**

## **ISSUES**

**The Evaluation Team defines an "issue," to be matters in dispute or opportunities that motivate the creation and preparation of an integrated coastal resources management plan. In general, issues — in the context of integrated coastal zone management — can be divided into four types:**

- **Impacts of one coastal area activity (e.g., tourism, clearing mangroves for shrimp ponds) on other activities (e.g., decrease the visual quality of the coastline, loss of mangrove habitat values);**
- **Coastal hazards or impacts of natural forces (e.g., shore erosion, river flooding, ocean-borne storms) on coastal uses;**
- **Development or sectoral planning needs (e.g., tourism development plan for an area, or the harvesting of underutilized fishery stocks); and**
- **Organizational process problems, such as an inadequate data base or lack of coordination.**

**From the beginning, the Project has focussed on the key issues that can only be adequately resolved through the preparation and implementation of an integrated coastal resources management program. The 1984 Project Paper identified five impact and hazard issues and four institutional issues common to most developing coastal nations. The impact and hazard issues were:**

- **Depletion of fisheries resources;**
- **Degradation of coastal agricultural lands;**
- **Marine pollution;**
- **Natural coastal hazards (such as coastal flooding or ocean-borne storms); and**
- **Coastal land erosion (shoreline erosion).**

**The institutional issues identified were:**

- **Incompatible siting of development;**
- **Multiple use conflicts;**
- **Insufficient and inadequately trained personnel; and**
- **Lack of clear institutional responsibility for coastal zone management.**

## **Shrimp Mariculture and Mangrove Conversion Issue**

The Project Paper, in respect to Ecuador, noted that,

**"The highly publicized issue of sustainability of the very profitable shrimp industry is an excellent starting point for a CRM project, as it involves both the government and the private sector."**

The shrimp mariculture issue was reiterated in the 1985 Cooperative Agreement. This was the only issue specifically identified in respect to the Ecuadorian Pilot Program.

**"Initially, the program will focus on the development problems and opportunities of the southern coast in the provinces of Guayas and El Oro, where the shrimp pond industry is located. Ultimately, the program will aim to develop national policies that would guide development along the entire Ecuadorian coast." (Cooperative Agreement 1985).**

Clearly, the shrimp mariculture and mangrove-estuary modification issue was of national concern. However, as Figure 7 demonstrates, the issue is a very complex problem, involving many stakeholders, resource values, and impacts.

The Joint Project Agreement (JPA), does not list a set of issues the Project will address during the four-year time period. The JPA identifies, as a task, Profiles of Ecuador's Coastal Regions. According to the JPA,

**"These profiles will identify the major management issues, pertinent information and Ecuadorian expertise on the issues, and priorities for additional information gathering, research, and technical assistance."**

Shrimp mariculture is the only natural resource or environment issue to be given the importance of assigning a specific task (2.3.6) in the JPA. Task 2.3.6 states that:

**"The most significant man-made alteration to the coastline has been from the development of the shrimp culture industry. The construction of shrimp ponds is the primary cause of recent destruction of the mangroves. The CRMP will work with counterpart institutions to identify the major social, economic and environmental impacts of the industry and devise policies that will promote the long term stability of shrimp culture. The Project will also identify priority needs for technical assistance and research in all sectors of the industry."**

In 1986, the PMRC formed the national mangrove working group. This group has recently drafted a proposed national strategy for mangrove management. According to the director of URI's Coastal Resources Center, this is the most important national policy dialogue since the drafting of the 1987 national mariculture strategy (Olsen 1992).<sup>1</sup> However, this 1987 strategy has been criticized by the shrimp mariculture association because it took three years for the proceedings from the conference

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<sup>1</sup> According to S. Olsen (memorandum, 2 October 1992), this "over-emphasizes the importance of this initiative. The national dialogue preceding Executive Decree 375 overshadows both the mariculture and mangrove strategies."

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in 1986 — which was the basis for the 1987 strategy — to be published and distributed. In the course of the intervening three years, the information was not readily available to the shrimp mariculturists to modify their development and operation practices in cost-effective ways that could have minimized or prevented the continued wide-scale destruction and degradation of Ecuador's mangrove and estuarine ecosystems. According to government statistics, between 1985 and 1990 the rate of mangrove conversion substantially increased in comparison to the fifteen preceding years (Vásconez 1992). In that five-year interval, approximately 30,000 hectares of mangroves were converted (more than double the area converted in the previous 15 years).

The URI-CRC director states that the proposed national mangrove management strategy,

"...is based on ideas developed in some of the special area management zones, most notably the Atacames-Súa-Muisne plan. It establishes the basic principle of local management of mangrove resources and assesses how this can be carried out in different regions of the country. This is a significant advance over the current outright prohibition on cutting mangroves, which is unenforceable. (Olsen 1992).

### **Issue Identification and Profile**

In September 1987, the PMRC and Foundation Maldonado published *Ecuador: Perfil de Sus Recursos Costeros*. This document is the product of the task specified by the JPA in the previous year. This effort was discussed in the response to Question eight. According to the Preface, the Profile (*Perfil*) derived from the,

"active participation of specialists in different disciplines and fundamentally with the support of representative organizations of the coastal provinces whose contribution was obtained by means of workshops during which members of academic entities and "gremios" and representatives of the private and public sector and evaluated and enriched the collective information." (translated)

There was one workshop in each province, and the names of the participants at each workshop are listed on the first page of each chapter. The following number of participants for each province were: Esmeraldas - 12, Manabí - 12, Guayas - 15, and El Oro - 14. Several of the presenters and commentators attended two or more of the workshops.

The Profile is organized into four chapters, one for each province. Each chapter concludes with a summary of uses and problems for the province. The problems identified for each province are not ranked according to relative importance. The profile does not address the information requirements posed in the JPA, specifically:

". . . pertinent information and Ecuadorian expertise on the issues, and priorities for additional information gathering, research and technical assistance.

A summary chapter to indicate to what degree the four mainland provinces are similar and different in respect to the issues would have been useful in the Profile.

In the introduction to the Profile, it is stated that one of its purposes is to serve in the development and application of a preliminary version of a plan to classify coastal waters and adjacent

lands. According to the document, this plan will recommend the division of the coast by categories of use, from those of conservation to intense industrial development. This objective of preparing a use categorization plan is in response to the JPA that specifies such a plan as a task item. A land and water use categorization plan cannot be found in any of the documents provided to the review team or in the A.I.D. Ecuador files for the Project.

In the preface to the Profile, a second document was mentioned, *Ecuador: Vision Global del Desarrollo de la Costa*, "whose publication would constitute a great support for the comprehension of the actual processes in the area." The "*Vision Global*" report was published in September 1989. The document is "a history of the changes which have occurred in the diverse economic activities, in the resource base and in the services sector since the 1950's." We do not understand why PMRC resources were expended on this document, since it provides much the same information as the Coastal Profiles, and offers little new information that could assist government or user groups in preparing coastal management plans.

The 1988 report, *Structure and Objectives of a Coastal Resources Management Plan for Ecuador*, succinctly stated the concept of focus on coastal management issues:

"The focus of the program must be on issues and conflicts that are truly coastal in nature, that is, 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."

According to the Mid-term Evaluation of the CRMP (June 1989), the principal issues identified by the Program were:

- The protection and improvement of water quality;
- Sustainability of shrimp culture and fisheries;
- Maintenance of coastal attractiveness for tourism and recreational use;
- Resolution of competing uses in specific areas;
- Production and implementation of plans for coastal resource management at local levels; and
- Enforcement of existing laws and regulations.

The 1988 report on the structure and objectives asserted that:

"There is no massive critical problem or problems 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."

This assertion implies that massive, critical problems are impact or hazard type issues, and not institutional issues. If one confines the assertion to impact or hazard types of issues, the question is what

is meant by "massive critical problems." Our visits to the four ZEMs and the associated field trips, our overflights along approximately 70 percent of the coast, and review of the literature lead us to the conclusion that almost all the coastal lagoon and estuary systems are being degraded by significant adverse impacts. These impacts are depicted in Figure 7, and include:

- The physical alteration of estuary or lagoon systems and, in particular, the conversion of natural environments into shrimp ponds;
- Pollution of estuarine waters from either upstream discharges, pollution from shrimp ponds, or pollution from shoreline development from direct discharge of sewage or inadequate septic systems; and
- Reduction of river flows from dams and stream diversions for irrigation -- increase in salinity, decrease in fresh water flushing and nutrient inputs.

We believe that the numerous adverse impacts of estuary and lagoon system constitute a "massive, critical problem" common to all four mainland provinces. Fifteen of the 18 cantons that border on the open ocean or the Guayas estuary system have one or more estuary or lagoon system that has been physically modified and probably degraded for various development purposes.

Shoreline erosion is also a common issue in all four mainland provinces. However, it has not reached massive proportions since many of the areas in which erosion was observed were undeveloped cliffed coasts with little or no habitation except for the encampments of the *larveros* (collectors of post-larval shrimp).

The last part of Question 10, "special attention to identifying the interests represented," is addressed in the response to Question 14b.

**11. Validity of the approach used in project implementation to achieve the stated Project Paper goals.**

*The following is a more detailed discussion of the changes in design which have occurred during the CRMP, particularly as detailed in the Annual Work Plans.*

The 1983 Project Paper has one Goal, which is,

"To contribute to the economic development of LDCs by assisting them to develop and manage their coastal resources on a sustainable basis.

Given the Project Paper goal, the evaluation team interprets project implementation to mean:

- a. The preparation of a plan for the integrated management of Ecuador's coastal resources and environments and a program that will enable Ecuador to effectively and efficiently implement the plan.
- b. The lessons learned from the preparation and implementation of a plan for the integrated management of Ecuador's coastal resources and environments will be

written as a book and/or a series of publications that will be distributed to other coastal developing nations as well as international assistance institutions.

The evaluation team interprets the meaning of "approach used in project implementation" to mean the systematic process and set of procedures used to prepare and implement a plan for the integrated management of Ecuador's coastal resources and environments. In the USAID/E Pilot Program files, we found a figure prepared by URI-CRC that identifies a general process for developing and implementing a coastal resources management program (Figure 8).

The process depicted in Figure 8 shows that the basic, general approach used should be applicable to Sri Lanka and Thailand, as well as Ecuador. The nine steps listed in Figure 8 comprise the most common approach used by integrated natural resources or environmental management programs worldwide. The approach is neither specific to integrated coastal resources management nor to developing nations. It was the basic process, for example, used to prepare and implement the U.S. national CZM program as well as the CZM programs established in 28 U.S. states and territories (in context with the national program).

We could not find one document that lays out the specific approach used in Ecuador for plan preparation and implementation for the full seven-year Pilot Program period under review. Apparently, the designers of the plan preparation and implementation process assumed that an incremental approach to program design should be adopted. This position is shown as an expression of Assumption #1 listed in the set of assumptions by the CRMP. (see Appendix 6)

### **The Incremental Approach**

We have reconstructed the specific, incremental approach that was used — and will be used for the next two years — to prepare and implement a plan for the integrated management of Ecuador's coastal resources and environments. The approach we have constructed is based on, 1) our review of all the resources and environments. The approach we have constructed is based on, 1) our review of all the documents provided to the evaluation team (see Appendix 3, References and Bibliography), 2) a review of the Pilot Program files in the USAID Ecuador Mission, 3) field trips and interviews in four of the six ZEMs, 4) interviews with representatives of national and local institutions involved in the PMRC, and 5) discussions with staff of the PMRC (particularly the in-country Director) and CRMP staff in URI.

The most relevant documents are the following: the *Joint Project Agreement (JPA)*; the *Structure and Objectives of a Coastal Resources Management Program for Ecuador*; the *Fifth, Sixth, and Seventh Year Work Plans*; and a professional paper prepared in 1990 entitled, *Special Area Management as a Basic Method for Planning and Guiding the Development of Ecuador's Coastal Resources*.

The JPA identified the following four steps to be taken from 1986 to 1990 in the approach to prepare the plan:

- Analysis of the existing laws, decrees, regulations, and procedures that currently affect the management of coastal resources. This was done.
- A series of profiles of the environmental characteristics and activities of the nation's coast. These profiles will identify the major management issues, pertinent information and Ecuadorian expertise on these issues, and the priorities for additional information gathering, research and technical assistance. This was done in part.

- **Assess the feasibility of developing an integrated classification scheme for coastal waters and adjoining lands.**
- **The preparation of shorefront development and protection standards. An effective management process should include: a review process for all major construction proposals, a set of construction standards, and an identification of coastal features that must be protected from development. This task is now part of the year-eight work plans for a number of the ZEMs.**

In June 1988, this approach was updated and modified by the publication, *Structure and Objectives of a Coastal Resources Management Program for Ecuador and Manifesto in Support of the Program*. This document was based on a Draft Concept Paper by W. Matuszeski, E. Pérez, and S. Olsen. The 1988 publication added the following components to plan preparation and implementation:

- **Form in each of the seven Port Captain jurisdictions a "Unidad de Conservación y Vigilancia" (Ranger Corps) comprised of enforcement personnel from all the agencies, to improve enforcement of existing statutes throughout the coastal area. This was done.**
- **Designate Special Management Zones (ZEMs) where it is especially essential to improve coordination among governmental entities to deal with real or impending issues. It was recommended that the designation be made by the President and that it clearly lay out the geographic extent of the zone itself, the activities to be addressed within each zone, and the government agencies to be part of the Management Program. However, Executive Decree 375 of January 1989 does not lay out activities in respect to preparing and implementing ZEM plans.**
- **Once a strategy, in the form of a Special Area Management Plan [for each ZEM] has been agreed to, a second and more protracted implementation phase would begin. This task has begun if one considers the execution of practical (or experimental) exercises as one of a number of implementation strategies.**
- **The formation of a Special Management Zone could provide the opportunity to develop a "one stop" permit system. This would unify all required approvals for a project into a single application, with an internal checking system to assure timely agency action. The PMRC decided that this recommendation will not work in Ecuador in the near future. Consolidation, however, could be done of the permit request forms.**

The fifth year work plan (October 1989 - September 1990) added two additional sections to the Special Area (or ZEM) Management Plans:

- **An integration of the various proposals in the plan, emphasizing the resolution of existing and impending use conflicts, and the establishment of zones. At least two zones have been established in the Atacames ZEM; a recreation zone and a sustainable mangrove harvesting area. The law prohibiting the cutting of mangroves will have to be changed in order to allow this to occur legally. Additional zones will be established next year in other ZEMs as well as more in the Atacames ZEM.**

- **A realistic implementation framework and schedule for the overall plan, including priorities, funding sources, actions required of existing agencies, and roles of local groups. According to the work program for year eight, some of this will be done in 1993.**

**The fifth year work plan also initiated the small projects component of the planning approach:**

- **Small projects, which promote and provide models for sustainable and integrated development will be implemented in each of the ZEMs. According to the sixth year work program, 40 practical exercises were implemented in 25 different communities in year 5.**

**The fifth year work plan also called for, 1) the design of mangrove management plans in the ZEMs including zoning and practical systems for monitoring and use of mangroves and 2) the completion of the Manual on Geomorphology and Uses of the Ecuadorian Coastline. The product of this task is in draft.**

**The sixth year work plan (October 1990-September 1991) indicated that work was continuing on the preparation of the ZEM plans in order to have them submitted for approval by the Advisory and Executive Committees prior to submission to the National Coastal Resources Management Commission. In the work plan, the CRMP initiated work on the preparation of a national mariculture strategy as well as to begin to draft a coastwide water quality monitoring system. Also in year six, a report was to be prepared verifying the accuracy of CLIRSEN satellite imagery of mangroves and a report on the area covered by mangroves, shrimp ponds, and salt flats. CLIRSEN has just finished the final draft of this report.**

**The seventh year work plan (October 1991-September 1992) did not initiate any new tasks directly relevant to the preparation or implementation of the integrated coastal resources management plan. According to the work plan, one of the eight elements will be completing technical documents that analyze priority resource management issues of coastwide significance.**

**The URI-CRC Program Manager of the Ecuador Pilot Program presented a paper for a professional conference. The paper is entitled, *Special Area Management as a Basic Method for Planning and Guiding the Development and Ecuador's Coastal Resources* (Robadue 1990). In this, he outlined the preparation and implementation of the five special area plans (ZEMs) and future PMRC directions:**

- **The strategy consists of three basic elements; policy design, participation, and plan implementation.**
- **Reexamine each of the coastal provinces to determine how the approaches and activities, which are proving successful in the ZEMs, can be applied to other communities and coastal ecosystems. ZEM evaluations will be done in the year-eight work plan.**
- **Examine national priorities in key issues through the activities of CRMP working groups. Working groups have been formed for mariculture, mangroves, water quality, and coastal development. (Robadue 1990)**

### **The Unknown Future Steps**

The extent to which the ZEMs will achieve their objectives remains unknown, until full-scale implementation occurs sometime in the future. Should the ZEM approach be applied to all the rest of Ecuador's ocean fronting coastal lagoons and estuaries in which multiple use conflicts are occurring or are likely to occur? There are approximately thirty lagoons and estuaries on the ocean coast. Also, will, and should, the ZEM approach work for the many hydro-geographic subunits of the Guayas estuarine system?

What will be done to plan and manage the other 93 percent of the coastal zone that are not covered by ZEM plans? Can, and should, the ZEM approach of involved resource users be applied to plan and manage regional systems — such as all lands in a watershed, the use of which may have direct and significant impact on coastal resources. When will the inland limit(s) of the coastal zone be defined and why has it taken so long? How should the Project influence decisions on major national public-works projects that will have an impact on coastal resources and environments — such as new highways to and along the coast, or new major fresh-water impoundments or diversions of rivers and streams that flow into the ocean's coastal estuaries or the Guayas estuarine system?

#### **14. Effectiveness of the approach used to implement the Ecuador pilot, including:**

##### **4.14a Selection criteria for pilot project issues, and process of the policy, legal, and institutional analysis;**

*Issues have been selected at various stages through the design and implementation of the Ecuador Pilot Program. The following section includes comparisons of the approaches used in Ecuador and in the U.S. national coastal zone management program.*

##### **Similarities**

The response to Question 11 mentioned that the general approach to plan preparation and implementation used in Ecuador (as depicted by Figure 8) was basically the same process used in the U.S. national coastal zone management program, as well as the coastal management programs established in 28 U.S. states and territories in context with the national program.

One of the most common techniques for plan preparation and implementation in the U.S. Coastal Zone Management programs — as well as elsewhere around the world — is the designation of special management areas and the preparation and implementation of management programs for these areas. The special management areas approach is the basis for the creation of the ZEMs. Many, if not most, of the special area management plans in the U.S. and around the world are to plan and manage estuarine or coastal lagoon systems. By contrast, with the exception of the Bahia-San Vicente-Canoa ZEM, estuaries or lagoons were not the central resource element for ZEM selection or the designation of ZEM boundaries.

The fact that the Bahía-San Vicente-Canoa ZEM has as a central focus on the Estuario Caráquez system has given the effort a distinct advantage in the planning and public participation processes. The size, the central location and the visibility (the estuary is surrounded by tall hills) made it easier for all user groups to comprehend the estuary and the immediate watershed as two interactive systems. The

productive focus on the Caraquez system was further enhanced by a mosaic of aerial photographs as well as maps depicting the estuary and the immediate watershed. The aerial mosaic was done in 1977 and indicated only two modest-size shrimp ponds. There was a professionally drawn map of the status of shrimp pond conversion in 1984. At that time, the conversion of mangroves and salt flats was approximately 80 percent, now it is 95 percent.

The photo-mosaic map mounted on the wall served as a very effective public participation device — as well as providing the Evaluation Team with a clear overview of the ZEM system. Representatives of different user groups repeatedly walked over to the aerial mosaic to point out areas of their concern or to clarify points of information. By contrast, none of the other four ZEM offices we visited had aerial photographs. A number of offices did have official government maps depicting the general features of the area in and around the ZEM. The most striking contrast to the aerial mosaic at the Bahía ZEM office was a crudely hand-drawn map of the Muisne and Bunche estuarine system in the Atacames office. There were no scale and no reference points in order to overlay it with any professionally drafted maps. The Muisne-Bunche map roughly indicated four types of cover: mangroves, shrimp ponds, estuary and river, and populated areas.

The contrast between the maps at the Bahía and Atacames ZEM offices convinced the team that the ZEM process has been hampered by the absence of good time-series maps. We understand there was a budget problem with obtaining appropriate aerial photography, other imagery and maps from CLIRSEN and other vendors. However, given the importance of base maps in plan making and public participation, it is difficult for the evaluation team to understand why this budgetary obstacle was not overcome at the outset of the ZEM process — particularly given the PMRC and A.I.D./W access to high levels of the Ecuadorian government.

One last point about the Bahía ZEM. A large highway is presently being constructed from the city of Bahía to the south to connect with a new open ocean port. The Caraquez Estuary no longer functions well as a port because of the sedimentation from watershed erosion. There is now a dangerous bar at the mouth of the estuary that precludes the navigation of large ships. No impact statement has been prepared for either the road or the new port facilities. Whether or not an impact statement was required for the new highway and port in Bahía, the Evaluation Team repeatedly heard that if impact statements are done, they are usually conducted and delivered well after the project has been initiated. In essence, the impact assessment process and products in Ecuador are mostly window dressing and have little or no effect on eliminating or mitigating adverse environmental impacts. This counterproductive and ineffective situation is common to almost all LDCs.

The preparation and implementation of local coastal programs (LCPs) is another common method used by U.S. states and territories to implement the USCZMP. A local coastal program covers that portion of the local government's geographic jurisdiction that is within the coastal zone. In this arrangement, the state establishes policies and guidelines for local governments to use in the preparation of LCPs. The LCP includes not only the plan but also the complete set of implementation arrangements the local government will use. The states provide funding and technical assistance to the local governments to assist them in the program preparation effort. Also, a time limit for completion of the LCP is established by the state. If the local government does not complete the LCP within the time limit, the state usually exercises one of two options. The state either grants a time extension and a revised completion schedule, or the state prepares the LCP itself and imposes it on the local unit of government. If the local government unit prepares its own LCP, the state then reviews it and, if it is determined to meet the state's policies and guidelines, the program is approved. Otherwise, revisions are requested by the

state until the program is deemed to be acceptable. Once the LCP has been approved by the state, the local government unit has the primary responsibility for implementation.

To the extent that Ecuador's ZEM programs include the total portion of the coastal zone of a canton or a municipality, it generally fits the LCP approach. Next year, the Province of Esmeraldas, with assistance from the PMRC (following a request from the new provincial Governor), will attempt to expand the ZEM approach to its entire coastal zone (which comprises four coastal cantons, which include coastal municipalities). In Latin America, Costa Rica and Venezuela are also using the LCP approach.

The Draft Concept Paper, *Structure and Objectives of a Coastal Resources Management Program for Ecuador*, recommended:

"An essential feature is the time period be limited for formulating an integrated Plan for each Special Management Zone [ZEM]. This will prevent the cooperative effort from becoming bureaucratized and fossilized. Two years is probably the optimum term; by then it should be clear if the conflicts can be resolved, differences negotiated. Less than two years may not provide for the start up effort. More time will simply allow for unnecessary delays. Once a strategy, in the form of a Special Area Plan has been agreed to, a second and more protracted implementation phase would begin." (Matuszeski, Pérez, and Olsen 1988)

Given the fifteen years of experience in the U.S. with the LCP approach, the recommendation cited is somewhat unrealistic. Almost all the seventeen states in the U.S. that used the LCP approach had deadlines of at least two years, with three to four years the usual limit. In all the states that used the LCP approach, the great majority of local governments failed to meet the state's deadlines. The most common reason for failing to meet the deadlines was the effort involved in getting consensus on the set of implementation measures. By comparison, it is much easier to gain consensus on policy plans since they are vague on the specifics on who will benefit and who will be adversely affected if and when the policies are implemented. The ZEM plans are policy plans.

In the U.S., most local governments that participated in the LCP arrangement already had planning departments with substantial experience in land use and public works planning and implementation. Since most of the ZEMs had no experience with planning, it is commendable that they produced policy plans in a little over two years. But, as noted in the response to Question 8, implementation, the hard part of achieving the objectives of the ZEM programs, lies ahead.

Public participation is a required component of the USCZM program as well as all the state and territory programs it supports. The Pilot Program is to be commended for its commitment to public participation in Ecuador where it had not been practiced in the context of integrated resources management. Generally, public participation is not encouraged, much less practiced, in developing nations.

### **Dissimilarities**

The U.S. national coastal zone management program was initiated by national legislation. The law placed responsibility for program administration in one government agency, the National Oceanic and Atmospheric Administration. The legislation provided national funding to the states for both plan preparation and plan implementation. By contrast, the national coastal program for Ecuador was four

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years old before it was recognized by Executive Decree, and six years old before a second Executive Decree centralized the program as a subunit of the General Secretariat for Public Administration, accountable directly to the Presidency. No national funds for program development were allocated in either decree.

Generally, there are two types of governance arrangements for integrated coastal resources management programs: centralized and network. The USCZM program, most U.S. state programs, as well as programs in Sri Lanka, Israel, Venezuela, and Costa Rica are centralized arrangements. In a centralized arrangement, either a new government agency is created or an existing government agency is given new authorities and powers to develop and implement a CZM program. In the "network" arrangement — such as practiced in Brazil, Philippines, Malaysia, South Africa and New Zealand — no new powers are created and the preparation and implementation of the CZM program relies on networking together existing powers from existing laws. Ecuador has had a network arrangement since the start of the program. Figures 2, 3, and 6 illustrate the change from an interagency Policy Board composed of six Ministries and a Steering Committee composed of six institutions to a National Commission for Coastal Resources Management composed of seven government agencies.

One of the main points of international discussion among practitioners of CZM are the pros and cons of the network versus the centralized arrangement for program preparation and implementation. In the United States, the states and territories with a centralized arrangement are generally regarded as having a stronger and more viable program than the networking states.

The limits of the coastal zone have not been established in Ecuador. This is a basic component of the U.S. law and almost all other CZM programs as now practiced by 40 nations around the world. The Profile report does sketch lines on maps that indicate a Zone A and a Zone B. Associated with each of the maps is a table that is entitled "Proposals for areas identified for management." The table divides each Province into specific geographic areas. Most of the geographic areas are divided into two categories, Zone A and Zone B. The only explanation in the entire Profile of what constitutes Zone A and Zone B is a parenthesis in the table. Zone A is "directly coastal" and zone B is "of influence on Zone A."

The states were the focus of CZM program preparation and implementation in the U.S. National program. By contrast, with the exception of Esmeraldas, coastal provinces have had marginal or no involvement in the PMRC, particularly in respect to the ZEM efforts in their respective jurisdictions. The year-eight work program recognizes the need to involve the provincial level of government. One of the tasks is to advise Esmeraldas Province on how to apply the ZEM process to its entire coastal zone. The assumption is that the experience from scaling up the ZEM approach to the coastal zone of Esmeraldas will motivate the other three mainland provinces to initiate similar programs.

States in the U.S., by serving as the focal point for the national program, in most cases, were able to effectively involve local units of government in preparing and implementing local coastal management programs, particularly those states that used the LCP approach. The Evaluation Team's interviews in four of the five continental ZEMs revealed relatively little direct involvement by either the canton or municipal governments. The ZEMs are currently operating as a parallel governance arrangement to the local units of government in which they are located. This parallel arrangement does little to build the institutional capacity of local governments to manage their coastal resources and environments, but provincial and municipal governments in Ecuador are rarely concerned with long-term management of natural resources and are often minimally effective in general. Nevertheless, these local governments do have the legal authority required for the planning and regulation that ideally should

occur. It is essential that the PMRC include these provincial and other local authorities in the project, for continuation of the CRM process after international funding terminates, even though this will be difficult to accomplish.

The U.S. Congress enacted a law that created the National Estuary Program. The goal of this program was to prepare comprehensive conservation and management programs for a number of large-scale estuary systems whose resources were being degraded by multiple use conflicts both within the water area and in the surrounding watershed. To date, seventeen estuaries around the United States, including Narragansett Bay, are components of the program. Almost all the water area and most of the watershed of Narragansett Bay are within the State of Rhode Island. The University of Rhode Island and the Coastal Resources Center have been involved in the preparation and implementation of the Narragansett Bay comprehensive conservation and management plan.

Despite URI's knowledge and direct involvement in the National Estuary Program, there is no apparent transfer of this Program to Ecuador in context with managing the Guayas estuary system. The water area (including mangroves) of the Guayas estuary system covers an area of approximately 51,230 km<sup>2</sup>. The total watershed that drains into the Guayas estuary covers an area of approximately 11,914 km<sup>2</sup>. Many of the estuaries in the U.S. National Estuary Program have watersheds and water areas greater than the Guayas estuary system.

Despite the relative success of the U.S. National Estuary Program, particularly the Narragansett Bay program, we can find no evidence of an attempt to apply this institutional and technical success to the Guayas estuarine system. It was obviously beyond the budget of the Pilot Program to become actively involved in the planning and the management of the Guayas estuary system. However, it appears that the PMRC could afford to support, at least, an analysis of how planning, management, and development programs of the Commission for Development of the Guayas Watershed (CEDEGE) interrelate to planning and managing the coastal resources and environments of the Guayas estuary. The Guayas is one of the most productive estuarine systems in the world (Klima 1989). It would be a national, as well as international, tragedy if significant and unnecessary loss in the sustainable productivity of the Guayas estuarine system is allowed to occur because of the inability of government and private-sector institutions to forge a workable management plan.

The National Commission should be involved in the scoping step of designing projects, as well as review and comments on impact statements, for large-scale river impoundments, channelization or diversions of fresh water that may adversely affect coastal resources and environments of the Guayas estuary system. Current examples are the Daule-Peripa dam for irrigation and power generation, and the Lower Guayas Flood Control Project of CEDEGE. Two ZEMs in the Guayas estuarine system may be adversely affected by large-scale projects in the watershed.

Another dissimilarity between the U.S. approach (as well as other countries) and the Ecuadorian approach is planning designed to manage large-scale biogeographic units. It is fairly clear from a review of the literature — and reinforced by our overflights along the coastline — that the coast zone of Ecuador is divided into two distinct parts, the Guayas estuary system and the coastal zone of the Pacific Ocean. The dividing point is Punta Arenas and the Canal del Morro. The Pacific Ocean coastal zone can be subdivided into two parts. The southern part, from the Salinas Peninsula to Punta Súa is backed by a continuous series of coastal mountain ranges. The northern subdivision of the Pacific coastal zone is dominated by two watersheds; the Esmeraldas River and estuary (with a watershed of 21,418 km<sup>2</sup>), and the San Lorenzo estuary. A 60 kilometer-long stretch of small estuaries and cliffed coast divides these two systems. These three biogeographic divisions are depicted in Figure 9.

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**There is a notable absence (in the literature provided to the Evaluation Team, as well as materials in the A.I.D. Mission files) in respect to considering the coastal zone as an aggregation of large-scale biogeographic units, such as depicted in Figure 9. If a nation-wide plan for the coastal zone of Ecuador is to be realized, programs for the management of the coastal resources and environments of these biogeographic units will have to be prepared and implemented.**

**Sustainable development of coastal resources is a socio-economic necessity in Ecuador. In the U.S. and other developed nations sustainable economic development is often not a goal of CZM programs, and in fact in many programs, the primary goal is resource or environmental protection with little regard for the socio-economic consequences. According to the director of URI's Coastal Resources Center,**

**"In the United States, environmental protection interests often dominate state programs. In the developing world, however, a central reality is that the need for development is urgent and at times the overwhelming priority. The identification of social and economic costs, benefits, and tradeoffs in LDC coastal programs will therefore be fully as important as the environmental quality issues that have been a dominant concern when framing coastal programs in the United States." (Olsen 1987)**

**One obvious manifestation of this difference between LDCs and DCs is the list of small public works projects compiled by the advisory committees of the ZEMs. It is understandable that communities with piles of solid waste, litter in most public places, inadequate supplies or no potable water, open flows of raw sewage, unpaved streets that continually generate dust and have innumerable potholes, would place a higher priority on resolving these problems than the protection of wildlife habitats, endangered species, public access to the beaches, and the visual quality of the shoreline.**

**APPENDIX 3**  
**REFERENCES AND BIBLIOGRAPHY**

### APPENDIX 3

#### REFERENCES AND BIBLIOGRAPHY

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**APPENDIX 4**  
**INDIVIDUALS AND AGENCIES CONTACTED**

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## **APPENDIX 4**

### **INDIVIDUALS AND AGENCIES CONTACTED**

**Arriaga, Luis.** In-country URI Project Coordinator for PMRC.

**Bodero, Alejandro.** Forester, Chief of Mangrove Working Group, PMRC.

**Coello, Segundo.** Mariculture Specialist, PMRC.

**de la Cruz, Homero.** ZEM Coordinator, Manglar Alto, PMRC.

**del Campo, Renato.** Manager, Chamber of Shrimp Producers, Guayaquil.

**Elizalde, Marcelo.** President, Community of Jambell.

**Fierro, Miguel.** Executive Director, PMRC, GOE.

**Flores, Sergio.** Rector of ESPOL, Guayaquil.

**Gabino, Sr.** President, Council of Canton Playas.

**Garaycoa, Cristian.** Biologist, shrimp pond owner, Machala.

**GOE, Director of National Institute of Fisheries Research Laboratory, Guayaquil.**

**GOE, Subsecretariat of Fisheries, Guayaquil.**

**GOE, Governor's Office, Province of Esmeraldas.**

**GOE, Port Captain, Esmeraldas.**

**Jurado, Romulo.** ZEM Coordinator, Atacames, PMRC.

**Kramer, H. Robert.** Acting Director, USAID/Ecuador.

**Macias, Washington.** Executive Director, Fundación Pedro Vicente Maldonado, PMRC.

**Maldonado, Arturo.** ZEM Coordinator, Machala, PMRC.

**Maldonado, Fausto.** Mission Liaison Officer for CRMP, Office of Natural Resources, USAID/Ecuador.

**Noboa, Ricardo.** Geomorphologist, PMRC.

**Ochoa, Emilio.** Fundación Pedro Vicente Maldonado, PMRC.

**Pezo, Wilfrido. President, artisanal fishermen cooperative, Machala.**

**Proaño, Dario. ZEM Coordinator, Bahía de Caráquez, PMRC.**

**Ruybal, Ronald. Chief, Office of Natural Resources, USAID/Ecuador.**

**Vásquez, José. Environmental Sanitation Specialist, Chief of Water Quality Working Group, PMRC.**

**Veintimilla, Rodolfo. Biologist, shrimp pond owner, Machala.**

**Villón, Jose Luis. ZEM Coordinator, Playas, PMRC.**

**ZEM Advisory Committee, Playas.**

**ZEM Advisory Committee, Machala.**

**ZEM Advisory Committee, Atacames.**

**ZEM Advisory Committee, Bahía.**

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**APPENDIX 5**  
**CRMP TIMELINE**

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## APPENDIX 5

### CRMP TIMELINE

- 4/83 USAID/Ecuador expresses strong interest in the CRMP project; Memorandum, 8/83, recommends support.
- 12/83 Quito 10245 Cable: Mission willing to earmark some or all of FY85 (\$500,000) and FY86 (\$400,000) funds designated to Fishery Sector Development Project to CRMP, as well as additional estimated \$150,000 over a 3-4 year period from other program funds. Estimated total \$900,000.
- 1/84 Ecuador chosen as pilot project country.
- 4/84 CRMP Project Paper approved.
- 10/84 Site Visit by Caldwell Hahn (R&D/ENR Project Manager) & M. Hatzolis (LAC/DR/E); Meetings with GOE Ministers. LAC/DR/E Played role in original coordination of Pilot Project Startup.
- 3/85 Coastal zone management training workshop, Bangkok.
- 5-6/85 H. Clark (LAC/DR/E, REA/SA) & S. Olsen (URI) TDY to Ecuador.
- 6/85 Two-day workshop to launch pilot project, Guayaquil.
- 7/85 PVMF Proposal for lobster conservation submitted.
- 1986 *Generally spent in organizing the Project and in planning and implementing the Workshop for Sustainable Development of Shrimp Mariculture Industry in Ecuador. In first year, worked principally with public sector agencies.*
- 1/86 URI in-Country manager.
- 2/86 Meetings with ESPOL.  
Working groups planed for:  
Mangroves  
Pollution Lab  
Oil Spill Cleanup.
- 3/86 Convenio between A.I.D. and Government of Ecuador.
- 5/86 Dr. L. Arriaga contracted as GOE counterpart Co-Director.
- 6/86 First Meetings of the Directorate and Executive Committee of PMRC.
- 7/86 PMRC Office in Guayaquil.

**Contract for Studies on Legal & Institutional arrangements relating to coastal resources.**

**8/86 Workshop for Sustainable Development of Shrimp Mariculture Industry in Ecuador (\$40,000 USAID/E).**

**Shrimp Mariculture Strategy begun.**

**Three major problem areas:**

**Reducing Post-larvae mortality**

**Assure water quality**

**Develop feed quality assurance.**

**10/86 FPVM contract for Env. Coastal Profile.**

**11/86 Nora Berwick is AID/R&D/ENR Project Manager. Guayas Profile begun.**

**12/86 USAID/Memo: Mission's participation in CRMP will emphasize "shrimp and related seafood industries." "The project needs to include action as well as analysis, and action with the shrimp industry seems ideally suited."**

**1/87 Analysis for legal and institutional framework for CRM completed.**

**3/87 Workshop on draft FPVM Env. Coastal Profile.**

**4/87 Shrimp Mariculture Strategy.**

**5/87 AID/URI CRMP Round Table in Rhode Island - Luis Arriaga attends.**

**7/87 Mangrove ecosystem seminar - Esmeraldas.**

**8/87 Completed drafts of Esmeraldas, Manabí, Guayas & El Oro Profiles.**

**9/87? Water Quality Working Group established.**

**9/87 Spanish Version of Coastal Resource Management Guidelines.**

**9/87 FPVM Env. Coastal Profile completed.**

**12/87 FPVM begins design of educational materials.**

**12/87 Water Quality Working Group begins activities.**

**12/87 Workshop on key coastal issues for Guayas Province, at ESPOL.**

**6/88 Workshop — Artesanal Fisheries.**

**7/88 Structure and Objectives for CRMP Ecuador — ZEM concept.  
First discussions by URI with IDB.**

**8/88 Almaguer/Olsen letter — Concern over costs of new activities — Mission cannot promise funds.**

- 11/88 **Workshop — Role of Universities and Research Centers in Coastal Zone Management - Guayaquil.**
- 11/88 **Olsen/Almaguer letter — "Shrimp mariculture industry not in need of technical assistance" - but its effects on the environment do need to be addressed. Four topic areas:**
  - Artesanal Fisheries
  - Tourism development
  - Water quality & water resource allocation
  - Development issues in immediate watersheds.
- 1989 **The major task for this year was to implement the Coastal Resource Management system outlined by Executive Decree 375. ZEM Coordinators were put in place in all ZEMs except San Pedro-Valdivia-Manglaralto.**
- 1/89 **Almaguer/Olsen Response — \$75-100,000 per year USAID/Ecuador funding if GOE institutes ZEMs.**
- 1/89 **Presidential Decree 375.**
- 2/89 **F.Maldonado/Olsen letter — CRMP should not divert scarce resources to artesanal fisheries activities. Shrimp industry should pay for water quality activities — privatization.**
- 3/89 **First meeting of the National Commission on Coastal Resources.**
- 3-4/89 **CRMP Mid-term Evaluation.**
- 4/89 **Contract with ILANUD for UCV training manual.**
- 6/89 **Workshop for UCV members from 4 provinces.**
- 7/89 **Replacement of "Directorate" with "National Commission." GOE counterpart changed to General Secretariat for Public Administration.**
- 9/89 **PL-480 funds for CRMP.**
- 10/89 **Draft Debt-for-Resource Management Agreement - expected purchase date 12/89.**
- 12/89 **First Meetings of ZEM Advisory Committees (except San Pedro-Valdivia-Manglaralto). Handbook for the Application of Coastal Resource Management Regulations published.**
- 1/90 **First Meeting of ZEM Advisory Committee for San Pedro-Valdivia-Manglaralto.**
- 3/90 **UCVs officially established by Regulation #1 of the national Commission on Coastal Resources.**
- 6/90 **Workshop - Galapagos ZEM.**
- 8/90 **New draft Debt-for-Education Agreement.**
- 11/90 **Dr. Fausto Maldonado redesignated Mission Liaison Officer for CRMP project.**

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- 8/91 IDB Mission to Ecuador.**
- 10/91 Initiation of activities by FPVM funded by debt swap. Draft Strategy for Mangrove Management. Request for interim evaluation of the CRMP Ecuador Project.**
- 2/92 IDB Mission to Ecuador.**
- 2/92 Draft Executive Decree prepared by PMRC.**
- 6/92 Executive Decree 3399.**
- 7/92? National Commission approves 5 ZEM Management Plans.**
- 8/92 Ecuador Pilot Project Evaluation.**

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**APPENDIX 6**

**ASSUMPTIONS AND CHALLENGES**

**THE INTERNATIONAL COASTAL RESOURCES MANAGEMENT PROJECT**

## APPENDIX 6

### ASSUMPTIONS AND CHALLENGES THE INTERNATIONAL COASTAL RESOURCES MANAGEMENT PROJECT

#### ASSUMPTION # 1

Process of restructuring institutions and resolving resource management issues in characterized by bargaining and accommodation rather than the straightforward application of technical solutions to problems.

#### Project Design

- Incremental approach to program design adopted; and
    - Annual work plans based on evaluation of previous years experience
  - Strong emphasis on informal inter-institutional teams directed at specific issues.
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#### ASSUMPTION # 2

The weak link for achieving effective resource management programs are inadequate local level institutions, resulting in:

- a) Ineffective implementation of adopted statutes; and,
- b) Inadequate public support/involvement in resource management initiatives.

#### Project Design

- Initial emphasis on geographically specific Special Area Management (SAM) Plan formulation.
  - Complete the loop among planning-implementation-evaluation as frequently as possible.
  - Involve resource users and the private sector interests in all phases of SAM Plan formulation through public workshops and committees.
  - Emphasis on public education.
- RV

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**ASSUMPTION # 3**

Priority CRM issues and effective means to address them vary from one geographic area to another.

**Project Design**

- SAM Plan approach provides for testing techniques in different setting.
  - SAM Plans are issue driven.
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**ASSUMPTION # 4**

CRM Programs in developing nations must be based on concepts of sustainable levels of development rather than the anti-development, conservationist stance adopted by many U.S. programs.

**Project Design**

- Emphasis on analysis of economic implications of management issues and alternative management strategies.
  - CRM plans provide for multiple objectives for multiple use for sustainable levels of resource utilization.
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**ASSUMPTION # 5**

Successes and failures of U.S. coastal resources management programs offer a rich body of experience of direct relevance to CRM program formulation in developing nations.

**Project Design**

- Study tours to view U.S. CRM problems, successes.
- Application of U.S. CZMP partnership approach between central and local government to address resource management problems.



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**ASSUMPTION # 6**

CRM Programs are most likely to be sustainable if they are formulated under local leadership, and support for CRM concepts and initiatives are broadly based among agencies, universities and resource users.

**Project Design**

- All in-country project directors are local hires.
- Local consultants are used whenever possible, even when this creates short-term inefficiencies.
- U.S. participants work as collaborators or advisers to in-country project participants.
- Major emphasis is on building CRM-related activities in host country universities.
- Strong emphasis on training programs.

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**THE CHALLENGE**

**Can Coastal Ecosystem Management:**

- Improve the existing decision-making process by better integrating knowledge about ecosystems with societal needs?
- Provide a means for achieving sufficient consensus on how coastal ecosystems should be utilized?
- Provide an efficient and consistent regulatory process?

in order to:

- Achieve a sustainable and balanced mix of activities within coastal ecosystems.

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