

UNITED NATIONS

ECONOMIC  
AND  
SOCIAL COUNCIL



LIMITED  
E/CEPAL/PROY.3/L.6  
April 1980  
ORIGINAL: ENGLISH

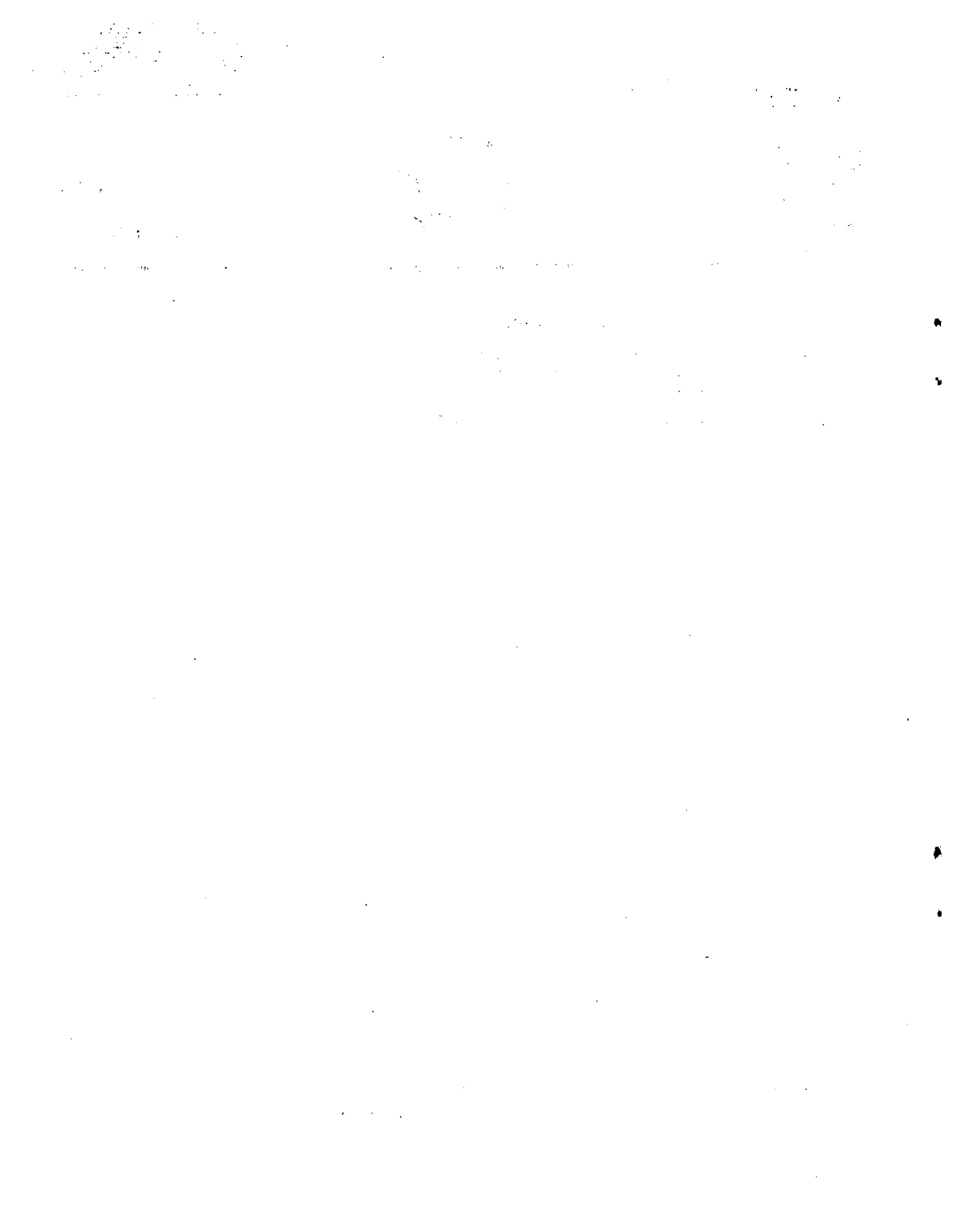
C E P A L

Economic Commission for Latin America

Meeting of Government-Nominated Experts  
to Review the Draft Action Plan for the  
Wider Caribbean Region

Caracas, Venezuela, 28 January-1 February 1980

REPORT



CONTENTS

	<u>Paragraphs</u>	<u>Page</u>
Introduction .....	1- 2	1
Part One		
ORGANIZATION OF WORK .....	3-16	2
1. Place and date .....	3	2
2. Attendance .....	4- 9	2
3. Election of officers .....	10	3
4. Agenda .....	11	3
5. Opening meeting .....	12	4
6. Adoption of the Revised Draft Action Plan for the Caribbean Environment Programme .....	13	4
7. Closing meeting .....	14-16	4
Part Two		
ACCOUNT OF PROCEEDINGS .....	17-25	5
Part Three		
REVISED DRAFT ACTION PLAN FOR THE CARIBBEAN ENVIRONMENT PROGRAMME .....	1-75	8
PREAMBLE .....	1- 4	8
I. INTRODUCTION .....	5- 8	10
II. ENVIRONMENTAL ASSESSMENT AND MANAGEMENT .....	9-44	11
III. EDUCATION, TRAINING AND DEVELOPMENT OF HUMAN RESOURCES .....	45-49	20
IV. SUPPORTING MEASURES .....	50-75	21
APPENDIX .....		25
Annex List of documents .....		27

The following information was obtained from the records of the  
 Department of the Interior, Bureau of Land Management, regarding  
 the land parcels described herein:

The land parcels described herein are situated in the  
 County of [County Name], State of [State Name], and are  
 more particularly described as follows:

Parcel 1: [Detailed description of Parcel 1, including acreage, location, and any other relevant information.]

Parcel 2: [Detailed description of Parcel 2, including acreage, location, and any other relevant information.]

Parcel 3: [Detailed description of Parcel 3, including acreage, location, and any other relevant information.]

Parcel 4: [Detailed description of Parcel 4, including acreage, location, and any other relevant information.]

Exhibit A

The following information was obtained from the records of the  
 Department of the Interior, Bureau of Land Management, regarding  
 the land parcels described herein:

The land parcels described herein are situated in the  
 County of [County Name], State of [State Name], and are  
 more particularly described as follows:

Parcel 1: [Detailed description of Parcel 1, including acreage, location, and any other relevant information.]

Parcel 2: [Detailed description of Parcel 2, including acreage, location, and any other relevant information.]

Parcel 3: [Detailed description of Parcel 3, including acreage, location, and any other relevant information.]

Parcel 4: [Detailed description of Parcel 4, including acreage, location, and any other relevant information.]

Exhibit B

The following information was obtained from the records of the  
 Department of the Interior, Bureau of Land Management, regarding  
 the land parcels described herein:

The land parcels described herein are situated in the  
 County of [County Name], State of [State Name], and are  
 more particularly described as follows:

Parcel 1: [Detailed description of Parcel 1, including acreage, location, and any other relevant information.]

Parcel 2: [Detailed description of Parcel 2, including acreage, location, and any other relevant information.]

Parcel 3: [Detailed description of Parcel 3, including acreage, location, and any other relevant information.]

Parcel 4: [Detailed description of Parcel 4, including acreage, location, and any other relevant information.]

### Introduction

1. In accordance with Resolution 2997 (XXVII) of the General Assembly, UNEP was established "as a focal point for environmental action and co-ordination within the United Nations System". The Governing Council of UNEP defined this environmental action as an encompassing and comprehensive transectoral approach to environmental problems which should deal not only with the consequences but also with the causes of environmental degradation. Although such problems are global in scope, a regional approach to solving them has already been applied by UNEP to various regional areas where plans are operative or are being developed.<sup>1/</sup>

2. Moreover, the second session of the Governing Council (1974) of UNEP decided that "UNEP should concentrate ..., on the protection of the marine environment" and stressed "the importance of activities in the Caribbean" (Decision 8/II). The third session of the Governing Council of UNEP (1975) recommended the initiation of a regional programme for the Caribbean and emphasized the environment problems of the islands. A Latin American Preparatory Meeting, held prior to the 1976 session of the Governing Council of UNEP agreed by consensus on the need for an investigation of the environmental needs of the Caribbean. At the fourth session of its Governing Council (1976), UNEP was urged to launch a regional programme for the Caribbean. In keeping with the regional approach, an early association was sought by UNEP with CEPAL and a joint UNEP/CEPAL project team was set up to co-ordinate the preparations for the development of an Action Plan for the Caribbean Environment Programme under the overall guidance of UNEP and CEPAL. The close collaboration of the specialized agencies of the United Nations and of other inter-governmental and non-governmental organizations was also sought and obtained in the preparation of the Draft Action Plan for the Caribbean Environment Programme <sup>2/</sup> submitted for review to the Meeting of Government Nominated Experts held in Caracas.

<sup>1/</sup> See the Annotated Provisional Agenda (E/CEPAL/PROY.3/L.2/Prov.).

<sup>2/</sup> E/CEPAL/PROY.3/L.3. The Introduction to the Draft Action Plan lists in paragraph 12, pages 2, 3 and 4 the main sources of information and orientation that were used as a basis for the formulation of the Draft Action Plan, including consultations with government officials and the findings and recommendations of other relevant meetings. This list appears as an appendix to the Revised Draft Action Plan for the Caribbean Environment Programme, contained in Part Three of this report, as agreed at the Caracas Meeting.

Part One

ORGANIZATION OF WORK

1. Place and date

3. The Meeting of Government Nominated Experts to Revise the Draft Action Plan for the Wider Caribbean Region was held in Caracas, Venezuela, from 28 January to 1 February 1980 under the joint auspices of the United Nations Environment Programme (UNEP) and the Economic Commission for Latin America (CEPAL).

2. Attendance

4. The Meeting was attended by representatives of the following member States of the Commission: Bahamas, Barbados, Colombia, Costa Rica, Cuba, Dominica, Dominican Republic, France, Grenada, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, the Netherlands, Panama, St. Lucia, Suriname, the United Kingdom, the United States and Venezuela.

5. Belize also attended as an associate member of the Commission.

6. The following bodies of the United Nations Secretariat were represented at the meeting: United Nations Centre for Human Settlements (HABITAT), Secretariat of the Third United Nations Conference on the Law of the Sea, Department of International Economic and Social Affairs (Ocean Economics and Technology Branch), Office of the United Nations Disaster Relief Co-ordinator (UNDRO), United Nations Industrial Development Organization (UNIDO) and the United Nations Development Programme (UNDP).

7. Representatives of the following organizations of the United Nations system attended the session: Food and Agriculture Organization (FAO), United Nations Educational, Scientific and Cultural Organization (UNESCO) (Intergovernmental Oceanographic Commission), World Health Organization/Panamerican Health Organization (WHO/PAHO), World Meteorological Organization (WMO), Inter-Governmental Maritime Consultative Organization (IMCO).

8. The following intergovernmental organizations and bodies were represented at the meeting: Organization of American States (OAS), Inter-American Development Bank (IDB), Caribbean Community Secretariat (CARICOM), Caribbean Development Bank (CDB), European Economic Community (EEC), and Commonwealth Scientific Committee.

9. The following non-governmental organizations also attended the meeting: Caribbean Conservation Association and the International Union for Conservation of Nature (IUCN).

3. Election of officers

10. At the first plenary meeting the following officers were elected:

Chairman: Germán Uzcategui B.  
Venezuela

Vice-Chairman: B. Collymore  
Barbados  
Juan de Dios Reyes Leal  
Guatemala

Bernard Gittens  
Grenada

Louis Jadotte  
Haiti

Rapporteur: Beverly A. Miller  
Jamaica

4. Agenda

11. The Meeting adopted the following agenda:

1. Opening of the Meeting

2. Organization of the Meeting

2.1 Rules of procedure

2.2 Election of officers

3. Adoption of the agenda

4. Adoption of the Draft Action Plan for the Caribbean Environment Programme

4.1 Environmental assessment

4.2 Environmental management

4.3 Legal aspects

4.4 Supporting measures

5. Other business

6. Adoption of the report

7. Closure of the Meeting

/5. Opening

#### 5. Opening meeting

12. The meeting was honoured by the presence at the opening ceremony of the President of the Republic of Venezuela, Dr. Luis Herrera Campins, who gave an address. Addresses were also made by Dr. Carlos Febres Pobeda, Minister of the Environment, Venezuela; Mr. José Lizarraga, Director of the UNEP Office for Latin America, and, Mr. Enrique V. Iglesias, Executive Secretary of CEPAL.

#### 6. Adoption of the Revised Draft Action Plan for the Caribbean Environment Programme

13. At the final plenary meeting held in the afternoon of 1 February 1980 the Government Nominated Experts adopted by consensus the Revised Draft Action Plan for the Caribbean Environment Programme as set forth in Part Three of this report.

#### 7. Closing meeting

14. Following the adoption of the Revised Draft Action Plan at the final plenary meeting it was agreed to entrust the Rapporteur and the secretariat of the Commission with the task of completing the Report of the Meeting, which would incorporate the Revised Draft Action Plan.

15. The representative of France requested that it should be placed on record that his delegation had adopted the Action Plan on the basis of the English text in the absence of an adequate French text.

16. The Chairman in his closing remarks thanked the Government Nominated Experts, observers and the secretariat for their valuable contributions and dedication which had greatly facilitated the adoption by consensus of the Revised Draft Action Plan which augured well for the future. Experts from several countries and various observers also expressed their appreciation for the work done, emphasizing the important role played in this connexion by the Chairman, Vice-Chairmen and Rapporteur as well as by the secretariat.



Part Two

ACCOUNT OF PROCEEDINGS

17. Discussion of the Draft Action Plan for the Caribbean Environment Programme was initiated at the plenary level with a presentation by Mr. Trevor Boothe, Co-ordinator of the Joint UNEP/CEPAL Caribbean Environment Project.

18. After a brief reference to recommendations made by the Governing Council of the United Nations Environment Programme, he mentioned the work of the Caribbean Environment Project in connexion with the priority areas of the sea, human settlements, environmental health, natural resources, and ecosystems, industry and technology, energy, tourism and natural disasters, covering the Wider Caribbean. A series of sectoral Overview Studies had been prepared, containing regional reviews and analyses of the environmental situation in the sectors covered by the Project and recommendations for action at the national, subregional and regional levels. He referred particularly to three documents prepared by the Project in conjunction with other organizations which offered a useful discussion and summary of the Wider Caribbean situation.

19. Referring to the Draft Action Plan for the Caribbean Environment Programme, he listed its four major components which provided for assistance to governments to improve their capabilities by identifying environmental and socio-economic variables, the development of strategies and co-operative activities, a legal framework and the development of adequate supporting measures at the national and regional levels to strengthen the institutional infrastructure. He mentioned the working documents which would serve as an aid to the experts in considering the Draft Action Plan, and expressed the expectation that the principal document to emerge from the meeting would be a revised Draft Action Plan as the first stage of an Action Plan for the Caribbean Environment Programme.

20. He said that it was expected that the Draft Action Plan would assist governments in integrating environmental factors and considerations into the development planning process, and pointed out that it provided a framework

/for co-ordinated

for co-ordinated environmental management activities and for technical co-operation among the developing countries of the region. In conclusion he said that work was already advanced on the preparation of Project proposals for the implementation of the Action Plan.

21. This statement was followed by several interventions of a general nature on the part of Government nominated experts. However, it was the general consensus of the meeting to suspend the plenary and establish an informal Working Group to give detailed consideration to the Draft Action Plan contained in E/CEPAL/PROY.3/L.3.

22. The Working Group was open to the participation of all interested delegations and observers; it made a careful examination of the Draft Action Plan with special emphasis on the sections on environmental management and environmental assessment which were discussed as a whole. On completion of this discussion, the Working Group took up the section on Supporting Measures and produced a number of amendments and suggestions as had also been the case for the preceding sections.

23. In accordance with a decision taken by the plenary, the Presiding Officers were entrusted with the responsibility of examining the various amendments and suggestions that had emerged from the Working Group's discussions with a view to submitting a revised draft of the Action Plan to the plenary meeting. In this task the Presiding Officers were assisted by the consultants who had previously served as members of the Advisory Panel to the Project and by the secretariat.

#### Decisions

24. The Revised Draft of the Action Plan thus prepared by the Presiding Officers was examined at the last plenary meeting held in the afternoon of 1 February 1980, and further amendments were introduced in the text which was then adopted by consensus as it appears in Part Three of this report.

25. Following the adoption of the Revised Draft Action Plan for the Caribbean Environment Programme, the final plenary meeting also agreed that:

(a) The Inter-governmental Meeting to adopt the Action Plan should be postponed from May 1980 to September 1980, to allow for the preparation of the necessary documentation, and to give governments adequate time to study documentation prior to the Inter-governmental Meeting;

/(b) An

(b) An additional meeting at the expert level would be necessary prior to the inter-governmental meeting. In this connexion, it was suggested that the technical level meeting should be held immediately before the high-level inter-governmental meeting;

(c) There was a need, as many delegations emphasized, for the documentation for the inter-governmental meeting to be made available sufficiently far in advance, to allow governments adequate time to study the documents. The secretariat assured the meeting that every effort would be made to prepare and distribute the documentation by the end of June 1980;

(d) The implementation of the Action Plan should be initiated as soon as possible;

(e) The specialized agencies of the United Nations, with their projects experience and knowledge of the region, should have as critical a role and function in the implementation of the Action Plan as they had in the preparatory phase, and that every effort should be made to avoid duplication in the activities of implementing the Action Plan;

(f) Since it was also stressed that the issues on which additional information should be provided in the documentation included the financial implications, concrete project proposals with their approximate costs, and the proposed operational time frame, any general outlines for institutional arrangements in the opinion of some delegations should not be finalized until this specific information was available;

(g) With respect to the section of the original Draft Action Plan (E/CEPAL/PROY.3/L.3) concerning legal aspects and the corresponding reference document (E/CEPAL/PROY.3/L.5), discussion on this matter should be deferred until the Inter-governmental Meeting.

(h) A strong recommendation should be made for extending the Caribbean Environment Project for an appropriate period, in the light of the recommendation already approved by the plenary to postpone the high-level Inter-governmental Meeting and the request for the secretariat to provide additional information.

Part Three

REVISED DRAFT ACTION PLAN FOR THE CARIBBEAN ENVIRONMENT PROGRAMME

PREAMBLE

1. The region is a geographical entity made up of states and territories with diverse economic and political structures, natural resources, social systems, environmental characteristics and potential development capabilities. These diversities have been recognized in the formulation of this Action Plan.

2. The region covered by this Action Plan is the Wider Caribbean, defined as comprising the states and territories of the insular Caribbean (including the Bahamas), the north-eastern parts of South America from Colombia to the French Department of Guiana, Panama, the States of Central America, Mexico and the Gulf States of the United States, as well as the coastal and open waters of the Caribbean Sea proper, the Gulf of Mexico, and the waters of the Atlantic Ocean adjacent to the states and territories mentioned above.

3. The island countries of the region have special needs owing to the fragility of their ecosystems and their particularly limited carrying capacities. These were specifically recognized in the Action Plan.

4. The principal objectives of the Action Plan are to assist the governments of the region in minimizing environmental problems in the Wider Caribbean through assessment of the state of the environment and development activities in environmental management. Furthermore, the Action Plan will establish a framework for activities requiring regional co-operation in order to strengthen the capability of the states and territories of the Wider Caribbean region for implementing sound environmental management practices and thus achieve the development of the region on a sustainable basis. In order to achieve these overall goals, co-operation will specifically include:

- assistance to all countries of the region, recognizing the special situation of the smaller island countries;
- use of the region's human, financial and natural resources through technical co-operation among developing countries (TCDC);

/- regional

- regional self-reliance through the sharing of experience in common problems;
- co-operation on problems of a transnational or international nature, including natural and man-induced disasters;
- stimulation and co-ordination of international assistance activities;
- strengthening of existing national and subregional institutions;
- increasing public interest in, and awareness of the environment/development process.

## I. INTRODUCTION

5. In order to achieve the objectives of this Action Plan, the following process must take place:

(a) Assessment, including an inventory and analysis of natural resources and their environmental characteristics, as necessary for formulating an environmental diagnosis in order to provide a basis for sound environmental management;

(b) Management including the formulation of guidelines, plans and specific projects as well as the determination of the means necessary for this purpose.

6. The Action Plan will concentrate its activities on the coastal areas with special reference to the interactions among terrestrial, coastal and marine ecosystems.

7. The Action Plan recognizes two distinct action levels:

(a) Development of long-term comprehensive strategies for environmentally sound development, taking into account the priorities, needs and capabilities of the region; and

(b) Specific action-oriented co-operative projects in response to the region's important and immediate environmental needs.

8. The components of the Action Plan are interdependent and constitute a framework for comprehensive action in order to contribute both to the protection and to the continued environmentally sound development of the region. No component is an end in itself.

/II. ENVIRONMENTAL

## II. ENVIRONMENTAL ASSESSMENT AND MANAGEMENT 1/

### A

9. One of the major constraints on the effective use of resources in the development processes confronting the Wider Caribbean region is the paucity of environment and resource information which impedes rational decision-making. This lack of adequate information is particularly critical in that it relates to issues of a fundamental nature such as (i) the potential of underutilized resources; (ii) the fragility of many of the region's ecosystems; (iii) the inability of overutilized and degraded resources to maintain sustained yields, and (iv) the presence of many island countries which are ecosystems with limited resources and relatively large populations. Consequently, the environmental assessment component, which includes the systematic description and examination of environmental topics or problems evaluating their present and future implications for man and the environment, will underlie and facilitate decision-making and the implementation of the environmental management elements of the Action Plan.

10. Owing to the lack of basic environmental data and scientific knowledge, a co-ordinated resource inventory and environmental monitoring programme will be developed throughout the region covered by this project, particularly for coastal and marine areas and neighbouring areas affecting the latter (including estuaries, deltas, marshes, mangroves lakes, rivers, coastal lagoons, coral reefs and sea grass beds), as a basis for providing guidelines for environmentally sound development and for training tasks. The operational details of these programmes will be based on existing and projected national, regional and international activities in this field.

11. The major activities of the environmental programme will be:

---

1/ At the meeting, the sections on environmental assessment (section II) and environmental management (section III) contained in the Draft Action Plan for the Caribbean Environment Programme (E/CEPAL/PROY.3/L.3) were discussed jointly by the Government nominated experts, and it was agreed that those two sections, contained as A and B in chapter II of the Revised Draft Action Plan, should be considered as a whole, and the contents and subtitles accordingly correlated.

General

12. Survey of national capabilities and means to respond to environmental problems including scientific and administrative institutions, manpower, research facilities and equipment.

Pollution control

13. Assessment of the origin and magnitude of pollution in the region with special reference to hydrocarbons and other hazardous substances including:

- determination of technical knowledge as well as existing means and economic capabilities at the national or regional level for preventing, combatting, limiting and, in so far as possible, eliminating pollution and other adverse effects of the exploration, exploitation, refining and transportation of hydrocarbons and other hazardous substances;
- studies on sources of pollution by hydrocarbons and other hazardous substances;
- identification and monitoring of existing and potential direct and indirect effects of the exploration, exploitation, refining and transportation of hydrocarbons and other hazardous substances;
- studies of the destination and effect of oil pollution, especially oil spills, on tropical coastal ecosystems particularly those of economic importance, such as mangrove swamps, coral reefs, beaches and coastal fisheries, by making use and taking advantage of accidental spills;
- identification and monitoring of potential and existing hazards of the transportation of hazardous substances other than oil and petroleum hydrocarbons.

14. Assessment of the sources, quantities and routes of industrial and agricultural wastes as well as domestic and municipal wastes reaching the marine environment and their effects on human health, marine ecosystems (in particular fishery resources) and coastal amenities.

Coastal areas

15. Assessment of the impact of coastal and land-based activities on coastal marine resources comprising:

- identification of critical coastal areas within the region;

/- studies



- studies of the characteristics of industrial, agricultural and domestic waste discharged into coastal areas (waste discharge profile);
- studies of the effects of pollutants and coastal development activities on important biological communities and habitats, particularly those connected with coastal fisheries and other coast-dependent activities;
- development of a basis for environmental quality criteria applicable to the tropical coastal waters of the region;
- studies of land use, conservation and recovery of coastal swamps and coastal lagoons;
- studies of the impact of building, engineering and mining activities on coastal areas;
- studies of the effects of pesticides on banana plants and other major crops and of possible biological controls.

16. Assessment of the coastal dynamics which have a significant impact on human health, marine ecosystems and human activities in modifying the fate of wastes, sediment and sand movement as well as the configuration of the coasts.

#### Fisheries

17. Studies of the life-cycle of commercially important species of crustaceans, fishes and molluscs, with particular reference to the role played by coastal ecosystems such as mangroves, coastal lagoons, coral reefs and turtle grass beds.

18. Studies to establish the fishery potential of the region, its present utilization and the optimum yield which can be maintained.

19. Studies of the technologies applied at present to harvest coastal fisheries with a view to improving efficiency and productivity on a basis which can be maintained. Particular attention will be paid to artisan-type fishing industries.

20. Assessment of the suitability of species and techniques for aquaculture and mariculture.

/Watersheds

Watersheds

21. Assessment of the effects of disturbance on the relationship between forest cover and water and soil resource utilization with a view to introducing environmental planning concepts in the management of watersheds, particularly on small islands and coastal areas.

Natural disasters

22. Survey and evaluation of the disaster potential of natural phenomena (risk analysis) in order to develop an adequate short-term strategy and medium- and long-term planning for the prevention and mitigation of risks.

23. Continued co-operation with the pertinent agencies in the survey and evaluation of existing strategies and procedures of preparation for national disasters and of the intrinsic effects of disasters with a view to developing more appropriate national, subregional and regional response mechanisms in a form compatible with environmental protection.

Energy

24. Assessment of major sources of non-conventional energy and their potential for utilization.

Human settlements

25. Assessment and evaluation of present characteristics and future population trends, considering elements of growth, distribution, density and migration of environmental significance, with particular attention to the special problems of islands and the environmental impact of relocation and temporary housing.

26. Assessment of existing coastal urbanization policies and processes and human settlements technologies applied in the region, including building technologies appropriate to the region's environment.

27. Identification of the interaction between the principal ecosystems of the region in order to determine potential long-range effects caused by human activities and the environmental and infrastructural cost of population growth.

Tourism

28. Assessment of the impact of tourism on the physical, social and cultural environment, particularly as regards coastal zones.

29. Assessment of alternative tourism (integrated tourism) aimed at reducing the negative impact on local environments, bringing greater benefits to local people, and putting tourism on a sustainable basis.

30. A survey of potential areas for national parks and marine reserves that could serve as tourism resources, and at the same time protect fragile ecosystems and areas of scientific interest.

Environmental health

31. Survey of existing environmental health problems with particular reference to:

- availability and quality of drinking water supplies particularly in rural areas;
- waste water disposal;
- solid waste management;
- working environment hazards;
- impact on human health of industrial waste and pesticide residues including the contamination of ground water;
- food contamination and its possible impact on the problems of human health and malnutrition;
- the health problem associated with migration to urban areas and the relocation of people as a result of development projects;
- vector control and vector-borne disease.

B

32. The key to environmentally sound development is the management of the resources on a sustainable basis. Such environmental management should take into account the carrying capacity of the environment, the goals of development as defined by the pertinent national authorities, and the economic feasibility of implementing them.

33. Most of the region's environmental needs can best be satisfied, and will continue to be principally dealt with, by individual states and territories. Regional and subregional co-operative action, however, can strengthen and supplement national efforts, particularly in attending to joint concerns which, by their nature, lie outside the control of any

/single country.

single country. In addition, co-operative regional and subregional action can be especially beneficial to the smaller states and territories, which have limited capacity for dealing with environmental problems.

34. Possible types of regional and subregional action include international consultations, co-operative research and joint actions by national institutions. Priority opportunities for regional or subregional co-operation and action, based on the critical needs of the people of the region include:

General

35. (a) Analysis of development trends in the region, particularly in coastal areas, in order to determine possible areas of environmental stress resulting from multiple demands on limited resources.

(b) Development and strengthening of the capability of the nations of the region to prepare environmental impact analyses of major development projects and plans in order to incorporate the dimension of the environment and natural resources in the planning and implementation of socioeconomic development programmes.

(c) Promotion of increased technical and financial support for sound environmental management practices within ongoing national, regional, and internationally-supported economic development activities, so that they will have a demonstration effect.

(d) - Development of regional and subregional networks of coastal, marine and terrestrial protected areas so as to help to maintain the living natural resources vital to development.

- To further existing efforts and agreements involving countries of the region, development of co-operative activities for the protection of endangered and threatened species so as to help to maintain the region's wealth of genetic resources; and the harmonization of national policies for the management of wildlife, genetic resources, and natural habitats.

(e) Promotion of a fuller utilization of existing mechanisms for a continuous exchange of environmental data and other relevant information between the countries at the regional and subregional level.

Pollution control

36. (a) Development of regional and subregional co-operation in preventing, combatting, detecting, containing and cleaning up accidental spills of hydrocarbons and other hazardous substances.

(b) Promotion of development of national and subregional contingency plans to control pollution caused by hydrocarbons bearing in mind the work undertaken by organizations already participating in this effort.  
Co-ordination of existing national, subregional and regional plans.

(c) Development and strengthening of national capabilities for pollution control and monitoring through training and harmonization of methodologies.

(d) Strengthening of national capabilities to develop or improve programmes for water quality control in coastal areas.

Coastal areas

37. (a) Formulation of advisory coastal zone management plans with particular reference to the preparation of guidelines for land use, resource management and environmental protection and support for national endeavours in this area.

(b) Catalysis of assistance to national institutions for the restoration of degraded coastal ecosystems, especially mangroves and coral reefs, as part of general coastal management plans.

Fisheries

38. (a) Development and strengthening of co-operation, exchange of information and training activities fostering locally appropriate aquaculture technologies.

(b) Harmonization of policies and practices to ensure rational utilization of large-scale commercial and artisanal-type fisheries on a sustainable basis.

Watersheds

39. Development of watershed management plans especially for drainage areas surrounding the Caribbean Sea with particular reference to:

- Control of floods, soil erosion and sedimentations;
- Prevention of the destruction of tropical forests and establishment of reforestation programmes as appropriate;

- Protection of the hydroelectric potential of the rivers;
- Maintenance and improvement of adequate fresh water management on the surface and underground;
- Maintenance of wildlife habitats;
- Prevention of the pollution of the catchment by domestic, agricultural and industrial wastes.

#### Natural disasters

40. Strengthening of existing regional or subregional co-operation for natural disaster prevention and relief, and for environmental recovery following disasters.

#### Energy

41. (a) Co-operation and technical assistance in the application of energy accounting systems which may be used as the basis for the formulation and implementation of sound national energy policies and programmes.

(b) Reinforcement of regional and subregional integrated non-conventional energy activities with the objective of a fuller exchange and dissemination of all available information and provision of training opportunities.

(c) Development of a co-operative programme for the implementation of appropriate technologies and practices for waste disposal with special attention to recycling, energy generation and the special problems of the smaller islands.

#### Human settlements

42. (a) Encouragement of the consideration of ecological variables and ecodevelopment techniques in the design of new human settlement projects.

(b) Encouragement of the formulation of human settlement projects leading to alternative styles of development.

(c) Promotion of policies and practices in the field of human settlements which will give special attention to the ecological aspects of urban and rural development as well as to the need for proper structural designs taking account of the possibility of natural disasters. Attention will be given to the development of appropriate building technologies and the appropriate use of indigenous building materials on a sustainable basis.

Tourism

43. Development of guidelines to minimize the negative impact of tourism on the physical, social and cultural environment, particularly as regards coastal zones.

Environmental health

44. Development and strengthening of national institutional capability for improving environmental health services including water supplies in urban and rural areas, water quality control, water resources, sanitary waste disposal, water pollution control and vector control.

### III. EDUCATION, TRAINING AND DEVELOPMENT OF HUMAN RESOURCES

45. In view of the vital need for supporting measures to reinforce sound environmental management, the countries of the region give the highest priority to strengthening their institutional and human resources in the various fields of environmental and natural resource management.

46. The Plan envisages an intensive training and technical assistance effort, especially in the early stages of the Plan's implementation, to allow less-developed participant countries to take full advantage of possibilities for co-operation.

47. Many of the Plan's environmental management activities will in fact have built in training components with stress on their action orientation and the indispensable link between management and training in the region.

48. In addition to well-qualified and prepared manpower, adequate care of the environment requires the active help of the entire population.

49. The Plan gives high priority to:

- (a) development of a regional manpower base;
- (b) environmental education activities at all levels related to local socioeconomic and ecological characteristics;
- (c) support for strengthening of environmental non-governmental organizations;
- (d) promotion of media seminars and campaigns to focus and strengthen public awareness of environmental issues.



#### IV. SUPPORTING MEASURES

50. A large number of supporting measures, including the development of appropriate institutional and financial arrangements, is required to ensure the harmonious development of the Action Plan.

51. The assistance of the international organizations, in particular those belonging to the United Nations system, is essential for the implementation of the Action Plan; their full support for specific projects will therefore be solicited.

##### Institutional arrangements

52. The results of the Action Plan will depend on action at national, regional and subregional levels. It is therefore important to identify and develop appropriate institutional capabilities and co-ordinating mechanisms at each of these levels. The following components are essential for this task.

##### (a) Overall authority

53. The overall authority to determine the content of the Action Plan, review its progress and direct its course, including the financial implications, is to be found in the ministerial/plenipotentiary level meetings of governments participating in the Action Plan.

##### (b) Advisory group

54. In view of the large number of states and territories expected to participate in the Action Plan, and in order to obviate the need to convene frequent intergovernmental meetings to monitor the programme, the governments may establish a Technical Advisory Group. This Group would meet in between the regular intergovernmental meetings and would advise both UNEP and the governments.

##### (c) Overall co-ordination

55. The governments of the states and territories participating in the Action Plan should assign responsibility for the overall co-ordination of the implementation of the Action Plan to UNEP which would then answer to the governments.

/(d) Regional

(d) Regional co-ordinating unit (RCU)

56. Strong regional co-ordination will be established to ensure the timely and harmonious implementation of the Action Plan.

57. A regional co-ordinating unit (RCU) will be established to operate under the authority of UNEP, to which the governments of the countries participating in the Action Plan assigned the overall tasks of co-ordinating its implementation.

58. The RCU will be physically located in the Wider Caribbean region.

59. The principal function of RCU will be technical, i.e., the development and co-ordination of the work of national, subregional, regional, international and intergovernmental institutions. Another important function will be to organize government expert and intergovernmental meetings to monitor the progress of the implementation of the Action Plan and decide on its further implementation.

60. The RCU will not itself conduct research but will serve as a focus for the collection, analysis and dissemination of information on results obtained through the Action Plan and as a centre which will assist participants in the Action Plan in solving their specific environmental problems.

61. The staff of the RCU will be nationals recruited from the states and territories participating in the Action Plan.

(e) National focal points (NFP)

62. The active participation and co-operation of the states and territories are the basic prerequisites for the success of the Action Plan. In order to achieve an efficient and well-co-ordinated co-operation, a national focal point (NFP), to deal with all matters relating to the Action Plan, will be established (or an existing structure will be assigned this task) in each of the participating states and territories.

63. The role of the national focal points will be:

- to co-ordinate the input of their national institutions into the Action Plan;
- to maintain links with the regional co-ordinating unit of the Action Plan.

/(f) National

(f) National institutions (NI)

64. National institutions (NI) designated by their governments will provide the institutional basis for the activities agreed upon among the governments to be components of the Action Plan. They will be the principal executants of specific activities within the Action Plan.

65. In order to allow for their full participation in agreed activities, technical and managerial assistance (equipment, training, etc.) will be provided through the Action Plan to those national institutions requiring it.

(g) Subregional and regional institutions (organizations)

66. The existing subregional and regional institutions, including NGOs will be used to the maximum possible extent for the implementation of specific activities or for co-ordinating their implementation.

67. Whenever necessary, a national institution may also assume a subregional or regional role.

68. Technical and managerial assistance will be provided through the Action Plan to the subregional and regional institutions participating in it.

(h) Network arrangements

69. In principle, each of the activities agreed upon as part of the Action Plan will be carried out by several national institutions (NI) located in the various states and territories of the region, which will be linked up into networks of co-operating institutions.

70. The regional (RI) and subregional institutions (SRI) participating in specific activities will also be considered as members of the networks.

71. One member of each network will assume the role of the regional activity centre (RAC) for that network and co-ordinate the activity for which the network was established.

Financial arrangements

72. Financial support for the activities agreed upon as part of the Caribbean Action Plan may come from several sources:

(a) As voluntary contributions from states and territories participating in the Action Plan;

/(b) As

(b) As voluntary contributions from states supporting the Action Plan but not participating in it;

(c) From the United Nations system;

(d) From the regional, subregional and international organizations which are not part of the United Nations system.

73. All these contributions should be in cash or in kind (staff time, experts; training, facilities, services, etc.). Although contributions in kind could be of great importance, contributions in cash are essential for the smooth implementation of the Action Plan.

74. Two mechanisms are envisaged as channels of cash contributions:

- A Caribbean Regional Trust Fund to cover common cost expenses (co-ordination, meetings, etc.) and the costs of projects (activities) of general interest to all participants in the Action Plan;
- Contributions to specific projects (activities) agreed upon as part of the Action Plan.

75. Although the ultimate aim is that the implementation phase of the Caribbean Action Plan should be financially self-supporting, the United Nations system will initially provide financial support which will progressively decrease as the governments of the region, through a Trust Fund or other mechanism, assume fuller financial responsibility.

APPENDIX

The formulation of the Action Plan has been based upon:

(a) Consultations with government officials held during the preparatory phase of the joint UNEP/CEPAL Caribbean Environment Project.

(b) Analysis of the environmental problems associated with the socio-economic development of the region.

(c) Views and recommendations of the Advisory Panel for the Caribbean Environment Project composed of environment experts from the Caribbean region.

(d) Recommendations of the IOC/FAO/UNEP Workshop on Marine Pollution in the Caribbean and Adjacent Waters, Port of Spain, December 1976.

(e) Recommendations of the First Meeting of the Planning Officials of CDCC/CEPAL, Havana, February 1979.

(f) Recommendations of the First Workshop of the OAS Caribbean Oil Pollution Task Force, Port of Spain, May 1979.

(g) Recommendations of the USOFDA/AID Caribbean Disaster Preparedness Seminar, St. Lucia, June 1979.

(h) Recommendations of the PAHO/CARICOM Environmental Health Strategy adopted by CARICOM Health Ministers, Antigua, July 1979.

(i) Recommendations of the USMAB/UNESCO/CDB/UNDIESA, UNEP, CEPAL Conference on Economic Growth and Environmental Management in the Smaller Caribbean Islands, Barbados, September 1979.

(j) Findings and recommendations of the following sectoral overviews prepared for the development of the Caribbean Environment Programme;

- The State of Marine Pollution in the Wider Caribbean Area (UNEP/CEPAL, 1979);
- The Status of Oil Pollution and Oil Pollution Control in the Wider Caribbean Region (IMCO, 1979);
- Overview on Energy and Environment in the Caribbean Area (UNIDO, 1979);
- Overview on Environmental Health in the Wider Caribbean Region (PAHO/WHO, 1979);

- Natural disasters in the Wider Caribbean Area: An Overview (CEPAL/ UNEP, 1979);
- Marine and Coastal Area Development in the Wider Caribbean Area; Overview study (UN/DIESA, 1979);
- Human settlements in the Wider Caribbean Area: An Overview (UNEP/ CEPAL, 1979);
- Overview on Natural Resources for Food and Agriculture in the Wider Caribbean Region (FAO, 1979);
- Tourism and Environment in the Wider Caribbean Area: An Overview (OAS/CICATOUR, 1979);
- A Perspective on Environmental Education in the Wider Caribbean Region (UNEP/CEPAL, 1979).

(k) A Strategy for the Conservation of Living Marine Resources and Processes in the Caribbean Region (IUCN, 1979).

(l) Recommendations of the Meeting of Government-Nominated Experts to Review the Draft Action Plan for the Wider Caribbean Region, Caracas, Venezuela, January 1980.

Annex

LIST OF DOCUMENTS

Working documents

E/CEPAL/PROY.3/L.1	Provisional Agenda
E/CEPAL/PROY.3/L.2	Annotated Provisional Agenda
E/CEPAL/PROY.3/L.3	Draft Action Plan for the Caribbean Environment Programme
E/CEPAL/PROY.3/L.4	Options for Financial and Institutional Arrangements
E/CEPAL/PROY.3/L.5	Principles and Guidelines which may be Used for a Regional Legal Agreement

Information documents

E/CEPAL/PROY.3/L.INF.1	List of Documents
E/CEPAL/PROY.3/L.INF.2	List of Participants
E/CEPAL/PROY.3/L.INF.3	Development and Environment in the Wider Caribbean Region: A synthesis (UNEP/CEPAL, 1979)
E/CEPAL/PROY.3/L.INF.4	The State of Marine Pollution in the Wider Caribbean Region (UNEP/CEPAL, 1979)
E/CEPAL/PROY.3/L.INF.5	The Status of Oil Pollution and Oil Pollution Control in the Wider Caribbean Region (IMCO, 1979)
E/CEPAL/PROY.3/L.INF.6	Report of the IOC/FAO/UNEP Workshop on Marine Pollution in the Caribbean and Adjacent Waters, Port of Spain, Trinidad, December 1976 (UNESCO, 1977)
E/CEPAL/PROY.3/L.INF.7	Collected Contributions of the IOC/FAO/UNEP Workshop on Marine Pollution in the Caribbean and Adjacent Waters, Port of Spain, Trinidad, December 1976 (UNESCO, 1977)
E/CEPAL/PROY.3/L.INF.8	Directory of the Caribbean Marine Research Centres (IOC/UNEP, 1979)
E/CEPAL/PROY.3/L.INF.9	Overview on Energy and Environment in the Caribbean Area (UNIDO, 1979)
E/CEPAL/PROY.3/L.INF.10	Overview on Natural Resources for Food and Agriculture in the Wider Caribbean Region (FAO, 1979)
E/CEPAL/PROY.3/L.INF.11	Overview on Environmental Health in the Wider Caribbean Region (PAHO/WHO, 1979)

- E/CEPAL/PROY.3/L.INF.12 Natural Disasters in the Wider Caribbean Area: An Overview (UNEP/CEPAL, 1979)
- E/CEPAL/PROY.3/L.INF.13 Marine and Coastal Area Development in the Wider Caribbean Area: Overview Study (UNDIESA, 1979)
- E/CEPAL/PROY.3/L.INF.14 Human Settlements in the Wider Caribbean Area: An Overview (UNEP/CEPAL, 1979)
- E/CEPAL/PROY.3/L.INF.15 Review of International Conventions relevant to the Environmental Protection of the Wider Caribbean Area (UNEP, 1979)
- E/CEPAL/PROY.3/L.INF.16 A Strategy for the Conservation of Living Marine Resources and Processes in the Caribbean Region (IUCN, 1979)
- E/CEPAL/PROY.3/L.INF.17 Transactions of the USMAB/CDB/UN/UNEP/CEPAL/UNESCO Conference on Economic Growth on Environmental Management in the Smaller Caribbean Islands, Barbados, September 1979 (USMAB, 1979)
- E/CEPAL/PROY.3/L.INF.18 Tourism and Environment in the Wider Caribbean Area: An Overview (OAS/CICATOUR, 1979)
- E/CEPAL/PROY.3/L.INF.19 A Perspective on Environmental Education in the Wider Caribbean (UNEP/CEPAL, 1979)
- E/CEPAL/PROY.3/L.INF.20 A Preliminary Data Atlas for the Wider Caribbean (IUCN/UNEP, 1979)
- E/CEPAL/PROY.3/L.INF.21 Proceedings, Issues and Recommendations Caribbean Disaster Preparedness Seminar, St. Lucia, West Indies, June 1979 (USOFDA/AID, 1979)
- E/CEPAL/PROY.3/L.INF.22 Executive Summary Caribbean Disaster Preparedness Seminar, St. Lucia, West Indies, June 1979 (USOFDA/AID, 1979)
- E/CEPAL/PROY.3/L.INF.23 Activities of the Western Central Atlantic Fishery Commission (WECAFC) (FAO, 1979)



