

ECOplata

AN INTEGRATED

COASTAL ZONE

MANAGEMENT EXPERIENCE

*The Pilot Areas of the ECOPLATA Program 1999-2001*

**SUMMARY DOCUMENT**



# **An Integrated Coastal Zone Management Experience**

*The Pilot Areas of the ECOPLATA Program  
1999-2001*

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## Integrated Management of the Uruguayan Coastal Zone of the Río de la Plata

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ECOPLATA IS AN INTER-INSTITUTIONAL AGREEMENT TO SUPPORT THE INTEGRATED MANAGEMENT OF THE URUGUAYAN COASTAL ZONE OF THE RÍO DE LA PLATA, WITH THE PARTICIPATION OF THE MINISTRY OF HOUSING, PLANNING AND ENVIRONMENT (MVOTMA); THE MINISTRY OF LIVESTOCK, AGRICULTURE AND FISHERIES (MGAP); THE MINISTRY OF DEFENSE (MDN), AND THE UNIVERSITY OF THE REPUBLIC (UR).



# AN INTEGRATED COASTAL ZONE MANAGEMENT EXPERIENCE

SUMMARY DOCUMENT

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# INTRODUCTION

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The **Uruguayan** experience of Integrated Coastal Zone Management (ICZM), carried out within the ECOPLATA Program, is described in this document. That experience is based on an initiative developed between 1999 and 2001 in two pilot areas **selected along the Uruguayan Coast of the Rio de la Plata**. The work carried out in both areas has been compared, contrasted and thoroughly evaluated, in order to extract principles and lessons to implement an ICZM national Plan.

This document contains three principal sections:

1. A theoretical background, which explains the fundamental concepts used to support the development of the pilot projects;
2. A brief description of the work done on each area, and;
3. An analysis of processes and results along with lessons learned.



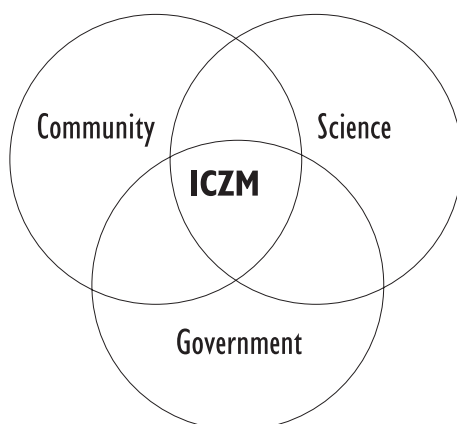
# THEORETICAL BACKGROUND

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## Integrated Coastal Zone Management

Integrated Coastal Zone Management (ICZM) is “a continuous and dynamic process that unites government and the community, science and management, sectoral and public interests in preparing and implementing and integrated plan for the protection and development of coastal ecosystems and resources.”<sup>1</sup>

In the past, coastal management was often done sector by sector without the proper participation of the main actors who are the principal users of the natural resources. Today, a properly constituted coastal management plan identifies and utilizes interactions between government, scientists and communities in order to fulfill ICZM objectives (Fig 1). In some cases, institutional and legal modifications are necessary. In others, changes in attitude and behavior may be required for its success.



**Figure 1.** Components and interrelations of an ICZM process.

From an ICZM perspective, the coastal management process includes several different but equally important steps:

- Data collection
- Decision making
- Planning
- Management and monitoring

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<sup>1</sup> GESAMP. 1997. “The Contribution of science to Integrated Coastal Management”, *Report and Studies #61*. FAO. Rome. Cited in Michele H. Lemay. December 1998, *Coastal and Marine Resources Management in Latin America and the Caribbean*, Sustainable Development Department. IADB. Washington D.C. pp. 22.

In the present management approach, many objectives have been identified, for example:

- Managing coastal resources;
- Modifying approaches to the various issues in order to coordinate different perspectives;
- Identifying the interests and responsibilities of different social actors, with the goal of obtaining their participation;
- Working on different types of conflicts (e.g., uses, resources, interests and externalities);
- Incorporating an institutional and/or social vision and reforming the sectoral approach;
- Strengthening the joint actions of different actors;
- Including all private and public actors, and;
- Considering flexible geographic limits in reference to theoretical issues, as well as to implementation and management capability.

The term “integrated” is used here in its broadest sense to actively embrace a wide array of objectives, actors, policies, sectors, management instruments, and scientific and local knowledge.

Any attempt at coastal zone management should take into account the local circumstances by structuring problem-solving proposals and decision-making mechanisms that are specific to that area and that are based on a solid knowledge of immediate social, economic and environmental conditions.

Then, ICZM can be defined as a dynamic, continuous and interactive process designed to promote the sustainable development of coastal areas.

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## Participation in an ICZM Process, the Role of the Local Community

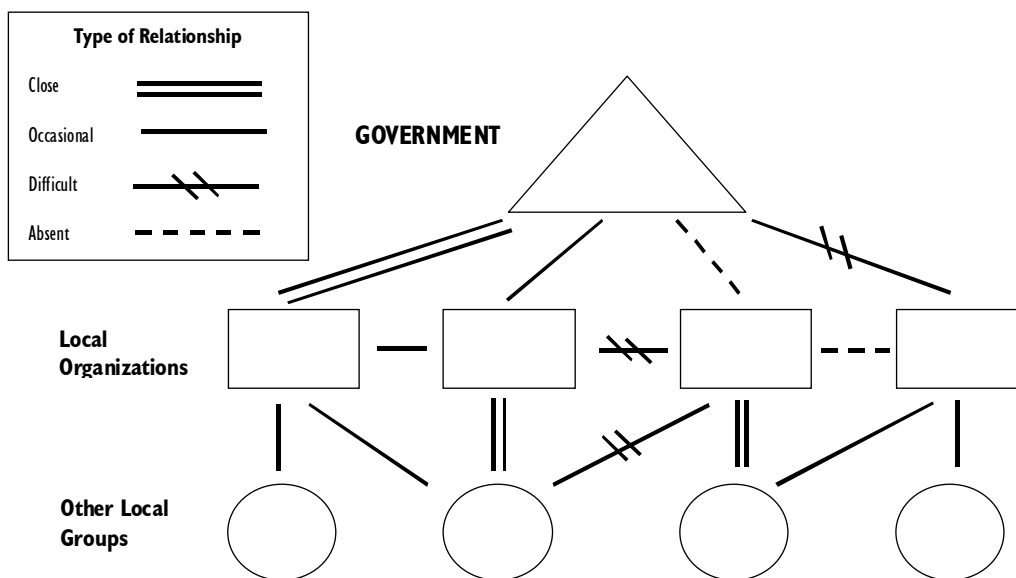
Community participation is a fundamental concept of ICZM and one that was adhered to throughout the Pilot Area experiences of ECOPLATA. This type of management makes use of the interaction and cooperation of all interested parties (social, political and scientific) in order to identify, formulate and evaluate societal objectives within a specific coastal zone, and in order to act in the best manner possible to achieve those objectives.

*Participation* is regarded as a dynamic process that requires constant revision. It transcends institutional channels and focuses on social movements and their relations with the political system. The concept of *Action Sets* was used to guide, organize and incorporate the participatory experiences that were generated in the field<sup>2</sup>. An Action Set is defined as a group of actors drawn from a given geographic area and who are bound by different linkages that can change in time and which are expressed by varying forms of action. Within a given Action Set local groups can be distinguished, including the principal interactive sectors, responsible authorities and relevant institutions. The relationships between all these groups can be categorized as close, occasional, difficult or absent.

This concept provides a dynamic setting within which it is possible to continuously evaluate linkages, both initial as well as evolutionary, generated between various actors throughout the entire participatory ICZM process. Simultaneously, it allows the graphic representation of these Action Sets, reflecting the diversity of linkages established for each situation (Fig. 2).

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<sup>2</sup> Rodríguez Villasante, Tomás (coord.). 1994. *Las ciudades hablan. Identidades y movimientos sociales en seis metrópolis latinoamericanas*. Nueva Sociedad. Caracas. pp. 41-47.



**Figure 2.** Action Sets and Types of Relationships

Additionally, the concept of a local network offers an alternative perspective to better comprehend and facilitate the work in the pilot areas. During initial contacts with the community, the technical team can encounter social webs of which even the participants may be unaware. The complexity of this web or network can vary depending on the level of organization and history of each community.

Recognizing and strengthening these networks is an important consideration in the overall process of promoting participation among local actors, as well as generating the freedom necessary to encourage legitimization and independent growth of the participative process.

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## The Role of Government

Coastal management programs generally contain components that deal with the role of government, such as its jurisdiction over coastal and marine areas, the administration of resources and the establishment of policy and regulations. Government also plays an essential role in funding for the implementation of program activities, as well as the development of management regulations and the coordination of activities between different segments of the public sector. The government is also connected to the processes of decentralization, an important element linked to participation.

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## The Role of Science

In the phrase Integrated Coastal Zone Management, the word “integrated” refers to multiple layers of communication and interactive participation. One of these layers is the use of scientific knowledge in order to support the decision-making process of all actors, involved in coastal management.

This presumption sets new challenges for both the scientific community and coastal managers, since the confrontation between scientific knowledge and political decision-making has long been a source of conflict in the ICZM process. It also encourages each sector to analyze and thoroughly consider their approach to coastal problems, even to the extent of reassessing and redefining what each considers as “their problem.”

Scientists, in particular, are often forced to decentralize their research and consider the applicability of their studies to specific circumstances. Dissemination and management of results then becomes equally important as the production of the information. This fact makes interdisciplinarity and teamwork an essential part of the process, since scientists are not always in positions where management and decision-making are part of their responsibilities. In addition, the need for knowledge appropriate to answer questions, within specific circumstances, demands a complex interplay between the various actors, which can only be achieved with a multidisciplinary or interdisciplinary approach.

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## The Coastal Zone

The concept of the coastal zone is generally identified as a transition area between the marine and continental domain, an interphase zone where land, sea and air interact.

The importance of the Uruguayan coastal zone becomes obvious when analyzing its population distribution and economic structure; the coastal provinces of the Rio de la Plata bear more than 70% of the total population and generate 76.8% of the GNP.<sup>3</sup>

During the process of economic development within the coastal zone, it is necessary to pay attention to various potential factors that might possibly produce irreversible effects on the system and thereby compromise the balance of the resource being utilized. Therefore, integrated management tools should ideally be used to obtain a balance between “development” and “conservation”, and hopefully to achieve resolution of present conflicts so as to reduce the risks of further reduction in the quality of the coastal environment.

For the purpose of management, international guidelines recommend that boundaries be defined in accordance to the strategic management needs. This avoids the problem that too broad a definition could create an area larger than the capacity of a program to successfully attend the necessities and problems contained therein.

The Pilot Areas selected by the ECOPLATA Program were delimited and defined as: aquatic areas which reflected the characteristics of the Rio de la Plata’s national jurisdiction; and terrestrial areas associated with national transportation routes, population centers, and major water courses flowing to the sea. These limits have been established from the outset as flexible, thereby allowing for the future integration of yet to be determined environmental or social aspects.

### Identification of potential Pilot Areas

Several potential pilot areas were identified, based on the results of the environmental and socio-demographic diagnosis<sup>4</sup>.

The elements considered for this selection were:

- Qualitative pressure indices (anthropogenic activities and natural processes)
- Actual conditions (quantitative data of deterioration or change in natural environmental conditions)
- Water quality (based on existing legislation)
- Landscape modifications (anthropogenic and natural)
- Use/user conflicts
- Presence of engineering works that modify natural processes
- Contamination resulting from anthropogenic activities (industrialization, shipping, ports, agriculture, livestock)

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<sup>3</sup> Garibotto, Susana; Gorfinkel, Dense; Fernández, Virginia; Peña, Carlos and Resnichenko, Yuri. 2001. *Natural resources and economic activities in the Río de la Plata’s coastal zone*. ECOPLATA. Montevideo.

<sup>4</sup> López Laborde, Jorge; Perdomo, Ana; Gómez Erache, Mónica. Editores. *“Diagnóstico Ambiental y Socio-Demográfico de la Zona Costera Uruguaya del Río de la Plata: Compendio de los principales resultados”*. October, 2000. ECOPLATA, Montevideo, Uruguay.

- Exploitation, both naturally renewable and non renewable
- In depth interviews with qualified informants
- Survey of environmental NGO'S in the Rio de la Plata's coastal municipalities
- Stakeholder reports and their environmental agenda
- Public opinion surveys



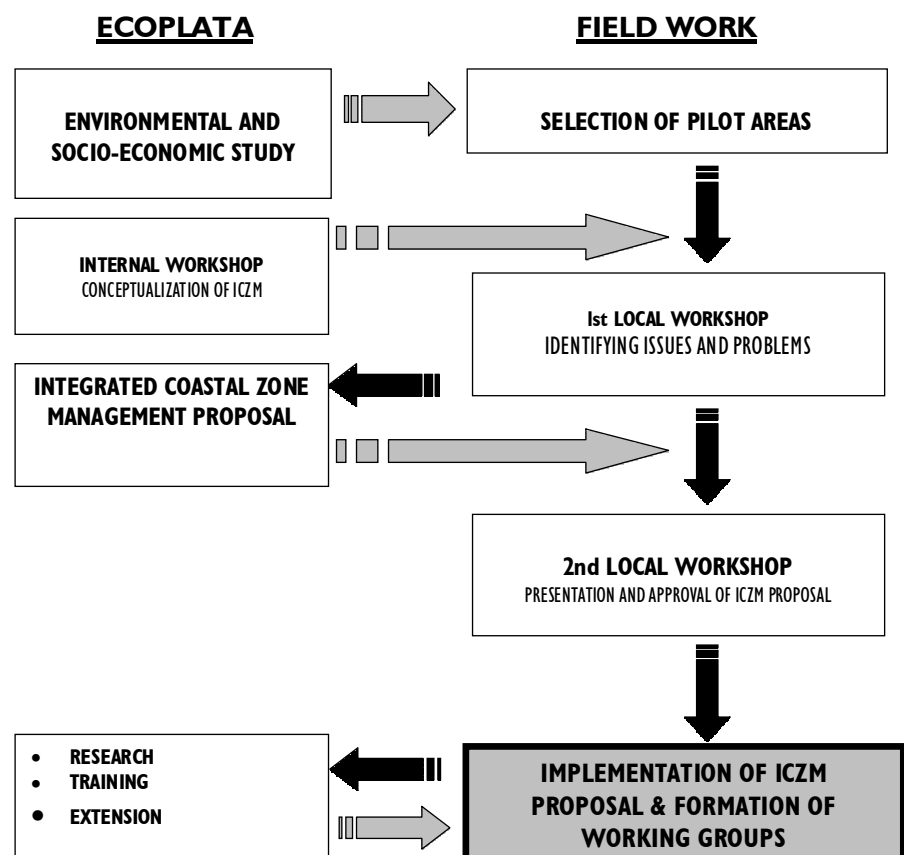
# DESCRIBING THE EXPERIENCE

## Action Strategy

The ECOPLATA Program is an innovative mechanism to support inter-institutional cooperation and interdisciplinary work. It is an institutional arrangement specially designed to allow institutions responsible for the management of coastal resources, in association with scientific organizations, to coordinate their activities toward the common goal of integrated management of Uruguay's coastal zone in the Rio de la Plata.

One objective set forth by the framers of the ECOPLATA Program was the establishment of pilot areas specifically for the development of ICZM experiences. Pilot areas were designed to become local test-beds where planning strategies and their resultant actions would hopefully reveal the evolution of an ICZM plan. This evolution, composed of periodic evaluations, would allow continuous learning through trial and error. It would also allow the selection of suitable measures conducive to the creation of experiences applicable in other areas.

The Pilot Area strategy commenced with participation by local communities and institutions, identification of prominent issues, a cooperative approach toward the creation of an ICZM proposal, and examination of problem solving solutions (Fig. 3).



**Figure 3.** Procedure for the selection of pilot areas and elaboration of an ICZM proposal

## Selection of Pilot Areas

A diagnostic survey, containing environmental and socio-demographic inputs, was carried out during the first stages of the ECOPLATA Program. Analysis of the survey findings suggested several areas that would be appropriate for selection as practical sites to carry out the ICZM experience. Specialists, institution representatives and the ECOPLATA Board of Directors selected two of these areas, during an internal workshop, according to environmental, social and logistic criteria. Finally, the two Pilot Areas selected were:

- Carrasco to Pando Rivers, and
- Pascual Beach to Espinillo Point

### CARRASCO - PANDO





This pilot area is a portion of coastline delimited to the west by the Carrasco River and to the east by the Pando River. Landward it was defined as the area inside the Interbalnearia highway, a major trunk route between Montevideo and Punta del Este. Offshore it extended out approximately 10 kilometers, the approximate extent of national jurisdiction within the Río. The Carrasco-Pando area is a region of high population growth. According to the 1996 General Population Census, over the five years beginning with 1991 it received more than 24,000 immigrants, a growth of 61% over that period.

High levels of both education and economic participation in qualified professions distinguish the Carrasco-Pando population. This indicates the importance the area places on human assets, which become relevant at the moment of implementing an ICZM process.

## PASCUAL BEACH - ESPINILLO POINT

This area is delimited by the El Tigre stream to the west, Espinillo Point Park on the east, Highway #1 landward and the Rio to the south (Fig. 4). The chosen area includes portions of the Municipalities of San Jose and Montevideo, and embraces the mouth of the Santa Lucia River.

The Pascual Beach-Espinillo Point area is characterized by an important demographic growth, although its total population is only around 5,500. Its educational structure is concentrated at the primary and middle school level. This is consistent with its employment structure, which 41% defined as non-professionals and concomitantly a low percentage of professionals, technicians and intellectuals.



## Workshops

The first workshop, in each pilot area, took place in July 1999. The primary purpose was to discover the local perceptions of major coastal problems. These were identified in each area, with the participation of all local public and private actors with an interest in coastal issues. The specific objectives were:

1. To inform all interested parties of the results obtained by the ECOPLATA Program;
2. To integrate the local population into the identification and prevention of coastal environmental problems, and;
3. To exchange information between the ECOPLATA Technical Group and workshop participants.

The second workshop, in each pilot area, took place in October 1999. The ECOPLATA team presented a proposal that was created from the discussion of the previous workshop. The proposal contained a general ICZM strategy, a tentative agenda for the area, possible issues to be approached by ECOPLATA, some actions for possible implementation and a basic organizational method to help with the facilitation of working groups.

The specific objectives were:

1. To present the ICZM proposal;
2. To assess the level of agreement, and
3. To establish the first implementation steps.

## **METHODOLOGY**

The methodology designed for the workshops placed special emphasis on a high level of participation by stakeholders, notably their involvement in decision-making, implementation and other contributions. Community participation is essential during the initial phases of the ICZM process in order to properly set the rules of the game and to enable future developments. Environments of “trust and confidence” were established very early, consistent with the view that they were critical pre-conditions for successful long-term workshop participation. The methodological criteria applied during the workshops was the following:

- Outreach Stage:
  - Strengthening previous relations
  - Opening and strengthening links with and between actors
- Workshop Execution:
  - Respecting different opinions, manners, habits and working rhythms
  - Emphasizing opportunities for participation

### **Outline – 1<sup>st</sup> Workshop**

- Introduction - ECOPLATA
- Presentation of participants
- Presentation of ECOPLATA achievements
- Open floor - Questions
- Working in subgroups – Issue identification and priority setting
- Plenary – Elaboration of a “common interests” table
- Open floor – Questions and opinions about the workshop

### **Outline – 2<sup>nd</sup> Workshop**

- Explanation of procedure
- Explanation of proposal
- Working in thematic subgroups – Artisanal Fisheries, Coastal Planning, Environmental Quality, Others
- Priority setting
- Defining future actions
- Plenary – Setting common views

## **Results**

The ECOPLATA Team used the primary issues identified, classified and prioritized by participants as the basis for the ICZM proposal presented at the 2<sup>nd</sup> workshop. Following are the main concerns raised by participants during the 1<sup>st</sup> workshop:

- Need for a coastal planning strategy;
- Conflict between conservation and development;

- Importance of education in preserving the environment;
- Importance of linking education and organization actions;;
- Effects of water and air pollution on human health;
- Need for preventive measures, as a means to avoid future problems;
- Increase in coastal population, and;
- Identification of problems not strictly coastal, but have a direct effect on the coast.

During the 2<sup>nd</sup> workshop, following analysis of the ECOPLATA Team proposal, the participants agreed in general terms with what was presented:

- That the most important issues could be reduced to three categories: Environmental Quality, Coastal Planning and Artisanal Fisheries;
- That scientific research, education and management should be included when approaching the issues identified, and;
- That integrated management implies the participation of community, science and government

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## ICZM Implementation

The ICZM proposal was created from the summation of several different stages, technical discussions and experiences with the various coastal problems. At the same time, the proposal incorporated the vision of local communities expressed during the workshops.

Integrated management is based on the interaction between government, community and science (Fig. 5). Each sector shows independence in decision-making, but the possible interrelations between them can result in an area of joint and coordinated efforts that will lead to an ICZM process.

The ICZM proposal reinforced the need for a coordinated effort between the various actors involved in coastal issues (government, community and science) in order to properly develop and implement a plan to protect coastal ecosystems and resources.

### Strategic Approach

In order to deal with the selected issues, three approaches were chosen. The three are linked in order to address and solve specific problems in an integrated manner. They include:

- Education
- Management
- Research

### Implementation

The implementation structure proposed took into consideration the need for preventive measures, not only to solve present problems but also to avoid future ones. Different levels of coordination were proposed in order to take care of identified problems.

*Local Coordination Group* – Included stakeholders and representatives of institutions responsible for coastal management

Responsibilities:

- Coordinate activities between all institutions in the area;
- Design and evaluate yearly plans to address local needs, for example: coastal erosion, water pollution, etc.;
- Address conflict resolution by seeking joint solutions, through the participation of authorities, resource users and local communities, and;

- Propose specific projects targeted at key management problems in each area, and once financial support has been secured, design and implement them.

*Issue Specific Working Groups* – Included individuals with a personal interest or who represented local organizations with a particular issue. ECOPLATA specialists participated only when their contributions were absolutely necessary to assist the development of the group.

Responsibilities:

- Notice, identify and analyze problems specific to each issue, and;
- Propose alternative solutions and actions to the Local Coordination Group.

*Enforcement Group* – Created to cope with enforcement problems, in a coordinated manner, among institutions in order to avoid confusion when applying regulatory measures.

Responsibilities:

- Coordinate enforcement activities;
- Apply enforcement implementation measures;
- Resolve conflicts in accordance with the Local Coordination Group, and;
- Manage enforcement problems, within the area of jurisdiction, when no responsible institution can be identified.

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## Pilot Area: Carrasco – Pando

Based on the discussions and results that emerged from the 2<sup>nd</sup> workshop, three Issue-Specific Working Groups were created to work on the following topics:

- *Coastal Planning Team* – An integrated project on coastal planning to deal with infrastructure development and erosion.
- *Environmental Quality Team* – Solid waste and information search on water pollution.
- *Artisanal Fisheries Team* – Sea lions and their impact on artisanal fisheries, solid waste and habitat destruction, and competition with the industrial fishing fleet.

### Coastal Planning Team

The coastal planning team worked on a planning proposal for the coastline, which required studying its present condition and then defining the criteria to be used for its development. The ECOPLATA team produced a proposal, in collaboration with the working group, which introduced the study area, analyzed its components, physical processes, vegetation, and socio-economic characteristics. This was followed with a plan described as a *Coastal Park* drawn from the previous diagnosis. It proposed a series of programs and measures to attend the different situations, problems and necessities identified in the study area.<sup>5</sup>

The plan set forth a series of programs and measures to allow conciliation between coastal resource protection and development demands in the area. In addition to providing a tool for coastal management, this plan attempts to foster an environment supportive of its implementation in an integrated manner.

Some of the programs proposed have to do with beach access, maritime trails and parks, coastal flora and fauna, dune ecology and stream outflows. In this sense, the plan can be organized and implemented by modules, in accordance with possible agreements between responsible institutions.

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<sup>5</sup> GTOEC. Noviembre de 2000. *Plan del Parque Costero. Propuesta para el ordenamiento ambiental de la zona costera del área piloto Carrasco-Pando.* ECOPLATA.

## Environmental Quality Team

The objectives of this team were:

- To generate scientific information on the water quality of the rivers that delimit the Carrasco-Pando pilot area;
- To evaluate the composition of solid waste deposited on the beaches along outflow margins of both rivers, and;
- To develop environmental awareness and education proposals for public and private actors in the area.

## Water and Sediment Quality

The goal was to facilitate the ICZM process through better water and sediment quality determinations, including the level of toxic substances in the watercourses and adjacent coastline. Although this was a priority issue additional trustworthy information was required before alternatives could be considered and decisions made.

## Solid Waste

The initial proposal identified research to monitor the quality and quantity of solid wastes that are routinely deposited along both river outflows and various beaches. ECOPLATA team members carried out the fieldwork, with the occasional participation of high school students. Students then elaborated a report, with the aid of professors, to analyze the collected information and suggest management measures. The results showed that solid wastes were transported by the rivers and deposited along the beaches, and that 85% of the total waste was composed of plastic containers.

Another proposal, aimed at school children and local families, involved the creation of an environmental awareness program on the topic of household solid waste production. A pilot project was initiated in 7 public and private schools and it is estimated that it reached 2,500 children and their families, or approximately 10,000 people. The objective was to change certain habits regarding the coastal environment by informing and educating children, families and neighbors about the proper treatment of plastic containers.

The project moved through four stages. The 1<sup>st</sup> stage attempted to increase environmental awareness of children and family members through integrated workshops using information brochures, social and biological research results and general proposal objectives. It is important to highlight here the participation of TRANSFORECO, a private business dedicated to the transformation of plastic containers into recyclable material for export.

During the 2<sup>nd</sup> stage children collected household plastic containers and deposited them into large bags at their schools for TRANSFORECO to pick up. Children and teachers registered data on the volume, weight and number of containers collected, which was then used and incorporated into the schools' curriculum.

In the 3<sup>rd</sup> stage all participants evaluated the experience as "very satisfactory." TRANSFORECO reported a 20% increase in the collection of recyclable plastic containers and the Municipal government acknowledged a significant reduction in the number of plastic containers collected daily.

The 4<sup>th</sup> stage is the planned implementation of this experience in all schools in the area. Children and teachers will develop it themselves, with the aid of ECOPLATA and TRANSFORECO, and by visiting other schools, passing on their experience and by broadening active participation.

## Artisanal Fisheries Team

The artisanal fishery sector has been confronting a broad array of difficulties, many of which were raised in the public consultations and remained throughout the team's discussions and work plan. During stage one priority was given to the declining fish catch, while during the second stage the main concern was the lack of basic housing services. A homogenous group of some 20 artisanal fishers and family members participated actively throughout both stages.

## 1<sup>st</sup> Stage (June 1999 – December 2000)

Fishers attributed the continuous decline in fish catch to the legal prohibition of beach nets, the presence of industrial vessels in their operating area, the presence of solid waste on the sea floor and the competition with sea lions for the same resources. In response to these concerns an action plan was elaborated. The plan proposed: the development of an experimental fishing net specifically for King weakfish (*Macrodon ancylodon*); a study of suspected illegitimate presence of industrial vessels in the artisanal fishing zone; a study of the occurrence of solid waste on the sea floor, and; a review of possible devices or technologies that might deter the presence of sea lions.

An experimental fishing net was subsequently designed and constructed by experts from DINARA with the objective of later transferring the technology to the artisanal fishing community. Unfortunately, conditions have not been suitable to conduct the appropriate tests before implementing its use.

The National Naval Prefecture (NNP) authorities were informed about the concerns of artisanal fishers regarding the illegal presence of industrial vessels in their fishing zone. Their response was that these intrusions are not as frequent as expressed, but that they could be corrected by effectively reporting all infractions to the NNP.

Preliminary qualitative and quantitative studies were conducted in the areas thought to be most affected by the presence of solid waste on the sea floor. The results showed that the survey sleds used were inappropriate due to their design and size. A modified plan was offered to design and construct an improved sled and mid-water net for performing quantitative and qualitative sampling of solid and floating wastes. Presently, the team is undertaking the necessary coordination and organization before performing the fieldwork.

Studies conducted in other regions, regarding the use of sea lion deterrents have produced inconclusive results regarding their efficiency. Despite this, it was hoped that a small number of these devices could be acquired in order to conduct tests *in situ* tests as a means of determining effectiveness in local conditions. However, due to the high cost of these devices other alternatives have had to be studied.

## 2<sup>nd</sup> Stage (January 2001 – Present)

During the second stage the objective was to incorporate the artisanal fishing community into the Coastal Park Project developed by the Coastal Planning Team. Local authorities have not approved the residency of these communities in the area and as a result many lack basic housing services. This hinders the possibility of providing tourism services and impedes the conservation and refrigeration of fishing products, which means fishers must sell at low prices to wholesalers.

The work plan included:

- Surveying the coastal zone with the aid of the NNP to determine the total number of inhabitants, the number of artisanal fishers, the type of housing, their exact location and the services available to them;
- Obtaining information on the ownership of the land occupied by fishers;
- Promoting coordination of all relevant institutions in order to authorize the legal use of land occupied by fishers and the removal of all inhabitants not associated with the artisanal fishing activity, and;
- Promoting the installation of adequate services to improve the quality of life for members of the local fishing community and its eventual incorporation into the Coastal Park Project.

This experience resulted in a better knowledge of the problems and a greater understanding of the potential of the fishing community, as well as the need for its eventual inclusion into the global development project for the area. It is important to mention that working with this particular segment of the community demands relatively more social work than other groups.

## Pilot Area: Pascual Beach – Espinillo Point

The cultural characteristics of the Pascual Beach – Espinillo Point pilot area required the ECOPLATA Team to adjust its strategic approach. From the beginning, the problems and issues presented by participants were very specific. Also, significant differences and difficulties between actors from different localities surfaced when they commenced working together. The ECOPLATA Team feared that it might become ineffective in the face of such broad and fragmented demands. Simultaneously, several problems outlined by a group from Delta del Tigre were extremely interesting. In that area they had attempted an initial ICZM experience which offered an opportunity to resolve some important problems simply by bringing about integrated action on the part of various institutions and the public. The main concerns identified by this group were:

- Maintenance of local canals which prevent the area from flooding;
- Water quality of those same canals;
- Present and future state of the local municipal dumping ground ;
- Uncontrolled growth of illegal settlements, and;
- Illegal removal of sand from local beaches.

The ECOPLATA Team decided to focus all efforts on the Delta del Tigre group, in the hope that the remaining social actors would be included later. Despite this minor change in strategy, the main objective of involving as many actors as possible remained intact. As a result, the following action strategies were taken:

- To work with the population of Delta del Tigre on their specific demands, while attempting to gain trust and legitimacy for the ECOPLATA project;
- To propose a Protected Area, within the Pilot Area, which would allow the definition of sub-areas with varied protection categories, and reflect the needs of the population in an integrated manner;
- To elaborate and implement such a proposal with the endorsement of all relevant institutions;
- To gradually extend participation to the remainder of the local population, and;
- To organize environmental education courses in a response to the considerable interest shown by high school students and their teachers.

The most important achievement in this area has been development of a trusting relationship with the population of Delta del Tigre, thereby increasing the potential for future success in ICZM activities. The organizational scheme in the area has diversified to include three new organizations. In addition, local politicians and professionals have shown an increased interest. It is important to emphasize that concern for the sustainable management of the coastline has played a critical role in the organizational processes experienced by the residents.

# LESSONS LEARNED

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Experience acquired during the two years of work in both pilot areas has permitted an approach using concrete actions in a practical manner. This has helped to consolidate a local space for Integrated Coastal Zone Management (ICZM). Following the principles of ICZM, the general approach employed has allowed the integration of experts from participating institutions. This has created a positive feedback mechanism between institutions and the program itself, which in turn facilitated management and decision-making. In this manner, local networks have interacted and strengthened their links with the institutions responsible for decision-making.

The selection of two pilot areas with dissimilar structural, demographic, cultural, geographic and environmental characteristics enriched the program by allowing the application of management practice under quite different circumstances. The need to deal with these varying circumstances has been a learning experience for the ECOPLATA team. It was recognized early on that there are no universal recipes when it comes to the application of strategies or the organization of human and physical resources when it comes to solving specific problems. For this reason, an open planning process was used, based on the principles and concepts of ICZM, which relied on a trained and flexible team of experts.

This process has not been exempt from conflicts and tensions, but the team has learned to recognize them and deal with them. The idea was not to eliminate conflicts but to turn them into opportunities by transforming them into management tools. The lessons learned should transcend local boundaries and eventually be applicable to the remainder of the coastline. In this sense, ECOPLATA has moved forward from diagnostic studies and theoretical proposals to the actual implementation of activities to support ICZM.

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## Main Achievements

The achievements identified in this experience constitute the basis for extension of ICZM to new and more extensive coastal areas. These achievements include:

- Establishing a discussion forum with a given community, where solutions to coastal problems can be sought;
- Increasing the demand by local actors for basic scientific knowledge in order to understand, analyze and better define proposals to solve coastal issues;
- Involving new social actors and organizations in existing local networks;
- Strengthening the existing institutional network;
- Increasing general public interest in coastal matters;
- Establishing new local organizations related to coastal issues;
- Creating public participation mechanisms to solve coastal environmental problems;
- Involving schools in the process;
- Advancing studies on coastal environmental conditions, and;
- Contributing objective information for the resolution of conflicts.

The community has acquired knowledge and tools that allow an improved critical posture regarding the process of coastal management. Those involved in the process have taken notice of their own resources and limitations, and contributed to the coordination and implementation of activities at the local and national level.

However, it is important to recognize that there remains much to be done in order to see the efforts of the ECOPLATA Program fully realized. Additional measures that require attention before we can hope to realize that full potential include:

- Obtaining greater government commitments;
- Proposing improved political and legal frameworks for ICZM;
- Defining and consolidating existing institutional structures;
- Clarifying roles and responsibilities of all participating institutions, and;
- Improving the financial sustainability of the ECOPLATA Program.

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## Future Outlook

Integrated Coastal Zone Management is a valuable development tool for Uruguay. An improved coastal zone can assist with the generation of employment and foreign currency through improved tourism. It can improve the quality of life. It can also assist government efficiency through the avoidance resource overlap. A great deal has been achieved over the past two years of work and study with the pilot areas, but lasting change is only achieved through a long and slow process requiring a proactive attitude toward coastal issues. As the ECOPLATA experience and findings becomes better known in other parts of the world, increasingly Uruguay will look to the experiences of other countries in order to learn from those experiences.

In order to solve major problems affecting our coastline Uruguayans must extend and intensify integrated management. We believe that the development of an integrated management process for the Rio de la Plata's coastal zone will ultimately require the implementation of both a national and local strategies. Therefore, based on the advances made in the pilot areas, future efforts should focus on a process that will induce a national action plan based on local experiences. We should be striving for the development and implementation of a "National ICZM Program."

In order to achieve this objective, many additional changes will be required. Among those will be better definition and rationalization of the institutional structure of the ECOPLATA Program, and improved clarification of responsibilities for each of the signatory institutions that make up the program. This will be an essential prerequisite to achieving greater government commitment at all levels thereby improving the potential for establishment of the political and legal framework necessary to ultimately institutionalize the ICZM process

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