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Economic Commission for Latin America and the Caribbean

REPORT OF THE REGIONAL MEETING ON THE CONTRIBUTION OF OCEANS TO SUSTAINABLE DEVELOPMENT IN THE REGION

Santiago, Chile, 30 November to 3 December 1998

This meeting, organized by the Environment and Development Division of ECLAC under the auspices of the Ministry of National Assets and the Office of the Undersecretary of the Navy of the Republic of Chile, was held from 30 November to 3 December 1998, at ECLAC headquarters in Santiago, Chile. Unedited document.

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I. ORGANIZATION OF THE MEETING

Place and date

1. The meeting was organized by the Environment and Human Settlements Division of ECLAC, under the auspices of the Ministry of National Assets and the Office of the Under-Secretary of the Navy of the Republic of Chile. It was held from 30 November to 3 December 1998 at the headquarters of the Economic Commission for Latin America and the Caribbean (ECLAC) in Santiago, Chile.

Objectives

2. The key objectives of the meeting were: (i) to analyse the status of implementation of Chapter 17 of Agenda 21 adopted by the United Nations Conference on Environment and Development relating to the protection of oceans and seas of all kinds —including enclosed and semi-enclosed seas— and coastal zones as well as the protection, rational use and development of living resources; (ii) to prepare a technical, regional report as a contribution to the seventh Session of the Commission on Sustainable Development, which was expected to review the status of chapter 17 in 1999 and (iii) to make progress with considerations on tourism in the coastal and marine areas for possible inclusion in a technical study of this kind, since tourism was one of the subjects that the Commission was expected to consider.

Attendance and organization of work

3. Attending the meeting in a personal capacity were experts from Argentina, Brazil, Chile, Cuba, Mexico and Venezuela. Also participating were official representatives of ECLAC (ECLAC headquarters and the ECLAC subregional headquarters for the Caribbean); the Regional Office for Latin America and the Caribbean of the Food and Agriculture Organization (FAO) and the Caribbean Environment Programme of the United Nations Environment Programme (UNEP/CEP). A full list of participants appears as annex I of this document.

4. The meeting was chaired by María Eva Bustos of the Atacama Regional Office of the Ministry of National Assets (Chile) and the duties of technical secretary were performed by Mrs. Carmen Artigas, Legal Officer in the Environment and Development Division of ECLAC.

5. The work of the meeting proceeded in accordance with the agenda contained in annex II, incorporating a new item 2.7 on international cooperation. The conclusions and/or recommendations reached for each item are set forth below.

II. SUMMARY OF PROCEEDINGS

6. The deliberations focused on a study by ECLAC consultant, Jairo Escobar, entitled: "Una visión regional del Capítulo 17 del Programa 21 en América Latina y el Caribe (1992-1998)".

Agenda item 1: The seventh session of the Commission on Sustainable Development and the implementation of Chapter 17 of Agenda 21

7. For this issue, the duties of rapporteur were entrusted to Judith Musso of the Sectoral Department of the Office for Professional Development and International Relations in the Ministry of the Environment and Renewable Natural Resources of Venezuela.

8. On the basis of the list contained in the invitation to the meeting, an analysis was done of a number of issues directly relating to the programme areas outlined in chapter 17:

(a) Integrated management and sustainable development of coastal areas and marine zones, including the exclusive economic zones;

(b) Protection of the marine environment;

(c) Sustainable use and conservation of living resources of the high seas;

(d) Sustainable use and conservation of living marine resources under national jurisdiction;

(e) Solving the main uncertainties arising in relation to management of the marine environment and climate change;

(f) Strengthening international cooperation and regional coordination; and

(g) Sustainable development of small islands.

9. The consultancy report indicated that the sea and marine resources had been the subject of highly varied political and legal arrangements, some of which were set forth in the numerous international treaties of varying scope, which were being implemented through different programmes, plans and projects by a series of institutional organizations of varying prestige and scope. Many of them involved coordination and relationship mechanisms that predated Agenda 21 and others had emerged since the United Nations Conference on Environment and Development (1992). At the regional level, such coordination and sectoral integration mechanisms on marine issues were limited, rare or in some cases, non-existent. In others cases, there was little integration. In general, in the region, marine matters were included on the agenda of institutions whose main mandate was concerned with issues other than the sea.

10. Institutional arrangements relating to the sea did not have a unified structure supported by international action, so that the issue of the sea was split up among the agendas of a number of very different organizations, each with its own objectives and priorities, a pattern that was mirrored within many coastal States, themselves. Sustainable development calls for certain conditions in which integration and inter-sectoral linkages are decisive. Chapter 17 is particularly demanding in terms of mechanisms for coordination and integration in a whole range of levels, requiring an improvement in relevant institutions both at the governmental level and at the level of the international community.

11. There is a great deal of uncertainty with respect to the sea and marine phenomena. Hence, chapter 17 depends largely on scientific research, which implies also a significant dependence on technological support and international cooperation. It is also related to the development of methods that allow for the incorporation of "elements of uncertainty in decision-making".

12. Chapter 17 proposed new ways of managing marine resources and was categorical about the need to construct and/or effect changes, modifications, additions or follow-up within programmes, organizations and institutions responsible for issues relating to the sea. In some cases, Chapter 17 represented a complete change in approach to traditional forms of management of marine and coastal areas. The combination of land-based and marine uses had now directed attention towards the integrated management of coastal areas.

13. Research, together with the control of management measures for some subjects of certain programme areas in Chapter 17, especially on the high seas and seabed, required the use of highly technical, and above all costly, methods, some of which were beyond the capacity of most of the States in the region, which constituted a serious impediment to the development of the studies required in those areas. Moreover, many environmental problems referred to in Chapter 17 were beyond the jurisdiction of the States, and therefore called for a response at the supranational level.

14. Agenda 21 called for the establishment of mechanisms for sectoral integration, a need expressed more urgently in chapter 17 since the administrative system governing marine development in most coastal States tended to be highly compartmentalized, deficient or lacking any intersectoral openings and as such did not meet the requirements for implementation of the chapter. This was a reality in the majority of Latin American and Caribbean coastal States.

15. Chapter 17 called for conditions to stimulate "sea culture" in order to facilitate implementation of its recommendations. Paradoxically, in many coastal States, the sea had not played a key role in development partly because marine or maritime issues had not been treated as national priorities. Many coastal States of Latin America and the Caribbean, despite their rich endowment of natural coastal and marine resources, were following a pattern of development more along the lines of land-locked countries. Implementation of chapter 17 would be the most favourable approach for ensuring social equity, which was a prerequisite for sustainable development. The different actors involved in the conservation and sustainable use of marine resources constituted a challenge to democracy-building and the participation of the different groups contemplated in section 3 "Strengthening the role of major groups" of Agenda 21. Similarly, the nature of marine areas required the State to perform an especially efficient role as trustee of common property.

16. Sustainable development of the marine environment demanded of all users of the sea an understanding of its potentialities, needs, supplies and constraints. Chapter 17 therefore called for the exchange of information through means of communication and the use of wide-ranging mechanisms for

dissemination based on formats that were simple and comprehensible for the different actors. Thus, the scientific information must be timely, readily available and presented in such a way as to be really understood and used by the multiple users. It is important for the scientific researchers, administrators and others to adopt comprehensible ways of communicating among themselves in order to ensure that their ideas were coherent. In most cases, scientific data had to be presented in "real time" in a format that facilitated decision-making. Currently, few institutions devoted to marine research in the region had the capacity to transmit scientific information in real time and in a language that could be readily understood by the public in general.

17. Chapter 17 stressed the interdependence of ocean resources and the processes and interaction between sea and land and, hence, advocated integration mechanisms for the management of coastal areas, as well as for institution-building including the contributions of the social and natural sciences.

18. Chapter 17 required the application of scientific and social disciplines, many of which lacked a sound empirical development, as was the case with environmental economics and ecological economics, which demanded new forms of communication between the world of nature and the social environment. The real value of coastal and marine resources must be incorporated in those referred to as heritage accounts, but the analytical and technical methods for conducting such assessments were still being developed. Generally, it would be necessary to design indicators for environmental sustainability of the marine and coastal environment and to improve comprehension of the economic value which could be assigned to coastal eco-systems.

19. Chapter 17 posed the challenge of finding forms of financing and introducing new schemes for economic and technical cooperation.

20. It was crucial for Governments to incorporate social and anthropological variables in the design of different strategies for implementation of chapter 17, in accordance with the guidelines set forth in Agenda 21 for the involvement of local communities in the management of different spaces and resources and the need to deepen their analysis of the prerequisites of sustainable development as an option designed to enhancing the quality of life of the population. It was also stressed that the concept of sustainable development combined different approaches as represented by the four sections of Agenda 21 and that each chapter on natural resources needed to be read in conjunction with those relating to the economic and social dimensions, the main groups and the means of implementation.

21. It was essential to continue developing proposals for the conservation and sustainable use which were considered forms of participation and recognition of local cultures, since the ecosystem approach was considered a possible starting point for reporting on the interdependence between the different components of the biosphere.

22. The treatment of issues relating to the sea required the participation of a multidisciplinary team since the environmental problem is a complex one with multiple layers of interconnectivity.

23. It was becoming necessary to adopt a strategic approach to the implementation of chapter 17 through an integrated vision of global, regional, subregional, national and local dimensions.

24. It is of vital interest for the region, to design methodological strategies for the implementation of Agenda 21 and to identify the successful experiments being conducted internationally in this regard in the short, medium and long term.

25. It was imperative to break with the traditional compartmentalization of the different sectors relating to the sea and to promote multidisciplinary and inter-sectoral integration which in turn would be reflected at the regional and international level.

26. The lack of an integrated forum to deal with international marine issues in order to consolidate the different views and experiences was viewed as a serious constraint on the incorporation of oceans in sustainable development. Similarly, it was considered appropriate, as in the case of forests, to consider the possibility of establishing an inter-governmental panel on oceans in the context of the Commission on Sustainable Development.

27. Reference was made to the special restrictions of small-island developing States and the importance of the Caribbean Sea Forum, held from 3 to 6 June 1998 in Trinidad and Tobago and which led to the adoption of the draft Action Agenda for the Sustainable Development of Caribbean Coastal and Oceanic Areas.

28. An analysis was made of the special situation of the Caribbean island States and the forms of management required given their size and proximity, as reflected in proposals such as the declaration of the Caribbean Sea as a special zone in the context of sustainable development.

29. Experts agreed that the sustainable development of small island States and, in particular, the Programme of Action for the Sustainable Development of Small Island Developing States adopted in Barbados in 1994 should continue to be a central item on the international agenda and recommended that those States should adhere to the Programme of Action as the framework for their policies on sustainable development.

30. The experts agreed to recommend strengthening the contacts and cooperation between ECLAC headquarters, ECLAC subregional headquarters for the Caribbean (Port of Spain) and the Caribbean Environment Programme of the United Nations Environment Programme (UNEP/CEP) in order to support the efforts being made to implement Chapter 17 of Agenda 21 in Latin America and the Caribbean.

31. Similarly, they underscored the importance of making progress towards a regional body of the Sub-Committee of Oceans and Coastal Areas of the Administrative Committee on Coordination (ACC), to optimize the different efforts of the United Nations System on the sustainable development of oceans and coastal areas.

Agenda item 2: The broad lines of Chapter 17 of Agenda 21

2.1 Conservation and management of marine living resources

32. For the above item, the duties of rapporteur were performed by María Bertolotti of the National Institute for Fisheries Research and Development of Argentina.

CONCLUSIONS

33. Fisheries output in Latin America had grown steadily for the ten preceding years; increased shipments coincided with a significant increase in the international trade of fisheries products. Market access resulted not only from the comparative advantages but also from energetic policies in search of international market niches. In the wake of that expansion in regional exports, barriers to international trade in fisheries products were increased.

34. It was pointed out that the main problems with resource management were generated in the low control area of river States. The task for Governments would consist in administering fisheries to achieve a total and sustainable use of resources, together with economic efficiency and an equitable distribution of social benefits.

35. Solving conflicts arising from resource allocation in free access global commons (that is those that are used by all, but which are not the private property of any) continues to raise difficulties; focusing on priority issues is also problematic. A look at the background to fisheries disputes reveals two major contributory factors. The first is the dispute for the resource itself; the second for the markets. The more trade flows increase —as occurred with the fisheries products— the more the dispute for markets intensifies.

36. There was no doubt that demand for regional fish production was growing and that had led to a steady increase in the competitiveness of regional products on international markets. That expansion had contributed to the emergence of the first barriers to some developed markets.

37. There is a real dependency on marine resources, mainly fish products, in economic and social terms by the majority of the population in the region. The capacity for renewal and permanence of such resources at appropriate levels was not fully guaranteed by the current status of knowledge in social and economic terms and, in many parts of the world, small-scale fishermen were ranked as "the poorest of the poor", a situation aggravated by an increasing over-fishing of species.

38. The legislation on control of fishing capacity had not always proved effective. The lack of monitoring and taxation practices and a lenient attitude could have contributed to over-fishing in some profitable fisheries.

39. With respect to the allocation of fishing rights, concern was expressed as to the way in which individual transferable quotas were being assigned, since that could determine the success in fisheries management and lead to an undesired denationalization of fishery resources.

40. Scientific uncertainty surrounded much of current knowledge about the sea and marine phenomena, so that it was important to develop methods that enabled them to incorporate "unknown factors" in decision-making. Moreover, it was necessary to promote criteria to establish a link between Maximum Sustainable Yields and related administrative control mechanisms.

RECOMMENDATIONS

41. Participants agreed that the main elements for sound management of fisheries and aquaculture should be an up-to-date legislation, an appropriate institutional framework, management institutions with adequate financing, high-level research centres, the preparation of national strategies and an organized fisheries sector to facilitate the necessary cooperation of all interested parties.

42. It was agreed that social equity should be understood as an instrument and one of the most important objectives of management and sustainable use of fishery resources.

43. States should take full responsibility for the conservation and management of marine living resources and for providing the financial and political support necessary for the management of their resources as well as for monitoring and controlling management measures.

44. The lack of scientific evidence should not be used as a pretext to avoid taking management decisions. The adoption of the precautionary approach must be a common practice in the decision-making process.

45. It was necessary to establish sectoral integration mechanisms. The implementation of chapter 17 would be facilitated to a great extent by the application of emerging theories and practices involving the participation of the public and non-governmental interest groups concerned with the sea. Steps should be taken to promote maximum transparency in making decisions concerning fisheries management; the business fisheries sector, academia, organizations representing fishermen and non-governmental organizations (NGOs) should have an important role in decision-making.

46. Traditional, small-scale and indigenous fishing communities must play an important part in the organization and management of coastal areas in particular with respect to fisheries.

47. The assessment of the economic value and intrinsic potential of marine resources and constant, long-term monitoring before, during and after each exploitation of resources must be a priority objective; moreover, the economic losses due to over-exploitation of resources must be properly assessed.

48. It was also stressed that over-capitalization and over-exploitation of fishing grounds must be avoided by reducing fishing capacity. Free access to fisheries had proven to be one of the fundamental causes of over-exploitation. Restricting access, either through the number of licences, fishing quotas or allocation of territorial fishing rights should be given the highest priority in organization plans.

49. Experts advocated strengthening the role of local, regional and international councils, which was crucial for the management and administration of aquatic resources.

50. The meeting also stressed the need to limit in many cases the entry of new users to specific fisheries, to reduce the fishing effort wherever possible and to encourage the granting of fishing concessions to companies and organized groups of fishermen.

51. The States of the region should exchange information on local experiments in fisheries management in areas under the control of small-scale fishing communities.

52. In setting up protected marine coastal areas, consideration should be given to the historic rights and traditional knowledge of local fishing and indigenous communities.

53. In order to develop fisheries in the region along sustainable lines, an effort should be made to incorporate value added to their products and to conduct research into new products and processes that would make it possible to make maximum use of resources (discards, by-catch and wastes) and to go beyond the stage of exporting only primary protein from their fisheries resources.

54. In order to achieve the above, the public and private sector needed to coordinate their activities in order to propose in international forums and free trade treaties the elimination of undue barriers to processed fisheries products from developing countries.

55. It was essential to monitor and assess environmental policies formulated within the framework of the World Trade Organization (WTC), the Uruguay Round of negotiations of the General Agreement on Tariffs and Trade (GATT), the Free Trade Area of the Americas (ALCA) and the Southern Common Market (Mercosur) and to study their link with global environmental agreements including the Convention on Biological Diversity, the Framework Convention on Climate Change, the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, and the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). In addition, the implementation of ISO 14000 standards, internalization of environmental costs and environmental certification should be promoted at the regional level.

2.2 Scientific marine research

56. For the above item, the duties of rapporteur were performed by Jairo Escobar R., Consultant with the Environment and Development Division of ECLAC and Advisor to the Colombian Oceanographic Commission.

CONCLUSIONS

57. In general, research relating to global change was being prioritized although little was known about changes occurring locally.

58. The region had made a major effort to ensure conservation, with reasonable expanses of territory reserved for land conservation. However, the expanses of sea set aside for coastal and marine ecosystems was still far from what was desirable.

59. Marine scientific research efforts lacked continuity, which was reflected in a lack of long-term data and information, a common problem in the region. The lack of continuity in research was attributable to lack of consistency in scientific development policies.

60. On-going monitoring of physical and chemical variables was non-existent but was an essential element of scientific research especially in coastal areas and on the high seas.

61. The economic crisis which had been affecting the region was a major obstacle to human resource training and the development of infrastructure for marine scientific research in the region.

62. The region had institutions with significant scientific research capacity. The Caribbean, for example, was one of the regions with the most laboratories per unit of area and most international agencies responsible for technical assistance for research had operated there. Paradoxically, it seemed that the most successful examples of marine scientific research in that region lacked the international technical support.

63. Most of the results of quality scientific research were published abroad partly because that practice tended to be favoured by a misguided system of research credits. Some of the issues covered in chapter 17 —especially those relating to the protection of living resources within the limits of national jurisdiction— could be handled smoothly in the region since the necessary scientific capacity existed.

64. Although the region had national scientific research programmes at different stages of development, not all the issues referred to in chapter 17 were included in such programmes. There was need, in particular, to deepen the analysis of those relating to the integrated management of coastal areas and the impact of the uncertainty relating to global climate change and the role of oceans.

65. Most of the marine scientific research was based essentially on the international scientific agenda, particularly that of the programmes of the Intergovernmental Oceanographic Commission, the United Nations Environment Programme (UNEP) and the latter's Regional Seas Programme and were often far removed from regional priorities.

66. Progress had been achieved in setting up informal networks, often on a contingency basis in research operating through modern computerized systems. However, there was still need for more formal and institutionalized mechanisms for consultation and coordination at the thematic level.

67. There was no technical scientific proposal at the regional level for tapping into traditional knowledge of living marine resources and promoting the incorporation of such knowledge in the organization systems.

68. There were huge gaps in research in some of the marine sciences; for example, there was a lack of professionals in the area of systematization and taxonomy to document biological diversity; there were very few professionals in touch with techniques and methods for integrated management of living marine resources, especially in areas such as spatial technology, remote sensors and geographic information systems. Experiments on use of information relating to the heat given off by the oceans as a means of identifying biological productivity and contamination in the region were very rare.

69. There was very little experience in the region in the area of marine meteorology and in the application of operative oceanography for the transmission of information in "real time".

70. Priority had been given within the region to short-term research in coastal areas and in areas falling under national jurisdiction. Medium- and long-term research efforts on the sea-bed and the high seas were few and far-between.

71. In very few cases were there any time-series tradition which could be used for comparative purposes, on-going monitoring was unheard of in the region and there was no sustained effort owing to

the lack of perseverance with scientific development. Moreover, in cases where there such time series did exist, the processing capacity was inadequate.

72. As with other areas of knowledge, marine scientific research had suffered from the impact of economic reforms, privatizations and deregulation.

73. Those factors also had an impact on education with training geared to the market rather than to the scientific grounding required for crucial decisions that would have a bearing on sustainable development.

74. Comparing species in the region was becoming difficult because the preference was given to those of greater international interest and links between scientists were limited.

75. Experts agreed that the generation of basic information was severely constrained, in some cases, by the lack of time series and ignorance of the environment's capacity to absorb changes and, in others, by failure to assess the extent of habitat destruction.

76. Moreover, the information format was not clear or accessible. Problems arose for example with the use of certain basic reagents such as organic solvents, which, as precursors to alcaloids, were subject to strict controls.

77. Furthermore, the tendency was to use criteria that were effective for management but not for research.

78. Lack of knowledge of species did not make it possible to dictate effective standards or analyse the relevance of measurements. Moreover, it was difficult to express scientific evidence in economic and social terms.

79. Research for different reasons tended to be short-termist and often was conditional on financial assistance on which it was based.

80. The lack of regulation of the activity and lack of protection on the part of scientists were obstacles to chances of greater organization and coordination of actions.

81. Moreover, taxation policies which slapped what amounted virtually to luxury taxes on research teams were a constant hindrance to research work; the same applied to the indiscriminate prohibition of certain fishing methods which could be acceptable for exploratory activities.

82. Intellectual property rights over the result of research were considered to be an important restriction on the dissemination of scientific knowledge.

83. The fact that a great deal of scientific research was being exported and published in journals abroad explained the lack of a regional ambit for discussion.

84. Similarly, the absence of information channels for dissemination of a regional ocean sciences bulletin was viewed as an obstacle to scientists' committing to more collective interests.

85. The incongruity between the government structure and the scientific structure had led to a compartmentalization that was incompatible with the desired integrated approach; in many cases, political projects for regional cooperation produced fragmentary reports of different kinds and scope which did little to stimulate the global approach which should enrich scientific knowledge.

RECOMMENDATIONS

86. Efforts should be made to ensure the participation of and the interrelationship between the different scientific disciplines linked to the management of marine and coastal resources.

87. Support should be given for lines of research designed to improve knowledge of the system to which commercially valuable species belonged.

88. Support should be given for lines of research that incorporate empirical knowledge and analyse criteria for use of natural resources by local communities.

89. Governments in the region should pay more attention to interdisciplinary research into the traditional knowledge of biodiversity among local communities.

90. Studies should be promoted for establishing the biological importance (or the importance of biological processes) in different areas of distribution of straddling species.

91. Research designed to define criteria for the control of invading species should be promoted and encouraged.

92. The study of global change, albeit a justifiable one, should not be allowed to take precedence over close monitoring of local change.

93. Progress towards an operational oceanography was necessary to take into account the demands of sustainable development in coastal and marine areas.

94. The notion of scientific research should incorporate both formal and traditional knowledge and should integrate visions of the different disciplines, that is, of the classic as well as the social sciences.

95. Standardized criteria should be used for the design of indicators of sustainable development.

96. Financial support should be provided for regional projects which take into account the interaction of ecosystems and the lack of barriers between zoological zones.

97. The goal of real time responses should be pursued to take into account the decision-making needs of the sector without thwarting the medium- and long-term objective of scientific marine research. ACQUARAP was one of the initiatives in support of such efforts.

98. In the effort to translate the scientific data obtained into economic and social terms, scientists should endeavour to adapt their language to the realities of decision-makers and adjust to the requirements of administrative bodies.

99. Governments should make demands on their scientific agencies and formulate concrete requests and questions, bearing in mind that economic incentives often generate a better response than specific requests.

100. Initiatives for the exchange of scientists as well as the establishment of networks of interest to scientists from the different areas increasing in this respect the potential for efforts such as the Latin American Association of Marine Research Scientists (ALICMAR).

2.3 The conservation and sustainable use of coastal and marine biodiversity

101. The duties of rapporteur for this item were performed by Arthur A. Gray, Regional Economic Advisor of the ECLAC subregional headquarters for the Caribbean in Port of Spain.

102. Under this item, it was considered important to take note of the conclusions and recommendations of the Regional Workshop on Conservation and Sustainable Use of Coastal and Marine Biodiversity organized jointly by ECLAC, FAO, the Brazilian Environment and Renewable Resources Institute (IBAMA) and the North-East Fisheries Extension Research Centre (CEPENE) and held from 6 to 11 October 1996 in Tamandaré, State of Pernambuco, Brazil.

CONCLUSIONS AND RECOMMENDATIONS

103. Scientific and technical experts of Latin America and the Caribbean should be encouraged to participate in the working group of the Scientific Committee on Problems of the Environment (SCOPE), which was commissioned to implement chapter 40 of Agenda 21 on "Information for decision-making" relating to marine and coastal matters.

104. The term biodiversity should not be construed as merely a list of species; the definition contained in the Convention on Biodiversity was considered a good starting point.

105. As indicated in relation to marine scientific research, attention was drawn to the dire lack of taxonomists due to university career orientation and the loss of museum conservation capacity.

106. A thorough understanding of the resource was essential in order to take into account the relationship between ecosystems, bearing in mind the constraints that protected areas can have with respect to the efficient protection of biodiversity. In many cases, management plans of such areas failed to take into account biological diversity.

107. There was a tendency to protect a particular target species without taking into account the relationship with other species or the fact that human populations were dependent on it. The State had a vital role to play as regulatory agent for the different actions relating to the conservation and sustainable use of biodiversity and the performance of local governments was very important. The State must, from the outset, exercise its power to manage spaces and resources before proceeding to allocate them to specific uses.

108. In order to facilitate that commitment by the State, decision-makers should be invited more frequently to attend technical meetings.

109. Participants supported the need to apply appropriate measures in order to focus on the elements of the diagnostic analysis relating to biodiversity in the Caribbean:

(a) The lack or scarcity of stocks of biological resources;

(b) The lack or scarcity of integrated strategies for the management of land and marine biodiversity;

(c) The low level of socio-economic and biological research into the most important species.

(d) Escalating degradation and destruction of habitats.

(e) The unsustainable exploitation of commercially valuable indigenous species.

(f) The absence or scarcity of safeguards to protect against loss of rights relating to genetic resources.

110. Most Caribbean countries had ratified the Convention on Biological Diversity. However, the majority had not established the mechanisms suggested for the protection of local biological resources. One noteworthy experience was the National Plan of Action adopted by Guyana for its forests and National Strategy and Plan of Action. Those initiatives, together with the Iwokrama project were a clear statement of its commitment to dedicating areas of great biological diversity to conservation and as a laboratory for the protection of biodiversity in the hemisphere. The objective of the Iwokrama project was the management of 360,000 hectares of tropical forest for the conservation and sustainable and equitable use of forest resources so as to provide ecological, economic and social benefits to the people of Guyana and the world in general, based on research, training and development of relevant technologies.

111. The consensus was that countries should proceed with the ratification of the protocol to the Cartagena Convention on Specially Protected Areas and Wildlife (SPAW) as an efficient tool for the conservation and sustainable use of biodiversity in the Caribbean Sea.

112. The following are the principal recommendations which emerged from the Regional Workshop on the Conservation and Sustainable Use of Coastal and Marine Biodiversity held in Tamandaré, State of Pernambuco, Brazil from 6 to 11 October 1996.

- Even though the Conference of the Parties to the Convention on Biological Diversity constitutes an international forum directed towards global actions, it must be borne in mind that the challenges imposed by the application of the Convention on Coastal and Marine Ecosystems call for a regional approach, which is consistent with the concern voiced at the second meeting of the Subsidiary Body on Scientific, Technical and Technological Advice insofar as it stresses the need, as a matter of priority, for a regional ecosystem-based approach.

- It must be recalled that biodiversity, in the context of the Convention on Biological Diversity, goes far beyond the identification of species, since the components of biodiversity that may be used in a

sustainable manner are placed in the service of the social and economic well-being of human beings. Hence, it is important to recognize taxonomic nomenclature as one area which needs to be strengthened. It should be borne in mind that such nomenclatures enhance conservation, but it is also necessary to develop other lines of research that are equally important and equally high on the scale of priorities, for example, the economic assessment of biodiversity and the appropriate technologies, which constitute the scientific basis for sustainable use, one of the pillars on which the Convention is based.

- The conservation and sustainable use of coastal and marine biodiversity represent a good opportunity for establishing real links, within the framework of the Convention on Biological Diversity, between conservation and use of genetic resources and central aspects of economic flows.

- Within the framework of the Convention on Biological Diversity, consideration should therefore be given to the sustainable use of resources in coastal and marine areas with due emphasis on fisheries resources and reference to the inherent economic, social and cultural factors, as a way of enhancing biodiversity and the benefits to be derived from its sustainable development; this implies allocation of financial resources proportionate to the extent of such biodiversity.

- Financial mechanisms such as the Global Environment Facility (GEF) should be support instruments for mitigating the adverse impact of various human activities on coastal and marine biodiversity and should also serve as financial support for setting up systems for the management and use of coastal and marine resources.

- The economies of Latin America and the Caribbean are heavily dependent on resource-based activities and it is therefore vital for them to increase their knowledge to ensure the conservation and sustainable use of such resources and to derive a greater share of the benefits of the Convention.

- States, in accordance with their own national policies and within the limits of their available resources, have made progress in implementing some basic actions for conservation and sustainable development; however, it is becoming necessary to create areas of regional and international cooperation to optimize the use of available technical and financial assistance, with reference to the specific requirements for application of the Convention to coastal and marine ecosystems.

- One noteworthy feature of the region is the fact that the priority ecosystems for the conservation and sustainable use of coastal and marine biodiversity referred to in Chapter 17 of Agenda 21 are well distributed over the territory with many of them located in different countries.

- Biodiversity must be understood as a dynamic system of interrelationships determined not only by human activities but also by natural phenomena which have a significant effect on their abundance and distribution. International cooperation is needed to take the appropriate protective or palliative action.

- The countries of the region were experiencing economic constraints and lacked the scientific foundation necessary for adoption of national strategies for sustainable use of biodiversity and proper management. It was therefore not feasible for them to commit themselves to the complex task of applying the Convention on Biological Diversity to coastal and marine ecosystems, especially in view of the gaps in their scientific knowledge in that area.

- The huge gaps in information on coastal and marine biodiversity demanded such an enormous effort on the part of countries that the only efficient approach was to adopt mechanisms for regional cooperation involving a large number of countries in order to ensure a multiplier effect.

- The regional or subregional legal instruments such as the protocols to the UNEP Regional Seas Programmes in Latin America and the Caribbean approach conservation of coastal and marine biodiversity from the point of view of protected areas and species. Since this is an important contribution, those aspects relating to other areas of the Convention should be tackled through other efficient mechanisms such as programmes of action and operational strategies which are the subject of specific cooperation programmes so as not to impair the achievement of such agreements by subjecting them to further processes of negotiation which impede their entry into force and operational capacity.

- In order to maintain the appropriate scientific and technical support of the work of the Convention on Biological Diversity, both the Subsidiary Body on Scientific, Technical and Technological Advice and the future group of experts on coastal and marine biodiversity must be composed of members whose qualifications and number are in keeping with the technical functions of those bodies.

- It is imperative for Latin America and the Caribbean to step up efforts to rehabilitate degraded ecosystems by encouraging the participation of local communities which are dependent on such resources. In this respect, some case studies for diverse ecosystem complexes in the region could appropriately be identified, where subregional or regional multiplier pilot projects might be undertaken with a broad training component.

- As indicated above, the preparation of regional ecosystem-based guidelines will give a strong boost to regional action which should receive full support from the Secretariat of the Convention. However, it is important to bear in mind that the prioritization of ecosystems in terms of the conservation and sustainable use of coastal and marine biodiversity contained in particular in chapter 17 of Agenda 21 demands that physical limits be set to separate the strict conservation sectors from those suitable for multiple uses. Moreover, such decisions also require strong scientific support to enable them to evaluate the potential of such areas.

- In the same connection, the identification of vulnerable ecosystems should not detract from the need to analyse carefully the relationship between different ecosystems (for example, the links between the coastal vegetation cover and the health of coral reefs) or the integrated approach to the conservation and sustainable use of coastal and marine biodiversity, which is particularly relevant given the fluid nature of the marine environment.

- Although the actions prioritized in decision II/10 of the Convention on Biological Diversity are important for the consideration of coastal and marine biodiversity, it is important for Latin America and the Caribbean to read them in the light of the social and economic reality of the region and its most pressing challenges in the area of sustainable development.

- In this regard, although the integrated management and sustainable development of coastal and marine areas, which, as stated in chapter 17 of Agenda 21, includes the exclusive economic zones), appears to be a fundamental tool, its real effectiveness depends on the content given to these concepts; indeed, they should not be considered as autonomous, self-sufficient entities distinct from the national efforts of countries to achieve sustainable development.

- On the other hand, in seeking guidelines for advancing towards these strategies, one must take into account the growing demand for analysis of the conservation and sustainable use of coastal and marine biodiversity in various negotiating forums on the ocean and ocean resources, including forums on land-based sources of marine pollution, fishing on the high seas or the exploration and exploitation of the international sea bed.

- In this context, it is also indispensable to analyse the effect of measures for protection of biodiversity in view of the development of mariculture and the possibility of producing modified organisms while taking into account the considerable contribution that this can make to food security in the region; an analysis of this kind should include the development of regional guidelines for ecosystem-based management.

- The multilateral, international and regional technical and financial assistance organizations should factor into their guidelines for the design of projects and analytical methodologies the possible impact of such initiatives on the conservation and sustainable use of coastal and marine biodiversity.

- The success of a regional strategy for cooperation directed towards the information, protection and equitable and sustainable use of coastal and marine biodiversity will require not only a commitment by countries of the region but also support and technical assistance from relevant international and regional organizations so that their full participation is considered highly desirable.

- It is crucial to pursue regional consultations for preparation of a technical cooperation project which deals with the priorities referred to earlier and which can be subjected to international as well as regional sources of funding. Such a project could be based on the following basic guidelines:

(a) Emphasis on the sustainable long-term use of resources as a means of systemic integration of conservation of biodiversity, equitable distribution of their benefits and the requirements of future generations;

(b) Respect for specific subregional and national characteristics;

(c) Realization of a major effort for increasing knowledge of the coastal and marine biodiversity including the respective habitats and the impact caused by various human activities and global environmental phenomena;

(d) Expansion of specially protected areas, through the adoption of conservation strategies which reconcile the preservation of species and their habitats with the economic, social and cultural needs of traditional peoples;

(e) Establishment of information mechanisms on coastal and marine biodiversity at the regional level;

(f) Fostering the development of methodologies for evaluation and systematic monitoring of biodiversity;

(g) Fostering the development, transfer and adoption of alternative practices and technologies for the sustainable use of the resources of coastal and marine biodiversity;

(h) Fostering the development of methods and practices for forecasting impacts on coastal and marine biodiversity;

(i) Fostering new methods of economic valuation of coastal and marine biodiversity.

2.4 The integrated management of coastal and marine areas

113. For this item, the duties of rapporteur were performed by Roberto de Andrade, Associate Research Officer of the Universidad del Mar of Chile.

CONCLUSIONS

114. The initial analysis of the consultancy document is summed up in the following paragraphs.

115. Absence of an appropriate political and legal framework for supporting the different actions required for the integrated management and sustainable development of coastal areas except in a few countries. This absence seems to be the result of State policy. Indeed, this is partly due to a high concentration of State attention towards "land ecosystems" reflected in a generalized tendency among countries of the region to follow a land-based style of development. As a result of this practice, it is difficult to do away with the isolated sectoral approach, promote integration and further the establishment of mechanisms for integration and participation in the integrated management of coastal areas.

116. Prevailing conditions make it difficult to achieve sectoral integration, especially with respect to fisheries, tourism and shipping. The responsibilities for allocation of resources to the coast are not yet well coordinated and there are few examples of incentives that guide the involvement of the private sector in the sustainable development of coastal resources.

117. In many of the countries of the region, the documentation relating to coastal and marine ecosystems was in the descriptive phase and at different levels of development. Currently, such documentation was not at a stage where it could be usefully or effectively incorporated into a programme for integrated management. For example, information on the extent of biological diversity in coastal ecosystems was incomplete. The observation of ecosystems was too recent to provide an understanding of changes over time and to permit forecasts of long-term changes and the impact of environmental fluctuations; in particular, one would have to have a scale for measuring the destruction of habitat and to know which natural processes operated to maintain the integrity of ecosystems.

118. The institutional framework remained inadequate, especially for the resolution of conflicts and for mitigating the adverse effects of development over coastal areas; some areas of the regional coastline attested to the "cumulative effects" of environmental damage.

119. Few countries had attempted to establish, within their administrative apparatus, institutions with responsibility for the integrated management of coastal areas; there were difficulties in establishing social and political agreements for the creation of spaces and processes for the full participation of the different important actors involved in the management of such areas.

120. There was an absence of inter-sectoral and inter-disciplinary curricula for developing the integrated management and sustainable use of coastal areas in the region. A number of training courses had already taken place in the region which emphasized particular aspects of that management. There were few environmental economists and few schools provided relevant training courses and generally speaking, that discipline remained an academic concern in many cases.

121. There were still difficulties in resolving conflicts in the allocation of resources referred to as freely accessible common property and for focusing on priority problems.

122. Recent examples of institutional reforms for overcoming problems of coordination and implementation of management of coastal and marine areas were of very limited effect, and above all did not seem to find any echo with senior government decision-makers; moreover, they were not financially viable in the long term and were highly vulnerable to political pressures.

123. The professional skills required for managing such areas were still lacking. The objectives were still not fully understood.

124. Integrated management at the regional and subregional levels was still lacking and existing subregional experiences approached the problem from very different perspectives; for example, for the Pacific south-east subregion, the integrated approach was construed as a methodological approach, based on a casuistry oriented to the development of a common methodology. Other subregional experiences approached the management of coastal areas with an approach to the protection of particular resources or ecosystems, resulting in a complex mosaic of experiences that did not necessarily coincide with the development objectives of the countries where they occurred, as was the case with various Central American programmes.

125. There are still traditional attitudes oriented towards increasing the output of coastal resources based on approaches to coastal administration that focused on investment in coastal infrastructure.

126. There were still difficulties in integrating social and economic disciplines with natural disciplines since there were few interdisciplinary groups and those that did exist were generally concentrated in the academic sector and had little influence in government circles. Some groups and authors also had difficulty in grasping the nature of the problems faced in coastal areas, owing to the use of different forms of expression which meant that not all authors were properly informed, understood or trained to participate especially in standardization of criteria. There were still different interpretations as to the magnitude and scope of the problems involved. Hence the need for a "common language".

127. There was still a need to identify and evaluate environment indicators for the integrated management of coastal zones and to develop apt methods and techniques for economic valuation of coastal resources and spaces.

128. Lack of international technical assistance and insufficient resources were persistent problems. The serious concerns which had become the focus of the region's efforts and resources meant that integrated management was given a low priority on the agenda of countries of the region.

129. Coastal areas were not autonomous or self-sufficient entities, nor was it possible to analyse them independently of the general policies on natural resources, environmental preservation or sustainable development.

130. The physical, political, legal or administrative constraints were relative.

131. It was important to bear in mind that geographic space interacted with river basins, exclusive economic zones and major marine ecosystems.

132. Emphasis was placed on the need to coordinate the actions of international, national, local, regional and non-governmental bodies, which carried out coastal management activities. It was appropriate to promote a directory of organizations at all levels and plans, programmes, activities and tasks that were being carried out.

133. The region still lacked the institutional capacity especially for conflict resolution and for mitigating the adverse effects of development on coastal areas; some stretches of the region's coast showed signs of environmental degradation, due to cumulative effects.

134. As regards the specific situation of the Caribbean, an initial diagnostic analysis pointed to the following:

(a) A lack of or insufficient integrated planning and management in coastal areas;

(b) The absence of an appropriate legal framework for protection of coastal and marine resources;

(c) The uncontrolled and unplanned development in key areas, including wetlands and active beach areas;

(d) Unsustainable drift-net fishing practised close to the coast;

(e) Illegal fishing in territorial waters and in the exclusive economic zone;

(f) Continuous destruction of coral reefs through tourism activities and fisheries;

(g) Lack of appropriate management of protected marine areas;

(h) Inadequate institutional capacity for the monitoring and implementation of the provisions of the law.

135. The SPAW programme had developed guidelines for the establishment and management of protected areas and also a very comprehensive programme for training of teaching staff. That programme also had provided support for management of ecosystems and coastal and marine species such as turtles, manatees and migratory birds.

RECOMMENDATIONS

136. A coastal management policy should be a tool for incorporating the management of such ecosystems in the country's overall strategy for sustainable development.

137. It should not be viewed as an isolated or air-tight instrument or as a category unrelated to the conservation and sustainable use of natural resources for enhancing the quality of life of the population.

138. The comparative models on integrated management of coastal areas were valuable and undoubtedly enriching examples, but could not be touted as applicable *strictu sensu* to different realities unless first evaluated against an endogenous proposal to reveal their limitations.

139. Coastal and marine ecosystems were common environmental property and the prime concern in managing them should be the public interest, equitable use and enjoyment, and the search for long-term sustainability.

140. The mechanisms for participation, coordination, allocation of uses and conflict resolution must be subordinate, in the final analysis, to the decision-making level which was in a position to safeguard the public interest and maximize efforts for the benefit of local communities.

141. It was essential to recognize the State's incontestable role in promoting the common good in the use of coastal and marine resources and the importance of the role of scientific knowledge and the precautionary approach.

142. It should be recalled that management of the oceans is part and parcel of efforts by the sector to achieve a more sustainable form of economic development and human development.

143. Coastal areas contain diverse, productive habitats which are important for human settlements, development and local subsistence practices. Management of coastal and marine areas should contribute to a better quality of life for coastal communities and for the future generations who will live in the region, based on the sustainable use of living coastal resources as a genuine source of economic income. Furthermore, it must constitute a practical and conceptual tool for the administrators of renewable natural resources to enable them to ensure that the use of such resources does not operate to the detriment of coastal biodiversity, the economic activities dependent on those resources and the current and future needs of a developing community.

144. It should be understood that the specificity of coastal areas seemed to arise from the exceptional combination of a series of physical and human factors; as a zone of contact between the lithosphere, the hydrosphere and the atmosphere, coastal areas are a medium of interchange, interaction and activity in which the sea plays a dominant role. Such areas had a rich biodiversity, which was threatened or impaired by the destruction of natural habitats, over-exploitation of species, pollution, the expansion of agricultural frontiers, spontaneous colonization and encroachment by the city on the shore.

145. Since integrated management implies a systemic approach, the problems that need to be tackled include: the conception of the ecosystem; delimitation of its boundaries; determination of its carrying

capacity; the effective incorporation of man as another element in the system, with his socio-economic characteristics and individualization of all the actors involved.

146. Training for sustainable development must not only be part of formal education but also should be carried out at the level of individual and institutional decision-makers. Moreover, there is clearly a need to take into account administrative restrictions and constraints and the respective jurisdictions in relation to the reality of the ecosystem, in particular in terms of environmental impact assessment. Public awareness campaigns must be undertaken by ensuring an on-going dialogue between environmental organizations and private actors, by enhancing their appreciation of the value of natural resources, the demands of sustainability and possible impacts.

147. Planning should be based on actual inventories; assessment of environmental supply and its absorption capacity; environmental appreciation based not only on economic considerations but also on respect for the value of each components as an indispensable part of the natural processes maintained by the ecosystems; recognizing that the environment is a system within which we are immersed —the only one capable of supporting human life within certain limits and which, as such, deserves our respect.

148. The Global Programme of Action for the Protection of the Marine Environment from Land-based Activities was recognized as having an important role to play in the integrated management of coastal areas.

2.5 Tourism in coastal and marine areas

149. The duties of rapporteur for this item were performed by Arthur A. Gray, Regional Economic Adviser of the ECLAC subregional headquarters in Port of Spain. Participants received a written contribution entitled "Exchange of experiences for the development of sustainable tourism in coastal areas" by Mr. Eugenio Yunis, Director of the Environment, Planning and Finance of the World Tourism Organization.

CONCLUSIONS

150. The conservation and sustainable use of biodiversity is not just a matter of ecological interrelationships; the socio-economic variable is another important consideration and, in this regard, education is vital. Training for sustainable development both of tourism and of the natural coastal and marine environment must not only be part of formal education - which is a way of incorporating the issue of the people's culture - but must also be provided to the individuals and organizations responsible for decision-making. In this regard, the "halls of nature" and "marine conservatories", which promote conservation actions by providing information on species and ecosystems, are of immense value.

151. Tourism on its own is not a tool for economic and social development. It must necessarily be part of a larger strategy for sustainable development which takes adequately into account the aspirations of local communities .

152. Real estate growth is not synonymous with development, since the latter corresponds to a specific policy based, among other things, on scientific evidence of the carrying capacity of ecosystems and social impact.

153. In recent years, various countries of the region have been developing large-scale infrastructural projects including hotel construction, cruise ships facilities, airport construction or expansion and upgrading of tourist sites. Plans for the development of tourism with greater emphasis on ecotourism have been made or are underway.

154. Reference was also made to the contribution to be made by the Regional Seas Programme to the Governing Council of the United Nations Environment Programme on tourism mechanisms and projects.

155. In many cases, it is difficult to calculate the carrying capacity, since much is still unknown about ecosystems and a number of factors are beyond any control, for example the observation practices in coral reefs for example.

156. In terms of the experience of the Wider Caribbean, a diagnostic analysis was made of the region's priority concerns, namely:

(a) Lack of information on the financial as well as environmental implications of tourism projects in the Wider Caribbean.

(b) Lack of efficient mechanisms for controlling the negative effects of tourism development.

(c) Lack of marketing support for tourism-oriented micro enterprises.

(d) Absence of significant links with other sectors of the economy.

(e) The underdeveloped state of specialized markets (the nickel market), e.g. ecotourism.

(f) Lack of financial mechanisms and incentives in support of ecotourism initiatives.

(g) Absence of information on the carrying capacity as a tool for management of natural resources.

157. An analysis was also made of the different initiatives taken under the Caribbean Environment Programme to curb the negative impact of tourism and promote technological upgrade packages for use in the hotel industry, in particular, with respect to waste management. Similarly, the different schemes under the Caribbean Environment Programme including the Marine Coastal Information System; the Protocol concerning Specially Protected Areas and Wildlife to the Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region (SPAW protocol) and the manuals on integrated management of coastal and marine areas. Energy conservation and rehabilitation of dunes are also part of a scheme to enhance environmental sustainability in the area of tourism management.

RECOMMENDATIONS

158. Care should be exercised in treating tourism as one of the elements of integrated coastal management.

159. In developing tourism development policies, it is important to weigh carefully the negative implications of lack of infrastructure for waste treatment and disposal.

160. As occurs in the different resource-based services, it is indispensable to analyse the State's regulatory capacity to allow private individuals access to activities that affect the sustainable use of coastal and marine biodiversity. Such regulatory frameworks must be consistent with the range of the natural unit which is subject to regulation, separate from the particular jurisdiction and regulations which often relate to traditional standards that have been ruled out by scientific evidence. In this respect, it is worth comparing experiences obtained with some specific ecosystems such as mangroves, wetlands and sandbars where the protected ecosystem requirements.

161. One of the legal lacunae in terms of regulation of the use of protected coastal and marine areas is the absence of guidelines for subaquatic activities; this means that the ecosystem is exposed to the risks caused by those who practise without having sufficient knowledge or without using the most appropriate techniques. It is indispensable to make some progress in terms of regulations and activities for the dissemination and training in this area by raising awareness among international diving organizations and associations.

162. It is necessary to direct tourism activities towards the objectives of sustainable development, by ensuring that so-called ecotourism both within and outside of protected marine and coastal areas is governed by an appropriate system that respects social and cultural values while generating appropriate alternatives sources of income for local communities.

163. In addition to catering for full participation by communities that exercise their activities in the area, ecotourism activities in coastal and marine areas must be part of a wider context encompassing activities in the hinterland through integrated rural tourism strategies and agro-tourism experiments for the advancement of local communities and the revival of depressed localities.

164. It is important to promote tourism services in the region —in particular at the level of employer organizations or labour unions of the tourist sector with control over coastal areas— to incorporate self-regulatory mechanisms which ensure that tourism development in the area is carried out within sustainable parameters. The implementation of this type of initiative should help to boost the image of some places and, as such, to promote them as tourist destinations which can offer a particular level or standard of environmental quality, in this case, certified by the private sector.

165. Similarly, this attempt to increase awareness should be undertaken with private tourism agents to ensure an on-going dialogue between environmental organizations and private actors to sensitize them to the value of natural resources, the demands of sustainability and the possible impact of uncontrolled tourist activity; in turn, they will be expected to pass on this information to the respective users of the services.

166. It is important to discourage so-called "adventure tourism" if this implies damage to the environment.

167. It is necessary to carry out environmental impact assessments of tourism-related projects (hotels, ports, tourist sites, etc.) to ensure that at least some of the possible negative impacts may be identified and remedial action taken.

168. Tourism should be a function not merely of the number of beds or the carrying capacity of the ecosystem, but of the cultural impact and the need to preserve local customs and practices.

169. It was considered fundamental to cater for the recreational needs of the local population as a priority activity when planning tourist sites or facilities.

170. The protection of common property is a central element in the definition of the protection of the character of the public space of places such as beaches where the State must guarantee equal access and enjoyment.

171. It is imperative to study tourist patterns which imply greater income for local communities and have a more positive influence on their living conditions since, usually, mass tourism organized by international operators generate very little benefit for local actors.

2.6 The uncertainties in management of the marine environment

172. For this item, the duties of rapporteur were undertaken by Jairo Escobar R., Consultant in the Environment and Development Division of ECLAC and advisor to the Colombian Oceanographic Commission.

RECOMMENDATIONS

173. As in the other areas relating to marine scientific research, the interaction between scientists and decision-makers was considered fundamental both in areas of evaluation and management and in specific sectors (fisheries, agriculture, tourism, infrastructure).

174. It was agreed that sustainable development programmes in countries of the region should incorporate strategies for preventing, anticipating and minimizing damage, with emphasis on the role that ECLAC can assume in this regard.

175. It was pointed out that the climate was the main environmental factor in the coastal and marine environment and that emphasis should be placed on weather forecasts and the analysis of biological response capacity, as well as on improvement of the network of oceanic, biological and meteorological information on ocean regions and coastal areas of Latin America and the Caribbean.

176. Integrated strategies for identifying potential positive effects and reinforcing scientific investigation should be defined in order to incorporate weather forecasting; the results could be used to investigate damage and assess economic implications.

177. International scientific cooperation and technology must be intensified through multidisciplinary projects that enable us to increase the suitability of the urban infrastructure and agricultural areas to mitigate the negative impact of phenomena such as El Niño.

178. It is necessary to develop capacities in monitoring, management, processing, use and interpretation of information in weather forecasting for early warning and prevention of natural disasters and for the development of regional models that link scientific factors with social and economic factors.

179. Although the region has a wealth of experience in monitoring and forecasting of weather patterns associated with el Niño, basically, at the level of the Regional Study on the El Niño Phenomenon carried out by the Permanent South Pacific Commission (CPPS), there is still need to establish the correlation scientifically and technologically and to coordinate the different decision-making levels involved in guaranteeing an appropriate planning for preventing the negative impacts of the phenomenon.

180. There is an important scientific record of oceanographic and meteorological phenomena and variations in fish stocks in areas close to the coast, which suggests the need to support and collect information relating to the El Niño phenomenon and to improve the existing monitoring of the Regional Climatic System and seasonal and interannual time scale forecasting.

181. It is also considered important to create and implement new climatic early-warning systems at the regional and subregional level.

182. The role of the oceans as sinks of greenhouse gases should be placed in a regional perspective through a programme tailored to the situation of Latin America and the Caribbean.

183. A dialogue is being initiated between the proponents of scientific and socio-economic approaches to climatic phenomena but it is essential to create appropriate forums to stimulate them in order to pose the main problems and responses that the scientific community can provide in the search for solutions.

2.7 International cooperation

184. For the above item, the duties of rapporteur were assigned to Judith Musso of the Office of the General Director for Professional Development and International Relations in the Ministry of the Environment and Renewable Natural Resources of Venezuela.

RECOMMENDATIONS

185. An integrated global forum on marine issues to ensure complementarity between the different approaches to sustainable development.

186. On the other hand, it is essential to ensure adequate participation by Latin America and the Caribbean at the different international forums on the sea and marine resources and to guarantee the availability of resources for this purpose.

187. Funding by the Global Environment Fund (GEF) for the implementation of agenda 21 in countries of the region should be of benefit to integrated projects with various ecosystems, with strong local participation and not merely lists of species and the creation of national parks.

188. It is important that the evaluation of medium-sized GEF projects with a strong local component are flexible insofar as they do not insist only on projects with a global impact.

189. It is important to promote the exchange of findings on successful GEF experiments to ensure the dissemination and multiplication of fruitful experiment such as those relating to Management of the Patagonian Coastal Zone and the Sabana Camaguey Coastal Ecosystem Project.

190. There was also concern that at the last meeting of the relevant bodies of the Global Environment Fund for the allocation of resources, none of the oceans or seas in the region was considered a priority for the funding of projects.

191. The experts urged ECLAC to take the necessary steps to continue convening regional meetings of experts prior to the future sessions of the Commission on Sustainable Development.

Agenda item 3: Preparation of a regional input for the seventh session of the Commission on Sustainable Development

192. The experts approved the draft Preliminary Report presented by the Technical Secretariat and agreed that, by April 1999, relevant amendments would be made to a technical input to be submitted to the Commission on Sustainable Development.

Annex I

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Annex II

PROGRAMME

30 November

Morning session
9 am - 2.30 pm.

Registration of participants

Agenda item 1: The seventh session of the Commission on Sustainable Development and implementation of chapter 17 of Agenda 21

Oceans in the work of the Commission on Sustainable Development of the United Nations. Introductory presentation: Carmen Artigas, Environment and Development Division of ECLAC.

Implementation of chapter 17 of Agenda 21: a regional perspective, Jairo Escobar, Consultant, Environment and Development Division of ECLAC.

Comments concerning the National perspective: Julio A. Baisre (Cuba); Antonio Carlos Diegues (Brazil); Mario Lara (Mexico); Horacio Ocariz (Argentina).

Discussion on conclusions and recommendations for agenda item 1.

Afternoon session
2.30 pm. - 5.45 pm.

The experience of the Caribbean Island States with the regional regime of ocean management and the Programme of Action for the sustainable development of Small Island Developing States, Arthur Gray, Senior Regional Advisor on Economic Issues, ECLAC subregional headquarters for the Caribbean, Port of Spain.

Agenda item 2: The main issues of chapter 17 of Agenda 21

2.1 The conservation and management of living marine resources
The conservation and sustainable use of living resources with reference to chapter 17 of Agenda 21. A perspective based on the Cuban experience: Julio A. Baisre, Ministry of Fisheries, Cuba.

Oceans: Zones of conflict for fishery activity, Roberto de Andrade, Consultant, Universidad del Mar.
Social equity as an instrument for the conservation and sustainable use of fishery resources in Latin America: Case studies, Antonio Carlos Diegues, Wetlands Conservation Centre, University of São Paulo.

1 December

Morning session
9 am. - 2.30 pm.

Status of Argentine marine resources: Oscar H. Padin, Office of Fishery and Aquaculture Resources, in the Ministry of Natural Resources and Sustainable Development.

Conservation and management of living marine resources with respect to regional cooperation in fisheries and aquaculture: Andrés Mena-Millar, Regional Fishery Officer, FAO.

Discussion on the conclusions and recommendations for this agenda item.

2.2 Marine scientific research

The challenges of marine scientific research in the region: Pablo Penchaszadeh, Vice-Chairman, Latin American Association of Marine Research Scientists (ALICMAR).

National Marine Scientific Research Efforts: Jairo Escobar, ECLAC Consultant and Advisor to the Colombian Oceanographic Commission.

Public/private collaboration in marine scientific research: Tomás Fonseca, Aquambiente, Chile.

Discussion on the conclusions and recommendations for this agenda item.

Afternoon session
2.30 pm. - 6 pm.

2.3 The conservation and sustainable use of coastal and marine biodiversity

Biodiversity in marine and coastal environments: the Latin American and Caribbean perspective: Pablo Penchaszadeh, Universidad Simón Bolívar, Caracas, Venezuela.

The conservation and sustainable use of coastal and marine biodiversity in Mexico: Mario Lara, Parque Nacional Isla Contoy, Cancún, México.

Summary report on the execution of the Caribbean Environment Programme: Nelson Andrade, Regional Coordinating Unit, UNEP/CEP, Kingston, Jamaica.

Discussion on conclusions and recommendations on this agenda item.

2 December

Morning session
9 am. - 2.30 pm.

2.4 Integrated management of coastal and marine areas

Integrated management of the Patagonian coastal area: Horacio Ocariz, Fundación Patagonia Natural, Puerto Mading, Chubut, Argentina.

The long-term impact of construction works or activities on coastal and marine ecosystems: Boris Ramírez, Universidad Católica de Valparaíso, Chile.

The Global Programme of Action for the Protection of the Marine Environment from Land-based Activities: an evaluation of the region's commitment, Jairo Escobar, ECLAC Consultant.

Integrated management of coastal and marine areas in the Wider Caribbean, Arthur Gray, Regional Economic Advisor, ECLAC subregional headquarters for the Caribbean, Port of Spain.

Discussion on conclusions and recommendations on this agenda item.

Afternoon session
2.30 pm. - 6.30 pm.

2.5 Tourism in coastal and marine areas

Experiences in countries of the region: Argentina, Chile, Cuba, Mexico, Venezuela.
Discussion on conclusions and recommendations for this agenda item.

2.6 Uncertainties affecting management of the marine environment

Monitoring El Niño 98 and presentation of conclusions of the International Seminar on the "El Niño Phenomenon in 97-98". Evaluation and projections: Juan Quintana, Meteorological Office of Chile.

Discussion on conclusions and recommendations on the above agenda item.

2.7 International cooperation

Discussion on conclusions and recommendations on the above agenda item.

3 December

Morning session
9 am. - 15.30 pm.

Agenda item 3: Preparation of a regional contribution to the seventh session of the Commission on Sustainable Development

Discussion on conclusions and recommendations for the items and sub-items under 1 and 2 and adoption of a preliminary report as a contribution to the work of the Commission on Sustainable Development.

General discussion on conclusions and recommendations on all agenda items.

Break for preparation of the final report.

Afternoon session
2.30 pm. - 5.30 pm.

Discussion and adoption of final report.
Closing session.