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REPORT OF THE SUBREGIONAL MEETING ON COASTAL MANAGEMENT
IN MARINE AND COASTAL AREAS OF HIGH
BIODIVERSITY IN THE ATLANTIC

(Tamandaré, Brazil, 23-27 October 1994)

This document has not undergone formal editing, but has been checked for correct terminology and references.

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I. ORGANIZATION OF WORK

Place and date

1. The meeting was organized by the Economic Commission for Latin America and the Caribbean (ECLAC), together with the FAO/UNEP Project on the Management of Forests, Protected Areas and Wildlife in Latin America and the Caribbean, and the Oceans and Coastal Areas Programme Activity Centre (OCA/PAC) of the United Nations Environment Programme (UNEP), with the collaboration of the Brazilian Environment and Renewable Resources Institute (IBAMA); the meeting was held from 23-27 October 1994, at the Centre for Research and Extension in the Northeast (CEPENE), located in Tamandaré, State of Pernambuco, Brazil.

Objective

2. The main objective of the meeting was to formulate a comprehensive subregional strategy proposal for coastal management, conservation and the sustainable use of marine and coastal biodiversity, based on the experiences of the countries involved.

Attendance

3. The meeting was attended by experts from Argentina, Brazil, Chile, Colombia, Peru, Uruguay and Venezuela, representatives from ECLAC, UNEP, and the Food and Agriculture Organization of the United Nations (FAO), officials from the Government of Brazil, representing the Ministry of the Environment and the Amazon Treaty Region, IBAMA and CEPENE, and observers from non-governmental organizations in Brazil. A list of participants can be found in annex I of the present report.

Agenda

4. During the meeting the following agenda was adopted:

1. International instruments relating to marine and coastal biodiversity.
2. Protection and management of marine and coastal biodiversity.
3. Economic aspects of the management and use of marine and coastal biodiversity in the context of sustainable development.

4. Methods for the qualitative and quantitative assessment of marine and coastal biodiversity.
5. The Latin American Technical Cooperation Network on National Parks, Other Protected Areas and Wildlife.
6. A comprehensive subregional strategy proposal for coastal management, conservation and the sustainable use of marine and coastal biodiversity.

Opening meeting

5. At the opening meeting, Mr. Geovânio de Oliveira, the Director of CEPENE, took the floor, welcoming the participants on behalf of the Government of Brazil and especially ECLAC. He stated that CEPENE had been involved in the quest for Latin American integration in fishing research for some considerable time, in cooperation with a number of international organizations. He also expressed his hope that that first joint initiative with ECLAC would be continued in the future, and he was making all the Centre's facilities available to that end.

6. Mr. Haroldo Mattos de Lemos, from the Ministry of the Environment and the Amazon Treaty Region, then took the floor. He expressed his satisfaction at being able to inaugurate the meeting. He said that the region had witnessed progress in environmental matters. In giving a brief overview of that progress, he drew attention to the United Nations Conference on the Human Environment, held in 1972 in Stockholm, which had principally considered the report of the "Club of Rome" that advocated zero growth. That had left a considerable impression on the developing nations and had given rise to the concept of ecodevelopment at the United Nations. One of the leading outcomes of the Conference had been the establishment of UNEP. The third report by the Club of Rome, which had come out in 1976, The New International Order, had included the views of social scientists and pointed out the great differences that existed between developed countries and developing countries. The report had included a series of recommendations relating, *inter alia*, to military expenditures. However, none of those recommendations had been adhered to; that had been especially so in the case of military expenditures, which had increased systematically until 1987, before subsequently starting to fall. That trend had held true for the countries of the region. The question of access to international trade had been another matter not taken into consideration by the developed countries. A series of phenomena had occurred in the 1980s which had hindered sustainable development in the region; one of the most significant of those had been the external debt crisis that had beset Latin American countries. The twin problems of pollution and overexploitation of natural resources had become more serious over that period. In the light of that situation, the Governing Council of UNEP had established the Brundtland Commission, which had produced the document known as Our Common Future. That document had given an outline of the concept of sustainable development which, in the view of Mr. Mattos, was both controversial and difficult to implement, especially as regards the idea of intergenerational justice and the environment's absorption capacity, among other matters. Concerns arose in the following chronological sequence: the depletion of natural resources, social considerations and the environment's ability to absorb pollution. The issues of governability and migration were two further highly important elements of sustainable development. Mr. Mattos highlighted the fundamental role of education, which created a more enlightened society, one which could take on the challenge of democracy with greater ease. In addition to long-term policy measures, science and technology was another element of great importance which contributed to the ability to generate clean technologies and adapt imported technologies. Very often for electoral purposes, public policy decisions were taken with a view to short-term considerations as well as the opinion polls,

as politicians sought only to remain in office. There was a need to increase society's ability to absorb long-term policies. Lastly, Mr. Mattos underlined the importance of coastal management in creating true sustainable development, and especially the ideal where the sea was the world's "food basket", a situation which ceased to be true once we had dirtied it, dumping in it all kinds of waste and overexploiting its fishing resources. It was vital to link coastal management to sustainable development, failing which the latter would be no more than a dream.

7. Ms. Mônica Borobia took the floor on behalf of the UNEP Oceans and Coastal Areas Programme. She said that the meeting was a unique experience for the subregion, in that it was of interest to the countries bordering the Atlantic Ocean and was in keeping with the principles enshrined in the Convention on Biological Diversity and the United Nations Convention on the Law of the Sea. The meeting was an initiative designed to provide the subregion with a coherent, comprehensive and above all marine focus in the formulation of policies aimed at the conservation and sustainable use of biological diversity. That initiative was an excellent example of the activities which UNEP had decided to support, in an effort to improve planning of biological diversity and the conservation of marine living resources.

Programme

8. Mr. Roberto de Andrade, Economic Affairs Officer in the Natural Resources and Energy Division at ECLAC, acting as secretary, introduced at the plenary meeting the programme of the meeting, which was duly adopted. The participants agreed to designate Mr. Jairo Escobar, from Colombia, Mr. Manuel Flores, from Peru, Mr. Jorge Pereira, from Brazil, and Ms. Jacinta de Fatima Oliveira, from Brazil, as rapporteurs for the meeting and Mr. Simão Marrul Filho, from Brazil, as general coordinator.

II. SUMMARY OF DISCUSSIONS

International instruments relating to marine and coastal biodiversity (agenda item 1)

9. Ms. Mônica Borobia, a UNEP Programme Officer, referred to the following three matters:

a) **The Regional Seas Programme:**

10. The UNEP Regional Seas Programme had been set up in 1974 as a global programme requiring implementation in regional components. The Governments of the region had to formally adopt a plan of action before the regional programme could enter into an operational phase. The programme currently took in 12 regions and encompassed approximately 140 States and territories. All plans of action had been structured in a similar fashion, although each included aspects that were specific to each region. The components are:

- i) Environmental assessment;
- ii) Environmental management;
- iii) Environmental legislation;
- iv) Institutional arrangements;
- v) Financial arrangements.

b) Global Activities:

11. Ms. Mónica Borobia referred to the programmes currently being conducted to counteract impacts on the environment of a global nature, namely:

i) GIPME: Global Investigation of Pollution in the Marine Environment, through three groups of experts on: methodologies, standards and intercalibration, the effects of pollutants, reference materials.

ii) Monitoring of climate change: the setting up of work groups on climate change, in collaboration with the Intergovernmental Oceanographic Commission (IOC), to prepare regional reports on climate change and its effects.

iii) GESAMP: Group of Experts on the Scientific Aspects of Marine Pollution, whose purpose was to prepare reports on the marine environment and identify problems.

iv) Environmental impact assessments: assessment of the environmental impact of projects affecting the marine and coastal environment and preparation of complementary guides on typical activities in coastal areas.

v) Protection and management of marine living resources: conservation of protected areas and endangered species, such as coral ecosystems and marine mammals.

c) International Agreements

12. The expert also referred to international agreements relating to biodiversity, in particular the Convention on Biological Diversity and several of the regional protocols: the Protocol concerning Mediterranean Specially Protected Areas (1982); the Protocol concerning Protected Areas and Wild Fauna and Flora in the Eastern African Region (1985); the Protocol concerning the Conservation and Management of Protected Areas in the South-East Pacific (1989); and the Protocol concerning Specially Protected Areas and Wild Fauna and Flora under the Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region (1990). The expert referred to UNEP guidelines for the preparation of national studies on biodiversity.

13. Discussion centred on the possible creation of a regional plan of action in the South-West Atlantic, especially initiatives implemented with that purpose in mind, as well as UNEP thinking with respect to the definition of coastal areas. UNEP had actively expressed its desire to support the scientific community in the Atlantic to solve common coastal and marine environmental problems. The UNEP representative also announced that that Programme and FAO were in the process of preparing guides on integrated management of coastal and marine areas.

Protection and management of marine and coastal biodiversity (agenda item 2)

14. Mr. Jairo Escobar Ramírez, from the Colombian Oceanographic Commission, introduced the document El manejo costero frente a la conservación de la biodiversidad costera y marina (concerning coastal management practices that were in keeping with the conservation of coastal and marine biodiversity).

15. The measures adopted by the international community to protect biodiversity were embodied in Agenda 21, the Convention on Biological Diversity and the Global Biodiversity Conservation Strategy. Those documents had tackled the issue of the loss of biodiversity using innovative models of conservation which took into account wider social and economic problems. Coastal area management had been addressed in chapter 17 of Agenda 21, both as regards the coastal and marine aspects of biodiversity and the integrated management of coastal areas. Those were both relatively new issues which had been developed to only a limited degree, and that made it difficult to incorporate coastal and marine biodiversity in integrated coastal area management.
16. The limiting factor was an apparent reflection of the traditional land-based focus applied to the management of coastal ecosystems as well as the lack of experience in ocean management; as a result, it was thought necessary to deal with the issues of coastal and marine biodiversity and integrated coastal area management from a marine perspective, departing from the traditional land-based approach usually adopted when addressing marine affairs. The fact that oceans and their resources were common property meant that a holistic, case-by-case approach was required. That in turn implied the need for distinct change in traditional policies. Coastal and marine diversity required a different approach from that of terrestrial biomes. Several examples served to support that need: the limits of marine biodiversity were less defined than in the case of terrestrial biodiversity and adaptations required a seawater environment. With respect to phyla, marine biodiversity was the broadest on the planet. The marine biosphere was at least twice the size of the terrestrial biosphere. The marine food chain was more complicated than the terrestrial one and marine organisms were more complex than terrestrial ones from the genetic point of view.
17. Up until then, the management of marine coastal areas at the national level had been traditionally and historically organized in terms of individual uses; experiences in the field of biodiversity conservation had been limited, with the exception of those leading to the identification and allocation of coastal and marine protected areas, which none the less differed in their conception from the integrated management approach characteristic of the new trends in ocean and coastal management.
18. The sectoral approach towards marine development had prevailed for so long had that it had led to a compartmentalized view of development opportunities. As a consequence, a situation of imbalance had arisen which failed to reflect current needs and conditions. The sectoral marine policies of most countries continued to be compartmentalized and uncoordinated. There was even less active integration, a situation that obviously hindered the effectiveness of measures designed to protect and manage coastal and marine biodiversity. That state of affairs was reflected primarily in the lack of an integrated marine policy stipulating conservation measures which should form part of plans for the integrated management of coastal areas. The basic precondition was the identification of coastal and marine problems and associated opportunities. With respect to biodiversity, there was a need to recognize the main problems involved in its conservation, the various options for its supply and the feasibility of its incorporation in economic and social development.
19. Discussion focused on the issue of participation by local communities and indigenous populations, among others, in the designation of protected areas and the establishment of regulatory and management guidelines. The meeting deemed as fundamental intervention by groups interested in the formulation of policies aimed at the conservation of coastal and marine biodiversity; such a process should be consultative and highly participatory. Several experts pointed out the need to consider the new economic trends evident in the region, especially those based on the neoliberal line of thought on cutting back research. Following several speeches, it was concluded that such trends had left a space which had

enabled the delegation of authority, in a number of countries in the region, as regards research obligations, in several cases by means of a contract; that made it difficult to implement measures for the conservation of coastal and marine biodiversity and paved the way for a highly regulatory State, with few opportunities for the development of home-grown biotechnologies. The delegates also concluded that, while the absence of an integrated marine policy made it appropriate to support coastal and marine protection biodiversity measures, to be included in a plan for integrated coastal area management, the formulation of such a policy was difficult given the age-old continental approach used in dealing with the seas in the region. However, it was agreed that there was a need to follow the course of action marked out at the United Nations Conference on Environment and Development (INCHED), held in 1992 in Rio de Janeiro, involving a holistic, integrated approach to the seas, which would gradually be attained as the Mediterranean approach in vogue in Latin America was abandoned.

Economic aspects of the management and use of marine and coastal biodiversity in the context of sustainable development (agenda item 3)

20. Mr. Juan Carvajal, from the National Confederation of Small-scale Fishermen of Chile (CONAPACH), introduced the document Áreas de manejo: una alternativa de administración pesquera (concerning management areas as an alternative method of fisheries management).

21. An examination of much deep-sea fishing in Chile showed that, generally speaking, the management methods aimed at resource conservation had not managed to fully achieve their aims; that was most likely due to the existence of a regime of open access to fishing grounds, the lack of suitable research and inadequate supervision.

22. Against that background, the General Law on Fishing and Agriculture had included a number of measures providing for the rectification of those shortcomings and the implementation of the twin goals of conservation and efficient use of resources.

23. One of the mechanisms included in the Law was that of management areas and exploration of benthic resources, which basically consisted in assigning a sector of the coast together with its resources to an incorporated organization, in order for controlled development of the area to proceed. To that end, the organization in question must present a detailed plan covering research, management and development of the area over a number of years, and have the support of a suitably qualified technical agency. That management tool was undoubtedly the most significant in the history of small-scale fisheries management, in that it set out ambitious goals for resource conservation and development of the small-scale fishing industry.

24. In order to implement the management areas, there was a need to establish guidelines setting out the conditions and modalities of the technical terms of reference for management projects. However, such guidelines had not yet been established by the authorities, owing to the fact that it would be necessary to make a number of changes to the law.

25. Management areas were subject to some controversy, given that certain groups, especially in the private sector, contended that they had just as much right to aspire to be allocated those areas. Nevertheless, it was necessary to aim for the sustainability of resources over time together with some social benefit for the local communities.

26. There were, at that time, around 100 management areas in the pipeline throughout Chile, whose size varied from 50 to 600 hectares per organization, depending on the number of members involved.

27. In the general context, the results that could be expected from the administration of management areas were as follows:

- Natural recovery in the levels of abundance of the resources associated with the management areas;
- Increase in, and stabilization of, fishermen's incomes;
- Strengthening and development of the organization's capacity to take on the administration of resources;
- Enhancement of the organization as a source of job opportunities and improvement in the quality of life; and
- Improvement in both the quality and quantity of the information generated concerning fishing activity associated with management areas.

28. That initiative undoubtedly opened up new prospects for development of small-scale fishing within a clear framework of self-management by local organizations of small-scale fishermen.

29. Discussion of the issue centred on participation by the communities. Mr. Carvajal stated that participation by small-scale fishermen was highly desirable due to their high level of organization and the knowledge they had of the conditions and characteristics of the marine and coastal environments. The Government of Chile had taken into account the fishermen's knowledge and had incorporated it in the definition of the protected areas made available for small-scale fishing. An area of 5,000 miles extending out from the coast was reserved for the exclusive use of small-scale fishermen and, furthermore, a large number of people had left other sectors of the economy for the small-scale fishing industry during successive economic crises. Lastly, Mr. Carvajal explained to the participants the process whereby small-scale fishermen became involved in the administration of management areas.

30. Mr. Roberto de Andrade, an Economic Affairs Officer at ECLAC, introduced the document, Manejo costero en áreas de alta biodiversidad en la perspectiva del desarrollo sustentable about coastal management in areas of high biodiversity in the context of sustainable development; he then proceeded to examine the question of coastal management, concentrating on the impact suffered by areas of high biodiversity as a result of anthropic activity. The approach to be adopted in examining the issue should be systemic and take into account the level of development in the countries of the region. With that purpose in mind, it was necessary to incorporate appropriate technologies into productive processes (clean technologies), so as to minimize the impact of pollution on areas of high biodiversity, ensure natural resources were used rationally and add value to them. Mr. Roberto de Andrade then gave an overview of the current situation in the region, highlighting the degradation of coastal and marine ecosystems in Latin America and the Caribbean. There were a variety of reasons for that situation; two of the main reasons identified by specialists were population density and the growth in economic activity, which led to overexploitation of natural resources and pollution of the environment. As the countries of the region sped up economic growth in the quest for development, marine and coastal areas would clearly be the hardest hit if the appropriate measures were not taken. It was possible to achieve development with environmental sustainability and social equity. A well-conceived policy designed to reconcile sustainability and competitiveness should be implemented, incorporating intellectual worth and technical progress onto the natural resources base. The problem of the impact of anthropogenic activities was compounded by natural disasters which directly affected coastal and marine areas.

31. Biodiversity took in all living species (plants, animals and microorganisms), as well as the ecosystems and ecological processes of which they formed a part. That broad definition of the concept of biodiversity immediately suggested a close link between biodiversity and coastal management, so long as the latter were defined as measures for the preservation, conservation and rational use of marine and coastal areas. Moreover, there were three sorts of reasons for taking an interest in preserving biodiversity: an ethical and aesthetic reasoning, on moral grounds; an economic reasoning, taking into account the natural resource base of economies; and the well-being of the community, on the grounds that natural ecosystems provided essential services.

32. Lastly, it was necessary, where sustainable development was concerned, to rise above rhetoric. That idea was the consequence of two economic concepts. The first of those was sustainability, which meant maintaining or extending the productive use of resources, without affecting their availability, i.e. the natural heritage, inasmuch as there existed a surplus of natural production available for use in extractive activity. The second concept was that of development, which arose as a theoretical principle broadening the view of economic growth, whose variables did not reflect society's well-being; growth failed to take into account the redistribution necessary for enhanced quality of life, which was, after all, the ultimate goal of economic development. Lastly, coastal management was the key component in achieving sustainable development, regardless of the approach taken, whether coastal management was designed to obtain maximum productivity for human purposes or was aimed at conserving the natural components of those ecosystems, including the natural resources used by man.

33. The discussion focused on the question of countries' real integration at the international level, as they made full use of the comparative advantages bestowed on them in the form of natural and social resources. For that process to occur, basic notions of competitiveness were required, and the basis for the real insertion of the region lay in meeting educational and training needs.

Methods for the qualitative and quantitative assessment of marine and coastal biodiversity (agenda item 4)

34. Mr. Gilberto Sales, from IBAMA, introduced a document, Sistemas de áreas protegidas marinas y costeras como estrategia para la conservación de la biodiversidad in situ (concerning arrangements for marine and coastal protected areas as a strategy for the conservation of in situ biodiversity). He said that protected areas were the most effective instrument in the conservation of in situ biodiversity. None the less, it was necessary to try to use that tool in a broad-based way, so as to guarantee the representativeness of biodiversity at its various levels, those being: genetic variation, the natural process of evolution undergone by all species and the ecosystems present in a given region.

35. To that end, protected areas should be thought of in terms of a system, and different management categories used, varying in their restrictions, which took into account distinctive regional characteristics, thus ensuring balance between those and existing productive activities.

36. Another fundamental aspect in that case was the genetic flow required to maintain and guarantee the continuity of the processes of natural evolution in those areas.

37. In the specific case of protected areas located in coastal and marine areas, two highly relevant aspects should be taken into account:

- The coastal area was historically the site of huge population densities, and concentrated many of the potentially high-impact activities that caused environmental degradation;
- Water was an effective carrier, and for that reason it was important to conduct studies on circulation and currents which would identify potential land-based sources of pollution affecting areas of interest to the conservation of biodiversity.

38. Once a system of marine and coastal protected areas representing the principal biomes of a region had been created, it was necessary to formulate on-going programmes of research into, and evaluation of, biodiversity with respect to the number of species, genetic variation, and ecological processes.

39. Such programmes should not reflect political borders, but instead have an international character in which common biogeographical provinces were taken into account; such programmes should seek to:

- Create an accessible, interactive data bank for exchange of information;
- Compile data and biological inventories already in existence;
- Identify and take notice of gaps in knowledge;
- Encourage specific studies to fill such gaps;
- Identify the most urgent situations calling for environmental restoration and regeneration of populations or endangered species;
- Promote a methodological monitoring scheme, using currently existing indicators of the broadest geographical distribution groups.

40. The formulation and implementation of a programme thus thought out not only served to emphasize the importance of a scheme for marine and coastal protected areas, but more importantly justified and consolidated the trend towards use of those areas as a means of conserving natural resources.

41. There was a need to step up research into biodiversity. Brazil lacked an assessment process at the national level; however, information on resources and special areas administered through specific programmes did exist. The initiatives taken to protect areas were recent and could be traced to experiments in the forestry sector. Schemes for protected areas should logically lead on to programmes to monitor and protect coastal and marine biodiversity as a whole and institution-building was vital if such programmes were to be implemented. The system currently in place in Brazil did not have the means to take on a monitoring or research programme that could promote biodiversity in a systematic manner. That perhaps held true throughout South America and the Caribbean, with the exception of Costa Rica. In addition, information was only available in a piecemeal fashion, and that did not allow for a full understanding of biodiversity. To date, no programme had been implemented to consolidate, analyse and subsequently interpret currently available data on biodiversity. Protected areas constituted a framework on which such programmes could be based. In order to promote a strategy, such an initiative should be implemented at the biome level as part of a national biodiversity conservation programme and be followed up by a monitoring programme.

The Latin American Technical Cooperation Network on National Parks, Other Protected Areas and Wildlife (agenda item 5)

42. Mr. Juan Oltremari Arregui, a consultant from the FAO Regional Office for Latin America and the Caribbean, introduced a report on the Latin American Technical Cooperation Network on National Parks, Other Protected Areas and Wildlife. He gave an overview of technical cooperation projects in the

region, pointing out that they owed their existence to the conviction that imported technologies did not always fully satisfy local needs, and that there was little dissemination of know-how among the countries. Those programmes had their origins at the United Nations Conference on Technical Cooperation among Developing Countries, held in Buenos Aires in 1978. From that time on, the countries of the region increased their requests to FAO to assume a leading role in formulating technical cooperation networks, which began to be created in 1979, under the auspices of the FAO Regional Office for Latin America and the Caribbean.

43. A total of 20 technical cooperation networks currently existed in Latin America, 15 of which were regional in nature while the remaining five existed at the subregional level. One of the networks most closely linked with the meeting's theme was the Latin American Technical Cooperation Network on National Parks, Other Protected Areas and Wildlife. That network had been set up on the recommendation of seven countries in the region, at a round-table meeting organized by FAO in Santiago, Chile in 1988. The Network's objectives had been established at that meeting, and fundamentally consisted in improving protected areas and wildlife management, promoting training and technical exchanges among professionals working in the field and increasing the contribution of protected areas to socio-economic development.

44. The Parks Network operated through a National Coordinator in each of the countries of the region, which appointed a Regional Coordinator. The FAO Regional Office for Latin America and the Caribbean acted as international technical secretary.

45. The Network undertook a variety of activities between 1983 and 1994, including several workshops and seminars on various themes relating to protected areas and wildlife, technical exchanges, the creation of a database of institutions and specialists, various publications (such as Boletín, Carta Circular, technical documents and workshop reports) and the setting up of subnetworks on specific issues in a limited number of subregions.

46. Network activities had received the financial support for a number of periods from the FAO/UNEP Project on Management of Wildlands, Protected Areas and Wildlife in Latin America and the Caribbean. It was shortly hoped to implement a new project with UNEP —with particular emphasis on protected area schemes and their contribution to conservation and sustainable development of biodiversity—, closely related to the meeting's theme. Thus, one specific activity was aimed at the formulation of policies, strategies and plans of actions for the in situ conservation of biodiversity in the region's coastal ecosystems. A regional case study on marine and coastal protected areas in the South-East Pacific was also being undertaken at the time, with funds still available.

47. Further Network activities were also under consideration, within the context of a project on protected area schemes in the Amazon, as were activities which needed to be organized in conjunction with other international organizations. A case in point was a regional workshop to be organized in collaboration with the United Nations Educational, Scientific and Cultural Organization (UNESCO) concerning natural world heritage sites.

48. The issue of biodiversity in coastal and marine environments had been considered of major interest to the Network and there were excellent prospects for conducting joint activities with international organizations, non-governmental organizations and national institutions responsible for resource conservation and management in those environments. In that regard, an increasingly important role was being assigned to activities relating to training, education and technology transfer for resource

conservation in marine and coastal environments, through the strengthening of technical exchange programmes and participation by specialists in the dissemination of know-how through the various means promoted by the Network.

NATIONAL AND LOCAL EXPERIENCES

Argentina

49. Mr. Carlos Lasta, from the National Institute for Fisheries Research and Development (INIDEP) of Argentina outlined the situation in his country, in his capacity as an expert, and identified protected coastal areas along the Argentine seaboard, extending from the fishing area Argentina shared with Uruguay to the channels of Tierra del Fuego. He listed protected coastal areas: 1) the estuary and seaward entrance of Río de la Plata and Bahía Samborombón; 2) Bahía Blanca and the Rincón area; 3) San Matías Gulf; 4) San José y Nuevo Gulf; 5) San Jorge Gulf; 6) San Julián and 7) the channels of Tierra del Fuego.

50. The systemic study of both environments indicated that they were spawning grounds for fish and crustaceans of commercial significance for coastal and platform fisheries. Biotopes in those areas shared a number of characteristics, and as a result it was possible to study them in a comprehensive manner.

51. A number of scientific institutions in Argentina were conducting research projects in the areas identified; INIDEP was involved in most of those through the research campaigns of the various projects executed by the organization.

52. Clearly, there was a need for the various research groups to join forces in a joint initiative, for the purposes of creating a single data bank as part of the first step in a project to study biodiversity in protected coastal areas.

53. The case study of Bahía Samborombón, in the Río de la Plata estuary, was introduced, and results were presented concerning the following: analysis of the heat cycle of the water's surface; variation in salt content in the Río de la Plata; description of the salt water marsh and analysis of the turbidity throughout the river's mouth. Within the Bahía community, analysis of the toxocenosis? of fish during autumn and spring provided evidence of constant and sustained loss of specific richness over the eight-year period for which data was collected. That phenomenon was closely related to the marked increase in the number of coastal fishing vessels which fished for coastal species in the bay. Those results had been useful when making decisions designed to improve resource management.

54. Analysis of the structure of the Argentine fishing fleet, broken down into deep sea fishing boats, factory ships and coastal vessels, had suggested a change towards fishing strategies where reasonable profitability criteria were balanced by greater concern for the environment. Such strategies might include use of alternative fishing gear, effective protection of protected zones and incorporation of added value to coastal fish products, exchanging quantity for quality.

55. Mr. Carlos Lasta told the plenary meeting in response to earlier speeches that most of Argentina's fishing resources were at their maximum sustainable yield. That was true of hake, Argentina's leading fishing resource, as well as pollack, in the southernmost waters. Two projects were possible with respect

to biodiversity: one an institutional project, a fishing strategy which minimized the degradation of the environment; and another, a project involving selected coastal areas, in an effort to change the fishing strategy.

Brazil

56. Mr. Jorge Pereira de Castro Filho, from CEPENE, introduced the document Política de manejo costero en Brasil (on coastal management policy in Brazil), and referred to the legislation setting out guidelines for environmental management, also as a result of coastal management. He said that the Brazilian Constitution contained an article specifically devoted to environmental preservation, as well as other articles governing the development of renewable natural and/or mineral resources. Mr. Pereira also introduced a series of extracts from the Forestry Code, the law on the protection of fauna, resolutions by the National Council for the Environment (CONAMA), the law which created the National Coastal Management Plan and the Fourth Sectoral Plan for Marine Resources.

57. In his presentation, Mr. Pereira pointed out the existence of laws that might create the conditions for satisfactory coastal management. The chapter of the Constitution on the environment deserved special attention as it was considered among the most progressive in the world. It was difficult to put constitutional rules into practice owing to the lack of ordinary legislation regulating them.

58. States, territories and municipalities could legislate on environmental matters independently of the federal Government, in accordance with the federative principle, and in such cases the more restrictive piece of legislation would prevail.

59. Mr. Pereira then proceeded to read a number of passages from articles 5 and 225 of the 1988 Constitution. The first of those stipulated that any citizen may bring a class action with a view to prohibiting an act detrimental to the environment. The second stipulated that behaviour or activities considered detrimental to the environment would lead to punitive and administrative measures being taken against the offenders, whether they be individuals or corporations, irrespective of the obligation to repair the damage caused. Every citizen had a right to enjoy an ecologically balanced environment, a public good and one essential for a healthy quality of life, and both the public authorities and the community were under the obligation to defend the environment and preserve it for present and future generations.

Uruguay

60. Mr. Guillermo Arena gave a presentation on "The Uruguayan Experience of Fisheries Development Within the Context of a Sustainable Approach". He analysed the process of fisheries development plans introduced in Uruguay in 1974, as it constituted a rare example of planned development, that took the importance of sustained management of natural resources into account, instead of leaving it up to chance.

61. Prior to the introduction of that Plan, landings had been of little significance in Uruguay, which was a stock-raising country, in spite of the existence of conditions propitious to fisheries development:

- a) The smallness of the country (178,000 Km²), which was virtually surrounded by water and featured an exclusive economic zone whose area was comparable to the land area.

- b) Great biodiversity, due to the variety of environments (inland waters), the Río de la Plata estuary, continental shelf waters, warm-water currents from Brazil, the cold water current from the Falkland Islands, the subtropical convergence zone, as well as the different types of bottom (mud, sand, shellfish, tuff, stone) and coastline (long sandy beaches, rocky headlands, clay bluffs, etc.).
- c) Fishing resources with a high biomass or yield, due to the abundance of nutrients (carried by the river basins of the Paraná and Uruguay rivers), the outcrops associated with subtropical convergence and the fact that fronts occur in the area that are conducive to spawning grounds or the existence of nursery areas, etc.
- d) The Treaty on the River Plate Basin, concerning the river and its mouth, signed by Argentina and Uruguay, which adopted a regional management and use approach to create a common fishing zone where boats from either country could operate. That Treaty provided for the harmonization of both country's fishing laws, and aided efforts to fight pollution.

62. In 1974 the Fishing Development Plan had proposed steering the Uruguay fishing industry towards an approach marked by significant State involvement and sustained management. That proposal had been made on the basis of studies in line with estimates of fishing potential, and had been carried out under the slogan of "fishing without plundering". FAO had lent assistance in the form of research vessels, scientists and technicians and training of Uruguayan researchers and, in addition, appropriate infrastructure development projects (ports, fish-processing plants) had been identified. Incentives had been provided in the form of loans by the Banco de la República Oriental del Uruguay for overhauling the fishing fleet. Such moves had essentially been directed more at the prosperous industrial fishing sector than the small-scale fishing industry.

63. Management criteria had been based on an approach incorporating biology, landing statistics, infrastructure development, legislation designed to organize sustainable development, fish products technology and marketing (although the latter had received very consideration). Infrastructure had been identified on the basis of estimates of sustainable potential.

64. It had been possible, as a result of the Plan, to increase the number of vessels in the fleet and proceed with a drastic overhauling between 1974 and 1985; beginning in 1985, the number of vessels in the fleet had stabilized and even started to drop, once the fleet had reached a size in line with the abundance of fishing resources. There had also been an increase in the number of people employed on boats—in both the industrial and non-industrial sectors—and in processing factories; it should be stated, however, that starting in 1987 employment in processing factories had recorded a marked decrease and that total landings had also declined between 1974 and 1981, before stabilizing and even tending to decrease somewhat once maximum sustainable catches had been attained.

65. Although the Fishing Development Plan had attained those objectives, a number of drawbacks had also come to light:

- a) Practically 85%-90% of catches had been obtained using bottom-trawling gear, despite awareness that use of alternative fishing techniques would have provided access to non-traditional resources.
- b) Concentration on fishing just three demersal species: hake (Merluccius hubbsi), sea bass (Micropogonias furnieri) and whiting (Cynoscion striatus), partly as a result of the importance of bottom trawling and the limited range of other fishing methods.
- c) Centralization around Montevideo, with the predominance of the capital's port.

- d) Virtually the entire range of exports was based on products with minimal added value, essentially frozen fish and to a lesser extent fresh fish, with other kinds accounting for insignificant shares.
- e) Neglect of the small-scale fishing industry, development of which would have been desirable not only on social grounds but also from the economic point of view, as even a modest volume of catches could provide small-scale fishermen with substantial income.

66. Mr. Arena outlined the following possible measures, as a solution to the above-mentioned problems:

- a) Diversification of fishing operations, on the basis of the progress made in developing new fishing techniques and incentives to enterprises that decided to implement them.
- b) That advantage be taken of excuses by traditional fishing enterprises, either by legislating to make the landing of a specified volume of accompanying abundant fauna compulsory, or by providing incentives to those shipowners who use it.
- c) Encouragement for the development of ports located some distance from Montevideo;
- d) Increases in the volume of export products with higher added value;
- e) Encouragement for the setting up of cooperatives which would operate boats some 21 m in length and fish for the range of non-traditional resources over the whole year, using fishing technologies that were new to Uruguay.

67. The presentation also included an outline of the most important national standards governing management of fishing resources (some of which were also subsequently incorporated by Argentina), designed in essence to protect spawners and juveniles, as well as limit the impact of fishing and curtail fishing by foreign boats in the zone in which the Uruguayan fishing fleet operated.

68. The leading coastal protected areas were also identified:

- | | |
|-----------------------|---|
| A biosphere reserve | - Bañados del Este (1976, 200,000 ha) |
| Two natural monuments | - Atlantic Coast (1966, 14,250 ha) |
| | - The Dunes of Cabo Polonio (1966, 1,000 ha) |
| Five protected parks | - Anchorena (1978, 1,450 ha) |
| | - Arequita (1964, 1,000 ha) |
| | - Roosevelt (1915, 1,500 ha) |
| | - Fortaleza de San Miguel (1937, 1,598 ha) |
| | - Fortaleza de Santa Teresa (1927, 3,288 ha). |

69. Other areas of ecological interest were the Isla de Lobos, featuring quite possibly the greatest concentration of seals in the Southern Hemisphere; the ravines and small wooded isles of Punta Gorda de Palmira; the clayey ravines of San Gregorio and Mauricio; Punta Ballena, a hill with caves and substantial tourist industry development, which drops down towards the sea; ocean lagoons, with very abundant bird fauna; and the groves of palms in Rocha, with butia palm trees (*Butia capitata*), which are a unique landscape in Uruguay.

Venezuela

70. Mr. Mario Gabaldón, from the National Parks Institute (INPARQUES), presented relevant aspects of the Venezuelan experience of coastal management. He said that the biogeographical system of coastal and marine areas in Venezuela was characterized by the great diversity of natural communities and the variety of landscapes. Those environments were highly fragile and vulnerable to human intervention. Such intervention had taken the form of squatting and unplanned urbanization, with the resulting pollution, landscape deterioration and the destruction and loss of habitats.

71. Although the national park scheme had been launched in 1937, it had not been until 1972 that the first marine environment protected area, the Los Roques Archipelago National Park, had been created. As a result of that experience, the National Executive had taken a decision to protect other communities and island and littoral environments, a decision which had been implemented towards the end of 1973 with the declaration concerning the national parks of Mochima, Morrocoy, the Coro sand dunes, the Tacarigua Lagoon, el Copey hill and the Restinga Lagoon; those formed a marine and coastal subsystem along the Caribbean coast, which had expanded to include the Atlantic coastal environment with the 1992 declaration on the Turuepano parks and the Orinoco Delta.

72. Two case studies were presented as evidence of the efforts made to rescue affected coastal areas. The main issues in the Morrocoy National Park had been the clearing of mangroves in order to build housing and tourist complexes, the damage sustained by coral reefs, marine grasslands, the direct discharge of sewage and squatting. The main issue affecting the Mochima National Park had been the construction of holiday homes on the coastal margins of the islands and on the mainland.

73. In response to that set of problems, the federal Government had ordered the Morrocoy Park be sanitized in 1974. To that end, the National Parks Service had, between 1974 and 1978, demolished 711 palafitte-style dwellings, located on coral formations and marine grasslands, as well as 1,562 other dwellings built on keys and islands where mangroves had been cleared.

74. Once the sanitation order had been performed and all the rubbish and dwellings removed, the areas had been cleaned up and made suitable for public recreation, ensuring, by means of a management plan, the recovery of degraded areas and the conservation of mangroves, coral reefs and grasslands.

75. Beginning in 1989, the federal Government had ordered similar steps be taken in Mochima National Park, in an effort to remove 510 holiday homes from 15 widely dispersed islands. That process had entailed the removal of some 18,000 m³ of debris caused by the demolition of those dwellings together with some 20 tons of rubbish.

76. The next step had been to restore the degraded environments, which had then been equipped with the recreational infrastructure to offer services and a quality environment for the enjoyment of both locals and foreign tourists drawn by the astonishing beauty of that part of the Caribbean.

77. As in the case of Morrocoy, the National Executive had not paid out any compensation to the people affected by those arrangements.

78. Lastly, in the case of Mochima, the planning process undertaken to formulate the management plan had resulted in the streamlining of the small-scale fishing industry and had ensured a future for the fishermen whose forebears had worked there in a tradition extending back more than 10 generations. The

interaction between the park rangers and the fishermen had given rise to an interesting experience as regards the management and conservation of the parks' various ecosystems; furthermore, community participation beginning at the planning phase had ensured that the management plan and park regulations became the means by which the interested parties could gain awareness of their lawful rights, comply with a publicly known standard and thus join the authorities in the defence and conservation of national parks.

79. Discussion focused mainly on the issue of financial management of park facilities, those being administered under a concessionary scheme with preparatory training provided by the National Parks Service. Parks lacked experience in complete financial self-sufficiency, but there was recognition that that type of funding contributed to maintenance. The service employed around 1,400 people, and operated on an annual budget of US\$ 10 million, with several projects financed separately. It was believed that the success of the national parks stemmed partly from the fact that local communities participated in formulating regulations and administering the parks. It had been possible to save and maintain the cultural and tourist values that generated foreign exchange and contributed to the incomes of small-scale fishing communities. The community approach owed its success to the way in which small-scale fishermen or fishing communities understood conservation measures and their rationale.

Peru

80. Mr. Manuel Flores Palomino, from the Marine Institute of Peru (IMARPE), introduced the document Situación de las políticas de manejo costero y áreas especiales protegidas con énfasis en la biodiversidad (concerning coastal management policies and specially protected areas with an emphasis on biodiversity). He said that, in the case of Peru, an examination of coastal management policies and conditions with particular emphasis on specially protected areas and biodiversity required consideration of three levels: global, regional and national.

1. At the global level, the major relevant international instruments were:

- The strategies and objectives of the World Conservation Union (IUCN) on the conservation of nature, rational and sustained use of natural resources and the development of human communities.
- The United Nations Convention on the Law of the Sea, principally Part XII, referring to the protection and preservation of the marine environment and the fight against marine pollution.
- Agenda 21, adopted by the United Nations Conference on Environment and Development (UNCED), held in 1992 in Rio de Janeiro, especially chapter 17, relating to the protection of the oceans, seas and coastal areas, and the protection and rational use of their living resources.
- FAO guidelines for the incorporation of fishing in coastal area management.

2. At the regional level:

- Primarily the Action Plan for the Protection of the Marine Environment and Coastal Areas of the South-East Pacific, formulated by the Permanent Commission for the South Pacific (PCSP) and UNEP in 1981, and involving Colombia, Ecuador, Peru,

Chile, as well as Panama and Costa Rica, with studies on marine pollution, coastal areas, management and impacts and climate changes, among others.

- The Regional Study of the El Niño Phenomenon (ERFEN) programme, also conducted by the PCSP, with the aim of understanding the mechanism producing the phenomenon and seeking a possible way to predict it in order to reduce the damage it caused and at the same time take advantage of its benefits.

3. At the national level:

- The Political Constitution of Peru, enacted in 1993, and specifically section III of the economic provisions, chapter II: Concerning the environment and natural resources and the following articles:
 - 66. Renewable and non-renewable naturales resources belong to the Nation, and the State is responsible for their use and development.
 - 67. The State decides national policy and promotes the sustained use of its resources.
 - 68. The State is bound to foster the conservation of biodiversity.
- The environmental and natural resources code, enacted in 1990 and suspended shortly afterwards. As a code, it was a piece of legislation which reconciled and consolidated various laws on the environment and natural resources, and had as its objectives the sustainable use and the protection and preservation of both the environment and natural resources.
- Fishing law 25.977, from December 1993, and the regulations subsequently issued under that law, which in essence contained the principles of rational sustained development in the interests of the Nation and harmony with the marine environment.

81. The presentation then focused on the National System of Areas Protected by the State (SINANPE); the 7 objectives of the national strategy for the conservation of such areas were identified, those being to:

1. Promote the sustained use of natural resources;
2. Reverse the trends towards environmental deterioration;
3. Incorporate the "ecosocial" dimension in economic and environmental policy;
4. Seek consensus on responsible decisions at all levels of society for a balanced environment, involving all levels;
5. Encourage the formulation of viable environmental legislation;
6. Strengthen institutions which conduct scientific research; and
7. Regulate land management processes.

82. Those objectives reflected awareness of major problems of environmental deterioration as well as the worldwide environmentalist trend in response to risks. In Peru, protected natural areas had been defined and categorized as: national parks, national reserves, national sanctuaries, historical sanctuaries, as well as others such as common reserves, protection forests, game reserves and preserves.

83. Mr. Palomino then presented a list with estimates of biodiversity in Peruvian waters at three levels: primary, secondary and tertiary production. After referring to the 31 specially protected areas, he provided greater details on locations in Peruvian coastal areas:

- the national mangrove sanctuary at Tumbes;
- the Virrilá sanctuary;
- the national reserve of Lachay;
- the national reserve of Paracas;
- the Mejía lagoon national sanctuary;
- the Villa swamp preserve.

84. Mr. Palomino showed a large number of transparencies on the Paracas national reserve, owing to its marine and coastal significance, involving a variety of scientific, environmental, geological, flora and fauna, and archeological considerations. He talked in great detail about the reserve and added that a comprehensive assessment programme was being conducted for management purposes with the support of PCSP.

85. Mr. Palomino explained the view taken in Peru of the coastal areas associated with outcrops, the atmospheric temperature gradient and the limits and characteristics of the coastal marine and inland domains. Lastly, he offered a number of suggestions to the South-West Atlantic countries —Brazil, Argentina and Uruguay— to shape that area as a neighbouring regional sea.

The Local Experience in the States of São Paulo and Espírito Santo

86. Mr. Martinus Filet, from the Secretariat of the Environment of the State of São Paulo, Brazil, gave a presentation in which he underlined the importance of coastal management in general and concluded by presenting the studies that are being conducted at the state level.

87. The National Coastal Management Plan enacted by law 7661 of 1988 and regulated by resolution 01/90 of the Interministerial Commission for Sea Resources (CIRM) should be viewed as a physical planning and management process being conducted in the coastal area.

88. That process, coordinated by the federal Government through the Ministry of the Environment and the Amazon Treaty Region, had as its most important partners the states, as they were organizations belonging to the national environmental system, responsible for linking municipalities and the coastal communities.

89. That process, taking place in the coastal area and covering approximately 200,000 Km², was not homogeneous nor was it always constant, as in a number of cases it depended on institutional support for the environmental policies in force. Nevertheless, it should be pointed out that progress had been made in several states which already had a history and a record of planning and environmental management even before the Plan's entry into force.

90. It was important to point out the part played by coastal management in the administration of marine areas of high biodiversity in tackling aspects such as the identification, collection and systematization of basic data and consolidation of proposals for environmental protection and conservation with regional linkages through coastal land use planning mechanisms. The main instrument of the Plan was zoning, which served to link the various actors (economic and social agents) for the purposes of the action and management plan at the level where the National Coastal Management Plan was consolidated as an on-going activity.

91. The coastal zoning process facilitated definition and discussion of the various possible uses and restrictions as well as identification of solutions to the various conflicts that arose in connection with the issue of land use.
92. Lastly, the importance of instruments should be underlined: monitoring, as an element of on-going assessment of Plan activities, and information systems, as an information tool for the conduct of such activities.
93. Since its creation in 1988, the National Coastal Management Plan had provided the setting for six national meetings to discuss methodologies and strategies and had enabled the 17 coastal states taking part in the Plan to exchange experiences. The national coordinating body had organized four courses at the subregional level to improve the skills of the state teams. Also under preparation was an assessment of federal public policies with a high impact on coastal areas and the long-term trends that should bolster the actions of the state teams of specialists.
94. In the specific case of the state of São Paulo, the process had been initiated in the lagoon region of Iguape and Cananeia, considered one of the Atlantic's leading areas of primary productivity. The clean-up plan, cast into final form in 1989, set out specific proposals that were already being implemented in the community, despite the fact that they had not yet become law.
95. The regulation of that particular part of the coast as well as the northern littoral had been cast in final form in 1993 but was conditional upon the passage of a bill creating a State Coastal Management Plan and regulating the ecological and economic zoning of the Plan's management systems. The third area, the Ribeira valley, a major coastal watershed, was undergoing zoning which was due for completion in 1995.
96. In São Paulo, the organization responsible for coordinating coastal management was the Secretariat of the Environment; the Secretariat maintained links with leading environmental bodies such as the Environmental Sanitation Technologies Company (CETESB), the Forestry Institute, the Botanical Institute, the Geological Institute and the Forestry Foundation, all of which actively participated in the State Plan.
97. Ms. Linda Suzana Brant, from the Secretariat of the Environment of the State of Espírito Santo, introduced a study Resultados do Gerenciamento costeiro no Espírito Santo (concerning the results achieved in the coastal management field in that state). She said that, at the time of the National Coastal Management Plan's implementation in 1988, six states located on the Brazilian coast had already been conducting programmes of one sort or another in that sphere; those states were: Rio Grande do Sul, Santa Catarina, São Paulo, Rio de Janeiro, Bahia and Rio Grande do Norte. As a consequence, the decision had been taken to enact the National Environmental Programme in those states, with funding by the World Bank.
98. The remaining coastal states had been provided with federal resources, in lesser amounts, and they had had to organize themselves in order to begin their respective programmes. After a variety of questions had been raised with respect to methodology and the means of implementation, a number of states had managed to formulate proposals for use in some sectors of their coastal area while other states had not.

99. In the case of Espírito Santo, which had begun to implement the plan in 1989, coastal management coordinated by the state's Secretariat of the Environment experienced a critical moment in its execution in the five areas designated as work areas in the coastal area: the extreme southern littoral, the southern littoral, the Victoria area, the northern littoral, the extreme northern littoral.

100. The state Government had had the political will to act. In 1991, at the beginning of the Government's term of office, its programme had been established on the basis of priority projects chosen by its secretariats. The Secretariat of the Environment had presented four priority projects, which had been adopted as Government projects: the Coastal Native Forest Project (Mata Atlántica); air pollution control; water resources recovery and clean-up of coastal ecosystems; and ecological and economic zoning of the state, with the coast as the priority area for zoning.

101. Thus, agreements and contacts between various institutions and Government bodies had been facilitated by the systematic holding of coordination meetings under the responsibility of a group of people in the upper echelons of Government.

102. The outcome of that Government policy, where coastal management was concerned, had been an agreement with the Secretariat of Economic Development on formulating a comprehensive tourism development plan, with the participation of the Jones dos Santos Neves Institute, an organization belonging to the Planning Secretariat for the socio-economic study of the region.

103. The Secretariat of Economic Development had sought the advisory services of the Government of Catalonia in Spain, which had performed consultancy work and come up with an overall plan for the region within the guidelines for long-term coastal zoning.

104. It should be pointed out that in the year of the agreement with the Secretariat of Economic Development, the state had paid for all zoning work, so there had been no transfer of financial resources from the federal Government, and that was evidence of the state's political will to implement coastal management.

105. That positive attitude explained why the state had been chosen to receive resources from the World Bank, via UNEP, and it had thus joined the activities being undertaken in six other Brazilian states.

106. Several noteworthy results of coastal management activities in the state to date concerned projects under execution; the first involved calcareous algae harvesting on the southern coast while the second involved the reduction in coastal management activities at the municipal level.

107. Firstly, the mapping was conducted of an area of 242 Km² of calcareous algae deposits in just one part of the southern coast, where Fermisa Mineración S.A. was operating an experimental deposit and monitoring to assess the impact on the adjacent marine biomass.

108. The second example had to do with municipal development; it had had its origins in a number of seminars held in the region and had resulted in a link-up between one of the municipalities and a private-sector concern, in an effort to raise funds for environmental zoning at the municipal level, using state zoning guidelines.

109. A further municipal-level result had been the creation of the municipal environmental preservation area of the Tres Islas archipelago, on the southern coast; the associated management plan was in the process of being drafted.

110. At the state level, the environmental protection area of Guanandy had been set up, along the southernmost part of the region's coast, incorporating a high diversity lagoon ecosystem. It should be pointed out that the state's Secretariat of the Environment was currently developing coastal management tools, apart from zoning, such as monitoring and regulatory activities, parallel to zoning based on existing environmental legislation (the forestry code, CONAMA resolutions and federal and state laws, among others). The database for the environmental management of the coastal area was being created in the geoprocessing laboratory using a geographical information system.

111. All such measures adopted by the state should become reality upon implementation of the projects contained in the management plan; execution of the plan would require direct participation by municipalities. It was obvious that, in addition to the question of the municipal Government's political will to actively participate in implementing coastal management, a major factor when considering the execution of sectoral projects was the lack of financial resources.

112. Decentralized programmes, coordinated by the Ministry of the Environment and the Amazon Treaty Region, should make up for that lack of resources. It was believed that, with approximately US\$ 5 million in resources from the Inter-American Development Bank (IDB), municipalities would actively seek to improve their organizational structure in order to attract such funds for use in their environmental management activities.

113. In Espírito Santo, two priority areas had been identified concerning that programme: the littoral and the Atlantic native forest area. At that time, the state was implementing the programme in its northern littoral and drafting state legislation on coastal management.

114. Mr. Henrique de Carvalho Dalton, from the Ministry of the Environment and the Amazon Treaty Region, introduced the study being conducted in the exclusive economic zone (EEZ), Evaluación del potencial sustentable de los recursos vivos en la Zona Económica Exclusiva, from the REVIZEE Programme, concerning an assessment of sustainable potential of living resources in that zone.

115. The REVIZEE Programme was the result of the commitments Brazil assumed when it ratified the United Nations Convention on the Law of the Sea, in 1988, and was identified as a priority goal in the Fourth Sectoral Plan for Sea Resources, coordinated by the Interministerial Commission for Sea Resources (CIRM). It had been based on a similar programme featured in the Third Sectoral Plan, in preliminary form, before being examined and enhanced in collaboration with the Brazilian scientific community.

116. The Fourth Sectoral Plan for Sea Resources established guidelines regarding the move to incorporate coastal waters and the exclusive economic zone into Brazil's heritage and provided for the rational development of living, energy and marine mineral resources. Bearing in mind the major socio-economic implications of fishing —such as its role as a source of animal protein, and in providing jobs both directly and indirectly as well as generating foreign exchange—, and Brazil's commitments vis-à-vis the United Nations, the Fourth Plan established the REVIZEE Programme as the primary focus. The Ministry of the Environment and the Amazon Treaty Region was responsible for coordinating the Programme and was taking the initial measures required to make the Programme fully viable; those

included the setting up of an executive committee, the preparation of a manual to standardize methodology and collection of all current information concerning marine research in Brazil.

117. The overfishing of several known fish stocks could be observed and that was an indication that Brazil's fishing activity was having a negative economic-cum-environmental impact. That impact was due to the excessive fishing which had begun towards the end of the 1960s after tax incentives were introduced. Overfishing took place in discontinuous and poorly distributed areas, generally concentrated on the inner continental shelf and in continuous estuaries, and for that reason the REVIZEE Programme had, in essence, been directed at attaining the following objectives: the carrying out of a survey of living resources in the exclusive economic zone, in a manner which took into consideration the biotic and abiotic characteristics of their occurrence; determination of their biomasses; and establishment of suitable catch potentials.

118. Due to the vast length of Brazil's coastline (around 7,000 Km), as well as the fact that oceanic islands were included in its territory, Brazil's exclusive economic zone covered an area of approximately 3,000,000 Km². Owing to the need to divide the EEZ into four main regions, fishing and oceanographic patterns were followed, thus providing the appropriate development of the activities foreseen:

1. The Southern Coast —from Chuí to Cabo de São Tomé (RJ)—, showed great abundance owing to climatic and oceanographic characteristics (subtropical marine convergence) and the low diversity, concentrated in species of lesser commercial value such as hawkfish, hake, Argentine anchovy and sardines, destined mainly for the domestic market in processed products;
2. The Central Coast —from Cabo de São Tomé (RJ) to Salvador (BA) and including the islands of Trindade and Martins Vaz—, was witnessing an increase in trawling; fish hooks were used in areas with a rocky or coral bottom;
3. The Coast to the Northeast of Salvador (BA) to the mouth of the Parnaíba river (MA/PI), with its narrow continental shelf; commercial fishing in that area was characterized by low productivity due to its oceanographic characteristics, the low presence of particulate organic matter in areas of warm marine waters and the virtual impossibility, given conditions in the area, of trawling on rocky or coral bottoms;
4. The Northern Coast —from the mouth of the Parnaíba River (MA/PI) to the sea boundary with Guyana—, was ideal for trawling due to the predominance of sand and mud at the sea bottom and the presence of demersal species in high densities.

119. The Programme covered the different aspects of research into oceanography and Brazil's marine living resources, including:

- recovery of the floating supports and equipment involved;
- preparation of limited methodology for field work and for the statistical processing of the information generated;
- collection of existing information and knowledge, which would need to be organized into a database for use in relational and geo-referenced systems;
- streamlining of procedures for legal instruments (conventions, agreements and protocols of intent), including those concerning the transfer of resources to the state, municipalities, universities and other institutions involved in the implementation of projects of the four regional subcommittees;
- the promotion of sea-farming;

- further development of fishery engineering and fish conservation and processing technologies.

120. It had originally been estimated that the projects could be implemented within a period of 10 years, a figure that had been scaled back to just four years; it was estimated that total expenditure would amount to 20 million reais, equivalent to about US\$ 22 million.

121. Mr. Mauro Maida, a researcher specializing in coral ecosystems, introduced a study Aspectos del manejo de arrecifes de corales (concerning management of coastal reefs); a case study of coral reefs was being conducted jointly by CEPENE and IBAMA.

122. First of all, Mr. Maida presented the methodologies used in the environmental assessment begun in the region employing basic and large-scale mapping techniques on the reef environments and their respective communities of flora and fauna. In line with that methodology, the protocol used in situ was highlighted, as was the importance of environmental mapping which could be undertaken thanks to aerial photography.

123. Mr. Maida then highlighted the importance of selecting specific areas when conducting research into the factors that influenced habitats and reef communities, as well as when generating specific data and information of benefit to management programmes. On that matter, Mr. Maida emphasized the importance of detailed studies, given the great structural complexity that characterized reef ecosystems.

124. Lastly, Mr. Maida outlined future prospects and activities for managing the region's reefs, inspired by management programmes used in reefs in other parts of the world.

A comprehensive subregional strategy proposal for coastal management, conservation and the sustainable use of marine and coastal biodiversity (agenda item 6)

125. The secretariat submitted to the plenary meeting the subregional strategy proposal (Argentina, Brazil and Uruguay) for integrated coastal management in areas of high marine and coastal biodiversity, which was considered paragraph by paragraph and adopted as the version which figures in annex I.

Closing meeting

126. The meeting was closed on 26 October 1994 by Mr. Geovânio de Oliveira, the Director of CEPENE, who congratulated the participants and referred to two events which he considered auspicious for reciprocal relations between Latin American countries: the entry into force of the Southern Common Market (MERCOSUR) and the fact that a new Government was set to take office in Brazil on 1 January 1995, with Fernando Henrique Cardoso as its democratically elected President. As regards implementation of the strategy proposal, Mr. de Oliveira indicated that the support of financing organizations, especially UNEP, would be necessary, if a programme of regional scope were to be implemented. In that respect, he indicated the willingness of CEPENE to act as a centre of reference for any such future programme. Referring to the technical document adopted at the meeting, Mr. de Oliveira emphasized the vital role that ECLAC should play in raising the awareness of national Governments and he also expressed his thanks to all the organizations of the United Nations system, offering the services of CEPENE for future joint initiatives.

Annex I

THE SUBREGIONAL STRATEGY PROPOSAL (BRAZIL, ARGENTINA AND URUGUAY) FOR INTEGRATED COASTAL MANAGEMENT IN AREAS OF HIGH MARINE AND COASTAL BIODIVERSITY IN THE ATLANTIC

GENERAL OBJECTIVE

To design and implement a programme of integrated coastal area management for the Atlantic region, in order to promote the protection, conservation and sustainable use of marine and coastal ecosystems in areas of high biodiversity.

SPECIFIC OBJECTIVES

1. To prepare national studies on the state of knowledge with respect to biodiversity in marine and coastal ecosystems in the Atlantic;
2. To support national studies on biodiversity in accordance with the Convention on Biological Diversity;
3. To promote national institutional arrangements for the implementation of national assessments with respect to the biodiversity of marine and coastal ecosystems as well as subsequent programmes, directed at their conservation and sustainable use;
4. To promote the incorporation of measures for the conservation of marine and coastal biodiversity within a broad regional plan for integrated coastal area management, taking into account national experiences;
5. To develop the capacity of countries in marine and coastal area management as well as biodiversity conservation measures.

Characteristics of the strategy

The strategy proposal has the following fundamental characteristics:

1. It is subregional in nature and covers marine and coastal areas of high biodiversity in Argentina, Brazil and Uruguay, and provides for possible participation by other countries of the region;

2. Marine and coastal areas of high biodiversity will be chosen by the competent organizations in each country;
3. The strategy is based on a broad consultative process in all its phases;
4. It is multisectorial, pluriparticipatory, interinstitutional and multidisciplinary;
5. The strategy recognizes the role played by native and traditional communities which currently interact with the areas and will be called upon to play an important role in the formulation and implementation of the strategy;
6. The strategy considers as essential the support that relevant international organizations can provide, especially those that make up the United Nations system, including the United Nations Environment Programme (UNEP), the Economic Commission for Latin America and the Caribbean (ECLAC), the Intergovernmental Oceanographic Commission (IOC) of UNESCO, the Food and Agriculture Organization of the United Nations (FAO) as well as other organizations which share similar objectives, such as the World Conservation Union (IUCN) and the World Wide Fund for Nature (WWF);
7. The strategy recognizes national experiences and the programmes and activities currently under way in each of the countries, which are invited to participate;
8. The strategy is in line with the principles and objectives of chapters 15 (Conservation of biological diversity), 17 (Oceans and seas), 26 (The role of indigenous peoples and their communities), 28 (Local authorities' initiatives) and 29 (The role of workers and their trade unions) of Agenda 21 of the United Nations Conference on Environment and Development (UNCED), and with the provisions of the Convention on Biological Diversity and binding international instruments;
9. The strategy also recognizes that protected areas serve as a vehicle for directing coastal and marine biodiversity protection activities, as well as coastal area planning and management activities;
10. The strategy recognizes that successful implementation requires the firm backing of participating States and a commitment by their competent national institutions, together with the technical support and financial assistance of international organizations;
11. While the strategy recognizes the existence of gaps in the general state of knowledge with respect to marine and coastal biodiversity, it stresses the need to take preventive measures based on the principle of precaution.

Institutional arrangements (coordination)

Before implementation of the strategy, the following steps need to be taken:

1. Each State should designate a national institution to act as the national body responsible for coordinating the activities that require execution as part of the strategy.

2. Given that the strategy is multisectorial, interinstitutional and pluriparticipatory, the relevant public- and private-sector entities are called upon to participate in activities through selection or invitation by national coordinating bodies. Each country is to establish its own coordination mechanisms.
3. The Economic Commission for Latin America and the Caribbean (ECLAC), acting as the Regional Coordinating Unit (RCU), will be responsible for regional and subregional coordination.
4. Each year, the RCU will convene national coordination meetings in order to assess the progress made with respect to the strategy, as well as take decisions on the proposal's substantive aspects.
5. The strategy will receive the firm technical and financial backing of the Oceans and Coastal Areas Programme of UNEP, which will serve as the catalyst in the implementation and advancement of the strategy.
6. Other international organizations will be associated with the strategy, through their specific activities, by invitation of the RCU and will be able to cooperate in implementing strategy activities; key among these are:
 - The Intergovernmental Oceanographic Commission (IOC) of UNESCO, through its programmes on, *inter alia*, coastal area management and assessment of the impact of global warming on mangrove ecosystems, coral reefs;
 - The World Conservation Union (IUCN), through specific programmes for coastal and marine biodiversity;
 - The Food and Agriculture Organization of the United Nations (FAO), through the Latin American Technical Cooperation Network on National Parks, Other Protected Areas and Wildlife;
 - The Intergovernmental Panel on Climate Change, through its coastal programmes;
 - The United Nations Educational, Scientific and Cultural Organization (UNESCO), through the DIVERSITAS module of its Major Interregional Project on Research and Training Leading to the Integrated Management of Coastal Systems (COMAR).

Strategy activities

Listed below are the initial activities proposed as regards planning and management in marine and coastal areas of high biodiversity in the Atlantic. It will be possible to incorporate other activities of a similar nature within the strategy at the suggestion of one or more of the participating States or at the initiative of the RCU, after consultation with the parties.

1. Preparation of national reports on the state of marine and coastal biodiversity. The national coordinating bodies will be responsible for choosing experts to prepare the respective reports, which will focus on ecosystems. These ecosystems include:

- Oceanic islands
- Coral reefs
- Mangroves
- Marine grasslands
- Cliffs
- Coastal lagoons
- Deltas, wetlands and estuaries
- Coastal native forests
- Other marine and coastal ecosystems.

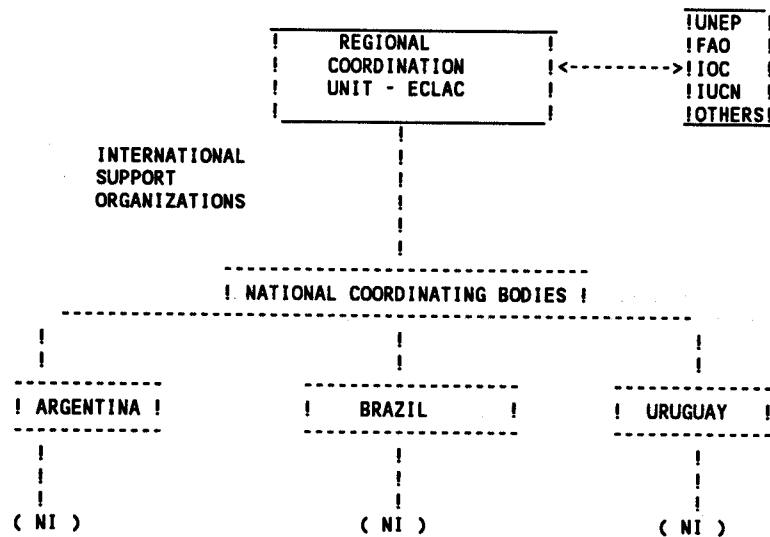
Points which the assessments need to take into consideration include: coverage and geographical distribution of biomes, taxonomical surveys and lists; types of study (descriptive and/or functional); programmes or projects carried out or in preparation; the state of environmental deterioration; related national institutions; identification of national areas of high coastal and marine biodiversity and criteria for their identification; current state of knowledge with respect to marine and coastal biodiversity.

2. The holding of workshops for experts, where national reports are analysed by ecosystem and the relevant national assessment prepared; workshops are to be convened by the national coordinating body, with the support of, inter alia, UNEP, IOC, ECLAC and FAO (one workshop per country).
3. Preparation of the subregional assessment (Argentina, Brazil and Uruguay) on the basis of national reports, in order to identify gaps in knowledge at the subregional level together with research and training needs, and to formulate, on the basis of the assessment, a subregional programme regarding marine and coastal biodiversity. Selection of national priority areas covered by the programme for biodiversity conservation and sustainable use, including development of the training, policy-making and rule-setting component and economic quantification of biodiversity (National Accounts).
4. The holding of an international meeting to prepare a subregional biosafety plan for the protection of marine and coastal ecosystems of high biodiversity in the Atlantic. In recognition of the principle of precaution, the goal of the strategy is to formulate a regional biosafety plan featuring common preventive measures designed to guard against destruction of coastal and marine biodiversity. The States will formulate such a plan during a meeting to be convened by the RCU, in consultation with the national coordinating bodies, at which each State's biodiversity protection measures will be determined in a coordinated manner.
5. The preparation of a proposal for the creation and implementation of a Subregional Network of Protected Coastal and Marine Areas in the Atlantic that will be responsible for, inter alia, formulating manuals, guidelines and principles governing the establishment of new protected coastal and marine areas in the region which are in conformity with international practice and reflect the interests of the region and its social and economic conditions. The Network will also help foster the development of regional legal instruments which serve to complement the Convention on Biological Diversity and other binding international legal agreements.
6. The creation of a subregional centre for information and the dissemination of data on coastal and marine biodiversity in the Atlantic, to be connected up with global networks for information sharing and dissemination.

7. The design and implementation of a programme of integrated planning and management in coastal and marine areas, featuring biodiversity protection measures which will serve as the basis for the application of integrated marine policies at the subregional level and environmental policies at the regional level.

8. An economic assessment of coastal and marine biodiversity in the Atlantic. The strategy tends to support national accounts through the execution of case studies that provide for the development of a methodology for the economic assessment of biodiversity.

ORGANIZATION OF THE STRATEGY: Coordination chart



NI= National institutions

Prior Steps:

The proposal will require the following prior steps:

1. Governments will express their acceptance of the proposal at the relevant level. To that end, it is recommended that ECLAC present the proposal to each government;
2. Once the proposal is accepted, ECLAC will make a request for financial support to UNEP and other financing agencies with respect to the implementation of activities.
3. Governments will, at the request of ECLAC, designate the strategy's national coordinating bodies responsible for preparing the list of national institutions participating in strategy activities. It is hoped that a sufficient number of institutions from each country can participate in strategy activities.

PROVISIONAL SCHEDULE OF ACTIVITIES

1. Adoption of the proposal by the countries;
2. Acquisition of funds (request for financing);
3. Designation of national coordinating bodies;
4. Preparation of national reports;
5. Workshops to prepare national assessments;
6. Workshops to prepare the subregional assessment and formulate the subregional programme;
7. A workshop to formulate the subregional biosafety plan;
8. Formulation of the proposal for a subregional network of protected coastal and marine areas in the Atlantic;
9. Creation of a regional information centre, for exchange and dissemination of data on protected coastal and marine biodiversity in the Atlantic;
10. An economic assessment of coastal and marine biodiversity;
11. Design of a regional plan for the integrated management of coastal and marine areas of high biodiversity in the Atlantic;
12. Design of a programme to execute the plan.

PROVISIONAL BUDGET (IN UNITED STATES DOLLARS)

(ITEM)	SOURCES OF FINANCING		
	(1)	(2)	(3)
1. Preparation of Reports (Argentina, Brazil, Uruguay) (15 days/month)	(A)		
2. Workshop for national assessments (3 workshops) experts e/a (3 days/month)	(A)		
3. Subregional workshop for the regional assessment and the formulation of the regional programme (4 days/month)	(A)		
4. Workshop for the formulation of the biodiversity plan (3 days/month) 9 experts	(B)		
5. Creation of a subregional network of protected coastal and marine areas in the Atlantic	(B)		
6. Creation of the subregional information centre and the data-exchange centre	(B)		
7. Economic assessment of biodiversity	(B)		
8. Design of a plan for integrated management	(B)		

(A) First year
(B) Second year

(1) UNEP
(2) Other sources
(3) In kind

Annex II

Resolution adopted at the Subregional Meeting on Coastal Management in Marine
and Coastal Areas of High Biodiversity in the Atlantic

The Subregional Meeting,

Considering that,

The loss of biodiversity and the deterioration of coastal areas are regarded by the international community as high priority environmental problems, and as such have been addressed in the Rio Declaration on Environment and Development adopted at the United Nations Conference on Environment and Development held in 1992,

Governments of the Atlantic subregion (Argentina, Brazil and Uruguay), together with other countries, have adopted common measures to protect coastal and marine biodiversity and to plan and manage coastal activities in order to attain social development goals,

The Atlantic subregion has unique coastal and marine ecosystems, which must be conserved, and should be studied in the interests of present and future generations,

A strategy proposal has been prepared to channel international support to common subregional initiatives to promote coastal and marine biodiversity and coastal management in their areas of high biological diversity,

Recommends that,

1. The Governments of Argentina, Brazil and Uruguay adopt the proposal prepared for this meeting and give their firm support in its implementation;
2. ECLAC, in accordance with the coordination mechanisms established between it and member States, submit the proposal to the States for adoption;
3. UNEP consider allocating funds from the resources of its Oceans and Coastal Areas Programme (OCA/PAC) so as to support the implementation of the strategy.

Annex III

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Annex IV

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