

**FINAL EVALUATION**  
**GLOBAL ENVIRONMENTAL FACILITY**  
***PATAGONIAN COASTAL ZONE MANAGEMENT PLAN***

**January 1997**

**Conducted by**

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## EXECUTIVE SUMMARY

This is the final evaluation of a three-year project entitled the Patagonian Coastal Management Plan funded by the UNDP Global Environmental Facility (GEF). It was directed at the design of the project, the process by which the planning phase of this coastal management initiative has been conducted and at assessing Patagonia's readiness for an initial phase of implementation.

The project team within the Fundación Patagonia Natural (FPN) has done an outstanding job of creating a foundation of technical assessments, public education and instigating productive dialogue on the public policy issues selected as the focus for a coastal management initiative that spans three provinces and over 3000 kms of coastline. The Patagonia coastal management initiative stands at the threshold of formal adoption by provincial commissions at the ministerial level. The ingredients for a detailed plan of action and a set of policies and procedures by which effective management can be initiated have been assembled. There is strong support for formal adoption and implementation of a CZM plan within provincial and central government and among major stakeholders in the private sector. These are major accomplishments that have been attained with remarkable efficiency and technical excellence over the three years of the GEF project. This coastal management initiative, if sustained, holds the greatest potential for conserving Patagonia's extraordinary biodiversity over the long term. This biodiversity will be under increasing pressure as the region develops. Only a cross-sectoral, integrated approach to environmental management, as developed by this GEF project, holds the potential for balancing among needs for biodiversity conservation and needs for development in Patagonia.

### 1. INTRODUCTION

#### Project Overview

Country:	Argentina
Project number and title:	ARG/91/G31 - Patagonian Coastal Management Plan
IPF (1987-1990):	US\$ 10,950,000
Duration:	3 years
Executing agency:	UNDP/OPS
Implementing Agencies:	Fundación Patagonia Natural Wildlife Conservation International (WCI)
UNDP contribution:	U.S\$ 2,800,000 Source of Funds GEF

The project was designed in 1992 as a three-year effort funded at US\$ 2.8 million and implemented by the Fundación Patagonia Natural (FPN) with technical support from the Wildlife Conservation Society (WCS). The project was funded through the Global Environmental Facility (GEF) administered by UNDP through the biological diversity element of that program. The objective of the project is to preserve Patagonia's spectacular concentrations of large marine birds and mammals along a 3,000 km coastline stretching from the northern boundary of the province of Rio Negro to the Straits of Magellan. This area includes three of the four provinces that make up the Patagonian region of Argentina. The majority of Patagonia is an arid, desert-like plain that has traditionally supported sheep farming and a sparse population currently of somewhat more than one million, most of which is concentrated in small coastal towns. The coast comprised of beaches, cliffs, islands, points and bays, is in largely pristine condition and supports a scattering of seasonally dense populations of large marine birds,

particularly penguins, and several species of seals. Several species of whales are seasonally abundant close to shore. The wide continental shelf that in places extends beyond the 200-mile exclusive economic zone (EEZ) is one of the most productive fishing grounds on the planet and the focus of one of the most rapidly growing industrial fisheries. This productivity is the product of the nutrient rich, northward flowing Patagonia current that supports great schools of fish, squid, that in turn support the mammals and birds that are the focus of this project. The region's rich endowment of marine resources is complemented by oil and gas reserves that are mostly on-shore and at the southern end of the province. Other as yet largely undocumented and unexploited on-land mineral resources include gold.

## **Evaluation Methodology**

This final evaluation was undertaken by Stephen Olsen, Director of the University of Rhode Island Coastal Resources Center and James Tobey, who is coordinating a project at the Center designed to develop a common methodology for learning from experience in coastal management worldwide. The evaluation began with a careful review of documents provided by the GEF Coordinator for Latin America and the Caribbean at UNDP/New York. Many other documents were reviewed during the site visit. The evaluation team was in Patagonia from January 6 through January 11, 1997. The schedule for the site visit and the people contacted are given in Appendices B and C. On January 11, the team met with the UNDP Program Officer and Environmental Advisor in Buenos Aires. Drafts of this evaluation report were provided to the Director of the implementing agency, the Fundación Patagonia Natural (FPN), the Director of the Wildlife Conservation Society (WCS), the Program Coordinator in New York, and the Program Officer in Buenos Aires during the week of January 20. A final version was submitted to UNDP/New York on February 7, 1997. There are two major categories of evaluation—process evaluation and outcome evaluation. This final evaluation, as suggested by the Terms of Reference, is primarily directed at the process by which coastal management is proceeding in Patagonia. An outcome evaluation that addressed each of the objectives and outputs called for by the Project Document was completed six months before by Dr. Kriwoken. This assessment of outcomes is further detailed by the September 1996 Final Report submitted by the FPN to UNDP.

This evaluation has provided the first opportunity to apply the evaluative instruments that are being developed by the Coastal Resources Center. The formulation of a common methodology for learning from, and therefore evaluating, coastal management programs has been supported thus far by the U.S. Agency for International Development through its Cooperative Agreements with the URI Coastal Resources Center. Dr. Tobey's collaboration in this evaluation was supported by the Coastal Resources Center and the USAID Cooperative Agreement. The further development of the methodology is being sponsored through a partnership that currently includes UNDP and the Swedish Foreign Assistance Program (SEDA). Appendix D presents the instruments used in this evaluation and discusses some of the lessons learned from this experience.

## **2. ANALYSIS OF THE PROJECT DESIGN**

### **2.1 Scope and Objectives of the Project**

According to the February 1993 Project Document (PD) *The Development Objective* of the Coastal Zone Management Plan (CZMP) is:

... to provide the coastal zone of Patagonia with tools for implementing sustainable use of its natural resources and for protecting its biological diversity. Reaching this objective has been planned in light of the needs and interests of the local communities.

The project thus makes the essential links between (1) biodiversity conservation and the broader development context, and (2) the needs for biodiversity conservation and the needs of the local human society.

The project has been structured around four principal objectives that, in a simplified form, may be stated as follows:

- (1) To upgrade baseline data, management techniques and legislation on coastal resources relevant to the protection of biodiversity.
- (2) To establish a participatory process to integrate the information that will be the basis of the CZM Plan.
- (3) To upgrade institutional and human capabilities for responsible coastal management.
- (4) To promote community participation in the management process.

These four objectives are expanded in the Project Document to 20 outputs, 88 specific activities, as well as a total of 34 achievement indicators.

The fundamental strategy underlying this complex design has been to produce a scientifically-defensible baseline of information on Patagonia's marine birds and mammals that can serve as a basis for assessing future change to these resources. In full conformance with the 1996 operational strategy of the GEF (that was published only five months before the Patagonia project was completed), this information has been gathered and presented following strategic principles that emphasize:

- the integration of conservation with sustainable use in sustainable regional development plans and policies
- a focus on the sustainable management of ecosystems
- the integration of biodiversity objectives with cross-sectoral management strategies
- targeting biodiversity objectives in strategic and cost-effective ways (GEF Operational Strategy p. 14).

The budget approved for the execution of the project as set forth in the project document reflects the complexity and fragmentation brought by the many sub-objectives and tasks. This is further complicated by the fact that there are many tasks listed under sub-objectives for which there is no line item in the budget and conversely there are some line items in the budget that suggests tasks that do not appear under the objectives. The greatest drawback to this somewhat cumbersome design, however, is that it is not linked to a clear conceptual framework. There is no logical sequencing of groups of activities that can provide themes for distinct stages in the formulation and approval of the CZM Plan. Similar kinds of activities are listed under more than one of the four major objectives.

In summary, while the objectives of the project encompass all major features that define the “what” of a planning phase that will culminate in the formal approval of a CZM Plan, the design is not helpful in setting forth “how” this goal will be achieved in practical operational terms.

## **2.2 Balance Among Project Components**

A great strength of the program is its dedication to promoting “a new way of thinking” within the inhabitants of Patagonia and the institutions of provincial government. The project has made impressive strides in promoting consideration of the long-term future of the region and the need to visualize the consequences of current trends in the qualities of the region and the development process within the context of a single interdependent ecosystem. Thus, the project has promoted the centrally important idea that “ecosystem management allows the integration of scientific knowledge of ecological relationships with that of sociopolitical conditions and values ...” (GEF Operational Strategy, p. 15).

The challenge for all projects that work to promote this fundamental idea is to maintain a dynamic balance among activities that include:

- public education
- institutional strengthening
- policy-relevant research
- public participation in all stages of management
- the formulation of public policy and the plans by which it will be implemented.

These essential components are all present in the Patagonia GEF project. However, an analysis of the lists of activities and of the budget suggests that by far the greatest emphasis and allocation of resources has been upon the scientific studies that have produced the baseline of information on the abundance of marine birds and mammals. While numerous individual studies on marine birds and mammals have been undertaken, there has only been one review of the legal and institutional framework for coastal management and one survey of the economic forces that are likely to affect this marine biodiversity. The relatively slight attention given to economic, social and institutional aspects of how Patagonia’s coastal and marine ecosystem can be managed has predictably resulted in a CZM Plan that while rich in information on biodiversity, gives limited practical guidance on how the emerging management process should unfold. The inadequacy of the attention given to such analysis and to activities that would have generated experience in the testing and detailing of public policy and management practice has led to the current deficiencies in the draft CZM Plan. As discussed in some detail in Section 3 of this report, the July 1996 draft made available for this evaluation does not address the design of an institutional framework for the management and regulation of the objectives and activities set forth by the plan. There is no guidance on how the many activities proposed should be sequenced or how activities might be focused on specific issues or geographic sites.

The lack of balance between natural science on the one hand and the economic, social and institutional aspects of ecosystem management on the other, has not prevented the project from making major achievements in public education, institutional strengthening, and promoting the processes of participatory democracy that underlie sustainable management. The sub-objectives and activities listed in the project document that apply to these essential features of coastal management have been met or exceeded despite the relatively small budgetary

allocations made to them. It is noteworthy that the training activities called for in the project document are focused on the topics related to fisheries and marine fauna and did not include attention to the legal and institutional aspects of coastal management. The significant advances that have been made in promoting the central ideas and values of the project within Patagonian institutions appears to have resulted as much from formal training than from the involvement of members of the staffs of the public and private institutions involved in the many workshops and discussion sponsored by the project.

### **2.3 Local Ownership of the Project**

The GEF Operational Strategy states (p. 14):

Sustainable achievement of global biodiversity benefits will greatly depend on the extent to which GEF activities are country driven.

One of the greatest strengths of the project is that it is “owned” by a Patagonian institution—the Fundación Patagonia Natural—which is composed of Patagonia residents that are recognized as leading figures in Patagonian society. This GEF project has greatly strengthened a pre-existing NGO that draws together the community of natural scientists and conservationists dedicated to the conservation of Patagonia’s unique wildlife. It has provided them with the means to make progress towards goals to which they are already dedicated. Many members of the foundation who have worked together as the core team for the GEF project are members of the staff of the Centro Nacional Patagonico, a major research center located in Puerto Madryn and/or the local university. The project team therefore had a pre-existing network of contacts within the provincial governments of Patagonia, the relevant institutions of central government in Buenos Aires and with the leadership in several of the region’s most important businesses.

Conversations with government officials and business leaders in Patagonia and with those familiar with the project elsewhere strongly suggests that the Fundación is a well-respected organization in which the public and the government have considerable trust. This is reflected in requests by government agencies for the Foundation’s recommendations on a diversity of topics and a great willingness to move forward with the implementation of the plan and further development of the ideas that underlie it. The benefits of local ownership are also reflected by the apparent efficiency and high quality that characterizes the many projects undertaken with GEF funding. The project team, being familiar with the agencies and individuals that became involved in the project, has contributed to the high standard and efficiency with which project activities have been conducted. Here again, however, the products that are weakest are in those areas unfamiliar to the project team, namely economics, institutional analysis, and policy formulation.

### **2.4 Technical Support to Project**

External technical support to the FPN has been provided primarily by the Wildlife Conservation International (WCS). This continues a productive partnership between Patagonia’s scientific research community and the WCS that began in the 1960s. The worldwide experience and high level of technical excellence within the WCS on topics related to wildlife conservation and management has doubtlessly contributed to the technical quality in the activities that have produced the baseline of information on Patagonia’s marine birds and mammals. The Director of the WCS, Dr. William Conway, has taken a personal interest in the program. He helped to



shape the P.D. and, in his periodic visits to Patagonia, critiques major documents and advises the FPN staff on its work and its priorities. Dr. Conway has excellent contacts within the Argentine central government in Buenos Aires and has played a valuable role in fostering relationships between the FPN and this project and relevant agencies of central government. The sustained support of the WCS is believed by the project team to have played a central role in the successes of the GEF project.

Early on in the project the FPN developed what has proved to be a productive partnership with a Buenos Aires-based NGO, Fundación Ambiente y Recursos Naturales (FARN). This is an organization that was founded just after the fall of the military dictatorship in 1985. FARN is composed primarily of lawyers and is dedicated to the promotion of participatory approaches to how natural resources policies are formulated and implemented in Argentina. FARN has been supported by the Ford Foundation. This partnership resulted in pioneering work within the municipality of Puerto Madryn in the use of public hearings to help formulate public policy and provide public input to major development decisions. The success of these public hearings has encouraged other municipalities and provincial government to use this technique elsewhere in Patagonia.

The FPN and the project would have benefited from exposure to experience in coastal management in other countries, to training in the techniques of coastal management and in stronger backup in how a CZM Plan is formulated and implemented. The only training provided to the project team was the participation of two of its members in a single one-week course on the economics of the sustainable use of natural resources conducted by Dr. Theo Panayotou in Colombia.

## **2.5 Evidence of Adaptive Management and Incremental Design**

The growing literature on the principles and practices of coastal management all emphasize that adaptive management and strategic behavior lie at the core of sustained success. It is therefore appropriate in this final evaluation to assess whether this project shows evidence of adaptive and strategic behavior by those conducting this project.

Discussions with members of the project team and with those in government and the private sector who have been involved in the project suggest that the past three years have been an exciting learning process for all concerned. The project is to be commended for the risks that it has taken in experimenting with previously untested approaches to public education, to such procedures as public hearings, and the design of workshops that draw together members of the research community with the public and private sector to discuss important issues posed by the further development of Patagonia. While these experiments have introduced a group comprised primarily of natural scientists to the challenges of ecosystem management in which human society is a dominant force to be understood and regulated, the project has until now been reluctant to enter into the management process itself. The Project Document states that provincial-level coastal Commissions would be formed during the three years of the project. These Commissions according to the project's design, would by the end of the project have generated a body of experience in the challenges of formulating, and possibly testing, elements of natural resource management policy and plans. This strategy was confirmed by those attending the first annual project workshop held from May 29 to June 1, 1994. It is unfortunate that the project team decided not to follow through. The adaptive management process would have been enhanced if the second and third years of the project had been structured around

annual priorities set by those participating in the second and third annual project workshops. Such annual priorities could have been based on a review and assessment of the experience gained in the previous year and would have modeled the participatory and strategic management process that lies at the heart of successful coastal management.

### **3. THE PROCESS BY WHICH THE CZM PLAN WAS DEVELOPED**

#### **3.1 Identification and Assessment of Management Issues and Stakeholders**

In 1992, a book was published entitled *Tracks in the Sand, Shadows in the Sea: Marine Mammals of Argentina and Antarctica* (Lichtner and Campagna, 1992, Terra Nova editions, Buenos Aires). It contained an article by Dr. William Conway, Director of the New York Zoological Society that made an eloquent plea for an ecosystem-based management program that would protect the abundant populations of marine mammals and birds along the 3000km coast of Patagonia. This article prompted the formulation of one of the first projects designed to conserve coastal biodiversity through the Global Environmental Facility (GEF).

The Project Document was drafted primarily in Patagonia by members of the FPN and the WCS working closely with GEF/UNDP staff in New York. The constraints imposed by GEF project criteria required that the issues selected as the focus of the project apply directly to the goal of biodiversity conservation. Secondary attention was given to the broader array of management issues that are typically considered when framing a coastal management program. However, since the advocates for the project were conservationists associated with the WCS, a focus on this topic fitted well their interests and experience and the long series of initiatives and studies with the WCS that began in the early 1960s.

The design of the project was discussed at internal meetings of the Fundación in 1992, followed by consultations with such national agencies as the CONICET. Once an initial framework was in place, a two-day, by-invitation, workshop was held later that year that drew together national and provincial level researchers, governmental officials and NGOs with interests in the four major topics that have been examined as the major forces affecting the conservation of marine birds and mammals:

- the management of wildlife preserves,
- tourism,
- pollution, and
- fisheries.

The workshop provided a forum for discussing the interconnections among these topics and developed a consensus among this broad-based group on the design of the GEF project.

The unswerving focus of the project since its inception on the conservation of marine mammals and large birds is both its great strength and, potentially, its greatest vulnerability. In terms of the three major forms of coastal management suggested by Olsen et al. (1997) the Patagonia program is “enhanced sectoral management.” The program is focused on one issue only, but places that issue in the context of the large scale ecosystem and development processes that are at work. This focus has fostered an unusually high level of technical excellence and has concentrated the project’s resources on a constrained agenda that has been within the

capabilities and capacity of the project team and its associates to carry out efficiently given the personnel and financial resources available. The risk lies in the modest degree of importance given to biodiversity conservation within Patagonian society and within the prevailing institutional and political system within which the project must find support if its work is to be sustained and its objectives are to compete successfully against other, sometimes conflicting, priorities.

### **3.2 Policy Relevant Research**

The principle emphasis of the project has been upon the generation of a baseline of information against which future change can be assessed. This has, in some cases, required sophisticated research and the application of a variety of techniques for assessing the size of wildlife populations and making initial estimates of potential causes of observed shifts in their abundance. The PD's long and ambitious set of technical studies have, with minor, exceptions, all been completed during the three years of the project. These studies and their status are listed in the project's Final Report.

It is beyond the scope of this evaluation to comment on the quality and the potential usefulness of these studies. A cursory review of some of them suggests that they are well written and well documented. They have been produced and distributed as a recognizable document series. The strategy underlying the many research tasks undertaken is that they will, together, provide an objective, scientifically sound benchmark against which future change in the populations of the species of concern can be measured. On the basis of such information, it is hoped, well informed arguments can be made to take action to address the likely sources of any future declines which -given the mounting pressures of development - are all too likely to occur in the future.

The research has strengthened earlier assumptions as to the relative importance of threats to marine mammal and bird populations. Since both are believed to be primarily food limited the greatest long term threat probably lies in the rapidly growing fisheries on the Patagonian shelf. The most abundant fish of commercial importance, the Patagonian hake, is also an important source of food to several species of marine birds and mammals. Hake populations are being significantly reduced by fishing and further declines are considered inevitable. The project has, through its successful on-board observer program, developed a good rapport with the inshore fishing industry and assembled the first data on at-sea discards and on the mortality of marine birds and mammals due to fishing gear entanglements. While the discard level—that ranges from 10 to 50 percent—is significant, but not unusual in a trawler fishery, the mortality in fishing gear of the species of concern to the project appears to be insignificant. There is, however, a major conflict between a mariculture operation involving spat collecting gear for mussels off the Golfo San Juan, Chubut, that is causing mortalities and disturbance to the right whales that are seasonally abundant in that area.

The second major threat one, and the one that is best documented in the impact of chronic oil pollution on penguins. Counts of oiled birds washed up along the coast reveal that as many as 10 percent of the total population of Megellanic penguins are killed by oiling each year. In addition, an oil spill offshore in 1991 killed an estimated 17,000 penguins that washed ashore along 400 kms of coast between Peninsula Valdes and Cabo Dos Bahias in Chubut.

Of lesser significance at present are the impacts of urban wastes—both sewage and dumps.

Unmanaged garbage dumps have been documented as the reason for increases in local gull populations. The greater abundance of gulls causes them to compete with other, rarer species for nesting sites. Such impacts, however are highly localized and are compounded by the impacts of the "trash fish" dumped by trawlers at sea that provide another major source of food for some seabirds, particularly gulls. The research sponsored by the project has also provided baselines on human disturbance associated with the large increases in visitors to rookeries. At present, however, these direct human impacts are small and far less damaging than in the past when birds and mammals were harvested in very large numbers.

The project's major investment in research and baseline documentation has provided a scientific foundation for management. It has also drawn together the research community within the three provinces and has provided them with a shared perspective on the relative importance of the threats to biodiversity and the actions that need to be taken to manage these forces effectively.

### **3.3 Collaboration With Local, National and International Entities**

The Fundación is to be commended for an open and inclusive style that has actively sought out the participation of collaborators in a diversity of institutions. As is appropriate, the biggest effort has been made with the staff of the relevant offices in provincial and municipal government, with local universities and with national agencies with offices in Patagonia. For example, when the project began an analysis of issues in the Rio Negro area it first assembled all those with interest and capabilities in the topics of biodiversity conservation and the impacts of pollution, fisheries and tourism. Once a consensus had been reached on the management issues and the priorities for a research phase designed to document baseline conditions, the project provided funds to enable local participants to conduct elements of the work. Additional workshops and training sessions were scheduled in response to the needs that had been identified together. This responsive and adaptive approach proved to be highly effective in building support for the project and credibility for the information collected and the conclusions drawn. For example while techniques for estimating populations of some birds presented few problems a series of four workshops were found to be necessary to develop an approach for estimating the dolphin population and providing the necessary training.

In the case of urban pollution, the coordinator undertook a series of coastwide trips that served the dual purpose of gathering baseline data and raising awareness through slide shows and discussions with municipal officials, at schools and in some cases at public meetings. In this case the scope of the discussion was not limited to biodiversity conservation, but the broader implications of water pollution and improper solid waste disposal were discussed. In the coal mining town of Rio Turbio a major issue are the problems posed by polluted water being used by displaced miners that are attempting to make a living from agriculture. The Coordinator worked with the municipality and the would-be farmers to analyze the problems and consider the options for mitigating measures.

At the national level collaborative relationships are restricted to agencies with responsibilities for the topics addressed by the project. The national fisheries agency, which is responsible for the rapidly expanding offshore fisheries have expressed little interest in the project. Some contacts have been made at the technical level, however, with researchers at the Mar del Plata laboratory. The project has had a very close and productive relationship with the Centro Nacional Patagonico of CONICET. The Center has historically had a close relationship with the

Fundación. Several members of the Fundación's Board of Directors are employed by the Center and several members of the project's staff are also Center employees. A significant portion of the Government of Argentina match for the project has been provided by the Center.

The Fundación and the GEF project are a result of the long standing collaboration between Patagonian scientists and the New York Wildlife Conservation Society. The Society, through Dr. Bill Conway has been the principle collaborator in all phases of the GEF project and has brought to the project international contacts and experience.

### **3.4 Public Education and Public Involvement in the Planning Process**

An educational program was implemented for teachers of 5th grade to 12th grade in 19 Patagonian towns. The goal was to create capacity and awareness of coastal issues. Recognizing that Patagonia is a single ecosystem, the topics addressed by the educational program addressed both terrestrial and coastal marine issues. A strategic decision was made to focus efforts on teachers and to develop with them the necessary curricula. A second strategic decision was to let the teachers themselves identify the issues and topics that are important. The three most important issues that teachers identified were trash, desertification, and water (quality and quantity). Over a period of three years, four FPN staff members held some thirty teacher-training courses in the three provinces. In some towns follow-up courses were offered.

Other public education and community awareness efforts included:

- production of 30,000 brochures and 2,000 posters on the southern right whale
- two courses on public hearings as a tool for community participation in environmental discussions
- three newsletters were prepared and distributed to some 350 people, mostly in government
- a beach walk was organized that attracted some 4,000 volunteers. The first of its kind, the "Primer Censo Argentino de Contaminación Costera" was a census on beach litter and oiled birds. The walk received considerable attention in the media and raised national awareness of coastal issues.

The program has been based on a participatory process. Courses, workshops, meetings, and consultations, were part of the participatory process of issue analysis and data gathering on each of the four major topics addressed by the project. Local media (newspapers, radio, television) have covered the project extensively.

### **3.5 Strengthening of Technical Capabilities**

Improving technical capacity for coastal resource management was one of the main objectives of the program. Technical courses and workshops were organized on a wide variety of topics that were selected through consultation with municipal and provincial officials and the research community. Course topics included:

- management of coastal wildlife
- tourism
- marine bird and mammal population dynamics

- coastal zone planning
- onboard biological observation
- environmental impact assessments
- environmental education.

Most courses were a week long. Participants were mainly from government agencies. The training format varied depending on the topic and participants. Most followed a lecture format, but some were more interactive and used a problem-solving approach.

The Fundación is cognizant of the importance of generating capacity among those individuals who it will be working with in the future, and the value in targeting those technical experts in government who are most likely to remain in their current positions.

### **3.6 Dissemination of Information**

A complementary component of building technical capacity is information management. The beginnings of a computerized data base of information on coastal resources was developed. It was the intention to make the data readily available to all three provinces to support coastal resource management, and to create an electronic link between the Fundación and the three provinces to allow communication and continual updating of data. Two problems appeared. First, it has not yet been technically possible to create such an electronic connection, and second, the Provinces have been slow to designate with whom the data should reside. Computers are designated for appropriate natural resource agencies in each of the three Provinces but only one has been distributed (Chubut). The Provinces of Santa Cruz and Rio Negro have not designated which agencies should receive the data.

A more effective mechanism of information dissemination has been the trimester reports which lists information and reports available from the Fundación. When the Fundación receives requests for information it is provided only at the cost of a diskette or photocopies.

## **4. STATUS OF THE DRAFT COASTAL ZONE MANAGEMENT PLAN AND THE IMPLEMENTING FRAMEWORK**

### **4.1 Progress Towards the Project Objectives**

The Development Objective as stated in the PD calls for:

- management tools, and
- responding to the needs and interests of local communities.

Significant and substantial progress has been made on both. A number of experiments have been carried out during the three years of the project that have provided experience and techniques that can contribute to the mitigation of many of the problems to be addressed by the CZM Plan. Furthermore, the investments in education and public involvement in the issue analysis and planning process has been done in such a way as to respond to the needs and interests of the public and the institutions involved.

Progress has been uneven on the four major objectives, on the 88 activities and therefore on the achievement indicators as these are listed in the project document. Excellent progress has

been made on developing a scientifically sound baseline of information on marine birds and mammals against which future trends can be estimated. Objectives for education and public involvement have likewise been met or exceeded. Together these accomplishments provide the groundwork for a CZM framework and for giving tangible expression to an incipient management process in Patagonia. However, the objectives, outcomes and indicators that apply to formalizing the management framework and advancing public policy by integrating baseline information on natural resources with the results of an analysis of the socioeconomic forces and the legal and institutional issues that must be resolved have not been achieved.

These realities are made clear by the evaluation instrument presented in Appendix D. The PD clearly calls for advancing to Step 3 (Formalization and Funding of the Program) within the three-year time frame of the project. The project is close to completing the actions that are essential to Step 2 (Program Preparation) but has not yet achieved important steps listed under output 2.2 in the PD including:

- to develop legislative proposals and regulations
- to distribute the draft CZM Plan for review and comment
- to submit the final draft of the plan for adoption and implementation.

Worldwide experience repeatedly demonstrates, however, that programs with the scope of this effort in Patagonia typically require at least five to six years to proceed successfully through Step 3. The project team is to be complimented on making as much progress as it has in the 36 months of this project. The project director, Guillermo Harris, has stated that he does not see how the project could have accomplished more in the time available. We concur with this assessment. If, however, the project had been provided training and technical assistance on the policy process during the three years of project implementation, it might have been possible to have made greater progress on the structuring and formalization of the CZM framework.

#### **4.2 Scope and Content of the Plan**

We were provided with a copy of the Plan de Manejo de la Zona Costera Patagonica, dated July 1996. The comments that follow are based on an assessment of that document. The document as it stands is a remarkably clearly written and well organized document that captures much of what has been learned through the project. The July draft, however, only contains some of the essential features of a management plan that is conceived as the basis for an initial phase of implementation.

The document begins with two clear and forceful goals that restate the fundamental ideas contained in the development objective of the PD. The document is structured in three sections.

- (1) The Conceptual Framework
- (2) Management Actions
- (3) Appendices

The first section begins with a lucid statement of the key resource management issues that are addressed by the plan. It then goes on to describe the three principal themes developed by the document: coastal biodiversity, sustainable use and zoning as it applies to diversity protection. The bulk of this initial section is devoted to what can be termed “findings of fact” on the five

topics that have been addressed by the project:

- the condition of marine bird and mammal populations
- public education
- tourism
- fisheries
- marine pollution.

While the findings on these five topics present an informative and useful synthesis of current knowledge on these topics, the style in which this information is presented varies from one section to another. For example, the text on education and tourism is organized as a series of bulletized points arranged under strengths, weaknesses, opportunities and threats, while information on fisheries provides a brief discussion of the status and issues posed by the different forms by which fishing and mariculture is taking place.

Part 2, the proposed actions, is also organized differently according to the topic. By far the greatest level of detail is devoted to sections on the management of marine birds and mammals and sections on each of the reserves. The remaining four topics together receive less attention—32 pages as opposed to 37—than the text on biodiversity. The text on each of the five topics is organized under a series of objectives. The text under each objective is in a question and answer format that first poses “how” and then “what will be accomplished” if those actions are taken.

The text as presented is at the status of an advanced first draft that can provide a solid basis for the process of negotiation and refinement that should accompany the formalization of such a document. Thus, the text leaves blank the numerical qualification of important actions. For example, “the number of visitors permitted onto the reserve will be limited to x.”

The major gaps in this draft are:

- a description of the institutional framework for coastal management and how it will function
- a statement of policies for each of the major topics, and
- the identification of those specific actions that would be undertaken during an initial phase of implementation.

The objectives for each topic could, and in the opinion of these reviewers should, be rephrased as statements of policy. It will require considerable thought and negotiation to decide upon what actions could be taken during an initial period of implementation—say three to six years.

It will be important during the finalization of this initial draft that a balance is maintained among the actions selected for implementation for each of the topics. It is disturbing to note that the current draft of Section 2 does not include a chapter on education. This is a serious oversight that should be corrected. Continuing investments in education will lie at the heart of the long-term sustainability of this program.

Section 3 calls for a listing of technical documents and protected areas and a summary of the analysis of the existing legislation and institutional arrangements for coastal management. An institutional analysis does not appear in the current draft and the single technical report on this



essential topic does not provide the information required for drafting such a section.

### **4.3 Framework for Intra and Interprovincial Coastal Management**

It is essential to place the progress that has been made by the project on the planning phase of a first generation program in the context of the recent history of Argentina and Patagonia. A period of military dictatorship during which some 30,000 citizens "disappeared" came to a close in 1984. During that period the participatory democratic process central to most forms of effective coastal management, and activism on environmental issues was not countenanced by the authorities. Only in 1994 were amendments to the Argentine Constitution adopted that provide for (1) the right to a healthy environment for human development (Article 24) and (2) a mandate for the provinces to formulate policies and regulations to guide development and conservation (Article 75). The amended Constitution implies that the federal government will provide the provinces with a base of funding for such activities. Thus the preconditions for formalized frameworks for CZM only came into existence during the project and the most basic procedures of a participatory democracy—such as public hearings on major development proposals—had to be tested and demonstrated as an effective means for opening up the decision making and management process. Only after these preconditions were in place has it been feasible to consider formalizing a coastal management process.

Within this context the project has made some notable advances. In 1992, before the formal start of the project, the FPN contacted an NGO based in Buenos Aires, Fundación Ambiente y Recursos Naturales (FARN), whose mission is to promote participatory and transparent approaches to resource management. FARN worked with the project to initiate public hearings in the municipality of Madryn. These have proved to be both popular and useful and now occur at a rate of 5 to 10 a year. Other municipalities in Patagonia have observed the process and are adopting it.

Members of the FPN subsequently participated in a municipal convention that produced a "Carta Organica" that sets forth the procedures by which the town is administered. One feature of these administrative procedures is the requirement of Environmental Impact Statements on new development proposals and a public hearing on each. The project has also worked to encourage the formation of informal working groups organized by town officials that include representatives from the research community, the church and the private sector that discuss issues of local importance. These have proved to be useful. For example, one group was formed to address the problems caused by the dumping of garbage from fishing vessels and ships moored in the bay. The solution was to purchase a garbage scow and to require that all wastes are placed in it and then taken to the town dump. In 1996 the scow collected 400 tons of solid waste that would otherwise have been dumped in to the bay directly adjacent to the bathing beach that is the major focus of the booming tourist trade of this town.

Both the evaluative instrument and the statements of the project staff make it clear that the formalized institutional framework for coastal management - even when limited to the topic of biodiversity conservation - is at the early stages of design in Patagonia. Although the PD calls for the creation of both provincial councils and an interprovincial council neither of these yet exist. At the national level CZM legislation is being discussed. Guillermo Harris, the FPN President, was invited to address the Senate Committee considering this legislation. He discovered, however, that the committee was focused on the restoration of the coastline and estuaries of Buenos Aires and had not yet considered the proactive actions that characterize

the CZM initiative in Patagonia.

A report on the "normative and regulatory aspects" of CZM has been prepared through a contract with FARN. This document provides a review of the existing policies and regulations that apply to the four major topics addressed by the project both at the national level and within the frameworks developed thus far by the legislatures and administrative offices of each of the three provinces. The report appears to be a careful inventory of the relevant policies and regulations. The report identifies the gaps and overlaps in jurisdiction and comments on the enforcement problems. However, the analysis does not directly address the implications of the existing legal and institutional framework for a CZM initiative in Patagonia and is of limited usefulness to preparing the Patagonia CZM Plan. It does not include a section of conclusions or recommendations for how the project should embark upon the process of formalizing a CZM framework for Patagonia.

The PD called for the formulation of "general and specific legal recommendations" to be developed by the implementing agencies during the second half of the project that would then be submitted to the respective provincial legislatures for the updating and improving of current laws. These steps have not been taken.

The issue of how to design an institutional framework has been discussed at length at the three annual workshops and at technical meetings. The new national Constitution gave the provinces the authority to manage renewable resource within their boundaries and out to the mean high water mark along the coast. The consensus reached at the first of the annual high level workshops reconfirmed the strategy set forth in the PD, namely that the project would facilitate the creation of a Provincial CZM Committee in each province and convene joint meetings of the three Committees. These would begin as ad-hoc bodies that would subsequently become formalized into permanent structures. The conclusion reached at the first annual workshop was that the committees should be formed in Year 2 and formalized in Year 3. The provincial committees, it was suggested, would be responsible for developing policy, and would approve a CZM Plan for each province. The critical details of whether such councils would be coordinating bodies or possess authority to review, modify, reject or approve specified development proposals, conduct impact assessments and develop and adopt its own plans remain to be proposed and negotiated. Presumably the agreed upon design would be formalized in a law adopted by each provincial legislature. An interprovincial council would presumably be a coordinating body that would meet - perhaps once a year - to discuss interprovincial issues, share experience on lessons learned and join forces on activities of common interest.

The creation of such formalized CZM frameworks is now viewed as one of the major steps to be taken during the proposed second phase. The proposal drafted by the Foundation, however, is somewhat vague on how this process would proceed and on the actions that would be taken to assure that the prospects for a positive outcome are maximized in an unavoidably complex and charged process of interagency negotiation that would presumably culminate in legislative campaigns in each province.

#### **4.4 Securing Long Term Financing**

Since the CZM Plan has not yet progressed to the design of a formalized institutional framework and the actions proposed by the plan have not been sorted into an initial work plan, it is not yet possible to estimate the annual costs that the sustained implementation of a CZM

program for Patagonia would entail.

The sustained financing for coastal management in developed nations invariably is provided primarily by the national government. Such financing is currently unlikely in Argentina but this should be seen as an important long term goal for the program. Such government funding could and should be supplemented by taxes and fees that are extracted from those that benefit from the services that the CZM Program provides. These include those who visit the reserves. At present fees are collected by the tourism departments that manage the reserves at the rate of \$1 for Patagonian residents and \$5 for all others for each visit to each reserve. These funds go to a national account and there is at present no "feedback loop" to the reserve system. Modifying the existing system and how the funds collected are allocated is likely to be difficult. In Costa Rica a small portion of a tax on hotel and restaurant charges has supported that country's coastal management program. Such an arrangement could be considered in Patagonia.

The Fundación is not self-supporting, but has benefited from donations from local and foreign businesses, NGOs and individuals. One donation provided for the purchase of the Foundation's offices and another for a vehicle. The salaries of the Foundation's Director and portions of some of the staff are paid by WCS.

#### **4.5 Readiness for an Initial Implementation Phase**

The evaluative instrument presented in Appendix D suggests that the program is ready for an initial phase of full-scale implementation after the plan has been formally approved and funded. A second phase of funding will need to begin with the negotiation and refinement of a management plan that at present has been shared only within the FPN-WCS project team. This places the project at a recognizable and very critical juncture in its evolution. The process of completing the draft document and filling the gaps identified above and then negotiating the contents with the Commissions and/or other relevant authorities may be expected to consume considerable time and energy. It may be possible to complete this process for Chubut in the first year of a second phase. If the Chubut process proceeds successfully, it may then be possible to make similar advances in the remaining three provinces within the second and third year of a follow-on project.

A second immediate priority is to make progress on generating the funding for sustained progress on the program. Several sources of funding have been identified:

- federal government funds in support of the offices of provincial government
- user fees charged at reserves and potentially levied in the form of taxes on tourism and other activities that rely upon the qualities of the ecosystem
- a second phase of GEF funding
- funds from the proposed World Bank loan program directed at the issues addressed by the CZM Plan
- the proposed Patagonia Conservation Trust
- continued support from the WCS
- additional donations in support of the FPN from both in-country and foreign benefactors.

Preparation of a coherent long-term funding strategy will require a considerable effort that will probably require some external technical assistance.

The work that needs to be done to formalize and fund the CZM program for Patagonia does not imply that substantial progress on the initial implementation of the policies and actions in the draft plan should not concur concurrently. It is in fact essential that the formalization process be accompanied by actions that build experience in the implementation of elements of the plan.

This will bolster confidence within the public, the institutions involved and within the FPN project team. Discussions with the coordinators of the five topic areas makes it clear that much thought has already been given to identifying which ideas are ripe for implementation.

## **5. RECOMMENDATIONS FOR THE CONSOLIDATION AND IMPLEMENTATION OF THE PATAGONIA COASTAL ZONE MANAGEMENT PLAN**

### **5.1 Priorities and Structure for Phase 2**

As the Patagonia coastal management initiative matures, the top priority is to create and activate the management framework by which biodiversity may be protected and the development process in the region is steered towards sustainable forms of ecosystem use. During and immediately following this step of formalization it will be essential to begin implementing elements of the CZM Plan so that lived experience informs the refinement and expanding scope of effective public policy. The third priority is to identify and secure the sources of funding that can support the continued development of the program. A number of activities will need to be undertaken in support of these three priorities. They have already been identified and discussed by the project team in Patagonia and are outlined in the concept paper prepared by the UNDP/GEF program. This section groups similar clusters of work.

#### **A. Formally Enact the CZM Framework for Patagonia**

(1) Establish the Provincial CZM Commissions. The first priority for the program is to formally create the CZM management structure that was first suggested in the 1993 PD and was reaffirmed at the first annual CZM workshop the following year. Discussions are currently underway between the FPN and the Minister of Production of Chubut Province that may result in a formal commitment from that Province's Governor to create a CZM Commission for Chubut. We recommend that the program first focus attention on launching a CZM Commission for Chubut and then, beginning in year 2 or 3 of the second phase of the project, to work to create similar commissions in the other three provinces of Patagonia - including Tierra del Fuego. The experience gained in Chubut would inform the design, and the selection of initial activities undertaken by the Commissions of the other provinces. It may be desirable to initiate other commissions more quickly. Such decisions should be made in consultation with the parties involved.

Since the details of the design of a Provincial CZM Commission have not yet been developed, and since world experience demonstrates that the details of institutional design are critical to the success and efficiency of a CZM program, the process by which an institutional design for Patagonia is developed will be very important. Those that participated in past project workshops should be given the opportunity to contribute to this next critical step. For example, a meeting or workshop on the design of the Chubut Commission could be called by the Governor. This would affirm support for CZM from the highest provincial authority. Those attending the meeting could review the strengths and weaknesses of CZM structures adopted by other nations and /or provinces. This would provide the participants with a range of options.

It should be expected that the resulting design could feature:

- a small Commission at the Ministerial level
- a secretariat administered by the FPN and composed largely of the same team that implemented Phase 1
- procedures that ensure sustained public involvement in the further planning and decision-making process.

The major challenge will be to define the roles and responsibilities of the Commission, as they relate to the existing provincial agencies and the proposed FPN Secretariat. The Commission's primary responsibility should be to negotiate the policies that will shape the implementation of the program, and set priorities for annual work plans. The policies should be designed to strike a balance between development and conservation. It may be appropriate for the Commission to assume decision-making powers for specified categories of decisions, and/or to serve as an appeals board for decisions made by the provincial line agencies. This would require action by the provincial legislature. An alternative is for the Commission to serve primarily as a coordinating body. The role of the Secretariat would be to develop options for policy and to draft management plans for specific issues and sites.

Assuming that the Commissions have a level of authority, coastal management policies and plans would be submitted to it by the Secretariat for approval, modification or rejection. The Secretariat would also:

- continue its excellent work in public education,
- organize Commission-sponsored events and programs, and
- manage continuing activities in applied research and monitoring.

The provincial level agencies are becoming more involved in resource management and allocation activities and already recognize the benefits of working within the context of CZM Plans and structured governance process. Their workload will increase as the provinces develop. This is likely to create a greater demand for the services of the Secretariat. The responsibility of these provincial offices, however, should remain focused on oversight of the preparation of Environmental Impact Assessments, decision making on permit applications, enforcement and selected extension activities such as those already underway in support of the inshore fisheries that are administered by provincial governments.

(2) Initiate An Inter-Provincial Assembly. Since there are a number of topics, particularly those involving fisheries and oil pollution, that require collaborative action at the regional scale, the practice of annual events that draw together representatives of four provinces with selected federal government agencies should be continued in Phase 2. In the next phase, however, the transition should be made from workshops designed to familiarize the participants with the management issues and thinking through hypothetical management problems offered as training exercises, to a more formalized body that could be named the Annual Interprovincial Assembly. The Assembly could analyze selected management issues and, where appropriate, recommending guidelines or policies that direct the development and conservation of the Patagonia region as a whole. The Assembly should also identify topics where interprovincial agreements are needed and provide an impetus for their formalization. Another major purpose of the Assembly could be to provide a forum for the sharing of experience - including the examination of experience from other countries that may be relevant to the resolution of issues

in Patagonia.

(3) Completion and Formal Adoption of Provincial CZM Plans. The July 1996 draft of the Plan de Manejo de la Zona Costera Patagonica has many, but not all, of the essential ingredients of the document that is needed to guide the conservation and further development in Patagonia. The major gaps in this draft are:

- a description of the institutional framework for management and how it will function,
- a statement of policies for each of the major topics addressed, and
- sections that follow each group of actions that identify what specified priorities will be undertaken during an initial phase and develop a timeline for their implementation (perhaps for the first three years).

Such specifics will need to be negotiated with the Commissions and/or Provincial Assembly with opportunities for public input and participation. The framing of policy statements will be particularly critical since these will define the broad objectives for each of the sectors addressed by the Plan and the process by which decisions will be made. The participatory management process and the “transparency” of the program will need to be defined in brief, but carefully crafted statements of policy.

Most of the issues addressed by the plan are local in expression and will need to be addressed by the individual provinces. An important decision will be whether the provincial Commissions should operate from the same single document or whether separate but complementary plans for each province should be prepared. From a pragmatic implementation perspective, the latter is probably the better option and will reinforce local “ownership” of CZM in each of the four provinces. Provincial CZM Plans should not only address issues from a narrow provincial perspective but should recognize and incorporate feature region-wide management initiatives. Thus, each provincial level CZM Plan should make reference to such region-wide initiatives as (1) a network of marine and terrestrial protected areas and multiple use reserves and (2) a coordinated oil pollution detection and response program. Such region-wide management initiatives could be negotiated by the proposed Regional Assembly and will probably require the support of central government.

Completion of the CZM plan or plans can be undertaken only after the provincial councils are in place. The framing of statements of policy and the selection of priorities for an initial period of implementation must be decided through a close collaboration between the commissions and the FPN Secretariat, and should be accompanied by an appropriate process of public review and comment. This stage of formalization of the plan will be the most critical period in the project. It needs to be very carefully planned and will place the Secretariat at the hub of activities in which it has little experience. It will be useful to involve FARN in this process and to supplement their expertise in participatory public process with external technical assistance in the design and negotiation of public policy.

(4) Securing Funding for the Sustained Implementation of the CZM Program. This is the second major challenge that must be addressed during the formalization stage of a first generation CZM program. The concept of a Patagonia Conservation Trust needs to be developed. This will require designing the objectives and structure of the fund, specifying the target amounts of money that are required and the sources from which they might be obtained as well as the administrative and operational procedures that would govern use of the fund. As

outlined in Section 4.4, a funding strategy, however, should draw together all available income sources into a coherent, sustainable package that may include:

- the proposed Trust Fund,
- the Government of Argentina,
- funds in support of provincial government,
- a second phase of GEF funding,
- elements of a potential World Bank loan program,
- user fees for reserves, and
- impact fees on some forms of development.

### **B. Initial Demonstrations of CZM Plan Implementation**

World experience repeatedly demonstrates that the most critical juncture in a first generation CZM program is the transition between a phase devoted primarily to planning and research to an initial phase of implementation. The best strategy is to gain experience in the realities of implementation that can shape the planning process and thereby to avoid a clear separation between the two phases. Therefore, as suggested by the Concept Papers for Phase 2 prepared by the FPN, and the GEF/UNDP, the program should move swiftly to:

- negotiate an operational management plan for one of the biodiversity reserves in Chubut as a first step towards an operating network of marine and terrestrial protected areas and multiple use preserves,
- select a set of actions that build on the experience gained in inshore fisheries (within provincial jurisdiction) and begin to build similar linkages between the CZM program and the offshore fleet that operates on the Patagonia shelf within Argentina's EEZ,
- implement key recommendations in the draft CZM Plan that address solid waste and sewage treatment and disposal and toxic waste issues,
- address the crucial issues identified as the causes of chronic oil pollution, i.e., tanker loading procedures, ballast water handling and the travel lanes followed by tankers,
- expand and reinforce the public education program that will be essential to building support for the implementation of CZM policies and actions, and
- increase the program's efforts in conflict resolution on issues raised by the interactions among the sectors addressed by the Plan.

Actions on these priorities, if they were undertaken by the coastal Commissions, would greatly broaden political support for the program. If the proposed World Bank loan moves forward, major benefits could accrue to the provincial Commissions if they became responsible for the administration of funds made available for addressing land-based contamination. This would reinforce the principle that CZM programs address both conservation and development priorities.

### **C. Continue Monitoring Trends in Biodiversity and Development**

Now that a well-documented baseline is in place on the four major topics addressed during Phase One, it will be essential to sustain a monitoring program that will document trends in:

- marine birds and mammals
- urban contamination
- oil pollution
- nearshore fisheries
- tourism.

We recommend that such information be used to (1) inform future priorities for action, further planning and policy making, (2) bolster public awareness of the condition of the Patagonia ecosystem and (3) nourish the school education programs. The phase 2 program should consider producing annual *State of the Patagonian Coast Reports*. These could be tied to activities such as the highly successful September 1995 beach walk. Each issue could feature detailed treatment of a different major management. Since disaggregated data is of limited usefulness to resource managers and the coastal Commissions, an emphasis on disseminating periodic analyses of trends may prove to be more useful than the computerized database that has so far been the “end product” of information dissemination.

#### **D. Additional Policy-Relevant Research**

The two major topics that require significant new investments in research should be directed at:

- the impacts of offshore fisheries, and
- the actions that can reduce oil pollution at sea.

The success of the observer program in building a positive relationship and an information base on inshore fisheries should be applied to the much more significant issues posed by the operations of offshore fleets. There is as yet no information on the impacts of offshore fisheries on marine birds and mammals or on the magnitude and potential impacts of by-catch. Since it is likely that the competition between fisheries and the biodiversity that the CZM Program is designed to protect is probably the primarily long-term threat to Patagonia’s marine birds and mammals, better information on fisheries is a top priority. Such information can also be the basis for progress towards an effective management plan for the fishery resources of the Patagonian Shelf. This, however, is primarily the responsibility of federal agencies of government based in Buenos Aires.

The oil pollution problem presents a different set of challenges. Here the greatest need is not for sophisticated scientific analysis but rather for the application of simple technologies and practices governing how oil is loaded onto tankers, the routes taken by tankers along the coast, and how ballast water is managed.

#### **E. Continued Public Education**

Sustained progress towards more sustainable forms of development in Patagonia will remain directly tied to concepts and information on the condition of ecosystems within Patagonia society. The FPN has initiated a school education program that has heightened awareness amongst school teachers and begun the process of developing curricula. The continuation and expansion of this program should be viewed as a top priority for Phase 2.

The school program should continue to be complemented by public awareness and public involvement activities. As an initial implementation phase of the program gets underway, the program will need to increase its efforts to inform and engage the public in the process by which decisions affecting the allocation and use of Patagonia’s natural resources are made.

#### **F. Capacity Building and Technical Assistance**

(1) The WCS has played an important role in nurturing the FPN and the GEF project. The WCS, through its Director, Dr. William Conway, should continue in its role as long-term advisor to the project during a second phase. The WCS is a trusted partner with long experience in Patagonia and good contacts both within central government and the provinces of Patagonia. It



may be appropriate to consider an advisory role for the WCS Director to the provincial Commissions.

(2) Training in Coastal Management Practice for FPN Secretariat Coordinators and Provincial CZM Commissioners. All those interviewed during the evaluation in Patagonia, both within the FPN and elsewhere stated repeatedly that the project was engaged in work that had not been previously attempted in Argentina and that the process was one of discovery. Those involved are unaware of CZM experience in other nations and, since the great majority of the team assembled for phase 1 by the FPN are natural scientists, there is very little awareness within the existing team of management practice and the process by which public policy is negotiated. Those involved in Phase 2 would benefit from exposure to CZM experience elsewhere and in particular to options for the design of management frameworks and the process by which CZM programs adapt and evolve. A capacity building component could therefore address such topics as the following:

- estimating and communicating the impacts of ecological and socioeconomic trends
- issues and options for the institutional design of a coastal management program
- impacts, management issues and management techniques for such activities as mariculture, tourism, shorefront construction, habitat degradation and water pollution
- situation analysis techniques
- linking management initiatives at the local and national level
- promoting a learning-based approach to coastal management
- fostering private-public sector partnerships.

Capacity building sessions could be scheduled to immediately proceed or follow the annual meetings of the proposed Patagonia Assembly.

(3) The design and activation of the proposed Patagonia Conservation Trust Fund will also require specialized technical assistance. This should be the second focus for external technical assistance during the next phase of the program.

## **5.2 Issues Posed by the Proposed UNDP/GEF and World Bank/GEF Follow-on Projects**

Those who fund the Patagonia CZM Program must recognize that successful coastal management programs evolve and gather strength through a sequence of generations each of which comprises the five major stages of a program cycle. This evolutionary process is described in the recent GESAMP Report #61, *The Contributions of Science to Integrated Management* and in the Proceedings of the Xiamen Workshop entitled, *Learning From Experience* (Chua et al., 1996). If one accepts this view of coastal management as an important vehicle for making progress towards sustainable forms of coastal development and conservation, then safeguarding the continuity between the stages of a given generation and subsequently among generations of a program becomes an issue of the highest priority.

It is equally important to balance the agenda for any program at a given stage in its growth with the capacity of the institutions involved. The Phase 2 that has been outlined as *Implementation of an ICM Plan* by the GEF/UNDP Program proposes \$7 million over six years. This would provide the program with an annual budget comparable to Phase 1. Given the current size and strength of the FPN and the as yet incipient status of the coastal Commissions, this is a modest but not inappropriate level of funding. The agenda that has been proposed by UNDP, as

reorganized and elaborated in the preceding section of this report, also appears to be on target. The critical issue will be to define the “lead agency” for implementing Phase 2. This needs to recognize the new emphasis on implementation and therefore upon the coastal commissions but yet must sustain the proven capability and energy of the FPN.

The initial description of a GEF Project Concept Paper drafted by the World Bank raises a series of more substantial issues. This paper proposes a total of \$65 million of which \$10 million would be provided by the GEF, presumably in the form of further grant funding. This paper implies that lead responsibility for this project would be the Secretaria de Recursos Naturales y Ambiente Humano (SERNA). This paper also implies that the implementation of the CZM Plan and a significant loan program would be combined into a single large project. While this may be useful for a number of bureaucratic reasons, such a strategy could threaten the continuity and “ownership” of the very promising CZM initiative that has been made in Patagonia. Careful consideration should be given to decoupling follow-on to the CZM Plan and a loan program designed to fund infrastructure for the control of coastal pollution, the development of an integrated fishery management program, and electronic marine information infrastructure. As suggested in Section 5.1 above, funding for the better management of solid waste and sewage in Patagonia should, if possible, be channeled directly to the coastal commissions. Activities that are clearly the responsibility of central government, including management of the fisheries and better control of marine oil pollution, should be channeled to central government. The proposed annual Patagonian Assemblies could provide the vehicle for coordinating what needs to be separate but complementary sets of activities.

### **5.3 Conclusion**

The Patagonia coastal management initiative is to be commended for having made remarkable progress over the three-year period of the GEF project. Both the technical capacity and the political will in place that are the essential preconditions for (1) formalizing the institutional structures for a sustainable program, and (2) beginning to implement the many actions required to balance conservation and development along Patagonia’s coast. The GEF project has been executed with efficiency and technical excellence and gives this initiative the potential for being a model for other regions of Latin America. If a follow-up project does not materialize, the investments made to date will be jeopardized and the unique biodiversity of Patagonia will be far more vulnerable in the decades to come.

## APPENDIX A

### TERMS OF REFERENCE

**Mr. Stephen Olsen**  
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Mr. Olsen will assist the Regional Bureau for Latin America and the Caribbean in providing an in-depth evaluation of the GEF-financed project entitled: *The Patagonia Coastal Zone Management Plan*.

He will work closely with staff from the UNDP Country Office and the project team, as required, to assess (1) the project's potential for advancing the conservation and sustainable use of coastal biodiversity in Patagonia, and (2) the sustainability of those impacts over the medium to long term. Based on these assessments, Mr. Olsen will also recommend strategies and actions aimed at ensuring the impact and sustainability of the proposed *Coastal Zone Management Implementation phase*.

Mr. Olsen's activities will include the following:

- A. Review of material related to the project including the GEF Project Document, the November 1995 project evaluation, the Project's draft Final Report, and other reports and assessments that may be provided during the mission.
- B. Interviews, consultations and meetings with staff from Fundacion Patagonia Natural national, provincial, municipal government agencies, NGOs, local communities, universities, civil society organizations, and the UNDP Country Office as arranged by project staff in Patagonia.
- C. The Evaluation shall be structured to address the following major topics:
  - (1) **Analysis of the strategy for developing a CZM Plan for Patagonia .**

The design of the project (scope, strategic focus, and balance among project components) will be assessed in light of the progress made towards the project's principal and immediate objectives. This section will summarize both substantive accomplishments and the lessons learned from the project's experience.

    - review of how the project analyzed the principle factors (institutional, legal, social, technical) affecting marine biodiversity and sustainable resource use in developing the integrated CZM plan.

(2) **Progress in developing a viable institutional framework for coastal zone management.**

- progress and accomplishments in creating (a) a framework for inter and intra-provincial coordination and collaboration, and (b) collaborative relationships with relevant local, national and international entities
- review and analysis of the proposed legislative and regulatory frameworks and their viability for an implementation phase.
- analysis of the technical capabilities in support of CZM and the role of training in strengthening such capabilities
- analysis of the project's approach to resource mobilization especially securing long-term project financing
- analysis of use/establishment of information technologies and electronic communication.

(3) **Evaluation of the process by which the CZM Plan was developed .**

- review of how stakeholders were identified and their involvement in all steps taken to develop the CZM plan; assessment of the strengths and weakness of the approaches adopted
- review of the environmental education component and its actual and potential contributions to building constituencies in support of the program's objectives
- review of the impacts of the information produced and disseminated by the project on policy formulation and to develop the necessary technical basis for effective biodiversity conservation

(4) **Analysis of issues posed by the existing UNDP/GEF project and the proposed World Bank/GEF initiative.**

Identify any potential for overlap or duplication and suggest how such issues might be addressed. Recommend how the two projects could maximize efficiency and positive impacts on biodiversity conservation.

- D. A draft report on the above topics shall be delivered to UNDP/NYC and UNDP/Buenos Aires no later than 14 days after the end of the field visit on diskette and by e-mail in WP5.1 or MS Word.

Mr. Olsen has agreed to a consultancy of 15 working days to consist of 5 days in the project site (Puerto Madryn, Patagonia) and 10 days in office. He will not

require travel arrangements. These will be made by the University of Rhode Island.

## APPENDIX B

### LIST OF PERSONS CONTACTED

#### **UNDP**

Hilda Paparoni, Regional Environment Officer  
Eduardo Rodriguez Vergez, Oficial de Programa  
Hector Sejenovich, Asesor Ambiental

#### **Fundación Patagonia Natural**

Dr. Guillermo Harris, Director del PMIZCP - Presidente de FPN  
Sr. José María Musmeci, Asistente Coordinador Área Turismo - Vicepresidente FPN  
Dr. Enrique (Kike) Crespo - Coordinador Área Fauna  
Dr. Pablo Yorio, Asistente Coordinador Área Fauna  
Oc. Guillermo Caille, Coordinador Área Pesca  
Dr. José Luis Esteves, Coordinador Área Contaminación  
Lic. Alicia Tagliorette, Coordinador Área Turismo  
An. Sist Horacio Ocariz, Administrador PMIZCP

#### **Centro Nacional Patagonico**

Dr. Adán Edgardo Pucci, Director  
Claudio Campagna, M.D. Ph.D.

#### **Province of Chubut**

Lorenzo Soriano, Ministro de Producción  
Antonio Torrejón, Secretario de Turismo  
Lic. Gabriel Punta, Director, Intereses Maritimos  
Cathy Olsen, Fisheries Officer  
Gerardo Dittrich, Director of Alpesca S.A.

#### **Wildlife Conservation Society**

William Conway, President  
William B. Karesh, DVM  
Robert A. Cook, VMD

## APPENDIX C

### FIELD WORK SCHEDULE

<b>January 4</b>		Depart Rhode Island
<b>January 5</b>		Arrive Buenos Aires, Argentina Flight delays to Patagonia require stop-over in B.A.
<b>January 6</b>	14:30 15:00-21:00	Arrive Trelue Discussion with G. Harris
<b>January 7</b>	09:00-12:00 14:00-16:00 21:00	Meeting with FPN Staff Dr. Pucci, Centro Patagonia Secretary Torregon
<b>January 8</b>	08:30 08:30 10:30 17:30	Meeting with A. Tagliorette (J. Tobey) Meeting with E. Crespo and P. Yorio (S. Olsen) Meeting with J. Mesmueci, H. Ocariz Meeting with Dietrich, Alpesca
<b>January 9</b>	08:30 10:30 15:00	Meeting J. Palla, J. Mesmueci Meeting C. Campagna Discussion with full staff on the common methodology and policy cycle
<b>January 10</b>	10:00 11:00 12:00 14:00	Meeting Minister Soiano (Rawson) T.V. interview Visit fishing port with S. Olsen Discussion with FPN Staff
<b>January 11</b>	07:15 10:00 14:30 15:30 22:30	Depart for Punta Tombo Meet with Reserve staff Depart for Buenos Aires Meet with E. Vergez and H. Sejenovich Depart Buenos Aires
<b>January 12</b>	14:00	Return Rhode Island

## **Appendix D: Application of Prototype Evaluative Instruments to the Patagonia Coastal Management Program**

### **1. Introduction**

There are a growing number of integrated coastal management (ICM) initiatives worldwide -- some 140 ICM efforts in 56 coastal nations can be identified -- but at present the lessons learned from these initiatives are generally undocumented and the efficiency and effectiveness of learning from ICM is being compromised. We have very little information that documents the impacts of ICM efforts and how the process of ICM has influenced outcomes. Many descriptions of ICM experience are anecdotal and, to date, no hypotheses about ICM design and practice have been systematically tested across the diverse spectrum of coastal nations.

At its 1996 meeting, the international Group of Experts on the Scientific Aspects of Marine Environmental Protection (GESAMP) identified learning from ICM experience as a priority “emerging issue”:

*there is an urgent need for an accepted evaluation methodology for assessing the changes identified and implemented. When an evaluative framework is in place it will be possible to document trends, identify their likely causes and objectively estimate the relative contributions of ICM programs to observed social and environmental change.*

The challenge is to develop and standardize methodologies and indicators by which the impacts of the rapidly expanding number of integrated coastal management initiatives can be analyzed, and by which the collective learning process can be improved. An activity at the global level that clearly measures progress (or lack thereof) towards ICM goals, and disseminates the results widely offers great opportunity for increasing the efficiency of the collective learning process for how to make ICM an effective response to the challenges of sustainable coastal development. Such an activity could stimulate national actions and provide guidance to donors.

This annex presents an analytical framework for learning from ICM experience, and applies two instruments for assessing program governance to the experience in Patagonia. Applied to a large number of diverse settings, instruments such as these will



help test hypotheses about what ICM practices and governance methods are most effective. The instruments provide a transparent framework to organize evaluation of the governance arrangements of a coastal management program. Further testing and refinement of tools such as these should contribute to advancing the science of the practice of coastal management.

The instruments are designed to be as simple as possible. But this does not imply that the theory behind them can be presented in a similarly parsimonious and simple way. Both instruments are based on a specific approach to coastal governance. To understand the instruments this annex presents the theory of coastal management upon which they are founded.

The instruments are based on a “universal” coastal management policy cycle. The policy cycle is a widely accepted framework for describing the process by which ICM programs evolve (GESAMP, 1996). It places the many actions of a program in a logical sequence and helps unravel the complex inter-relationships among the many elements of coastal management. It is assumed that certain features must be in place in order for a coastal management program to proceed efficiently to its destination--usually defined as *improvement in the quality of life of human communities who depend on coastal resources while maintaining the biological diversity and productivity of coastal ecosystems* (GESAMP, 1996). ICM is the “vehicle” that might take you to that destination. The instruments attempt to assess whether all the necessary features of the vehicle are in place--the wheels, the steering wheel, the engine, the seat, the windshield. The selection of necessary features is not entirely objective. The practice of integrated coastal management has not progressed to the point where there is consensus among experts in this field of the fundamental actions in the ICM policy cycle. Selection of actions is in itself a judgment of what comprises good coastal governance. Additional judgment of good coastal governance enters in the selection of the indicators that describe each of the actions. If the actions are the necessary features of the vehicle, the indicators describe the quality of the vehicle--“how” the vehicle is put together and drives. The qualities that define the “how” embody the principles of effective coastal management.

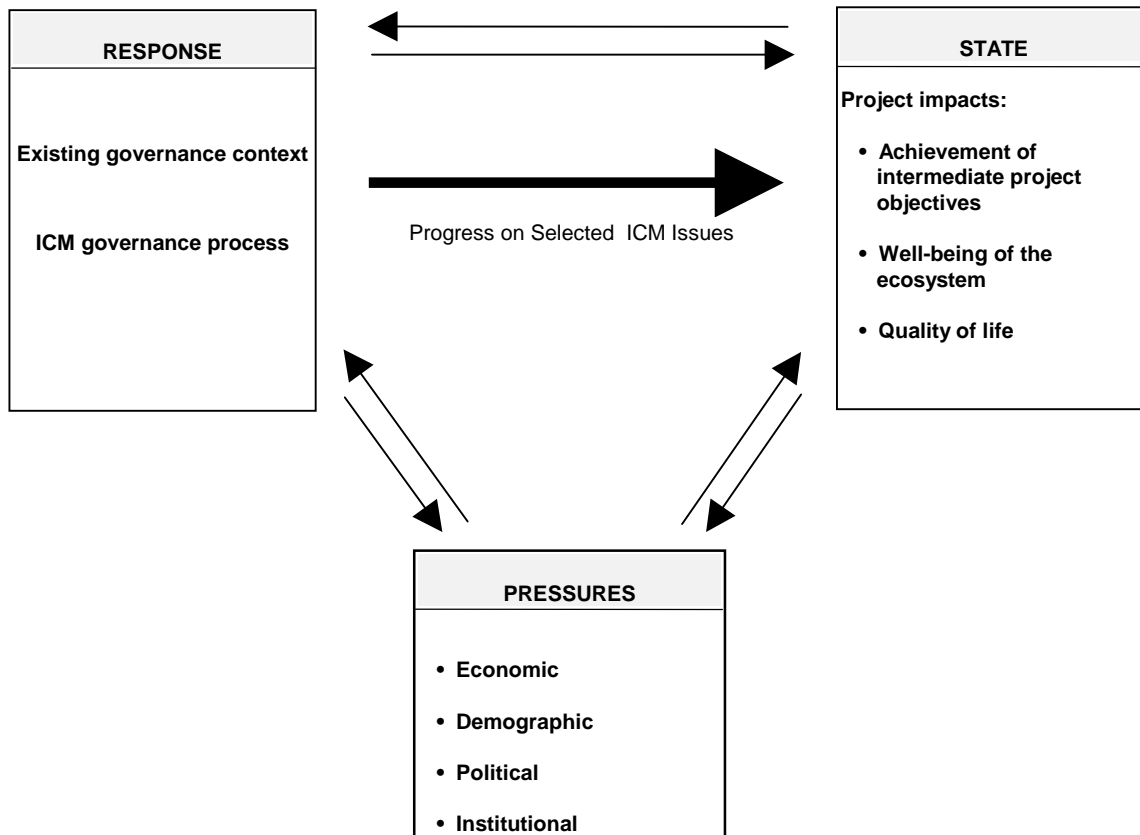
Below, we describe the policy cycle, and the principles of coastal management embodied in the instruments. But first it is useful to take a larger perspective to see where governance sits within a framework for learning from ICM experience.

## **2. A Framework for Learning**

An emerging common methodology for learning is based on an adaptation of the “Pressure-State-Response” (PSR) framework for developing environmental policy indicators. This provides a conceptual model to help ascribe change in societal behavior and changes in the condition and use of resources, to the efforts of the coastal management program, as opposed to other forces (Olsen et al., forthcoming). As illustrated in Figure 1, the “pressures” are the external forces that influence, and sometimes drive both the intermediate and final outcomes that a coastal management program is striving to achieve. They include demographic, economic, institutional and political, and social pressures. The “state” represents the condition of the ecosystem, quality of life and achievement of intermediate ICM objectives. The “response” is the governance process, that, in the context of the pressures works to change selected state variables (e.g., water quality, marine wildlife) and ultimately to influence some of the pressures.

The PSR framework unites the three elements in a cycle of causality whereby the responses of an ICM program form a feedback loop to the pressures created by human activities. Controlling for “pressures” and other contextual variables, we can begin to understand the causal relationship among the ICM governance process and intermediate and long-run ICM outcomes.

**Figure 1. Conceptual Framework for Learning from ICM Experience**



### 3. The Governance Process of a Sustained Coastal Management Program as Seen through the Policy Cycle<sup>1</sup>

Experience is rich in measures of state of the environment and socioeconomic indicators which can be applied to coastal development. Less developed are the governance aspects of coastal management.

Although the coastal management process is dynamic and adaptive, it follows the familiar steps and phases by which all public policy progresses from issue definition, to selection of objectives, to formalization of structure and on to implementation and evaluation (see, for example, Chua and Scura, 1992; IPCC, 1994; Knecht, 1995;

<sup>1</sup> This section is adapted from Olsen et al. (1996).

UNEP, 1995). These steps provide a “road map” to the formulation of a continuous coastal management program. It is essential that the actions and priorities at any given time are appropriate to the phase and step in the policy cycle that the program has achieved. A superficial or incomplete analysis of an issue, for example, will likely lead to policies and actions that will ultimately prove unworkable and unsustainable.

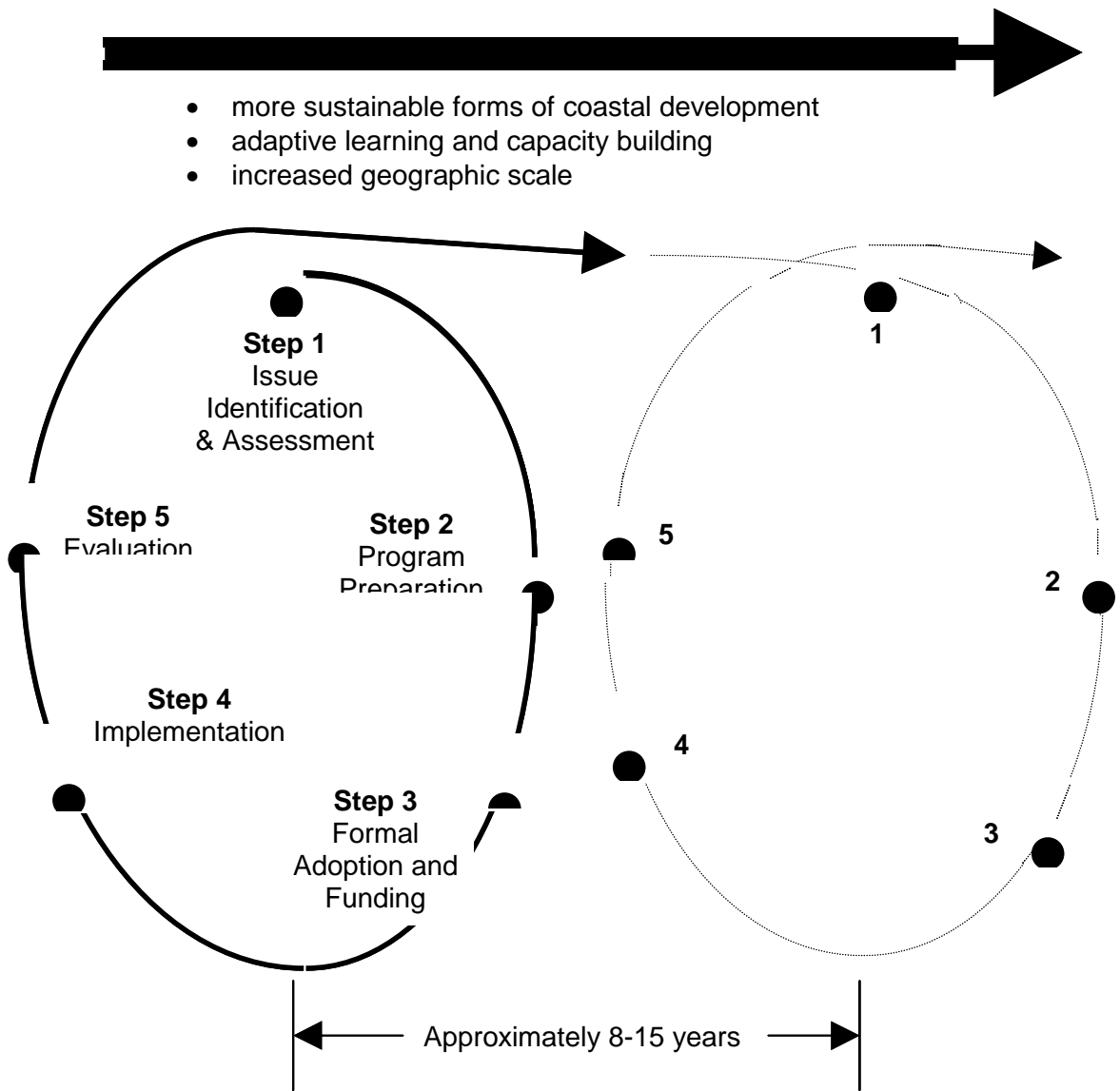
Experience from both developed and developing nations suggests that eight to twelve years is the usual amount of time for completion of an initial cycle through the five steps of the policy cycle. A completion of the cycle can be termed a “generation” of a program (see Figure 2). Some state coastal management programs in the U.S. are now in their second or third generation as are other programs initiated in the 1970’s such as those administered by the Great Barrier Reef Authority (Australia) and the Coast Conservation Department in Sri Lanka. In successful programs a new generation usually entails broadening the objectives and scope of the program.

In developing nations, a first generation ICM program will typically focus its objectives on one or more pilot sites and on a limited set of issues. It is far better to do a few things well than many things poorly. A pilot project may achieve improvements in reef fisheries and the qualities of life of a small community at a pilot site within a single generation, but several generations may be required to achieve similar results for an entire region or nation. Thus, building capacity and linkages at the national level should be a key element of all pilot scale initiatives.

The evolution of a program calls for shifts in emphasis, but governance activities, once initiated, must be sustained. For example, issue analysis and the implementation of strategies and planning itself is a dynamic process requiring constant refinement as new information becomes available, experience accumulates, and the political and social context within which the program is operating changes. Public education, capacity building, new small-scale practical exercises and the annual cycle of self-evaluation and adjustment must be sustained through all phases of a generation. Programs need to develop mechanisms for sustained learning on how to improve efficiency and effectiveness based on the results of monitoring and previous implementation experience. They must be able to seize new opportunities and adapt their work plans and priorities to the often rapidly changing political, economic, and socio-cultural

conditions in which they operate. Planning for the uncertain and the unexpected can best be achieved by adopting a management style that is flexible, adaptive and experimental.

**Figure 2. Steps and Generations of the Coastal Management Cycle.**  
 The dynamic nature of ICM requires feedback among the stages and may alter the sequence, or require repetition of some stages. Each completion of the ICM cycle may be considered a generation of a program.



### ***Step 1: Issue Identification and Assessment***

Problem identification and assessment is where initial requirements of a coastal management program are defined and initially assessed. Potential social and management goals are articulated, the range of affected and interested stakeholders are identified, initial informational requirements are defined, and likely policy options are assessed. This initial step can be carried out quickly (6 to 18 months) and is essentially a process of compiling, integrating and prioritizing information that defines the environmental, social and institutional context within which a coastal management program must proceed. Reliance upon available secondary sources is usually the best approach at this initial stage. The major topics to be addressed are as follows:

Assessment of the condition of coastal systems:

- historical trends in the condition and use of natural resources
- initial estimation of short and long term implications of such trends for society
- characterization of significant habitats, resources and their interrelationships
- initial identification of coastal management issues
- initial identification of geographical areas of particular concern.

Assessment of the policy and institutional context:

- roles and responsibilities of agencies as they relate to priority coastal management issues
- assessment of institutional capability, capacity and credibility for addressing priority coastal management issues
- identification of existing policies and goals relevant to the priority coastal management issues.

Assessment of the development context:

- assessment of economic issues: land tenure arrangements, employment, coastal infrastructure, trade flows, income distribution, quality of life, etc.
- identification of stakeholders for priority coastal management issues, their values and their interests
- initial assessment of societal perceptions of priority coastal management issues and their implications

This step is crucial since it sets the foundation for a coastal management program. The process of sorting through large amounts of information of variable quality on a diversity of topics to identify priority coastal management issues requires skill and judgment; the skills and techniques of natural and social scientists are required to successfully complete the three types of assessments. An advisory group including natural and social scientists is highly desirable to 1) identify existing research relevant to the emerging priority coastal management issues, 2) assess the quality and pertinence of such information for assisting in how issues are defined, and 3) assist in prioritizing within issues and understanding linkages among issues. The process of sorting and making judgments on the issues that are selected for the focus of a generation of a coastal management program requires judgments on the set of necessary and sufficient information required to rationally assess a given coastal management issue.

### ***Step 2: Program Preparation***

While Step 1 can be conducted as an assessment based on pre-existing information, Step 2 is a more protracted information generation and planning process, often extending over three to five years. Here scientific research may be undertaken to fill gaps judged to be important to understanding and addressing the selected coastal management issues.

At this step the coastal management program will formulate the goals, specific objectives, policies and plans that together comprise the substance of that generation of a coastal management program. Many first generation programs choose to focus upon one or more “special area management” sites where management policies and techniques can be implemented on a limited set of issues on a pilot scale. Such sites should be selected as microcosms for combinations of issues typical of that nation’s coast. Plans should as far as possible be “visions for the future” that express in realistic, tangible terms the changes in behavior, how resources are allocated and used, and the qualities of the environment that the coastal management program will attempt to attain. If the pilot sites are selected, they should meet the following criteria:

- the size of the area and the issues to be addressed will be manageable and within the financial and human capacity of the project;



- the institutional framework and management practices will be applicable as a model and for other areas;
- the site and the issues are important enough to merit attention;
- progress on the resolution of priority issues addressed will likely build support for coastal management.

It is at this stage that the required investments for a coastal management program are identified and budgeted, priorities are set and the detailed program design occurs. This selection process requires careful attention to the stated objectives of the program and the scope of its activities. If the participatory process is to be maintained and be meaningful, the stakeholders at various levels must be active participants in this planning process.

There are several risks at this stage. Inventories and comprehensive studies can distract the program from discovering what is salient and likely to attract attention, especially if the program is new. Pilot projects and early implementation actions are vital at this stage to discover the feasibility of implementing new policies and to build credibility in the program. Where the focus is on a limited number of sites, national government must be provided a specific role in supporting and learning from the effort.

In some instances an indigenous initiative, sometimes assisted by a grant aid program, will provide funds for Steps 1 and 2 and allow sufficient time for a process that meaningfully involves local stakeholders. If this has not occurred, there is a strong temptation to proceed too quickly through this stage, relying on outside experts and consultants that frequently do not continue with the program. This stage may become compressed into the narrower confines of a design contract prepared by international consultants, which focuses on technical perceptions of issues, leaves out most of the local consultation process and seeks to place the project on a rapid implementation track designed to the need to meet disbursement requirements.

### ***Step 3: Formal Adoption and Funding of the Program***

Formal adoption of a program typically involves passage of legislation, cabinet or presidential endorsement, or an administrative decision by the head of an agency, and the securing of funds for implementation of some selected set of actions. Whatever the

level of formal adoption, this step is typically characterized by focusing down on the most salient issues that will be addressed and a need to simplify the what, why and how of the program. This often brings a shift in focus from technical issues to the political process in which the interests of the governmental agencies and the private sector interest groups, that will be affected by the program, create new and unexpected issues that the program must address quickly. The process is one of bargaining and accommodation. It often involves consideration of whether the proposed actions can be reasonably expected to produce the results being promised, both in changed behavior and the condition of the ecosystem.

The promise of continued funding if a country adopts the plans and institutional reforms can be a strong motivator for action. Those who shaped the program during Steps 1 and 2, as well as those funding a program, must stay involved during this crucial, often highly charged step.

#### ***Step 4: Program Implementation***

Many programs that proceed through the first three steps never achieve a period of full scale implementation and this results in frustration for all concerned and skepticism for the practical viability of coastal management. Plans, legislation, regulations, parks and reserves that exist only on paper are increasingly abundant in developing nations. These failures underscore the importance of carefully evaluating how the preceding three steps are undertaken to assure that a solid technical, social and political foundation has been built that will in fact yield effective implementation.

Program implementation is where mechanisms planned in the policy formulation stage are made operational. Successful implementation of an ICM program invariably presents new, unforeseen issues and absorbs the energy of the program into the administration of complex activities that span:

- a range of development activities,
- regulation and conflict resolution,
- construction of infrastructure,
- sustained public education,
- additional forms of interagency coordination,

- further training and institutional development,
- an expanded extension program,
- further planning,

Although monitoring and assessment must be built into all the steps of the coastal management process, it is especially critical that a well designed monitoring program is prepared and baseline data is gathered before the beginning of the implementation of the program. Monitoring must address two topics:

- the governance process itself, including the decision-making process, compliance with voluntary and regulatory incentives to change behavior, conflict resolution, etc.; and,
- the outcomes of the governance process and the development actions of the program—typically expressed as the condition of coastal systems and the well-being of coastal communities.

A major risk during this phase is that the essential commitment of a coastal management program to learning and adaptation becomes overshadowed by the pressure of administering a complex, often politically controversial, program.

In some developing country contexts, a further challenge is that by the time financing for implementation has been arranged, local circumstances may have changed significantly, and the priority needs and opportunities along the coast may have changed. When financing is provided primarily through loans to the government it may be difficult and time consuming to make the necessary adjustments to a loan that was negotiated under a different set of circumstances.

### ***Step 5: Evaluation***

This step, where the greatest learning should occur, has been omitted or completed in a superficial manner, in the great majority of coastal management initiatives. Yet, if one accepts that coastal management programs should proceed through a series of generations to advance toward more sustainable forms of coastal development, this step should be the critical juncture between one generation and another. The evaluation step must address three broad topics:

- what has the preceding generation of the program accomplished, what has been learned, and how should this experience affect the design and focus of the next generation?
- what trends are revealed by an analysis of the monitoring initiated at the start of the implementation step?
- how has the context within which the program operates changed?

A meaningful evaluation can be conducted only if the program's objectives have been stated in unambiguous terms and if indicators for assessing progress were identified in steps 2 and 3 and monitored during the preceding generation. Baseline data is essential. In the great majority of programs completed or currently underway, these preconditions for a comprehensive evaluation do not exist.

Coastal management programs should, as far as possible, be designed and executed as experiments with clearly stated hypotheses, followed by data gathering and analysis to test the validity of such hypotheses. Natural and social scientists have much to offer in learning how this fundamental feature of learning can be applied to specific coastal management programs.

#### **4. Principles of Coastal Management Embodied in the Instruments<sup>2</sup>**

There is an emerging international consensus of the principles and features of effective coastal management (see, for example, Chua, 1993; Clark, 1995; OECD, 1993; Pernetta and Elder, 1993; World Bank, 1993; and Post and Lundin, 1996). Three core principles can be identified:

- stakeholder participation in all phases of the program,
- strategic issue-driven program focus and decision-making,
- integrated approaches and methods.

While not principles, other features of successful coastal management include commitment to adaptive learning over the evolution of a sustained program along the phases the policy cycle (described above), and building human and institutional capacity

for coastal management. These are the key principles and features that are designed into the evaluative instruments applied to the Patagonia coastal management program.

#### **4.1 Participation**

Coastal management programs provide for the meaningful involvement of those who are most affected by the coastal development process and the implementation of the coastal management policies. International experience repeatedly demonstrates that programs are successfully implemented and sustained only where there are constituencies that are active advocates for improved resource management. Participatory methods engage people who have a stake in the outcome of the management effort, gives them a voice in management decisions, and ensures that the program that is developed and refined is “owned” by the government of the country in question. Key parameters of participation are:

- government endorsement and involvement in the process,
- broad stakeholder participation fortified by public dialogue, and
- sustained, ideally collaborative, support from NGOs and the donor community.

The mechanisms by which the public is involved must be tailored to the culture and traditions of the nation, but should strive to assure that key participants at both the national and local level participate in all phases of the policy process. Many programs have embraced “participatory rural assessment” and other techniques that involve stakeholders in the initial identification and characterization of issues. But only a few proceed to ensure participation in the subsequent phases of plan formulation and policy selection, in implementation, and in evaluation. Participation is often best accomplished by making public education and consensus-building important components of the management process. Public education and outreach programs help to create constituencies and political support for resource management.

The processes for consultation and participation must be transparent and may combine such techniques as focus groups with representatives of private and public sector stakeholders, public workshops and individual consultations. For example, when the summary findings and conclusions of assessments of specific problems and

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<sup>2</sup> This section is adapted from Olsen et al. (1996).

development options are made public and become an element of an ongoing public education program, support and understanding for the program is likely to increase significantly. Participation can also be difficult, even in countries that welcome democratic processes. When we embrace participation, we give up our total control of the project and the process.

#### ***4.2 Strategic Decision Making***

The importance of maintaining a strategic focus throughout the program development and implementation process cannot be overstated. This requires spending considerable time defining and redefining the issues—the problems and opportunities upon which a program should focus its efforts—based on input from decision makers, the public and scientists. To maintain a strategic focus, it is important to prioritize coastal problems and opportunities and to concentrate efforts at the causes of such identified problems. Low-priority and complex issues should be incorporated in the later stages of program development, after initial successes have been realized.

It is within this context that periodic assessments should be made to define and refine the strategic focus of a coastal program. Thus, programs will periodically: 1) examine overall development scenarios for the coastal region in question, 2) identify bottlenecks to development at both the macroeconomic and sectoral levels and options for overcoming such constraints, and 3) delineate roles for the public and private sectors.

#### ***4.3 Integrated Approaches and Methods***

The integration in coastal management is what distinguishes the endeavor from traditional sectoral programs. Coastal regions, with their burgeoning populations and superposition of competing human activities, natural resources and ecological processes that together define the prospects for the sustained well-being of human society, are where integrated approaches are most urgently needed. The forms of integration required by coastal management have many dimensions.

One dimension of integration is integration between “bottom-up” and “top-down” approaches to resource management and policy reform. This the principle underlying the “two-track” approach to coastal management that the University of Rhode Island’s Coastal Resources Center has pioneered in several developing nations. A “top-down”

approach focuses upon central government, its procedures and structures, and the need for national policy reform. It assumes that a capacity for “command-and-control” resides within central government which, once properly adjusted, can produce the desired changes to how the coast is developed. More importantly, it assumes that a sufficient desire for change exists or can be created within central government to make such self-generated transformation a viable proposition. A “bottom up” approach works to catalyze change at the community level believing that the modeling of innovation at the grassroots level will be transferred and multiply across society.

The two-track strategy combines the two by simultaneously and incrementally building capacity both within central government and at selected community sites. Both governments and communities are involved in the analysis of development issues and in taking responsible action. The power of this approach lies in creating a dialogue that links the two tracks and promotes a sense of shared purpose at both levels. In Ecuador, the two-track strategy has created mechanisms for conflict resolution and consensus building that draws together the energies of all sectors of society—ranging from a shellfisherwoman’s association whose members are mostly illiterate and all very poor, to the National Commission, comprising high level representatives of five ministries.

The two-track approach creates opportunities to bring such different groups together to meet face to face and to develop respect and a measure of understanding for one another. Such diverse groups all have important roles in the process of analyzing management issues and framing a course of action. The second track serves as a “flywheel of continuity” since it is not subject to the continuous changes of personnel and the political agenda within central government. A strong and well-informed first track ensures that greater responsibility and initiative at the local level is not perceived as a threat to the power and prerogatives of central government.

A second dimension of integration is the integration of good science with good governance. The management of complex ecosystems subject to significant human pressures cannot occur in the absence of science. The natural sciences are vital to understanding ecosystem function and social sciences are essential to elucidating the origin of human-induced problems and in finding appropriate solutions. It is important

that science has clearly defined roles within the planning process. Science can be used to help characterize problems over time and establish management priorities; link causes to specific environmental problems and select protective actions; understand ecological systems in order to develop policy options and legitimize management decisions; and, monitor existing conditions in order to evaluate the effectiveness of policies and attainment of plan objectives.

But, some coastal management programs have focused too much on “science” that has proved to be peripheral to effective management practice and too little on governance processes; others have done the reverse. Research and technical tools (GIS systems, impact assessment, ecosystem modeling, surveys, and inventories), for example, are of little value if the institutional and societal context in which they are introduced cannot absorb the insights that such tools can provide.

Judgments on what research and what technology will be most useful and appropriate in a given setting is best made by managers and scientists working together through all the steps in the coastal management process.

Despite great differences in the social, economic and ecological conditions in countries, there is remarkable consistency in the lessons learned about the contributions of science to ICM. They demonstrate that scientists and managers must work together as a team if scientific information generated for ICM is to be relevant and properly applied for management purposes. Since the two professions have different perspectives and imperatives and approach the solution of problems differently, the objectives and priorities for programs must be derived, tested and periodically re-evaluated by scientists and managers working together. (GESAMP, in press).

A third dimension of integration is the integration among sectors and disciplines. This is an imperative in coastal management planning, research, policy formulation and implementation. The complex overlay of issues and institutions along coastlines makes it impossible for a single agency to meet the challenges of management alone. Success lies in forging partnership among institutions, among user groups and among programs and those who provide technical assistance. Productive and sustainable partnerships are built on trust and nourished by shared experience and shared values.



#### **4. Evaluative Instruments**

An argument can be made that the science of ICM is not as developed as other fields of public policy such as public health, which has a long history of testing and discussion of evaluative methods, tools, and indicators. With little prior experience to draw from, the two instruments applied to assess governance aspects of the Patagonia program must be viewed as prototypes which must be revised and improved. It should also be clear that they do not attempt to gauge the impacts of the program; they are tools for assessing the condition, or maturity, of the ICM governance institutions and process.

The first instrument is based on the essential features of a mature coastal management program. We refer to it as the Cobb-Olsen instrument because of its origin (Cobb and Olsen, 1994). This instrument has the advantage of having been informally applied to 4 other coastal management programs. The second prototype instrument is structured directly around the policy cycle described above. We refer to the second instrument as the policy cycle instrument.

The policy cycle instrument encompasses 18 discrete actions embedded in the 5 steps of the policy cycle described earlier:

##### **STEP 1 ISSUE IDENTIFICATION AND ASSESSMENT**

1. Rapidly assess existing conditions
2. Identify and consult key stakeholders to build consensus on priority issues
3. State program goals

##### **STEP 2 PROGRAM PREPARATION**

4. Select issues to be addressed and geographic focus
5. Document baseline conditions
6. Design and implement monitoring protocols
7. Conduct essential policy relevant research
8. Conduct a sustained public education and consultation process
9. Carry out early implementation actions
10. Define management objectives, strategies, and actions
11. Create capacity for implementation

### **STEP 3 FORMAL ADOPTION AND FUNDING**

12. Adopt formal plan
13. Secure adequate funding for implementation

### **STEP 4 IMPLEMENTATION**

14. Promote compliance to regulations and agreements
15. Construction/operation of infrastructure
16. Governance mechanisms and legislation
17. Monitoring

### **STEP 5 EVALUATION**

18. Evaluation and program adjustment

The selection of these actions is based primarily upon the experience of the University of Rhode Island's Coastal Resources Center over a period of 25 years in Rhode Island, Ecuador, Sri Lanka, Thailand, and other locations around the world.

Each instrument consists of a set of indicators that rank on an ordinal scale the degree to which components of the policy cycle have been achieved. The methodology is designed to be as simple as possible so that it might be administered by a professional ICM manager or social scientist, through interviews with knowledgeable in-country sources. Each indicator is ranked from 0 to 3, representing a minimal (or none), low, medium, and high level of program effort.

It is extremely important to clearly specify what is being defined as the "coastal management program" before applying the instruments and to consistently apply all indicators to that definition. In the present example, the instruments are being applied to the Patagonia Coastal Management Program, specifically the UNDP/GEF funded effort. It is equally important to state what is being considered when questions refer to the national level and local level. In the application of the instruments to the Patagonia program, the national level refers to central government, whereas the local level refers to the level of the province of Patagonia -- most specifically to Chubut province where the project is based and has focused its greatest efforts. Finally, in applying the instruments

it is important to include information or narrative that supports judgments of ordinal rankings. This will permit future evaluators to use common points of reference.

The policy cycle instrument in its current version does not include the detail that will need to be added in its application to programs in the implementation stage. Because the Patagonia program has not yet reached the implementation step, we have not made the effort to add this detail. Once both frameworks have received sufficient field testing, a set of refinements will be in order. The kind of questions that need to be addressed during this initial field testing are as follows:

1. are there other categories that need to be considered?
2. are the specific indicators under each component correct? Can some be eliminated as trivial? Are other indicators needed?
3. can we begin to rank the relative importance of the different categories and the specific indicators in each category? Presumably, some are more important than others. As more data are accumulated, we will be better able to determine the relative weight of the indicators on an international basis.

## **6. Results**

Both instruments show that the Patagonia program has performed relatively well within the bounds of a three year effort. A summary of results is shown in tables 1 and 2. Table 1 shows that the Patagonia program scores comparable or better than other programs in their initial years. The summary tables are only illustrative and can only provide a rough sketch of the maturity of the program. In averaging across indicators one loses the detail that is most meaningful, and averaging implicitly assumes that each indicator and action/component are equally weighted. It is unlikely that all indicators have equal weight, but understanding of coastal management is not sufficiently advanced to assign weights at present.

**Table 1. Summary of Cobb/Olsen Instrument Results (average score on scale of 0-3)**

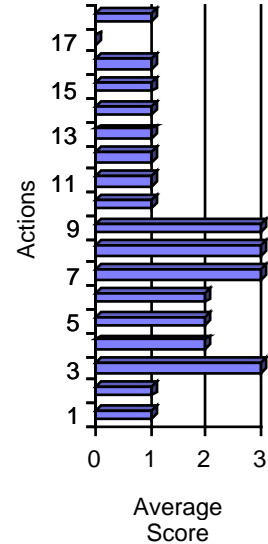
Component	Ecuador		Sri Lanka		Thailand		Rhode Island			Patagonia
	1985	1994	1985	1994	1986	1992	1973	1986	1994	1996
Stage Setting	0	2	1	2	1	2	1	3	3	2
Institutional Framework	0	2	1	2	0	2	1	2	2	1
CRM Plan	0	3	1	2	1	2	1	3	3	1
Implementation	0	2	1	2	1	2	1	2	3	1
Monitoring / Evaluation	0	2	1	2	0	1	0	2	3	1
Overall average	0	2	1	2	1	2	1	2	3	1

Assessing the results of the instruments in more detail one sees that the Patagonia coastal management program is in the early steps of the policy cycle--not yet fully completing the program preparation step (2) as defined in the policy cycle instrument. Because the program is not yet in the implementation phase, indicators of implementation that correspond directly to the program should, in principle, score 0. However, in both instruments, elements of implementation that will contribute to the implementation phase of the Patagonia program are noted and given value. In future evaluations, such contextual, background information could be separated out and included in a separate worksheet.

The instruments illustrate that public education, assessment of priority issues, consultation with stakeholders, and early implementation actions, are strengths of the program. Institutional capacity for implementation and management strategies are not yet established. Integration of top down and bottom up approaches to coastal management is also little developed, where top down refers to the national level. However, integration among provincial and community level is good. These are the findings that are highlighted in detail in the body of the evaluation report.

**Table 2. Summary of Policy Cycle Instrument Results**

Step/Action	Average Score ( 0-3, rounded-up to nearest whole number)
<b>Issue Identification</b>	
1. Rapidly assess existing conditions	1
2. Identify and consult key stakeholders to build consensus on priority issues	1
3. State program goals	3
Sub-total, issue identification	2
<b>Program Preparation</b>	
4. Select issues to be addressed and geographic focus*	2
5. Document baseline conditions	2
6. Monitor trends for selected issues	3
7. Conduct essential policy relevant research	3
8. Conduct a sustained public education and consultation process	3
9. Carry out early implementation actions	1
10. Developing a plan: define management objectives, strategies, and actions	1
11. Create capacity for implementation	2
Sub-total, program preparation	1
<b>Formal Adoption and Funding</b>	
12. Adopt formal plan	1
13. Secure adequate funding for implementation	1
Sub-total, formal adoption and funding	1
<b>Implementation</b>	
14. Promote compliance to regulations and agreements	1
15. Construction/operation of infrastructure	0
16. Governance mechanisms and legislation	1
17. Monitoring	1
Sub-total, implementation	1
<b>Evaluation</b>	
Evaluation and program adjustment	1



\*Action 4 (select issues to be addressed and geographic focus) appears to have occurred in what we define as step 1. Moving this action to step 1 would not alter the summary score for either step 1 or step 2.

**7. Lessons Learned**

The instruments provided structure and focus for the evaluation of the Patagonia program, and helped increase the efficiency of the evaluation process. We emphasize

that the numerical scores at this stage of development are only rough and indicative. The strength of the instruments is the guidance provided by the instruments' framework.

The Patagonia evaluation confirmed our view that the instruments in some situations will need to be fine-tuned, or adapted. We noted earlier that in the Patagonia program, for example, that selection of specific issues and geographic focus, which is normally an element of program preparation (step 2) took place very early on in program development (in step 1). The instruments should not be rigidly applied since there is no rigid step-by-step approach to coastal management that is globally applicable. As suggested in section 3, the dynamic nature of coastal management requires feedback among the steps and may alter the sequence, or require repetition of some steps.

One week in-country was barely sufficient to perform an evaluation of the Patagonia coastal management program and apply the instruments. We were greatly helped by the honesty of the FPN staff and the unusual clarity of the 1992 project document and draft coastal management plan. However, we were not able to assess the quality of the technical reports that are a major product of the program.

For a more mature and complex program with a coastal management institution and various implementation activities, more time would certainly be required. We also see a great need for the development of additional, complementary instruments to support a common methodology for learning from experience--for example, instruments that address socioeconomic and other contextual variables with importance for the success of a program, and instruments on each of the major coastal management issues (e.g. fisheries, wildlife, water quality, tourism) that would provide more detail on progress in addressing the issues and impacts of a program.

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STEP 1 ISSUE IDENTIFICATION AND ASSESSMENT CONDITIONS				ACTION 1 RAPIDLY ASSESS EXISTING
Component	Description	Scale Items	Score	Comments
(1) Assess environmental condition and trends	Extent to which existing information has been analyzed to assess the condition of and trends in coastal resources	0 no assessment on this topic 1 limited effort 2 moderate effort 3 significant effort	1	* These issues were discussed at an initial planning workshop in 1992. In this project, the process of rapid assessment culminated in the completion of the Project Document since this document selected the issues to be addressed and strategies to be followed during the GEF-funded project.
(2) Assess policy, institutional context	Extent to which existing information has been analyzed to assess the institutional problems which are impeding effective CRM action	0 no assessment on this topic 1 limited effort 2 moderate effort 3 significant effort	1	* These issues were discussed at an initial planning workshop in 1992.
(3) Assess development needs/pressures	Extent to which existing information has been analyzed to assess development needs and trends and their implications for society and the environment	0 no assessment on this topic 1 limited effort 2 moderate effort 3 significant effort	1	* These issues were discussed at an initial planning workshop in 1992.
(4) Participation in rapid assessment	Extent to which rapid assessment of existing conditions involves the participation of local experts and the people affected	0 analysis undertaken by program managers without outside consultation of other organizations (research, private, government) and stakeholders 1 a limited level of consultation with other organizations 2 a moderate level of consultation 3 significant level of consultation	1	* When framing the Project Document, a single workshop was held with over 40 representatives of government and research institutions that built consensus on the project design (Puerto Madryn, August 1992).

STEP 1 ISSUE IDENTIFICATION AND ASSESSMENT <i>ISSUES</i>			ACTION 2 IDENTIFY AND CONSULT KEY STAKEHOLDERS TO BUILD CONSENSUS ON PRIORITY	
Component	Description	Scale Items	Score	Comments
(5) Initial consultation with stakeholders	Extent to which key stakeholders are identified and consulted, and a consensus on the range of priority issues is achieved	0 no action 1 little consultation with key stakeholders to discuss coastal issues of concern and their implications. 2 a moderate effort to consult with stakeholders (at many locations and levels) 3 a significant effort to consult with key stakeholders. Public meetings are held.	1	* When framing the Project Document, a single workshop was held with over 40 representatives of government and research institutions that built consensus on the project design (Puerto Madryn, August 1992).

STEP 1 ISSUE IDENTIFICATION AND ASSESSMENT <i>PROGRAM GOALS</i>			ACTION 3 STATE	
Component	Description	Scale Items	Score	Comments
(6) Statement of program goals	Extent to which overall program goals are formulated and understood by stakeholders	0 program goals are not stated 1 goals of program stated but cause confusion or are often misunderstood 2 minor confusion 3 well understood by all	3	* Project goals stated in the project document are: "To provide the coastal zone of Patagonia with tools for implementing sustainable use of its natural resources and for protecting its biological diversity". The document lists four intermediate term sub-objectives. * The goals and objectives of the project were developed largely by Dr. Conway (WCS) and Graham Harris.

STEP 2 PROGRAM PREPARATION GEOGRAPHIC FOCUS			ACTION 4 SELECT ISSUES TO BE ADDRESSED AND	
Component	Description	Scale Items	Score	Comments
(7) Issue selection	Extent to which the program is focused on a strategically selected set of coastal management issues	0 no issue focus 1 limited issue focus 2 moderate issue focus 3 a limited number of clearly defined issues have been selected and are the focus of the program	2	<ul style="list-style-type: none"> <li>* This action is normally part of step 2. In the Patagonia program, however, issues and geographic focus were selected in step 1 at the initiation of the GEF-funded project. Consultation with stakeholders and fine-tuning of priority issues, however, continued throughout the project.</li> <li>* The four principle objectives in the project document are clear. There are too many activities in both the PD and the draft CZfM Plan. The Plan needs to select a smaller number of activities to tackle initially</li> </ul>
(8) Stakeholder consultation in issue selection	Extent to which key stakeholders were consulted to select specific issues to be addressed by the program	0 no consultation 1 limited consultation 2 moderate consultation 3 significant consultation	2	<ul style="list-style-type: none"> <li>* When framing the Project Document, a workshop was held with over 40 representatives of government and research institutions that built consensus on the project design (Puerto Madryn, August 1992).</li> <li>* Throughout the project, consultation was a principle of operation for all activities (fisheries, wildlife, tourism, water quality, public education)</li> <li>* Three workshops with participants from the entire Patagonia region were held. The first General Workshop of the Project, held in Puerto Deseado, June, 1994, was focused on the project overall. The second General Workshop was held in San Antonio Oeste/Las Grutas (Río Negro) in March 1995. It was focused on fisheries. The third General Workshop, held in Puerto Madryn, March, 1996, was focused on marine birds. The zoning of the coast of Patagonia was also discussed during the third General Workshop and general recommendations were made for setting up new protected areas.</li> <li>* Teacher training courses, Province specific workshops, and a public meeting also worked toward building a consensus on priority issues. Priority issues vary from city to city, and the FPN has a good understanding of the consensus on issues.</li> <li>* Working meetings with the Instituto de Biología Marina y Pesquera Storni, Centro Nacional Patagonico and Subsecretaria de Pesca of Santa Cruz were held.</li> <li>* Seaweed harvesters were consulted as to their needs.</li> </ul>
(9) Conservation / development balance	Extent that the issues addressed are balanced with respect to conservation and development	0 not balanced 1 limited degree of balance 2 moderate degree of balance 3 significant degree of balance	1	<ul style="list-style-type: none"> <li>* Conservation as a focus dominates.</li> </ul>
(10) Define geographic focus	Extent to which the geographic focus of the program is identified	0 geographic focus is not clearly defined and communicated 1 limited degree of definition of geographic focus and communication of geographic boundaries 2 moderate degree of definition of geographic focus and communication of geographic boundaries 3 geographic focus is clearly defined and well known to all involved	2	<ul style="list-style-type: none"> <li>* The program took an ecosystem view of coastal management and thus included all of the terrestrial area of the provinces of Patagonia (with the exception of Tierra del Fuego). The seaward boundary includes the continental shelf within the EEZ.</li> </ul>

<b>STEP 2 PROGRAM PREPARATION BASELINE CONDITIONS</b>				<b>ACTION 5 DOCUMENT</b>	
<b>Component</b>	<b>Description</b>	<b>Scale Items</b>	<b>Score</b>	<b>Comments</b>	
(11) Baseline documentation	Extent to which key baseline conditions are assessed as they apply to the priority issues to be addressed by the program	0 no action 1 limited assessment of baseline conditions 2 moderate assessment of baseline conditions 3 significant assessment of baseline conditions	2	<ul style="list-style-type: none"> <li>* Biggest effort was to document baselines of fauna abundance in reserves.</li> <li>* Information on ecotourism attractions, lodging, infrastructure, demand and tourist profile, gathered by the municipalities of the three provinces and compiled as a Technical Report.</li> <li>• Baseline documentation on issues of governance and development context was limited.</li> </ul>	

<b>STEP 2 PROGRAM PREPARATION ISSUES</b>				<b>ACTION 6 MONITOR TRENDS FOR SELECTED</b>	
<b>Component</b>	<b>Description</b>	<b>Scale Items</b>	<b>Score</b>	<b>Comments</b>	
(12) Plan for monitoring trends for selected issues	Extent to which a monitoring plan (identifying indicators, unit of measurement, data sources, process for data collection, frequency of collection, responsible parties) targeted upon selected issues has been developed	0 no plan, and not in development 1 in the early process of development 2 an interim draft of the plan is under review 3 plan prepared	1	<ul style="list-style-type: none"> <li>* As far as we know, no specific, overall plan for monitoring trends for selected issues was developed. Several topic specific guidelines for monitoring were prepared:</li> <li>* An instruction manual for the on-board observer pilot program was produced including codes for on-board use, general instructions and forms to be used.</li> <li>* Protocols to carry out surveys and monitoring activities of populations of elephant seals and sea lions were prepared.</li> <li>* A protocol to census small cetaceans was edited as a Technical Report.</li> <li>* A draft manual on "guidelines for evaluating and monitoring marine birds" was completed.</li> <li>* A Technical Report on methods for the collection, transport, and preliminary analysis of biological and chemical samples was prepared.</li> <li>* Protocols and mechanisms for information transfer on artisanal and industrial fisheries were evaluated.</li> </ul>	
(13) Monitoring trends for selected issues	Extent to which trends in selected issues are monitored, including state of the environment, pressures, and governance	0 no monitoring of trends 1 limited monitoring 2 moderate monitoring 3 significant monitoring	2	<ul style="list-style-type: none"> <li>* There is monitoring of marine birds and mammals, fisheries, and water quality.</li> </ul>	
(14) Participation in monitoring trends	Extent to which the process by which trend monitoring is planned and implemented involves collaboration by all key parties involved.	0 no collaboration 1 little collaboration 2 moderate collaboration 3 significant collaboration	2	<ul style="list-style-type: none"> <li>* Participation in the development of monitoring protocols and in actual monitoring of trends appears to have involved technical experts in the FPN, Centro Patagonia, and other research institutions. The project final report prepared by FPN states that instruction manuals are being used by project beneficiaries in all four sectors addressed by the project.</li> </ul>	
(15) Accessibility and communication of monitoring information	Extent to which monitoring information is readily available and findings are communicated	0 no system of data storage, retrieval and communication of information 1 limited accessibility and communication 2 moderate accessibility and communication 3 significant accessibility and communication	1	<ul style="list-style-type: none"> <li>* Monitoring information is available on request.</li> <li>* Fundación Sirena was contracted to prepare a data base to manage data on wildlife, tourism, contamination, and fisheries. This was meant to be continuously updated and made available to the three provinces.</li> <li>* Communication occurs mainly between colleagues and technical experts, and is communicated to a lesser degree to the non-technical public and policymakers.</li> </ul>	

STEP 2 PROGRAM PREPARATION RELEVANT RESEARCH			ACTION 7 CONDUCT ESSENTIAL POLICY	
Component	Description	Scale Items	Score	Comments
(16) Analysis of key issues	Extent to which there is analysis of specific priority issues	0 no analysis of specific priority issues 1 little analysis of specific priority issues 2 moderate degree of analysis of specific issues 3 significant analysis of specific priority issues	3	<p><i>Research and reports on environment:</i></p> <ul style="list-style-type: none"> <li>* An on-board biologist observer program was initiated to collect data on the fisheries sector.</li> <li>* A report on whale biology and whale behavior during whale watching was prepared.</li> <li>* Reports on urban pollution in Bahía Nueva and Bahía Engaño in different seasons were prepared.</li> <li>* A Technical Report on the management plan of the "ría" of Puerto Deseado was prepared.</li> <li>* Technical Reports on the distribution and abundance of marine bird and mammal colonies were prepared.</li> <li>* GIS map prepared on status of coastal resources, resource uses, threats and biodiversity hot spots (some copies printed, revisions to be made). Have not received GIS diskettes.</li> <li>* A report on coastal protected areas in Patagonia was completed.</li> <li>* A report on migratory birds and areas of importance for their conservation on the coast of Patagonia was prepared by Wetlands for the Americas and edited as a Technical Report of the UNEP/GEF project.</li> <li>* Protected areas in the North East of the Province of Chubut were visited to assess the current situation, interview wildlife wardens and obtain information on attendance in recent years.</li> <li>* Reports on coastal fisheries (including artisanal) and mapping of fishing fleets were prepared.</li> <li>* A mobile pollution sampling van was used to gather water contamination data in the municipalities.</li> <li>* Joint effort with other research organization to monitor the VPM phenomenon in bivalves in San José Gulf, Province of Chubut.</li> <li>* Study on heavy metals and pesticides in marine birds and mammals.</li> <li>* Report on the use of bycatch by marine birds.</li> <li>* The use of garbage dumps by sea gulls and the presence of pathogens in birds was evaluated.</li> <li>* A directory of researchers and institutions working on projects related to marine birds, mammals and fisheries was prepared.</li> <li>* Database compiled with references on species of Patagonian marine birds and mammals; maps and aerial photographs; and references on local oceanographic pollution problems.</li> </ul>

STEP 2 PROGRAM PREPARATION (continued)			ACTION 7 CONDUCT ESSENTIAL POLICY RELEVANT RESEARCH	
Component	Description	Scale Items	Score	Comments
(16) Analysis of key issues (continued)	Extent to which there is analysis of specific priority issues (continued)			<p><i>Research and reports on development threats to marine biodiversity:</i></p> <ul style="list-style-type: none"> <li>* Studies on local demand for environmental services, tourism demand (including a survey of visitors at wildlife reserves), and on the economics of Patagonia fisheries, tourism, and the oil industry. Analysis of information on the high sea fishing fleet with regards to interaction with marine mammals.</li> <li>* Survey of octopus collecting in the intertidal zone of the West coast of San Matías Gulf was analyzed.</li> <li>* A Technical Report on guano exploitation activities was produced based on study of the distribution and abundance of Imperial cormorants in the Province of Santa Cruz.</li> <li>* Assessment of aquaculture activities in San José and Nuevo gulfs carried out. Based on the report new regulations were issued by the Fisheries Provincial Department to avoid whale entanglements from aquaculture activities.</li> <li>* Technical Reports prepared on introduced species for aquaculture on coastal Patagonia and its potential effects on coastal biodiversity (scallop fishing and mussel culture ).</li> <li>* A synthesis of the current status of macroalgae of commercial value was prepared.</li> <li>* Studies on urban pollution processes.</li> <li>* Information on recycling and processing of solid waste was gathered and made available to the cities of Patagonia with serious problems.</li> <li>* Technical report prepared on the impact of human presence on marine bird and mammal colonies of Monte Loayza.</li> </ul> <p><i>Research and reports on institutional issues</i></p> <ul style="list-style-type: none"> <li>* A data base and Technical Report on legislation in Argentina and international conventions with importance for coastal fauna, fisheries, macroalgae, and pollution problems was completed by FARN (a local NGO).</li> </ul>
(17) Policy relevance of analyses	Extent to which research is policy relevant and is useful for management	0 not policy relevance, and useful for management 1 limited policy relevance and usefulness for management 2 moderate policy relevance and usefulness for management 3 significant policy relevance and usefulness for management	3	<ul style="list-style-type: none"> <li>* Research was focused on policy relevant issues. However, we were told that oil management information would have been more relevant and informative on causal effects than pollution monitoring in specific sites.</li> </ul>
(18) Spatial definition of analyses	Extent to which research is site specific	0 no spatial definition 1 limited spatial definition 2 moderate 3 significant spatial definition	3	<ul style="list-style-type: none"> <li>* Most of the analyses are spatially defined.</li> </ul>

STEP 2 PROGRAM PREPARATION (continued)			ACTION 7 CONDUCT ESSENTIAL POLICY RELEVANT RESEARCH	
Component	Description	Scale Items	Score	Comments
(19) Participation in analysis of key issues	Extent to which research on priority issues involves the participation of local experts and the people affected	0 analysis undertaken by program managers without outside consultation of other organizations (research, private, government) and stakeholders 1 a limited level of consultation with other organizations 2 a moderate level of consultation 3 significant level of consultation	3	<ul style="list-style-type: none"> <li>* Strong cooperation with the Centro Patagonia, other NGOs, Universities, and other research institutions.</li> <li>* Some 4000 people took part in the first coastal census of oiled birds and garbage along some 2000 kilometers of the Argentine coast.</li> <li>* Field work was carried out with artisanal octopus fishermen in Rio Negro.</li> <li>* Meetings were held with directors and personnel of institutes, universities and governmental institutions to distribute results of studies, exchange information, and develop common work strategies.</li> </ul>
(20) Issue causality	Extent to which the causal relationship between coastal issues and past acts is perceived	0 no verbalized perception of a relationship between the past and the present; perceived only by coastal managers 1 limited awareness of relationships voiced in some way. There is critical resistance. 2 moderate awareness. Perception of causal relationships by increasing number of other groups (NGOs, research centers). Still some critical resistance. 3 significant awareness. General understanding about relationships by stakeholders and leaders. No critical resistance.	2	<ul style="list-style-type: none"> <li>* Studies addressed the impact of oil pollution on marine birds; the impact of tourism on whale behavior; urban pollution on coastal environments; fish waste and garbage disposal on gull populations.</li> <li>* There is a growing but still limited awareness of relationships among fisheries, petroleum, and tourism activities on marine wildlife.</li> </ul>
(21) Linkage of issues	Extent to which the relationships between critical coastal issues is perceived	0 no verbalized perception of a relationship between issues; perceived only by coastal managers 1 limited awareness of relationships voiced in some way. There is critical resistance. 2 moderate awareness. Perception of relationships between issues by increasing number of other groups (NGOs, research centers). Still some critical resistance. 3 significant awareness. General understanding about relationships by stakeholders and leaders. No critical resistance.	1	<ul style="list-style-type: none"> <li>* There is potential for conflict across issues and sectors, such as between tourism, fisheries, and the petroleum sector; for example, the impact of oil pollution on fisheries and marine bird and mammal-based tourism. Cross-issue conflicts are not currently a major concern, but perception of such conflicts may be growing.</li> </ul>

STEP 2 PROGRAM PREPARATION PROCESS		ACTION 8 CONDUCT A SUSTAINED PUBLIC EDUCATION AND CONSULTATION		
Component	Description	Scale Items	Score	Comments
(22) Mass media public education	Extent to which the mass media (press, radio, TV) carry CRM messages on issues directly related to priority issues of the program	0 no action 1 limited (3-5 time a year) 2 moderate (5 or more time a year) 3 significant (routinely)	3	<ul style="list-style-type: none"> <li>* 4 TV flashes on the project in general, on-board biologist program, responsible tourism and wildlife were produced.</li> <li>* A national beach walk was organized in September 1995 which received nation wide TV coverage for over 2 weeks.</li> <li>* There have been a significant number of TV appearances, radio interviews and press articles that have drawn attention to the need for protecting coastal biodiversity.</li> </ul>
(23) Targeted public education	Existence of targeted CRM education programs for user groups, school children, etc.	0 no action, or only in the design stage 1 activities on a limited scale. Programs involve limited interventions or limited number of priority issues. Brochures, posters, or reports are prepared that describe the program and issues. 2 moderate level of activities over a sustained period of time encompassing a number of schools and/or user groups. Brochures, posters or reports are prepared. 3 a significant effort involving many schools and/or user groups and geographic locations. Education program spans more than 2 years. Brochures, posters or reports are prepared.	3	<ul style="list-style-type: none"> <li>* Over 400 teachers participated in 30 teacher training courses in 19 towns.</li> <li>* Folders containing material on environmental education were prepared and distributed for the teacher training courses.</li> <li>* Two courses on public hearings were organized by FARN and FPN as a tool for community participation in environmental discussions.</li> <li>* A one week training course for fisheries biologists observers was held in November 1994. Eighteen people participated from 6 institutions. All 18 participants went on to participate in the on-board observer program.</li> <li>* 35 people participated in a nature interpretation course in Punta Loma in 1994.</li> <li>* A one week course on population dynamics was organized for post graduate students and resource administrators. Fifteen people participated from 7 institution.</li> <li>* Talks were given to people from the Patagonia coastal communities on management and recycling of solid wastes.</li> <li>* An educational brochure and a poster were designed jointly with Fundación Vida Silvestre and Fundación Cethus for protecting whales during the 1994 whale watching season.</li> <li>* An environmental education calendar was produced in three years sponsored by a local fishing firm.</li> <li>* Two issues of "Informe sobre Flora and Fauna" were printed, one about the on-board observer program and the other on marine and coastal birds.</li> </ul>
(24) Statements by leaders	Extent to which the Head of government or high officials speak publicly and favorably about CRM along the coast	0 they speak negatively 1 limited (they do speak publicly less than twice a year) 2 moderate (they speak favorably once or twice a year) 3 significant (they speak favorably more than twice a year)	2	<ul style="list-style-type: none"> <li>* In Chubut province the Mayor of Puerto Madryn, the Secretary of Tourism and Minister of Production speak favorably of the program in public and on TV.</li> </ul>



STEP 2 PROGRAM PREPARATION IMPLEMENTATION ACTIONS			ACTION 9 CARRY OUT EARLY	
Component	Description	Scale Items	Score	Comments
(25) Early implementation actions	Number of early implementation actions	0 none 1 limited (one or two) 2 moderate (3 or four) 3 significant (more than four)	3	<ul style="list-style-type: none"> <li>* Onboard fisheries observer program.</li> <li>* Introduction of reduction in fishing net size.</li> <li>* Meetings were organized with government officials and whale-watching tour operators to establish recommendations for sustaining the industry and reducing impact. Guidelines for whale watching in Chubut province were discussed and then prepared.</li> <li>* Meetings were held with small-vessel coastal fishermen to outline a new marine protected area (Isla Escondida, Chubut) which would limit fishing in favor of protecting the foraging area of a nearby penguin colony.</li> <li>* A preliminary proposal to create a protected area with restrictions for fisheries, aimed at protecting foraging sites of Magellanic penguins breeding at Punta Tombo and Punta Clara was submitted for review.</li> <li>* A proposal to extend the protected areas of Golfo Nuevo and to promote whale watching from shore was presented to the provincial authorities.</li> <li>* Meetings were held with Municipal authorities and community sectors of Puerto Madryn to develop pollution contingency planning for the coastal areas of the town. Output from this particular activity has been weak.</li> <li>* Garbage removal systems have been implemented in the port facilities of Puerto Madryn.</li> <li>* FPN participated in the public hearing on evaluation of environmental impact of the enlargement of Almirante Storni pier.</li> </ul>
(26) Transferability of initial actions	Extent to which the experience gained is likely to be transferable to other issues/sites	0 not transferable 1 limited ability to transfer experience to other issues/sites 2 moderate ability to transfer experience 3 significant ability to transfer experience	2	<ul style="list-style-type: none"> <li>* The actions targeted critical issues and tested in a limited way potentially important elements of an emerging coastal management plan.</li> </ul>

STEP 2 PROGRAM PREPARATION ACTIONS		ACTION 10 DEVELOPING A PLAN: DEFINE MANAGEMENT OBJECTIVES, STRATEGIES, AND		
Component	Description	Scale Items	Score	Comments
(27) Stakeholder participation in plan development	Extent to which the process of plan development has involved meaningful participation of all stakeholders	0 program director only 1 inner circle of participants 2 internal review with agencies affected 3 public review and comment	1	* Stakeholders were not directly involved in the preparation of the plan and no process or mechanisms were used specifically for plan development. However, the views of stakeholders are incorporated through program consultation during the 3 years of the project , including theGeneral Workshops.
(28) Strategic design of plan	Extent that the plan is strategic. This implies consideration of: institutional capacity; resources available; stakeholder support; the nature of the issues; minimization of conflicts; focus on causal relationships and relationships between issues; likely effectiveness of strategies considered.	0 plan is not strategic in design 1 limited strategic design 2 moderate strategic design 3 significant strategic design	1	* The plan is founded on a solid understanding of causal relationships, but several important sections of the plan are missing; in particular institutional design and the governance process.Consideration of resource requirements and effectiveness of strategies is also limited.
(29) Conservation / development balance	Extent that the program components are balanced among conservation and development needs	0 not balanced 1 limited degree of balance 2 moderate degree of balance 3 significant degree of balance	1	* Conservation objectives dominates.

STEP 2 PROGRAM PREPARATION IMPLEMENTATION			ACTION 11 CREATE CAPACITY WITH PUBLIC SECTOR FOR	
Component	Description	Scale Items	Score	Comments
(30) Technical staff	Extent to which capacity is created with sufficient and appropriate education and training to staff existing and projected CRM programs	0 no capacity building 1 limited capacity building 2 moderate capacity building 3 significant capacity building	2	<ul style="list-style-type: none"> <li>* A total of 16 courses were organized, targeted especially at government employees and others on topics ranging from environmental impact assessment, to population dynamics, biological diversity, biological observation, and education of park wardens</li> <li>* Ten researchers from FPN, the Centro Patagonia, and UNPSJB attended intensive management courses in tourism, pollution, fisheries and wildlife.</li> <li>* A one week course for wildlife wardens was held in June 1995. 28 wardens from the three provinces took part .</li> <li>* A course "evaluation of environmental impact" was given by Fundación Sirena in Puerto Madryn in June 1995 in cooperation with FPN. It was attended by people from governmental institutions, universities, and research centers in the three provinces.</li> <li>* FPN coordinated a Patagonian workshop on the role of the police in the protection of the environment, organized by the Chubut Police Department.</li> <li>* A workshop was organized on current knowledge of biology and conservation of right whales. It was attended by whale watching guides, people from the National Coast Guard Service and the Provincial Tourism Department.</li> <li>* A computer was installed in one Province to be used with the coastal resources database developed by FPN and Fundación Sirena.</li> <li>* A key and important limitation is capacity on coastal management. All FPN staff have a scientific background.</li> </ul>
(31) Program decentralization	Extent to which the program is decentralized	0 centralized in capital or dominant city 1 limited decentralization, or more decentralized in theory than in practice 2 moderate decentralization 3 significant decentralization	3	<ul style="list-style-type: none"> <li>* Many activities are focused around Puerto Madryn. However, the FPN has done a remarkable job at decentralizing the planning phase of the project over a very large area.</li> </ul>
(32) Local level institutional structures	Existence of local structures/institutions which make local decisions on the use of resources and which enable conflict resolution	0 none 1 limited local level structures 2 moderate local level structures with increasing community support and effective decisionmaking 3 significant (strong) local level structures which are viewed by the community as effective	1	<ul style="list-style-type: none"> <li>* The first General Workshop resulted in recommendations for the establishment of an inter-Provincial Coastal Zone Management Committee. Provincial chapters of this committee were established and met separately to discuss protected areas on the coast.</li> </ul>
(33) National level institutional structures	Extent to which there is a supportive institutional framework on a national basis	0 none 1 limited national level structures 2 moderate national level structures 3 significant national level structures	1	<ul style="list-style-type: none"> <li>* The critical national level structure with respect to resource issues in Patagonia is the national fisheries agency (for management of offshore fisheries). This agency has not been supportive of the Patagonia coastal management program.</li> <li>* FPN staff participated in meetings to develop a National Environmental Strategy.</li> </ul>

STEP 2 PROGRAM PREPARATION (continued)			ACTION 11 CREATE CAPACITY WITH PUBLIC SECTOR FOR IMPLEMENTATION	
Component	Description	Scale Items	Score	Comments
(34) Private sector institutional stage of development	Institutional stage of development of key NGO or other private coastal resource management organizations in terms of mission, strategy, structure, staff and systems	0 score of 0 to 9 on private CRM institution worksheet 1 score of 10 to 15 on private CRM institution worksheet 2 score of 16 to 21 on private CRM institution worksheet 3 score of 22 to 27 on private CRM institution worksheet	1	* See separate worksheet
(35) Public sector institutional stage of development	Institutional stage of development of public institution selected to lead the program	0 score of 0 to 9 on public CRM institution worksheet 1 score of 10 to 15 on public CRM institution worksheet 2 score of 16 to 21 on public CRM institution worksheet 3 score of 22 to 27 on public CRM institution worksheet	0	* No such public institution yet exists.
(36) Inter-institutional collaboration	Extent to which relevant institutions collaborate and coordinate their activities to address key coastal issues	0 no collaboration 1 limited (some relevant institutions meet together less than once a year) 2 moderate (institutions meet once a year) 3 significant (institutions meet at least three times a year and productively plan CRM activities). Formal inter-institutional agreements operating	2	* Cross-sectoral collaboration among provincial and national institutions with responsibilities for the issues addressed by the program is moderate with participation primarily of technical staff from various government agencies in the workshops and training courses held by FPN.
(37) Local-national level linkages	Extent of collaboration and cooperation between institutions at the local and national levels	0 no collaboration between local and national level 1 limited collaboration (institutions meet together less than once a year) 2 moderate collaboration (institutions meet once a year) 3 significant collaboration (institutions meet at least three times a year and productively plan CRM activities)	1	* The national Fisheries Secretariat was little involved with the project. The national tourism agency was supportive of the project, but it is not an important agency in tourism management in the provinces. * The national parks agency has collaborated with the tourism agency of the province of Chubut.

<b>STEP 3 FORMAL ADOPTION AND FUNDING</b>				<b><i>ACTION 12 ADOPT</i></b>
<b><i>FORMAL PLAN</i></b>				
<b>Component</b>	<b>Description</b>	<b>Scale Items</b>	<b>Score</b>	<b>Comments</b>
(38) Formal approval of official plan	Extent to which a plan, with policies, strategies, objectives, implementing mechanisms and budget, has been officially approved	0 no plan 1 plan in beginning stages of development 2 plan developed but not officially approved 3 plan developed and officially approved	1	* A draft plan has been written, it has not been reviewed and adopted at either the local, provincial, or national level.
(39) Process of negotiation of official plan	Extent to which the process of political negotiation over the official adoption of the plan is participatory and effective	0 no negotiation over official adoption of plan 1 limited negotiation and effectiveness 2 moderate negotiation and effectiveness 3 significant and effective negotiation	0	* The process of political negotiation over the official plan has not begun.
(40) Policy content of official plan	Extent to which the plan includes: summary findings that are formally endorsed as the basis of policies/regulation; statements of policy on major issues; actions ; regulations	0 no policy substance 1 limited policy substance 2 moderate policy substance 3 significant policy substance	1	* The plan identifies many objectives and suggests actions. Policy statements and institutional design to achieve objectives is incomplete or missing in the draft plan.

<b>STEP 3 FORMAL ADOPTION AND FUNDING</b>				<b><i>ACTION 13 SECURE ADEQUATE FUNDING FOR</i></b>
<b><i>IMPLEMENTATION</i></b>				
<b>Component</b>	<b>Description</b>	<b>Scale Items</b>	<b>Score</b>	<b>Comments</b>
(41) Financial resources secured (government, private)	Extent to which financial resources are secured from domestic government or private sources (NGOs, industry)	0 no resources secured 1 limited resources secured 2 moderate resources secured 3 significant resources secured	1	* Limited financial support has been secured from local businesses.
(42) Financial resources secured (international donors)	Extent to which financial resources are secured from international donors (national development agencies, multi-lateral development banks, international development organizations)	0 no resources secured 1 limited resources secured 2 moderate resources secured 3 significant resources secured	1	* To fund implementation of the CZM Plan, the FPN has been in contact with the European Community, international NGOs, and is hoping to secure another grant from UNDP/GEF. No funds have yet been secured from these organizations for an implementation stage .

STEP 4 IMPLEMENTATION AGREEMENTS			ACTION 14 PROMOTE COMPLIANCE TO REGULATIONS AND	
Component	Description	Scale Items	Score	Comments
(43) Monitoring compliance	Extent to which authorized activities and discharges are monitored to ensure compliance, and records are kept of attempts to prosecute and reasons for failure of prosecution	0 no monitoring of compliance 1 limited monitoring 2 moderate monitoring 3 significant monitoring	1	* Monitoring of compliance with coastal related regulations is judged to be limited, but our knowledge of this aspect is limited. Some park rangers (about 30 in 3 provinces) and provincial fishery officers exist and are doing excellent work.
(44) Compliance	Extent to which coastal resource users comply with the plan or other public policies of concern for the program	0 no compliance 1 limited compliance 2 moderate compliance 3 significant compliance	1	* No coastal management plan yet adopted. Permits for some activities of concern to the program exist and are accessible.
(45) Conflict resolution	Extent to which there are mechanisms for conflict resolution to resolve issues of compliance and enforcement	0 no mechanisms for conflict resolution 1 attempts being made to establish mechanisms 2 mechanisms established, often they succeed 3 mechanisms established, usually they succeed	1	* Mechanisms for conflict resolution of coastal issues are judged to be limited, but our knowledge of this aspect is limited.
(46) Transparency / public disclosure	Extent to which information about non-compliance and individual permits is publicly available	0 information is not publicly available 1 limited availability 2 moderate availability 3 significant availability	1	* As in many Latin American countries, traditions and mechanisms of public disclosure are weak.
(47) Prosecution / enforcement procedures	Extent to which there is prosecution (fines/punishment) for illegal activities, discharges, or non-compliance with permits	0 no prosecution 1 limited prosecution 2 moderate prosecution 3 significant prosecution	1	* Fines, prosecution activity are judged to be low, but our knowledge on this aspect is limited. A solid basis exists within the reserves but not for other issues addressed by the program.

STEP 4 IMPLEMENTATION INFRASTRUCTURE			ACTION 15 CONSTRUCTION/OPERATION OF	
Component	Description	Scale Items	Score	Comments
(48) Coastal management investments	Extent of activity to maintain or redesign existing public infrastructure, and new investment in coastal management and threat reduction (sewerage, hazard mitigation, etc)	0 no action 1 limited activity 2 moderate activity 3 significant activity	1	* Sewage treatment facilities, garbage collection, and the like are provided in Puerto Madryn and to a lesser degree in other towns and provinces. The fish processing plant near Puerto Madryn has a functioning wastewater treatment facility.
(49) Stakeholder participation in infrastructure decision-making	Extent that participants from local communities affected and the private sector are engaged in discussions with regard to investment in infrastructure	0 no action 1 limited participation 2 moderate participation 3 significant participation	1	* The Patagonia CRM program is not at this stage of development yet, but there has been extensive consultation with the various sectors concerned.
(50) Cost recovery	Extent that cost recovery mechanisms are established including charges and rents	0 no cost recovery 1 limited cost recovery 2 moderate cost recovery 3 significant cost recovery	1	* There is much greater potential for the use of economic instruments for revenue generation. Entry fees to important natural reserves are set only at \$1 for residents of Patagonia, and \$5 otherwise. Other revenue generating instruments have apparently not been considered.

STEP 4 IMPLEMENTATION LEGISLATION			ACTION 16 GOVERNANCE MECHANISMS AND	
Component	Description	Scale Items	Score	Comments
(51) Governance mechanisms (national level)	Extent to which workshops, formal or informal agreements, public meetings, coordinating committees of user groups or industry, etc. are used for effective implementation of the CRM plan	0 no action 1 limited governance mechanisms 2 moderate governance mechanisms 3 significant governance mechanisms	0	* National level support and governance mechanisms, if they exist, are not functional with regards to a Patagonia coastal management program.
(52) Governance mechanisms (local level)	Extent to which workshops, formal or informal agreements, public meetings, coordinating committees of user groups or industry, etc. are used for effective implementation of the CRM plan	0 no action 1 limited governance mechanisms 2 moderate governance mechanisms 3 significant governance mechanisms	1	* Efforts to initiate an inter-provincial coastal management body have stalled.
(53) Transparency of decision-making process	Extent to which the decision-making process is open	0 decision-making process centralized and hidden from public view 1 stakeholder groups request information 2 some information about costs/benefits of decisions made available 3 stakeholder groups are aware of cost/benefits and how decisions are made		* ?
(54) Stakeholder participation	Extent to which stakeholder groups are involved in decision-making	0 no stakeholder groups formed 1 stakeholder groups present 2 user groups involved in decision-making on zoning and other coastal management issues 3 stakeholder groups are able to devise and legally implement important management rules		* ?
(55) Enabling legislation	Extent to which associated legislation which influences effectiveness of CRM plan is reviewed and amended, or new legislation is adopted	0 no action 1 limited activity 2 moderate activity 3 significant activity	1	* Legislation was reviewed but no progress was made with respect to drawing conclusions concerning the need to amend or pass new legislation.



<b>STEP 4 IMPLEMENTATION PROGRAM ACTIONS</b>				<b>ACTION 17 MONITORING TRENDS AND</b>	
<b>Component</b>	<b>Description</b>	<b>Scale Items</b>	<b>Score</b>	<b>Comments</b>	
(56) Continued monitoring of trends	Degree of effort directed toward continued monitoring of trends of key issues selected, including state of the environment, pressures, and governance	0 no monitoring 1 limited monitoring 2 moderate monitoring 3 significant monitoring	1	*	Limited monitoring of environmental conditions continues after the UNDP/GEF project by WCS, the Centro Patagonia, FPN, and Universities.
(57) Plan for project monitoring	Extent to which a monitoring plan (identifying indicators, unit of measurement, data sources, process for data collection, frequency of collection, responsible parties) targeted upon project activities has been developed	0 no plan, and not in development 1 in the early process of development 2 an interim draft of the plan is under review 3 plan prepared	0	*	No plan. Project monitoring can only begin after a management plan is adopted; the Patagonia program is not that far along.
(58) Project monitoring	Degree of effort directed toward monitoring project-specific actions and objectives	0 no monitoring 1 limited monitoring 2 moderate monitoring 3 significant monitoring	0	*	See above.
(59) Participation in project monitoring	Extent to which monitoring project activities is participatory (cooperation with communities, universities and secondary schools, volunteer monitoring)	0 no participation; monitoring is done by consultant or specified staff person 1 limited participation 2 moderate participation 3 significant participation	0	*	See above.

<b>STEP 5 EVALUATION PROGRAM ADJUSTMENT</b>				<b>ACTION 18 EVALUATION AND</b>	
<b>Component</b>	<b>Description</b>	<b>Scale Items</b>	<b>Score</b>	<b>Comments</b>	
(60) Identify linkages	Extent to which evaluation identifies linkages among monitoring outcomes of governance, state of the environment, and other variables	0 causal linkages are not made 1 limited awareness of linkages 2 moderate awareness of linkages 3 significant awareness of linkages	0	*	Evaluations that have been made by outside evaluators, or by the Director of FPN for UNDP/GEF have not utilized baseline and monitoring information to help assess program effectiveness and guide future program management. Monitoring data is not sufficiently developed or comprehensive at this stage to enable this type of assessment.
(61) Adjustments to program	Extent to which CRM policy makers evaluate monitoring information to identify necessary adjustment to the plan, priorities, and governance procedures	0 necessary adjustment not identified 1 limited discussion of necessary adjustments 2 moderate discussion of necessary adjustments 3 significant discussion of necessary adjustments	1	*	A November 1996 external evaluation did not appear to lead to program adjustments. There has not been a process for internal evaluation and adjustment. The present final evaluation will suggest important areas for program adjustment.
(62) Openness and participation in program evaluation	Extent to which the process of program evaluation is open and participatory	0 no participation 1 limited participation 2 moderate participation 3 significant participation	1	*	Program evaluation has been largely perfunctory in response to UNDP/GEF requirements. * A status report summarizing results of the four areas of the project was presented to a Tripartite Review Committee.

ASSESSING MATURITY OF PRIVATE SECTOR CRM INSTITUTIONS SELECTED FOR IMPLEMENTATION				
Component	Description	Scale Items	Score	Comments
1. Mission	Extent that the CRM mission of the institution is well defined	0 no such institution 1 mission being defined by founders, project driven 2 a consistent mission across activities 3 mission is well known outside of the institution	1	The mission of the organization is not as well defined as it could be. The organization is still young. NGOs do not have a long history in Argentina, there are few NGOs and membership is low. The maturity of the FPN as an organization is probably a reflection of this environment.
2. Strategies	Extent that plans for how the institution will achieve its CRM goals and objectives are well defined	0 no such institution 1 informally defined plans and targets: focus on developing constituencies and securing funding 2 continued focus on constituencies and funding, and on expanding activities and services; attempts to formally define objectives, activities, targets 3 formal strategy development, dealing with more complex internal and external environment, including adaptation and innovation, sustainability, competitors, new services and markets	1	The FPN was established in 1989. For three years the activities were dominated by the UNDP/GEF-funded biodiversity project. Aside from this large activity, and hoped for second stage funding, the Fundación does not have an explicit plan for how to grow and achieve its objectives as an institution.
3. Structure / Administration	Strength of the institution's structure and organization. Is structure congruent with the strategy?	0 no such institution 1 direct control by founders; weak or no Board of Directors 2 attempts to delegate authority and responsibility, weak Board of Directors 3 Empowered Board of Directors advising on policy and appropriate delegation of authority throughout the institution	2	The FPN is a legally established non-profit organization. It has a Board of Directors of about 18 individuals, with President, Vice-President, Secretary, and Treasurer. By law it must meet once a year, but special meetings are called upon as necessary. Some 75-80 percent of the Board are individuals from Universities, research organizations, or other NGOs. Authority has been well delegated within the FPN. The team of staff working on the UNDP/GEF project (and now, except for the education coordinator, volunteering their time at the FPN) are a very cohesive group, working well together with a similar vision. Responsibilities for sectors and administration are clear.
4a. Human Resources (systems)	Extent to which there is a formal written system to recruit, hire, compensate and terminate staff and volunteers	0 no such institution 1 system minimal to nonexistent 2 system in place and functioning with some problems 3 smoothly operating and productive system	1	FPN operates under the statutes of NGOs in Argentina. It does not have an internal set of rules and policies regarding recruitment and hiring.
4b. Human Resources (people)	Extent to which there are qualified people available to carry out the work of the institution--staff and volunteers	0 no such institution 1 people selected on the basis of personal relationships rather than professional qualifications 2 trend toward professional staff and capable volunteers 3 qualified and satisfied staff and volunteers	3	The strength of the FPN lies in the very high quality and highly committed staff at all levels. An important reason for the many high quality staff available in Puerto Madryn is the Centro Nacional Patagonico which attracts the best students and professors to the University.

<b>ASSESSING MATURITY OF PRIVATE SECTOR CRM INSTITUTIONS SELECTED FOR IMPLEMENTATION (continued)</b>				
<b>Component</b>	<b>Description</b>	<b>Scale Items</b>	<b>Score</b>	<b>Comments</b>
5a. Finance (systems)	Extent to which there are systems to generate, manage and account for funds	0 no such institution 1 formal systems are minimal 2 development of formal financial management systems 3 formal systems support strong, diversified financial base and growth	2	At the end of every year the national government requires all NGOs to submit a very complex income and budget statement. A consultant is hired to prepare this. The provincial government (Direcció de Persones Jurídicas) also requires an annual report of activities and a financial balance report. During the UNDP/GEF project a detailed statement of expenditures was maintained, as was required by UNOPS. Updates were submitted three times a year; an end of year summary was also prepared.
5b. Finance (funding)	Extent of and source of funding	0 no such institution 1 funds derive from a few projects 2 successful attempts to expand and diversify financial base 3 diversified and growing financial base: projects, core funding, and interest from assets	1	The building is owned by the FPN, purchased with a donation from a private U.S. foundation. Some money has been donated for specific activities (such as FPN calendars). In the first 3 years of the FPN the WCS provided some funds for salary. The FPN sells posters and has sold T-shirts in the past. Most of the staff are now completely volunteering their time. FPN's treasurer indicated that financial support could be obtained through the state but a strategic decision has been made to not to be funded by the government. Despite the weak financial grounding for the FPN there is little strategizing on fund raising. It is hoped that there will be a second UNDP/GEF grant. It is difficult and costly to raise funds in Argentina for NGOs. Memberships are low, the state is not an option, and the FPN does not want to be too closely associated with large business who would most likely have resources to donate. Contact with international NGOs and foreign foundations and governments would seem to be the best source for funding. They have had contact with IUCN, WWF, and the European Union.
7. Communication	Extent to which there is an effective program of communication	0 no such institution 1 little or no communication program 2 little strategic planning, but at a minimum annual reports and publications are distributed widely 3 a strategy for communications with plans for program brochures, annual reports, newsletters, publications, web sites, media, and other forms of outreach	2	Communication was an important component of the UNDP/GEF project. Lacking financial resources, communication activities will drop off. The FPN does not prepare and distribute annual reports. Bulletins were prepared and distributed following the three workshops in 1993, 1994, and 1995.
<b>TOTAL SCORE</b>			13/27	

## **Notes to Accompany the Application of the Cobb/Olsen Instrument to the Patagonia CZM Program**

The Cobb/Olsen instrument was applied in January 1997 to the Patagonia CZM program as defined by the Project Document (PD) for the GEF-funded CZM Project and the draft CZM Plan dated July 1996. Since the Patagonia program as yet has no formal structure, questions regarding progress towards formalized structure were answered in the context of local level management through the expected CZM Commission for Chubut province and regional/national structures in the form of the proposed Patagonia assembly.

### **A. Stage Setting**

#### **1. Issue Analysis**

Objectives and strategies for the four issues that most directly affect marine birds and mammals—but not including public education—are contained in the draft plan.

#### **2. Institutional Analysis and Design**

The institutional arrangements proposed in the PD are still being discussed and none have been formalized.

#### **3. Issue Causality**

The public education program and many workshops, training sessions, and meetings have reinforced the concept of ecosystem management in which the linkages among the major issues are stressed and appear to be widely appreciated.

#### **4. Linkage of Issues**

There appears to be critical resistance to accepting the consequences of current forms of fishing and transfer/transport of oil. Meaningful actions on these issues are not yet being considered for implementation.

#### **5. Favorable Statements by Leaders**

In Chubut province the Mayor of Puerto Madryn, the Secretary of Tourism and Minister of Production speak favorably of the program in public and on TV.

## **6. Mass Media Public Education**

The project has done an outstanding job in working with the press on the issues it has addressed.

## **7. Targeted Public Education**

The project's program has succeeded in introducing environmental topics into the school curriculum. However, the process of internalizing these topics into school programs so that they become routine and self supporting has only just begun.

## **8. Scale of Stage Setting**

While a lot has been accomplished in three years, the process of negotiating a plan and the policies to govern it has not yet begun.

## **B. Institutional Framework**

### **9. Stage of Development of Key Public Sector Institution**

No commission has yet been created.

### **10. Stage of Development of Key Private Non-Profit CRM Institution(s)**

The attached worksheet demonstrates that the FPN is a young and very promising but as yet fragile NGO.

### **11. Administrative Structures**

There is as yet no CRM program, only an NGO-based project.

### **12. Technical Staff**

The supply of technical expertise for a program probably exceeds demand for Chubut and may be adequate for the other provinces. Such technical expertise resides in Patagonian research institutions, universities and provincial agencies. This technical expertise does not appear to be matched by people experienced in the administration

of a complex conservation/development program, or the practice of coastal management techniques.

### **13. Decentralization**

There is as yet no program. The proposed provincial commissions would, however, provide for decentralized authority.

### **14. Local Structures for Decision-making**

Significant progress is being made in the municipality of Puerto Madryn and the prospects for effective local structures appear to be good in other municipalities and the three provinces.

### **15. Scale of Institutional Framework**

There is as yet no institutional framework for CM at the national level.

## **C. The Plan**

### **16. Official Plan**

The July 1996 draft is an excellent start but has significant gaps (see text of report).

### **17. Level of CRM Program Leadership**

There is as yet no formal program.

### **18. In-country Budget**

Some donations from within Argentina are made to the FPN. Relevant offices in provincial government—including staff at some wildlife preserves—are supported with national and provincial funds.

### **19. Donor and Bank Support**

The project has received three years of GEF funding and has excellent prospects for further support from the GEF, the World Bank, and possibly other bilateral and multilateral donors.

### **20. Intersectoral Collaboration**

The majority of the provincial and national institutions with responsibilities for the issues addressed by the program have met annually over the past three years and appear to agree on issue definition . Some initial collaborative actions are underway.

#### **21. Priority Setting at the Community Level**

The CZM Plan draws upon a participatory process and is complemented by actions at the community level, for example at Puerto Madryn.

#### **22. Compliance with Plans**

The draft plan has not yet been circulated.

#### **23. Scale of Plan**

As above.

### **D. Implementation**

#### **24. Public Records**

Permits for some activities of concern to the program exist and are accessible, e.g., for the municipality of Puerto Madryn.

#### **25. Public Meetings**

The project has pioneered public meetings in Patagonia. They have become institutionalized for Puerto Madryn and are being tested elsewhere in the region.

#### **26. Conflict Resolution**

An example of an initial attempt to conflict resolution are the negotiations over the expansion of mariculture operations in an area frequented by whales off Punta Norte. Negotiations between the project and whale-watching businesses were successful.

#### **27. Resources for Enforcement**

Some park rangers and provincial fishery officers exist and are doing excellent work; much more is needed.

#### **28. Monitoring**



The basis for monitoring the abundance of marine birds and mammals appears to be in place. Monitoring data for tourists is being gathered at some sites. Monitoring on other issues is incipient.

### **29. Enforcement Procedures**

Here again, a solid basis exists within some reserves but not for other issues addressed by the program.

### **30. Fines and Permits**

Since there is as yet no CZM program, such actions as they relate directly to CZM have not yet begun.

### **31. Public Works/Investment**

Sewage treatment facilities, garbage collection, and the like are provided in Puerto Madryn and to a lesser degree in other towns and provinces. The fish processing plant near Puerto Madryn has a functioning wastewater treatment facility. Cost recovery appears to be minimal or nonexistent.

### **32. Scale of Implementation**

No plan as yet.

## **E. Monitoring and Evaluation**

### **33. Development of a Monitoring Plan**

Has been developed only for marine birds and mammals.

### **34. Monitoring**

Only for marine birds and mammals.

### **35. Evaluation**

There have been several outcome evaluations of the GEF project.

### **36. Use of Monitoring and Evaluation Data**

GEF evaluations appear to have had little impact on the project.

**Matrix of Policy Cycle Worksheet Indicators and Governance Principles**

<b>Step/Action</b>	<b>Indicator</b>		<b>Governance principle/feature</b>
<b>Step 1 Issue Identification and Assessment</b>			
Action 1 Rapidly assess existing conditions	1. Asses environmental condition and trends	1	strategic design and decision-making
	2. Assess policy, institutional context	1	strategic design and decision-making
	3. Assess development needs/pressures	1	strategic design and decision-making
	4. Participation in rapid assessment	1	participation
Action 2 Identify and consult key stakeholders to build consensus on priority issues	5. Initial consultation with stakeholders	1	participation
Action 3 Stage program goals	6. Statement of program goals	3	strategic design and decision-making
<b>Step 2 Program preparation</b>			
Action 4 Select issues to be addressed and geographic focus	7. Issue selection	2	strategic design and decision-making
	8. Consultation in issue selection	2	participation
	9. Conservation/development balance	1	strategic design and decision-making
	10. Define geographic focus	2	policy relevant science
Action 5 Document baseline conditions	11. Baseline documentation	2	policy relevant science
Action 6 Monitor trends for selected issues	12. Plan for monitoring trends for selected issues	1	strategic design and decision-making
	13. Monitoring trends for selected issues	2	policy relevant science
	14. Participation in monitoring trends	2	participation
	15. Accessibility and communication of monitoring information	1	participation
Action 7 Conduct essential policy relevant research	16. Analysis of key issues	3	policy relevant science
	17. Policy relevance of analyses	3	policy relevant science
	18. Spatial definition of analyses	3	strategic design and decision-making
	19. Participation in analysis of key issues	3	participation
	20. Issue causality	2	policy relevant science
	21. Linkage of issues	1	policy relevant science
Action 8 Conduct a sustained education and consultation process	22. Mass media public education	3	public awareness and committment
	23. Targeted public education	3	public awareness and committment
	24. Statements by leaders	2	public awareness and committment
Action 9 Carry out early implementation actions	25. Early implementation actions	3	learning and adaptive management
	26. Transferability of initial actions	2	learning and adaptive management
Action 10 Develop a plan: define management objectives, strategies, and actions	27. Participation in plan development	1	participation
	28. Strategic design of plan	1	strategic design and decision-making
	29. Conservation / development balance	1	strategic design and decision-making

Action 11 Create capacity with public sector for implementation	30. Technical staff	2	staff competence and commitment
	31. Program decentralization	3	integration: two-track approach
	32. Local level institutional structures	1	institutional capacity
	33. National level institutional structures	1	institutional capacity
	34. Private sector institutional stage of development	1	institutional capacity
	35. Public sector institutional stage of development	0	institutional capacity
	36. Inter-sectoral collaboration	2	institutional capacity
	37. Local-national level linkages	1	integration: two-track approach
<b>Step 3 Formal Adoption and Funding</b>			
Action 12 Adopt formal plan	38. Formal approval of official plan	1	strategic design and decision-making
	39. Process of negotiation of official plan	0	participation
	40. Policy substance	1	strategic design and decision-making
Action 13 Secure adequate funding for implementation	41. Financial resources secured (government, private)	1	institutional capacity
	42. Financial resources secured (international donors)	1	institutional capacity
<b>Step 4 Implementation</b>			
Action 14 Promote Compliance to regulations and agreements	43. Monitoring compliance	1	institutional capacity
	44. Compliance	1	institutional capacity
	45. Conflict resolution	1	institutional capacity
	46. Transparency/public disclosure	1	institutional capacity
	47. Prosecution/enforcement procedures	1	institutional capacity
Action 15 Construction of infrastructure	48. Infrastructure development actions	1	institutional capacity
	49. Participation in infrastructure development	1	participation
	50. Cost recovery	1	institutional capacity
Action 16 Governance mechanisms and legislation	51. Governance mechanisms (national level)	0	institutional capacity
	52. Governance mechanisms (local level)	1	institutional capacity
	53. Transparency of decision-making process		participation
	54. Stakeholder participation		participation
	55. Enabling legislation	1	institutional capacity
Action 17 Monitoring	56. Continued monitoring of trends	1	policy relevant science
	57. Plan for project monitoring	0	strategic design and decision-making
	58. Project monitoring	0	policy relevant science
	59. Participation in project monitoring	0	participation
<b>Step 5 Evaluation</b>			
Action 18 Evaluation and program adjustment	60. Identify linkages	0	strategic design and decision-making
	61. Adjustments to program	1	learning and adaptive management
	62. Openness and participation in program evaluation	1	participation

Criteria	Average Score (Step 1-5)	Average Score (Step 1-2)
Strategic design and decision-making	1.2	1.5
Participation	1.2	1.6
Integration: two-track approach	2.0	2.0
Public awareness and commitment	2.7	2.7
Staff competence and commitment	2.0	2.0
Learning and adaptive management	2.0	2.5
Policy relevant science	1.8	1.9
Institutional capacity	0.9	1.0

**1. Strategic design and decision-making** (14 indicators in policy cycle worksheet)

issue identification (Hennessey, 1994)

clear planning goals (Imperial, Robadue, and Hennessey, 1992)

planning goes beyond implementation of the first plan (Imperial, Robadue, and Hennessey, 1992)

clear and consistent policy objectives (Mazmanian and Sabatier, 1979, 1981)

**2. Participation** (13 indicators in policy cycle worksheet)

involve all appropriate political actors (Imperial, Robadue, and Hennessey, 1992)

consensus-based decision making (Imperial, Robadue, and Hennessey, 1992)

**3. Integration: two-track approach** (2 indicators in policy cycle worksheet)

work at both the local and national level simultaneously

**4. Public awareness and commitment** (3 indicators in policy cycle worksheet)

maintain the program's priority on the public agenda (Mazmanian and Sabatier, 1979, 1981)

**5. Staff competence and commitment** (1 indicator in policy cycle worksheet)

(Mazmanian and Sabatier, 1979, 1981)

**6. Learning and adaptive management** (3 indicators in policy cycle worksheet)

adaptive management (Hennessey, 1994)

participating organizations learn from experience (Imperial, Robadue, and Hennessey, 1992)

foster the learning process (Lowry, 1985)

**7. Policy relevant science** (9 indicators in policy cycle worksheet)

(Mazmanian and Sabatier, 1979, 1981)

the role of science (Hennessey)

a specific role for science (Imperial, Robadue, and Hennessey, 1992)

scientific information should be functional where possible to facilitate quantitative analysis of cause and effect relationships

**8. Institutional capacity** (17 indicators in policy cycle worksheet)

sufficient jurisdiction and authority (Mazmanian and Sabatier, 1979, 1981)

good implementation structure (Mazmanian and Sabatier, 1979, 1981)

coordinate and improve existing regulations and planning capacities (Imperial, Robadue, and Hennessey, 1992)

Features not captured in policy cycle:

- **Match objectives to the capability of the institutions responsible for their implementation** (could be considered an element of a strategic approach)

temper ambitions of program with the reality of constraints and competing interests (Imperial, Robadue, and Hennessey, 1992)