



**CARIBBEAN ENVIRONMENT PROGRAMME**

**UNITED NATIONS ENVIRONMENT PROGRAMME**

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**THE ACTION PLAN FOR THE CARIBBEAN ENVIRONMENT  
PROGRAMME: EVALUATION OF ITS DEVELOPMENT AND  
ACHIEVEMENTS (1976-1987)**

**CEP TECHNICAL REPORT NO. 1**

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**THE ACTION PLAN FOR THE CARIBBEAN ENVIRONMENT PROGRAMME:  
EVALUATION OF ITS DEVELOPMENT AND ACHIEVEMENTS**

**INTRODUCTION**

1. The development of the Action Plan for the Caribbean Environment Programme was initiated in 1974, at the request of several Caribbean governments, by Decision 8(II) of the Second Session of the Governing Council of UNEP (UNEP/GC/2/6, Annex I, Section A4).
2. The geographic coverage of the Caribbean Environment Programme comprises all of the insular and coastal States and territories of the Caribbean Sea, the Gulf of Mexico and their adjacent waters, from the U.S. Gulf coast states and the islands of the Bahamian chain, south to the French Department of Guiana.
3. Its development was requested since it was recognized that a regional co-operative approach was most suitable to address the growing concern for conservation, protection and development of the marine and coastal resources of the region.
4. Six years after the adoption of the Action Plan for the Caribbean Environment Programme in Montego Bay, April 1981, the Fourth Intergovernmental Meeting, held in Guadeloupe from 26 to 28 October 1987, decided that an in-depth evaluation should be initiated, to assess the achievements and shortcomings of the Action Plan since its inception, and to provide the basis for the formulation of a comprehensive long-term strategy for its future development.
5. The present document constitutes an in-depth evaluation of the Action Plan for the Caribbean Environment Programme. It covers the preparatory activities initiated in 1976 leading to its adoption in April 1981, and its implementation until the end of 1987.
6. In evaluating the Caribbean Action Plan, the following issues have been examined:
  - (a) the influence of the Action Plan on the development and implementation of policies for the protection, conservation and development of marine resources, at national and regional levels;
  - (b) the extent to which the Action Plan has favoured, directly and indirectly, a heightened awareness of the environment-development issues in both decision-makers and the general public;
  - (c) the role the Action Plan has played in fostering co-operation between participating countries to develop and strengthen national environmental management capabilities;
  - (d) the importance of the Action Plan in triggering the adoption by national institutions of harmonized methodologies for assessing pollution and other environmental problems; and

- (e) the level of success of the Action Plan in stimulating public interest in, and awareness of environmental matters as well as the development of training programmes in the region on matters related to environmental management and protection.
7. The accomplishments of the Caribbean Action Plan were looked at in light of the above issues, focusing on the level of success that has been achieved in the attainment of the principal objectives of the Plan, that is, "to assist the Governments of the Wider Caribbean Region in minimizing environmental problems through assessment and environmental management and to strengthen co-operation in environmental matters..." (UNEP Regional Seas Reports and Studies No. 26).
  8. The following specific criteria were used to ascertain the achievements of the Action Plan:
    - the mobilization of financial and manpower resources of nations in the region for the support of the Action Plan;
    - the enactment, implementation and enforcement of national and international legislation and policies on environment, prompted directly or indirectly by the Action Plan;
    - the level of participation of national institutions in the development and implementation of the Action Plan;
    - the nature, magnitude and quality of training provided through the Action Plan;
    - the efficiency of technical meetings held in the framework of the Action Plan to improve exchange of scientific data and promote co-ordinated management strategies;
    - the level of participation by regional and international organizations, measured by the degree of substantive and financial support provided for the implementation of regional co-operative environmental actions within the framework of the Action Plan;
    - the level of community participation in the decision-making process with respect to resource exploitation and conservation; and
    - the amount and quality of scientific data as well as the information and educational materials generated by the Action Plan.
  9. This evaluation has been prepared by the Secretariat of the Action Plan (UNEP) on the basis of information available in files supplied throughout the years by the collaborating national and international institutions.
  10. The preparation of the evaluation has been co-ordinated by the Oceans and Coastal Areas Programme Activity Centre (OCA/PAC) of UNEP, with the generous assistance of UNEP's Regional Office for Latin America and the Caribbean (ROLAC), and essential input of its staff (Mr. Arsenio Rodríguez), which is hereby gratefully acknowledged.

## **STEPS IN THE DEVELOPMENT AND IMPLEMENTATION OF THE ACTION PLAN**

11. The development of the Action Plan was initiated by a preparatory activity, undertaken by a Project Co-ordinator, operating from UNEP's Regional Office for Latin America and the Caribbean in Mexico City from April 1976 to March 1977 (CEP-1) \*.
12. In December 1976, shortly after the initiation of the preparatory activity, UNEP, FAO and IOC, co-sponsored an International Workshop on Marine Pollution in the Caribbean and Adjacent Regions, in Port of Spain, Trinidad and Tobago, to assess marine pollution problems in the region (CEP-2).
13. In February 1977, the Economic Commission for Latin America and the Caribbean (ECLAC) reached an agreement with UNEP to carry out a joint project to develop an Action Programme for Sound Environmental Management in the Wider Caribbean (CEP-3).
14. In April of that same year a project office was established by ECLAC in Port of Spain, Trinidad.
15. Between August 1977 to July 1978, ample consultations were undertaken with governmental and non-governmental institutions to assess the environmental management priorities of the region.
16. The results of the consultations as well as the review of a preliminary programme of priorities were reviewed in August 1978 by an advisory panel of high level regional experts.
17. Sectoral technical overviews assessing the environmental problems of the Caribbean were prepared from November 1978 to July 1979 by the ECLAC/UNEP Project Unit in collaboration with FAO, UNIDO, WHO/PAHO, UN/DIESA, IUCN, IOC, IMO and OAS.
18. A synthesis of the overviews, including elements for an Action Plan was prepared by UNEP(RS/PAC) in July 1979 and was reviewed by the Advisory Panel in November 1979.
19. The draft Action Plan was reviewed by two meetings of Government-nominated experts, held in Caracas (January 1980) and Managua (February 1981) prior to its adoption by the First Intergovernmental Meeting on the Action Plan for the Caribbean Environment Programme which was held in Montego Bay, Jamaica, in April 1981. The meeting identified a programme of priorities for the implementation of the Action Plan, established a Trust Fund to help support its activities, and decided that a regional legal agreement should be developed.
20. The ECLAC Project Unit in Port of Spain was closed in June 1981 and UNEP, through RS/PAC, assumed total responsibility as Secretariat of the Action Plan.

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\* The references in parentheses relate to the projects listed in Annex I entitled "Analysis of activities carried out in the framework of the Action Plan".

21. The draft regional legal agreements were prepared by RS/PAC, in consultation with Governments of the region, and reviewed by meetings of Government-nominated legal experts in New York (December 1981 and July 1982).
22. The First Meeting of the Monitoring Committee of the Caribbean Action Plan took place in New York, in December 1981. The meeting authorized the implementation, in co-operation with CCA, IMO, CARICOM and WHO/PAHO, of selected priority projects on: environmental education; oil spill contingency planning; and environmental health (CEP-7, 8 and 9). The projects, initiated in mid-1982, were undertaken within the context of the Action Plan and were supported by UNEP's Environment Fund, and counterpart contributions from agencies and government sources (at this time the CTF was not yet operational).
23. The Conference of Plenipotentiaries on the Protection and Development of the Marine Environment of the Wider Caribbean Region was held in Cartagena, 21-24 March 1983. Thirteen governments subscribed to the following agreements: (i) the Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region; and (ii) the Protocol concerning Co-operation in Combating Oil Spills in the Wider Caribbean Region. It is to be noted that the European Economic Community has only ratified the Convention and not the Protocol. In addition, the conference adopted resolutions on the relationship between the Convention, Protocol and Action Plan and on the need to elaborate additional protocols on pollution from land-based sources and specially protected areas and wildlife. Additionally, on this occasion, the Second Meeting of the Monitoring Committee and the Second Intergovernmental Meeting were held from 18-19 March and 24-26 March 1983, respectively.
24. The Caribbean Trust Fund (CTF) became operational in September 1983 when it reached the minimum level of US\$ 250,000 prescribed by its terms of reference, and as a result of this, the Third Meeting of the Monitoring Committee on the Caribbean Action Plan which was held in Havana, Cuba in November 1983, allocated US\$ 636,000 from the CTF for the immediate implementation of projects on oil spill contingency, coastal pollution monitoring, environment and tourism, training and development of impact assessment methodologies (CEP-6, 7, 9, 11, 12, 14, 15, 16).
25. In April 1985, the Third Intergovernmental Meeting on the Caribbean Action Plan held in Cancún, Mexico, allocated US\$ 627,600 for the immediate implementation of projects, and US\$ 170,000 for co-ordination activities including the establishment of the Regional Co-ordinating Unit (RCU)(CEP-GEN, CEP-7, 15, 18, 23 and 24). It also approved a priority list of projects to be implemented as funds became available. Of these, CEP-19, CEP-20, CEP-21 and CEP-22 have already been initiated. Additionally, the Fourth Meeting of the Monitoring Committee held on this occasion studied various alternatives for the establishment of the Regional Co-ordinating Unit (RCU).
26. The RCU became operational on 1 September 1986 in Kingston and formally inaugurated on 11 May 1987 by the Prime Minister of Jamaica and the Executive Director of UNEP.



On this occasion, the Fifth Meeting of the Monitoring Committee was held and provided the Secretariat with guidance on the financial, institutional, legal and organizational aspects relevant to the future implementation of the Action Plan and the Cartagena Convention.

27. The Cartagena Convention and its associated Protocol entered into force on 11 October 1986 with 9 countries ratifying these instruments (Barbados, France, Mexico, Netherlands, St. Lucia, Trinidad and Tobago, United Kingdom, United States of America and Venezuela). Subsequently, Antigua and Barbuda, Colombia, Cuba, Grenada, Jamaica and Panama ratified and/or acceded to these instruments.
28. The First Meeting of the Contracting Parties to the Convention was held in Guadeloupe, France from 26 to 28 October 1987, together with the Fourth Intergovernmental Meeting on the Action Plan for the Caribbean Environment Programme. The Fourth Intergovernmental Meeting decided inter alia: that the implementation of the Action Plan should concentrate "on activities of regional relevance addressing the common problems of the Caribbean region"; and requested an in-depth evaluation of the Action Plan and a reassessment of the region's environmental problems in order that a comprehensive long-term strategy for the future development of the Plan be formulated. The Meeting also approved activities for up to US\$ 2,103,300 to be implemented in four wide subject areas, during the 1988-1989 biennium: co-ordination, information and institutional development; environmental management of coastal and marine resources; assessment and control of marine pollution; and environmental training, education and public awareness. Prior to the Fourth Intergovernmental Meeting, the Sixth Meeting of the Monitoring Committee was held in Guadeloupe, France from 21-23 October 1987.
29. The Meeting of Experts on the Caribbean Environment Programme which was held in Mexico City, 7-9 September 1988, was convened with the following objectives: (a) to review and revise as appropriate, the draft "Regional Overview of Environmental Problems and Priorities Affecting the Coastal and Marine Resources of the Wider Caribbean" (UNEP(OCA)/CAR WG.1/3); (b) to review and comment on the draft "Action Plan for the Caribbean Environment Programme: Evaluation of its Development and Achievements" (UNEP(OCA)/CAR WG.1/4); and (c) to propose concrete region-wide programmes which may constitute parts of a comprehensive long-term strategy for the future development of the Caribbean Environment Programme.
30. The meeting recommended that the Regional Co-ordinating Unit undertakes the finalization of document UNEP(OCA)/CAR WG.1/4 incorporating the necessary modifications in order for the document to become a major fundraising instrument for the Programme. This recommendation was adopted by the Seventh Meeting of the Monitoring Committee on the Action Plan and Special Meeting of the Bureau of Contracting Parties to the Convention for the Caribbean Environment Programme (Mexico City, 12-14 September 1988).

## ACHIEVEMENTS

31. One of the most significant accomplishments of the Caribbean Environment Programme has been the creation of a framework for dialogue and co-operation on sustainable development, management and protection of the resources of the region, in spite of the striking political, cultural and socio-economic diversity that characterizes the Wider Caribbean region.
32. The adoption and ratification by a wide range of Parties, in spite of prevailing regional conflicts, of two regional legal agreements for the protection of marine resources, is an unprecedented event which vouches for the usefulness of this framework.
33. The Action Plan brought together, both in the preparatory and implementation phases, a considerable number of high level Government officials responsible for formulating and implementing policies on environment and on natural resource management.
34. During the development and implementation phases of the Action Plan, numerous national and technical focal points have become actively involved in the identification of the region's environmental priorities (see Annex II). Additionally, numerous intergovernmental and non-governmental organizations have contributed to the Action Plan's development. This concerted pioneering effort to analyze the environment of the region, constituted a very successful exercise of international co-operation that led to the formulation of the management strategies which are the basis of the Action Plan. Furthermore, it yielded important information on the state of the environment of the region.
35. By the end of 1987, twenty-four specific projects stemming directly from the Action Plan had been completed or were in progress. These have already generated significant results in terms of: baseline studies; directories; management guidelines; educational materials; training of scientific and technical personnel; and institutional build-up (see Annex I).
36. The Action Plan has been quite successful in launching wide reaching media campaigns, publishing educational materials and promoting national educational and public awareness programmes in several countries of the region (see analysis of CEP-9 in Annex I). However, it is difficult to quantify the impact of these activities in heightening public awareness of environmental issues.
37. The Caribbean Action Plan has been influential in promoting scientific and technical exchange among the national institutions of the region. In several instances, this has resulted in the adoption of common methodological approaches, for monitoring and managing environmental problems in the region. Relevant examples of the application of this approach relates to the monitoring of marine pollution and procedures for combating oil spills.
38. Approximately 600 scientific and technical personnel have been trained in various aspects of monitoring and managing environmental problems (see Annex IV). The training

provided through the Action Plan has been a significant contributory factor in strengthening the capabilities of participating national institutions.

39. Considerable scientific data and publications have been directly or indirectly generated by the Action Plan. Annex V presents a selection of technical publications and reports developed within the framework of the Action Plan for the Caribbean Environment Programme.
40. National focal points for the Action Plan were identified by every participating Government (see Annex II). These were instrumental, in many instances, in encouraging the establishment of interministerial co-ordination mechanisms to guide the implementation of environmental management policies, identified by the Plan, at both national and regional levels.
41. The Action Plan has been moderately successful in mobilizing financial resources, inside and outside the region to support environmental projects. The principal financial conduits have been the Caribbean Trust Fund, the Environment Fund of UNEP and counterpart contributions provided by participating countries as well as partner organizations.

## **DIFFICULTIES**

### **General**

42. The preparatory and development phases of the Action Plan were exceptionally long (1976-1981) and costly (about 2 million US dollars including an estimated 0.5 million spent by UNEP Regional Seas Programme in direct and indirect support). However, the initial task was a formidable one. There was no consensus among Government officials and scientists as to what type of Action Plan was needed; some wanted a comprehensive master plan, addressing the broad issues of environment and development; others, a plan focusing on concrete issues, like monitoring and managing marine and coastal pollution, or protecting endangered species. There was no agreement either with respect to the need for regional legal accords, or a regional trust fund.
43. Extensive consultations and negotiations were required to achieve a consensus and to obtain the political support which was essential for a successful regional programme. Previous activities of a similar nature in the region, which had focused only on the incorporation of technical institutions and scientists, failed because they did not obtain official and political backing from Governments.
44. In addition to the need for extensive consultations and the lack of definition as to the nature of the programme itself, another factor which contributed to the slow motion of the development phase, was the complicated fashion in which the project was managed. Based in Port of Spain, it was administered from ECLAC, Santiago, supervised programmatically from UNEP Headquarters in Nairobi and OCA/PAC in Geneva.

45. The principal objective of the Action Plan is to promote regional co-operation to address common environmental concerns. Recognizing this, the Intergovernmental Meeting which adopted the Plan in 1981, established as programme priorities those projects that had a "common interest" (see Annex I). In spite of this, there was a growing tendency to - allocate funds from the CTF to support projects that can hardly be classified as regional projects or as national projects having a regional significance.
46. Moreover, project proposals presented by Governments have been in some instances, technically deficient, requiring a lengthy revision process prior to final approval by UNEP. Even then, some projects still lack proper focus to produce useful outputs. One reason for this, is that national scientific institutions seldom participate in the process of project development and implementation. In some cases, the national environmental administrations develop and implement the projects themselves, overlooking the valuable technical input that could be provided by their research institutions.
47. Many of the projects have been carried out in an isolated fashion, without taking advantage of related activities being undertaken in the same subject area by other programmes. Furthermore, for most projects, no follow-up provisions are planned.
48. As in any other developing programme, the enthusiasm of dedicated individuals, well informed about its activities and requirements, is an important factor in maintaining progress at a constant pace. Frequent changes of the national focal points responsible for following-up the Action Plan, as well as changes in the international personnel in charge of the co-ordination have resulted in significant setbacks in its implementation.
49. The implementation of the Caribbean Action Plan during its initial phase, failed to establish effective co-operative links with other programmes, sponsored by multilateral and bilateral sources, which are pursuing similar objectives in the region. This is primarily due to the fact that Governments participating in the Action Plan have not promoted it among their own institutions, nor actively requested at the different international fora, that it be considered as a framework to co-ordinate all regional activities on environment.

### **Institutional Arrangements**

50. The overall authority for the Caribbean Action Plan rests in the biennial intergovernmental meetings. Four of these meetings have been held in the life of the Action Plan:
  - First Intergovernmental Meeting on the Action Plan for the Caribbean Environment Programme, Montego Bay, 6-8 April 1981;
  - Second Intergovernmental Meeting on the Action Plan for the Caribbean Environment Programme, Cartagena de Indias, 24-26 March 1983;
  - Third Intergovernmental Meeting on the Action Plan for the Caribbean Environment Programme, Cancún, 24-26 April 1985; and
  - Fourth Intergovernmental Meeting on the Action Plan for the Caribbean Environment Programme and First Meeting of Contracting Parties to the Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region, Guadeloupe, 26-28 October 1987.

51. The Monitoring Committee was established by the First Intergovernmental Meeting, to provide overall guidance to the Secretariat on the implementation of the Plan, and to periodically review its progress and approve project proposals to be financed by the CTF. The Committee has had seven sessions: New York 1981 (December); Cartagena 1983 (March); Havana 1983 (November); Cancún 1985 (April); Kingston 1987 (May); Guadeloupe 1987 (October); and Mexico 1988 (September). Annex III presents a complete list of meetings convened within the framework of the Action Plan for the Caribbean Environment Programme.
52. The same meeting decided on the establishment of a Regional Co-ordinating Unit, administered by UNEP, and located in Kingston, Jamaica, to provide the technical co-ordination for the various programme activities and act as the Secretariat of the Action Plan.
53. The establishment of the RCU was significantly delayed pending the ratification of the necessary legal agreements by the Government of Jamaica and the availability of funds in the CTF to support its operation. Despite the economic difficulties facing the country, it is important to note the significant contribution of the Government of Jamaica towards the establishment of the RCU in Kingston. The offices of the RCU became operational in September 1986 and the recruitment of a basic core staff was finalized by January 1987. A significant achievement of the Plan has been the fact that poor countries recognize the importance of regional co-operation as a means of achieving sustainable development.
54. Thirty-five States and territories of the Wider Caribbean region as well as the European Economic Community have participated in the Caribbean Action Plan. Several have failed to attend meetings, a number of countries have never contributed to the Caribbean Trust Fund and as of 31 December 1988, fifteen countries have ratified the legal agreements (see Table 1). The attendance to Intergovernmental and Monitoring Committee meetings has been irregular prior to the Guadeloupe meetings (see Figure 1).

FIG. 1. ATTENDANCE AT INTERGOVERNMENTAL AND MONITORING COMMITTEE MEETINGS OF THE CARIBBEAN ENVIRONMENT PROGRAMME 1981-1987

**TABLE 1. STATUS OF THE CONVENTION FOR THE PROTECTION AND DEVELOPMENT OF THE MARINE ENVIRONMENT OF THE WIDER CARIBBEAN REGION AND THE PROTOCOL CONCERNING CO-OPERATION IN COMBATING OIL SPILLS IN THE WIDER CARIBBEAN REGION (AS OF 31 DECEMBER 1988)**

State	Convention		Protocol	
	signed	ratified or acceded(1)	signed	ratified or acceded(1)
Antigua and Barbuda	-	11 September 86	-	11 September 86
Bahamas	-			
Barbados	5 March 84	28 May 85	5 March 84	28 May 85
Belize	-	-	-	-
Colombia	24 March 83	3 March 88	24 March 83	3 March 88
Costa Rica	-	-	-	-
Cuba	-	15 September 88	-	15 September 88
Dominica	-	-	-	-
Dominican Republic	-	-	-	-
European Economic Community	24 March 83	-	24 March 83	-
France (2)	24 March 83	13 November 85	24 March 83	13 November 85
Grenada	24 March 83	30 May 85	24 March 83	17 August 87
Guatemala	5 July 83	-	5 July 83	-
Guyana	-	-	-	-
Haiti	-	-	-	-
Honduras	24 March 83	-	24 March 83	-
Jamaica	24 March 83	1 April 87	24 March 83	1 April 87
Mexico	24 March 83	9 April 85	24 March 83	9 April 85
Netherlands (3)	24 March 83	16 April 84	24 March 83	16 April 84
Nicaragua	24 March 83	-	24 March 83	-
Panama	24 March 83	7 October 87	24 March 83	7 October 87
St. Kitts and Nevis	-	-	-	-
Saint Lucia	24 March 83	30 September 84	24 March 83	30 September 84
Saint Vincent and the Grenadines	-	-	-	-
Suriname	-	-	-	-
Trinidad and Tobago	-	24 January 86	-	24 January 86
United Kingdom (4)	24 March 83	28 February 86	24 March 83	28 February 86
United States of America	24 March 83	31 October 84	24 March 83	31 October 84
Venezuela	24 March 83	18 December 86	24 March 83	18 December 86

(1) Date of deposit of instruments of ratification or accession with Government of Colombia.

(2) Signed with reserve.

(3) Ratified on behalf of Aruba and the Netherland Antilles Federation.

(4) Ratified on behalf of the Cayman Islands, the Turks and Caicos and the British Virgin. Islands reserving the right to extend it at a future date to include the other territories.

Note from the Secretariat: the other territories of the United Kingdom participating in the Caribbean Environment Programme are Anguilla and Montserrat.

NOTE: The Convention and Protocol entered into force on 11 October 1986.

55. The periodic meetings of the Monitoring Committee have been an effective device in supervising the general direction of the programme. However, these meetings are a weak mechanism for the technical evaluation of project proposals and the assessment of the results of on-going projects.
56. It is to be noted that UNEP did not carry out an effective monitoring of the numerous projects that came on stream starting in 1984. Furthermore, it failed to properly evaluate the technical soundness of many of the proposals submitted to the Monitoring Committee prior to project implementation.
57. Prior to the establishment of the RCU, there was a tendency for projects to be assigned to Governments for implementation rather than to regional or international agencies. It is the opinion of the Secretariat that implementation of projects under the Caribbean Environment Programme requires close collaboration between national institutions and international organizations in order to achieve the objectives of the Programme.
58. At the time that different alternatives for staffing the RCU were being considered, UNEP informed the Monitoring Committee (UNEP/IG.46/4) that the minimum operational level of the Unit would be: a co-ordinator, one senior programme officer, an administrative assistant and two bilingual secretaries. Based on this information, the Third Intergovernmental Meeting approved a proposal for the establishment of the RCU (UNEP/IG.55/4, Annex VII). The proposal requested UNEP to finance the co-ordinator and a secretary for a period of two years with the understanding that "Governments/organizations of the Wider Caribbean will sponsor an experienced professional for the RCU on a rotating basis for a minimum period of one year...", and that the Government of Jamaica would furnish the rest of personnel. UNEP, the Government of Jamaica, the United States of America and the Netherlands have provided personnel to the RCU.
59. The interim co-ordination provided by UNEP through its Regional Seas Programme, slackened after the Third Intergovernmental Meeting (Cancún, 24-26 April 1985). From then on, until late 1986, UNEP's follow-up of the Plan virtually came to a standstill. As a by-product, Governments as well as international organizations lost interest in the programme. This was compounded by the appointment, during this period, of many new national focal points, who did not receive any briefing from UNEP as to the status of the programme and its future activities.
60. The Unit started its operation below the minimum functional level, with a fully loaded programme: twenty on-going projects; two legal agreements in force; and a subsequent request for the development of additional protocols. Furthermore, an in-depth evaluation process of the Caribbean Action Plan has been undertaken, together with the formulation of a comprehensive long-term strategy for the future development of the Plan.

## Financial Arrangements

61. Financial support for the activities agreed upon as part of the Caribbean Action Plan were envisaged as originating from several sources:
- Voluntary contributions from States and territories participating in the Action Plan;
  - Voluntary contributions from States supporting the Action Plan but not participating in it;
  - From the United Nations system; and
  - From the regional, subregional and international organizations which are not part of the United Nations system.
62. All these contributions could be in cash or in kind (staff time, experts, training, facilities, services, etc.). The Action Plan defined two mechanisms as channels to receive cash contributions:
- A Caribbean Regional Trust Fund (CTF) to cover common cost expenses (co-ordination, meetings, etc.) and the costs of activities of general interest to all participants in the Action Plan; and
  - Contributions to specific activities agreed upon as part of the Action Plan.
63. The Action Plan clearly stipulates that "the ultimate aim is that the implementation phase of the Caribbean Action Plan should be financially self-supporting...", and furthermore, that "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" (UNEP Regional Seas Reports and Studies No. 26, 1983).
64. The First Intergovernmental Meeting, upon adopting the Caribbean Action Plan, established a Trust Fund for the biennium 1982-1983 for the amount of US\$ 1,500,000 to be financed by voluntary contributions promised by Governments according to an agreed assessment formula. The meeting noted an estimated budget distribution for the 1981-1983 period as follows:

	1981	1982	1983	TOTAL
FROM THE TRUST FUND	650,000	850,000	1,500,000	
FROM UNEP	800,000	300,000	280,000	1,380,000
FROM OTHER SOURCES	300,000	1,950,000	3,070,000	5,320,000
TOTAL	1,100,000	2,900,000	4,200,000	8,200,000

65. Terms of reference for the management of the Caribbean Trust Fund were approved at the First Meeting of the Monitoring Committee. These established, among other things, that "no appropriations from the Trust Fund shall be made... before a minimum of US\$ 250,000 has been contributed to the Trust Fund." (UNEP/IG.30/6, Annex II).



66. This minimum was not achieved until September 1983, at which time the CTF became operational.
67. The level of US\$ 1,500,000 for the Caribbean Trust Fund agreed upon in Montego Bay in 1981 has not yet been realized due to a number of factors. Firstly, the Programme has not attracted the participation of all countries within the region. Secondly, the payment of contributions to the Fund decreased significantly during the second and third biennia due primarily to the lack of political co-ordination resulting from the non-establishment of the RCU. And, finally, one country, has drastically reduced their contribution. It is hoped that with the operation of the RCU, this situation should be remedied. Table / 2 and Figure 2 illustrate the status of pledges and received payments to the Caribbean Trust Fund as of 31 December 1987.

**TABLE 2: STATUS OF PLEDGES AND RECEIVED CONTRIBUTIONS TO THE CARIBBEAN TRUST FUND IN US\$ (AS OF 31 DECEMBER 1987)**

STATE OR TERRITORY	1982-1983		1984-1985		1986-1987		TOTAL	
	Pledged	Received	Pledged	Received	Pledged	Received	Pledged	Received
ANGUILLA	-	-	-	-	-	-	-	-
ANTIGUA AND BARBUDA	-	-	-	-	16450	-	16450	-
ARUBA	-	-	-	-	-	-	-	-
BAHAMAS	16450	16450	16450	16450	16450	16450	49350	49350
BARBADOS	16450	16450	16450	16450	16450	16450	49350	49350
BELIZE	15000	15000	15000	15000	15000	6500	45000	36500
BR. VIRGIN ISLANDS	11000	11000	11000	11000	11000	5500	33000	27500
CAYMAN ISLANDS	-	-	-	-	-	-	-	-
COLOMBIA	30940	30940	30940	30940	30940	30940	92820	92820
COSTA RICA	17898	-	17898	-	17898	-	53694	-
CUBA 30940	30940	30940	30940	30940	18384	92820	80264	-
DOMINICA -	-	-	-	-	-	-	-	-
DOMINICAN REPUBLIC	19347	-	19347	-	19347	-	58041	-
EEC	-	-	-	-	-	-	-	-
FRANCE	375000	375000	375000	375000	375000	375000	1125000	1125000
GRENADA	16450	6001	16450	-	16450	-	49350	6001
GUATEMALA	17898	-	17898	-	17898	-	53694	-
GUYANA	16450	-	16450	-	16450	-	49350	-
HAITI	16450	16450	16450	-	16450	-	49350	16450
HONDURAS	16450	16450	16450	-	16450	-	49350	16450
JAMAICA	25000	25000	25000	-	25000	-	75000	25000
MEXICO	250000	250000	20000	20000	60000	20000	330000	290000
MONTSERRAT	5000	-	5000	-	5000	-	15000	-
NETHERLANDS ANTILLES	30000	15000	30000	-	30000	-	90000	15000

STATE OR TERRITORY	1982-1983		1984-1985		1986-1987		TOTAL	
	Pledged	Received	Pledged	Received	Pledged	Received	Pledged	Received
NICARAGUA	16450	-	16450	-	16450	-	49350	-
PANAMA	17898	17898	17898	17898	17898	15530	53694	51326
ST. KITTS-NEVIS	5000	5000	5000	5000	5000	1180	15000	11180
ST. LUCIA	15000	15000	15000	15000	15000	15000	45000	45000
ST. VINCENT/GRENADINES 15000	15000	15000	15000	15000	3250	45000	33250	
SURINAME	16450	16450	16450	8228	16450	-	49350	24678
TRINIDAD AND TOBAGO	19347	19347	19347	19347	19347	12333	58041	51027
TURKS AND CAICOS	6732	6732	-	-	9000	27000	6732	
UNITED STATES			-	-	-	-	-	-
VENEZUELA	230000	230000	230000	230000	230000	230000	690000	690000
<b>TOTAL</b>	<b>1268600</b>	<b>1150108</b>	<b>1031868</b>	<b>826253</b>	<b>1097318</b>	<b>766527</b>	<b>3409054</b>	<b>2742878</b>

Footnote: At the time of finalizing this document, contributions for the 1988-89 period as well as for previous biennia had been received from Barbados, Colombia, France, St. Lucia, Turks and Caicos Islands and Venezuela.

FIG. 2. PLEDGES AND PAYMENTS TO CARIBBEAN TRUST FUND 1982-1987

(As of 31 December 1987)

68. The marked reduction in CTF's resources is a matter of serious concern. While contributions and pledges have been sharply decreasing, the financial requirements of the Action Plan are escalating at an accelerated pace due to the establishment of the RCU; the entry into force of the legal agreements; and the launching of new projects.
69. Table 3 shows the commitments (through signed projects) and expenditures made from all sources to support the development and implementation of the Caribbean Action Plan in the 1975-1987 period (as of 31 December 1987). Figure 3 illustrates how these resources have been distributed between the development phase, co-ordination support and project implementation. The counterpart contributions presented include UNDP, UNESCO, and the Government of Cuba's support 6 for project FP/CR/8201-79-01 (control and management of pollution in Havana Bay), although not all of it was a contribution to the regional objectives of the Action Plan.

FIG. 3. DISTRIBUTION OF SUPPORT FROM ALL SOURCES TO DIFFERENT ELEMENTS OF THE ACTION PLAN 1976-1987

**TABLE 3. COMMITMENTS AND EXPENDITURES FROM DIFFERENT SOURCES TO SUPPORT THE DEVELOPMENT AND IMPLEMENTATION OF THE ACTION PLAN FOR THE CARIBBEAN ENVIRONMENT PROGRAMME (1975-1989) (AS OF 6 NOVEMBER 1989)**

Project Number	Implementation	Subject	Duration	EF	CTF	CP	Total Cost
<b>A. Projects related to the development of CEP</b>							
FP/0503-76-02	UNWP	Preparatory	(1976-1977)	45,548	-	-	45,548
FP/1000-77-01	ECLAC	Development	(1977-1981)	1,135,262	-	150,000	1,285,262
FP/0501-73-05	IOC/FAO	Marine Pollution	(1975-1976)	4,712	-	6,900	11,612
FP/0503-76-07	IOC/FAO	Marine Pollution	(1976-1977)	28,720	-	21,500	50,220
FP/0503-77-07	IOC	Directories	(1979)	2,518	-	10,500	13,018
FP/0501-78-02	IMCO	Marine Pollution	(1978-1979)	30,379	-	11,580	41,959
FP/0503-80-08	OAS	Oil Pollution Control	(1980)	26,035	-	75,000	101,035
Sub-total				1,273,174		275,480	1,548,654

**B. Projects directly related to implementation of the Action Plan**

**1. Co-ordination**

FP/1200-75-01	WMO	Natural Disasters	(1976-1980)	78,361	-	43,000	121,361
FP/5102-77-03	UNEP	General Support	(1977-1984)	906,000	-	-	906,000
FP/1105-81-01	SIERRA C	Coastal Management	(1982-1983)	117,000	-	141,000	258,000
FP/CR/5102-82-02	UNEP	General Support	(1982-1986)	884,530	99,259	138,452	1,123,241
FP/5103-85-03	IUCN	Species Management	(1985-1987)	30,010	-	63,000	93,010
FP/5102-85-05	UNEP	General Support	(1985)	142,000	-	-	142,000
FP/5102-86-02	UNEP	General Support	(1986-1989)	13,523	-	-	13,523
FP/CR/JA/CP/5102-86-05	UNEP	General Support	(1986-1987)	507,432	845,000	630,513	1,982,945
Sub-total				2,678,856	944,259	1,015,965	4,640,080

## 2. Projects

FP/CR/8201-79-01	UNESCO	Coastal Management	(1981-1986)	513,086	40,171	5,413,501	5,966,758
FP/CR/5102-80-07	CARICOM	Marine Pollution	(1981-1987)	457,766	360,270	585,841	1,403,877
FP/CR/5102-82-12	CCA	Environmental Education	(1983-1984)	38,000	50,000	29,000	117,000
FP/5102-82-13	IMO	Oil pollution Control	(1982)	44,698	-	17,000	61,698
CR/5102-84-03	IMO	Oil Pollution Control	(1984-1985)	-	69,697	41,000	110,697
CR/5102-84-05	ECLAC	Tourism	(1984-1985)	-	47,892	34,800	82,692
FP/5102-84-06	FAO	Directories	(1985-1986)	49,700	-	21,080	70,780
CR/5102-84-07	UNEP-ROLAC	Training	(1984-1987)	-	46,322	-	46,322
CR/5102-84-08	IOC	Marine Pollution	(1985-1986)	-	115,958	169,500	285,458
CR/5102-85-01	MEXICO	Environmental Impact	(1987)	-	88,000	63,611	151,611
FP/5102-85-04	IUCN	Environmental Management	(1985-1989)	6,000	-	2,000	8,000
CR/5102-86-03	FRANCE	Industrial Wastes	(1986)	-	25,418	43,100	68,518
FP/5102-86-04	WIDECAS	Conservation	(1986-1987)	-	27,000	318,000	345,000
FP/CR/5102-87-02	CCA	Environmental Education	(1987-1988)	40,504	76,000	14,000	130,504
CR/5102-87-04	UNESCO	Conservation	(1987-1988)	-	64,900	33,000	97,900
CR/5102-87-06	IMO	Oil Pollution Control	(1987-1988)	-	104,500	64,000	168,500
CR/5102-87-07	UNESCO	Coastal Management	(1987-1988)	-	90,000	251,000	341,000
CR/5102-87-08	VENEZUELA	Marine Pollution	(1987-1989)	-	190,000	385,000	575,000
Sub-total				1,149,754	1,396,128	7,485,433	10,031,315
Total				<b>5,101,784</b>	<b>2,340,387</b>	<b>8,776,878</b>	<b>16,220,049</b>

70. Appropriations of the resources of the CTF by the Monitoring and Intergovernmental Meetings have been on the rise in the 1983-1987 period. Table 4 and Figure 4 illustrate CTF appropriations. The expansion of the programme of activities, coupled with diminishing income and increasing inflation, should by now have curtailed the implementation of the Action Plan. Two factors prevented this: the lull in programme implementation during the 1985-1986 period, coupled with the simultaneous accumulation of overdue payments; and UNEP's continuation of its support at higher levels than those prescribed by its catalytic role.

**TABLE 4. APPROPRIATIONS OF CTF RESOURCES BY INTERGOVERNMENTAL AND MONITORING COMMITTEE MEETINGS**

MEETINGS	APPROPRIATIONS				
	IMMEDIATE PROJECTS (a)	PENDING PROJECTS (b)	CO-ORDINATION	PROGRAMME SUPPORT (c)	TOTAL
III MONITORING COMMITTEE (Havana, 8-11 November 1983)	636,000	425,000	60,000	-	1,121,000
III INTERGOVERNMENTAL (Cancún, 24-26 April 1985)	627,000	803,200	50,000	98,800	1,579,000
V MONITORING COMMITTEE (Kingston, 11-13 May 1987)	-	-	60,000	-	60,000
IV INTERGOVERNMENTAL (d) (Guadeloupe, 26-28 October 1987)	-	1,548,300	555,000	-	2,103,300
TOTAL	1,263,000	2,776,500	725,000	98,800	4,863,300

- (a) Appropriations to projects for immediate implementation against funds available at the time of the meetings.
- (b) Appropriations for projects left on a pending status (in priority order) until funds become available, includes planned co-ordination support.
- (c) Overhead costs charged by UNEP (13% of expenditure), not identified in appropriations by other meetings.
- (d) At this meeting no priority order was fixed for project implementation, projects were to be implemented "as soon as they are appropriately prepared".

**FIG. 4. APPROPRIATIONS FOR PROGRAMME IMPLEMENTATION FROM CARIBBEAN TRUST FUND 1983-1987**

Footnote: Appropriations of the CTF's resources by the Monitoring and Intergovernmental Meetings have steadily increased during the 1983-1987 period.

- 71. The Government of France, the single major contributor to the Caribbean Trust Fund, has already indicated to UNEP that their regularly paid contributions, at amounts agreed in the Intergovernmental Meetings, are proportionately too high, in view of the fact that contributions from many other governments are not being received in the agreed amounts.
- 72. The French Government had originally stated in Montego Bay, at the time when the first pledges were made to the CTF, that they would only pledge 25% of the total of the Fund set at US\$ 1,500,000, and in fact they have contributed 40% of the total sum received by the Fund in the 1982-87 period.(\*)

73. As stated in the Action Plan, financial support to the Programme from the Environment Fund of UNEP is to decrease gradually, in line with the catalytic role of the organization, and the Action Plan has to become financially self-supporting. Actually, UNEP has already gone beyond its original plans in supporting the Action Plan, and its expected future contribution, subject to the availability of funds, would not exceed the amount of US\$ 700,000 for 1988-1989 and will certainly taper off as the CTF assumes greater responsibility for the common costs associated with the Plan.
74. Financial support was also envisaged in the Action Plan, from other sources that could contribute to the implementation of activities on a project by project basis. These sources have come short of the Montego Bay estimates. They have chiefly provided in kind support to develop the activities of the Action Plan. Although this genre of assistance has proved most valuable in facilitating the implementation of the programme, it in itself is an outcome of cash inflows, a multiplier of the allocated CTF and UNEP funds.
75. The economic crisis affecting the Caribbean nations cannot be overstated. It could be argued as the main reason behind the lack of support to the Caribbean Trust Fund. On the other hand, the levels of the quotas assigned to each country are extremely modest, even when taking into account the economic crisis. Perhaps a more plausible explanation could be that, prior to the establishment of the RCU, several countries were thoroughly convinced that the Action Plan was truly a viable vehicle for regional co-operation on environmental and natural resource management; and as to what are the concrete benefits that could be derived from it.
76. Support to the Action Plan from other sources, including those countries participating in the programme, but not contributing to the Trust Fund could be procured, if those Governments which are actively participating, visibly demonstrate their political support for it, at the various international fora and in their bilateral negotiations.

## **TRAINING AND TECHNICAL ASSISTANCE**

77. The Caribbean Action Plan gives the highest priority to strengthening the institutional and human resources of the countries of the region, in the various fields of environmental management. For this reason the training and technical assistance component is present in most of the projects designed to implement the Action Plan. A list of individuals that have participated in training exercises stemming from the Action Plan is provided in Annex IV. Several international agencies and regional organizations have actively collaborated in the training activities: ECLAC, IOC, IMO, FAO, WHO/PAHO, CARICOM, CCA and OAS.

(\*) At the time of finalizing this document and given the contributions received in payment of arrears from several countries, the percentage of the French contribution to the CTF has significantly diminished.

78. It is difficult to assess how adequate the training provided has been in achieving the objective of developing human resources and institutions, as specific feedback from the

participants is not available. Nonetheless, the general perception is that individual and group training, conducted in the areas of marine pollution monitoring and oil spill contingency planning, have been quite effective in improving the capabilities of the participating national institutions in these fields.

79. The provision of technical assistance (experts and equipment) has been limited to two specific cases: the build up of the CARICOM's Caribbean Environmental Health Institute in St. Lucia (CEP-7); and inputs to the Cuban Institute of Transportation Research for the development of a marine pollution and coastal zone management project for Havana Bay (CEP-6). A substantial amount of the assistance for the latter was made possible through the use of non-convertible currencies available to UNEP's Environment Fund.

## **SUMMARY**

80. Widespread consultations with the States and territories of the region and with international and regional bodies, at both governmental and non-governmental levels, to identify environmental priorities and design appropriate management strategies, were crucial in developing a politically and technically viable Action Plan that was a suitable instrument for regional co-operation.
81. The adoption of the Caribbean Action Plan created an effective dialogue for co-operation in addressing common environmental concerns. The signing and ratification of regional legal agreements, in spite of prevailing conflicts, and the launching of regional co-operative actions for the control and prevention of shared problems like marine pollution and accidental oil spills, confirms the usefulness of this dialogue.
82. The Action Plan has yet to attain its full potential with regard to regional co-operation. The temporary loss of focus on long-term goals should now be replaced by a long-term comprehensive strategy capable of yielding additional, more effective and efficient benefits and results to the participating countries. The work of the RCU, based in Kingston, should now attract the interest and support of all governments within the region, including that of funding agencies, acting in partnership in the attainment of sustainable development within the region.
83. The lack of interest has been reflected in: diminishing participation in the Action Plan's intergovernmental meetings; a drastic reduction in the payments to the Caribbean Trust Fund; and important cutbacks in pledges by some countries.
84. Several countries of the region have never become fully incorporated in the Action Plan, others seem to have abandoned their initial interest altogether, and some, although participating in the programme, have never committed themselves to finance its common costs. The non-committal posture of the United States, to G contribute financially to the programme or to actively promote and support it, stands out as a singular example. On the other hand, the Action Plan has never been seriously promoted by other Governments, even those participating actively in it, among the international and bilateral sources which are undertaking similar programmes in the region. Moreover, Governments have allocated

some of the scarce funds of the CTF to support projects that can hardly be defined as having a regional significance.

85. It is of interest to note that, at the time when there was a growing lack of interest in the programme, and an ebb of income flows to support it, the Caribbean Action Plan arrived at a new promissory phase; the opening of the Regional Co-ordinating Unit in Kingston, and the entry into force of the Cartagena agreements. These recent developments augment the possibilities of attaining the objectives of the Action Plan. The new thrust brought by the establishment of the RCU is already yielding new implementation initiatives, which if successful, could bring forth a new direction to the programme. These initiatives include the design of new projects having a regional character and executed in a co-ordinated fashion, a more active pursuit of linkages with other regional programmes and of communications with participating Governments.
86. In conclusion, a revitalization of the implementation of the Caribbean Action Plan is essential, basically through new well-conceived regional activities, which clearly demonstrate the concrete benefits to be accrued from regional co-operative actions. Additionally, the full participation in the Action Plan by Governments that have not previously done so, must be actively sought.
87. At the last Intergovernmental Meeting (Guadeloupe, 26-28 October 1987), governments realized that the implementation of the Caribbean Action Plan needed a reorientation, and initial steps were taken in this direction, including the request for this evaluation.
88. It is too early yet to assess the end result of the initiatives coming out of the recently established RCU and the reorientation requested at the Intergovernmental Meeting held in Guadeloupe, although one is certain that they will lead to a revitalization of the Action Plan; otherwise, the significant investments already made, in terms of funds (nearly US\$ 15,000,000), human commitment and care would have been in vain.



## ANNEX I

### ANALYSIS OF ACTIVITIES CARRIED OUT IN THE FRAMEWORK OF THE ACTION PLAN

This Annex contains: (a) the list of all projects undertaken specifically in the framework of the Caribbean Action Plan or directly supporting it; and (b) the analysis of the results obtained by individual projects.

#### A. LIST OF PROJECTS

Projects are arranged in chronological order, i.e. as they have been approved by the Environment Fund of UNEP. Project numbers of completed projects are underlined. The organizations responsible for their implementation are identified in the project titles. Activity codes do not correspond to previous denominations used in other CEP documents.

PROJECT NUMBER	PROJECT TITLE	ACTIVITY CODE
FP/0503-76-02	Caribbean Environment Programme Activity - Preparatory Activity (P.A.1) (UNEP)	CEP-1
FP/0503-76-07	Joint IOC/FAO/UNEP International Workshop on Marine Pollution in the Caribbean and Adjacent Areas (formerly FP/0501-73-05 Caribbean Regional Pollution Workshop)	CEP-2
FP/1000-77-01	Development of an Action Programme for Sound Environmental Management in the Wider Caribbean Area (UNEP)	CEP-3
FP/5102-77-03	Programme Activity Centre for Regional Seas	CEP-GEN
FP/0503-77-07	Preparation of the "Directory of Marine and Fisheries Research Centres of the Caribbean and Adjacent Regions" (UNEP)	CEP-4
FP/0501-78-02	IMCO/UNEP International Workshop on the Prevention, Abatement and Combatting of Pollution from Ships in the Caribbean (Cartegena, Colombia)	CEP-5
FP/CR/8201-79-01	Investigation and Control of Marine Pollution in Cuba (UNESCO/UNDP/Government of Cuba)	CEP-6
FP/CR/5102-80-07	Protection of the Marine and Coastal Environment of the Caribbean Islands (CARICOM)	CEP-7
FP/0503-80-08	Formulation of a Caribbean Oil Spill Control Plan (IMO)	CEP-8
FP/CR/5102-82-02	UNEP Support to the Implementation of the Caribbean Action Plan	CEP-GEN
FP/CR/5102-82-12	Development of Environmental Education and Public Awareness in the Wider Caribbean Region (CCA)	CEP-9
FP/5102-82-13	IMO/UNEP Workshop on Oil Spills and Shoreline Clean-up in the Islands of the Wider Caribbean Region	CEP-10
CR/5102-84-03	Development of Sub-Regional Contingency Plans for the Islands of the Wider Caribbean (IMO)	CEP-11
CR/5102-84-05	Tourism and Environment in the Wider Caribbean region (ECLAC)	CEP-12
FP/5102-84-06	Directories of Marine Institutes and Bibliographies of Marine Pollution (UNEP)	CEP-13
CR/5102-84-07	Environmental Training Project for the Wider Caribbean Region (UNEP - UCORED)	CEP-14
CR/5102-84-08	IOC/UNEP Project in Support of the CARIPOL Regional Programme for Research and Monitoring of Petroleum Pollution in the Marine Environment	CEP-15
CR/5102-85-01	Development of Specific Methodologies for the Preparation of Environmental Impact Assessment in the Wider Caribbean (Ministry of Environment - SEDUE -	CEP-16

	Mexico)	
FP/5102-85-04	IUCN's Assistance to Inter-regional Activities on Coral Reef Management	CEP-17
FP/5102-85-05	Programme Activity Centre for Oceans and Coastal Areas (OCA/PAC)	CEP-GEN
FP/5102-86-02	Programme Activity Centre for Oceans and Coastal Areas	CEP-GEN
CR/5102-86-03	Demonstration Workshop for the Treatment of Rum Distillery Wastes by Methanization (Ministry of Environment of France)	CEP-18
FP/5102-86-04	Promotion of the Survival and Recovery of Endangered, Threatened and Vulnerable Sea Turtles in the Caribbean Region (WIDECAST/Monitor International)	CEP-19
FP/CR/JA/CP/5102-86-05	Support for the Regional Co-ordinating Unit for the Action Plan of the Caribbean Environment Programme (UNEP)	CEP-GEN
FP/CR/5102-87-02	Development of Environmental Education and Public Awareness on Marine and Coastal Resources Management in the Wider Caribbean Region (CCA)	CEP-20
CR/5102-87-04	Feasibility of Establishing Biosphere Reserves in the Lesser Antilles Notably as Demonstration Areas for Regional Co-operation in Developing Sound Environmental Management Practices (UNESCO/MAB)	CEP-21
CR/5102-87-06	Sub-Regional Oil Spill Contingency Planning in the Wider Caribbean (Phase II) (IMO)	CEP-22
CR/5102-87-07	Environmental Management of Bays and Coastal Zones in the Wider Caribbean (UNESCO/Government of Cuba)	CEP-23
CR/5102-87-08	Assessment of Contamination by Hydrocarbons and other Pollutants in the South-eastern Waters of the Caribbean Sea (Ministry of Environment - MARNR - Venezuela)	CEP-24

## B. ANALYSIS OF INDIVIDUAL PROJECTS

The results of each project have been primarily analyzed from the standpoint of their contribution to the formulation and adoption of the Action Plan, as well as to the subsequent implementation of its objectives. Activities CEP-1 to CEP 4 were preparatory activities that led to the development of the Action Plan. CEP-6 to CEP-8 activities were initiated before the adoption of the Action Plan but contributed towards its implementation, CEP-6 and CEP-7 continued after the adoption of the Action Plan and received support from the Caribbean Trust Fund.

### CEP-GENERAL (SUPPORT AND DEVELOPMENT)

#### UNEP SECRETARIAL SUPPORT TO THE DEVELOPMENT AND IMPLEMENTATION OF THE ACTION PLAN FOR THE CARIBBEAN ENVIRONMENT PROGRAMME CEP-1, CEP-3 AND CEP-GEN.

The general support of UNEP for the development and implementation of the Caribbean Action Plan has been provided through six internal and one external projects: FP/0503-76-02; FP/1000-77-01 (ECLAC); FP/5102-77-03; FP/CR/5102-82-02; FP/5102-85-05; FP/5102-86-02 and FP/CR/JA/CP/5102-86-05. In addition, support for an estimated amount of US\$ 906,000 was provided through FP/5102-77-03. These projects covered:

- (a) support for a Project Co-ordinator undertaking a preparatory activity out of S UNEP's Regional Office for Latin America and the Caribbean (April 1976-April 1977);

- (b) cost of UNEP/ECLAC staff and consultants involved in the development of the Caribbean Action Plan until the time of its adoption (August 1977-April 1981);
- (c) support for staff in charge of providing interim co-ordination for the implementation of the Action Plan, until the establishment of the RCU in Jamaica (from April 1981 until September 1986);
- (d) support for sixteen technical and Intergovernmental Meetings convened by UNEP. Seven of these meetings were related to the development and adoption of the Action Plan and the Convention. The others have been part of the follow-up implementation (see Annex III for list of meetings); and
- (e) support for the Regional Co-ordinating Unit for the Action Plan.

The total cost of the above projects, to the Environment Fund of UNEP, from 1976 to December 1987 amounts to US\$ 4,737,113.

#### Development Phase

The development of the Caribbean Action Plan in its early stages consisted primarily of an extensive consultation process, at both technical and political levels, to define its scope and make it a relevant instrument to help solve the region's environmental needs. The Action Plan exercise was initially undertaken by UNEP at the request of some Governments of the region. However, this request was not known to the majority of the countries of the region. The principal objectives of the preparatory activity and the UNEP/ECLAC project were: to explore and enlist the political will of the Governments of the region; to underwrite a framework for regional co-operation on environmental matters; to assess the principal common environmental concerns of the region; and to formulate a comprehensive programme of action to attend to these concerns on a short and long term basis. The striking diversity of the region, in cultural, socio-economic and natural endowments aspects, was a formidable obstacle that had to be overcome in order to arrive at a programme supported by a broad consensus. On the other hand, the identification of common environmental concerns was difficult in view of several factors: the paucity of environmental data; the relative low priority assigned to the environment by a large number of Governments; and the lack of agreement among natural and social scientists, as well as policy makers, concerning the substance of the regional programme to be developed, and the mechanisms to implement it. Some argued in favour of a comprehensive plan of action covering the broad spectrum of environment and development, emphasizing that the major priority of the region was to attain social and economic development on a sustainable basis. Another sector favoured precise and concrete programmes, oriented to the solution of immediate concerns like oil spills, coastal pollution and conservation. Furthermore, there was broad disagreement among key countries as to the need for regional legal agreements and the Trust Fund.

Between 1976 and 1980, continuous consultations were undertaken with national, governmental and non-governmental organizations, as well as with regional and international bodies. On the basis of individual consultations and the study of recommendations stemming from various meetings of experts in particular fields of the environmental agenda, preliminary

environmental management priorities were identified by the end of 1977. Between 1978 and 1979, overview studies to assess the environmental problems of the region were undertaken in the following areas: agriculture, coastal development; natural disasters; human settlements and tourism; energy production and consumption; environmental health; and marine pollution. These were developed with the collaboration of FAO, UNDIESA, UNIDO, UNDRO, IMO, OAS and IUCN. A synthesis of these overviews including elements for an Action Plan was prepared by the Regional Seas Programme of UNEP. This synthesis was reviewed by a small advisory panel of high level experts from the region, and a draft Action Plan was formulated.

The draft Action Plan, together with alternative mechanisms for its financial and institutional support was presented before two meetings of Government-nominated experts, convened by UNEP, and held respectively in Caracas and Managua, in January 1980 and February 1981. The first meeting reviewed the draft Action Plan and considered general items regarding its implementation. The second meeting continued the review in greater detail and considered alternative financial and institutional arrangements to support the programme. The meeting agreed on a list of priority activities: the establishment of a regional Trust Fund; and the establishment of a Regional Co-ordinating Unit, somewhere in the region, to oversee the implementation of the Action Plan.

The recommendations of the Experts Meeting, were presented to an Intergovernmental Meeting held in Montego Bay, Jamaica in April 1981, attended by 22 Governments.

The meeting adopted the Action Plan, established a Trust Fund of 1.5 million US dollars for the 1982-1983 biennium, decided that the Regional Co-ordinating Unit (RCU) be sited in Kingston, Jamaica, and requested UNEP to develop a flexible regional agreement to be considered at a later date.

The Action Plan adopted by the Montego Bay Meeting, was a comprehensive programme covering: marine and coastal pollution; environmental impact; tourism; environmental health; watershed management; natural disasters; and environmental education. The Plan envisaged the development of assessment and management activities for each of these programme elements. Governments identified priorities of common concern which are listed in the Action Plan.

The development phase of the Caribbean Action Plan lasted five years, from April 1976 to April 1981, and represented a cost of approximately US\$ 2,000,000 to the Fund of UNEP and US\$ 400,000 from other sources. Of the amount spent by UNEP, an estimated US\$ 450,000 was used to cover costs of meetings, US\$ 200,000 for costs associated with the preparation of the overviews and the remnant (US\$ 1,350,000) for staff and general co-ordination activities. Seemingly, the time and cost involved in the development of the Action Plan were excessive. However, one must take into account the complexity of the region, the dearth of information available, and the lack of consensus among the countries of the region about the nature of the programme and the supporting measures required.

In addition, the institutional arrangements for the main project supporting this development phase (FP/1000-77-01) were not conducive to efficient implementation; a cumbersome and long-distance administrative and substantive supervisory procedure, (split

between Nairobi and Santiago) was applied to run the Port of Spain-based project. Compounding this, the site of the project itself did not make available suitable communications facilities and other necessary infrastructural requirements to enable the efficient operation of the project.

The adoption of the Caribbean Action Plan as a framework for regional co-operation on environmental matters, over a broad political and technical consensus, in a fragmented and strikingly diverse region, is indeed a noteworthy accomplishment. The consultations which led to the adoption of the Action Plan, mobilized an unprecedented number of Government officials, non-governmental organizations and international and regional agencies to assess, for the first time in a concerted manner, the common environmental priorities of the region and their relationship with developmental concerns, and to identify regional co-operative management strategies.

The potential of the Action Plan to serve as a vehicle for regional integration, has yet to manifest fully, although already the adoption of regional legal agreements for the protection of the marine commons, and the development of co-operative activities to monitor and control marine and oil pollution can be considered important strides towards this end.

## Implementation

UNEP has contributed (US\$ 1,808,390) as general support for the implementation of the Caribbean Action Plan since its adoption in 1981. This figure does not include support for specific activities of the Action Plan which are described in the continuing sections of this Annex.

Through the projects referred to above, UNEP has provided staff support for co-ordination activities, and covered the costs of Experts and Intergovernmental Meetings (travel, participation and conference service costs in the former, and conference service costs for the latter). Three legal Experts Meetings, six Meetings of the Monitoring Committee and four Intergovernmental Meetings (including the Conference of Plenipotentiaries that adopted the legal agreements) have been thus far sponsored (see Annex III for list of meetings).

The Intergovernmental Meetings provide the overall authority for the Action Plan. They are set to take place every two years and constitute the highest expression of the political and technical dialogue on environmental matters -established within the framework of the Action Plan. As such, they are in themselves an accomplishment, besides being an effective mechanism for determining priorities in the programme and deciding on the necessary supporting measures for its implementation.

The Monitoring Committee was established by Governments to provide technical and policy guidance to the Secretariat between Intergovernmental Meetings. The meetings of the Committee have played an essential role in allowing Governments of the region to redefine, when necessary, the contents of the Plan and to oversee its implementation.

On the other hand, the Monitoring Committee has been assigned the task of providing policy guidance to the Secretariat and reviewing progress made in the implementation of specific activities and project proposals for future implementation. However, at times, the Committee has been assigned the task of reviewing and approving highly technical proposals and reports. The short term assigned for this task and the technical nature of it goes beyond the capabilities of the Committee, leading occasionally to significant shortcomings in the analysis of results, and the approval of technically deficient project proposals. The project approval and review process needs to be redesigned in order to allow inputs to the proposals from national scientific and technical institutions prior to their consideration by the Monitoring Committee.

The common co-ordination costs of the Action Plan include besides the meetings, staff and associated administrative costs. Up to now, UNEP's contribution towards these common costs have been the largest. From 1981 until 1986, UNEP financed direct staff support through a programme officer and a secretary, indirect support from other professional and administrative staff of its Regional Seas Programme, and associated administrative support such as travel and communications. Since June 1986, it has financed the Co-ordinator of the RCU and a secretary. The support for the RCU staff will continue until end of 1988, at which point it is expected that the CTF will shoulder all common costs of the Action Plan and UNEP will shift its support to specific Action Plan projects that coincide with the priorities established by its Governing Council.

In addition, to bearing the costs of meetings and providing staff support for the co-ordination, UNEP has sponsored, through the CEP-GEN projects: media seminars, publications and film documentaries to promote and publicize the Action Plan; drafting committees to prepare the final texts in French, English and Spanish of the Convention and Protocol; training of scientific and technical personnel in specific analytical techniques; and technical assistance to countries of the region affected by oil spills.

A documentary on the Caribbean Environment produced and broadcasted by BBC has been highly regarded in the region as an educational tool and is perhaps the best documentary on the environment of the insular Caribbean which is now available. On the other hand, the special issue of "Ambio" on the Caribbean (Volume X, No. 6, 1981), provided a serious scientific digest of different region wide environmental issues. Both of these information tools were produced as part of the general support provided by UNEP to the Caribbean Action Plan.

A media seminar was held in Cartagena, Colombia, in March 1983, in conjunction with the Second Intergovernmental Meeting and Conference of Plenipotentiaries. More than 25 journalists and media professionals from the region participated in the seminar. Briefing materials and press kits on environment and development issues in the Caribbean region were prepared by Earthscan on behalf of UNEP, distributed and explained to the participants. The seminar spawned numerous articles on environmental issues in newspapers and magazines throughout the region.

It is not possible to quantify the effect these information activities have had in raising public awareness on environmental issues. However, in all cases, the information was widely disseminated and most likely it has helped cast public opinion on these matters.

CEP-GEN has supported training of staff members of the Caribbean Environmental Health Institute in St. Lucia in the analysis of pesticide residues using gas chromatography and intercalibration of microbiological monitoring methods for coastal waters. Technical expertise on microbiological monitoring and general chemical analytical techniques was also provided to CEHI.

Technical assistance was also provided to the Government of Jamaica in 1981, for the development of watershed management guidelines, for the assessment of the damage caused by an offshore oil spill and to the Government of Mexico during 1980 for the assessment of the ecological impact of the spill from the offshore platform IXTOC-1 in the Gulf of Mexico.

## **CEP-2**

### **JOINT IOC/FAO/UNEP INTERNATIONAL WORKSHOP ON MARINE POLLUTION IN THE CARIBBEAN AND ADJACENT AREAS**

This Workshop was held in Port of Spain, Trinidad and Tobago, in December 1976, with the participation of thirty-eight international and regional experts. The workshop assessed marine pollution problems in the Caribbean and adjacent regions.

Technical papers were presented in topics such as regional oceanography, monitoring for heavy metals, studies of petroleum pollution and river inputs. The workshop identified oil pollution as the most acute marine pollution problem of the region. On the basis of the recommendations of the workshop, the CARIPOL Marine Pollution Research and Monitoring Programme was established as an activity of IOCARIBE (IOC/UNESCO), initially focussing on the assessment and distribution of petroleum pollution in the region.

Other recommendations of the meeting referred to proposals for regional actions on health aspects of marine pollution, coastal processes related to the transfer and mixing of pollutants, effects of marine pollution on living resources and training education and mutual assistance. Except for the CARIPOL exercise and the training activities associated with it, the Workshop's recommendations have not been implemented and many of them are now outdated. A follow-up workshop is now being planned for 1988.

The total cost of the workshop was US\$ 50,220 (28,720 contributed by UNEP and 21,500 by FAO and IOC). The workshop constituted the technical basis for the development of the marine pollution monitoring programmes of the Caribbean Action Plan. Unfortunately, no follow-up was provided to the other recommendations of the workshop.

## **CEP-4**

### **PREPARATION OF THE "DIRECTORY OF MARINE AND FISHERIES RESEARCH CENTRES OF THE CARIBBEAN AND ADJACENT REGIONS"**

The Directory was first issued in 1980 as a joint UNEP/IOC effort and contained references to more than 150 institutions describing: facilities, laboratory equipment; scientific and technical personnel resources; and main fields of research interests. The Directory has been widely distributed and has definitively contributed to linking marine research institutions in the region. A second edition was published in 1985 as a Directory of Marine Environmental Centres in the Caribbean containing updated information on institutions dealing with the marine environment in the region both at the research and policy levels (see CEP-13).

The total cost for the preparation and publication of the first edition of the Directory was US\$ 13,018 (2,518 from UNEP and 10,500 from IOC).

#### **CEP-5**

#### **IMCO/UNEP INTERNATIONAL WORKSHOP ON THE PREVENTION, ABATEMENT AND COMBATTING OF POLLUTION FROM SHIPS IN THE CARIBBEAN**

The IMCO/UNEP International Workshop on the Prevention, Abatement and Combatting of Pollution from Ships in the Caribbean was held in October 1978 in Cartagena, Colombia. Thirty-five key personnel from nineteen countries were trained in identifying pollution problems caused by ships. The training was instrumental in the formulation of national programmes aimed at: (a) the implementation of requirements of relevant international Conventions for the prevention of pollution from ships; (b) recommendations on the necessary institutional and administrative arrangements for contingency planning. The Workshop utilised the services of a team of instructors from the Environmental Engineering Division of Texas A&M University.

The Workshop costed US\$ 41,959 (US\$ 30,379 from the Environment Fund and US\$ 11,580 from IMCO).

#### **CEP-6**

#### **INVESTIGATION AND CONTROL OF MARINE POLLUTION IN CUBA**

This project was initiated in 1979 as part of the UNDP Country Programme for Cuba. Its original objective was to develop an action plan to identify the operational programmes necessary to initiate the decontamination of Havana Bay. Additional objectives were incorporated into the project through subsequent amendments including:

- (a) establishment of scientific and technical infrastructure for research and monitoring pollution of Havana Bay and adjacent areas;
- (b) the promotion of Cuban participation in activities related to the environment at the regional level;



- (c) the integration of the projects' activities within the Caribbean Action Plan framework, using the project as a case study for the control of marine pollution in the Wider Caribbean; and
- (d) to provide training in management and control of pollution in bays and adjacent coastal waters to regional experts through a regional workshop.

The results of the project as it refers to national objectives were impressive as it substantially achieved all of its objectives. Some of the outputs of the project at the national level were:

- (a) a detailed manual of methodologies for monitoring pollution in Havana Bay;
- (b) a complete inventory and characterization of pollutants discharged to the Bay;
- (c) the establishment of a scientific and technical infrastructure (personnel and equipment) to deal with the environmental management of bays and coastal ecosystems in Cuba;
- (d) the creation of a scientific library and a data bank on various aspects of coastal pollution in Cuba
- (e) specific management recommendations to abate the pollution problems of Havana Bay and decontaminate its waters; and
- (f) a Master Plan for the rehabilitation of the Bay divided into short, medium and long term required actions. Many of the short term actions are already being implemented.

The regional component of the project consisted mainly of three concrete activities: two regional workshops held in Havana in 1984 and 1985 respectively; and an international training course on applied marine pollution monitoring methodologies, based on the experiences of the Havana Bay study. Specialists from Colombia, Mexico, Panama, and Venezuela took advantage of this training course.

In our opinion, the regional component of the project was not as fully developed as the national one. The integration of the project into the Caribbean Action Plan framework was not completely successful, perhaps due to the fact that the project was initiated well before the other Action Plan activities reached the implementation stage. Nevertheless, the extensive documentation resulting from the project and the methodologies adapted to study a tropical embayment are a positive contribution to the analysis of similar environmental problems in the coastal areas of the region.

The total cost of this project was US \$5,966,758 broken down as follows:

Cost to UNEP's Fund	
- Convertible currency	224,645
- Roubles*	269,870
- Cuban pesos*	15,049

Cost to Caribbean Trust Fund	40,171
Cost to UNDP	974,168
Cost to Cuban Government	4,442,855

\* (in US dollar equivalent)

The Caribbean Trust Fund contribution to the project was used to cover the costs of the regional workshops and training. UNEP's support went to cover staff costs of the project's international Chief Technical Advisor, laboratory equipment and short term experts.

### **CEP-7**

### **PROTECTION OF THE MARINE AND COASTAL ENVIRONMENT OF THE CARIBBEAN ISLANDS**

This on-going project was initiated in January 1981, prior to the adoption of the Action Plan. Its objective is to strengthen the institutional capabilities of the sub-region formed by the Eastern Caribbean islands to assess and manage their waste management and coastal pollution problems. The project has been executed by CARICOM in co-operation with WHO/PAHO through the Caribbean Environmental Health Institute, a subregional facility, based in St. Lucia, and established by the CARICOM Health Ministers to provide services to Governments in the assessment and management of environmental health problems.

The project has been divided in two main components: waste management; and coastal and marine pollution monitoring. The objectives of the waste management component are to carry out an inventory, characterize the land-based sources of pollution entering the marine environment, define their adverse effect on coastal and marine ecosystems and public health and develop projects aimed at eliminating major pollution sources. Studies have been undertaken in eleven countries of the CARICOM subregion. These have focussed on the impingement of domestic and agricultural wastes, industrial processes, and coastal development on coastal ecosystems. Countries studied were Antigua and Barbuda, Bahamas, Barbados, Belize, Dominica, Grenada, St. Kitts-Nevis, St. Lucia, St. Vincent and the Grenadines and Trinidad and Tobago.

The methodology and the results of the studies are synthesized in a report published by PAHO in 1985 entitled "Land-based Sources of Pollution in Coastal, Marine and Land Areas in CARICOM States". The report has been distributed to all member States together with the respective country reports. It is expected that this documentation will assist Governments in generating project proposals for waste the development of appropriate waste management actions.

The second component of the project has been more fully developed. It has enabled the posting at CEHI's facilities in St. Lucia of three marine scientists throughout the period 1982-1987 and the establishment of a laboratory equipped with modern analytical capabilities for monitoring marine and coastal pollution problems in the Eastern Caribbean islands. Activen research and monitoring activities have been undertaken to analyze oil pollution, water quality of

coastal areas, and heavy metal pollution. In addition to the laboratory facilities at the Institute, the project has provided technical assistance for the equipping of national laboratories in St. Vincent, Grenada, Dominica, St Kitts-Nevis and St. Lucia to establish a subregional monitoring network focussing on coastal water quality and oil pollution monitoring. On the establishment of the network, six weeks of training are provided to technicians in the participating national laboratories in field and laboratory analytical procedures.

In July 1985, an Environmental Pollution Workshop was convened at CEHI to examine the findings of the project and identify measures to be taken. Twenty one participants from seven Eastern Caribbean States plus international and regional observers attended the workshop. Its recommendations were forwarded to Governments for the appropriate actions.

The project has achieved considerable success in providing the Eastern Caribbean with the technical capabilities to assess marine and coastal pollution and waste management problems. The monitoring component of the project has accomplished more concrete results than the waste management component. This is probably due to the fact that implementing the recommendations of the country waste management studies requires large capital investments. The laboratories at the CEHI facilities in St. Lucia represent an unequalled subregional facility that confirms in clear terms the benefits of regional co-operation. The training component of the project is also noteworthy. Training has been provided already to more than 30 technicians of the region, in surroundings and conditions similar to the ones they have in their own countries.

The implementation of the project has been hindered partially by the institutional uncertainty of CEHI, which has not yet been ratified by the CARICOM Governments, and the isolated conditions in which the scientific staff was operating during the first years of the project's life. At present the project has been linked with the other marine pollution related projects of the Caribbean Action Plan, and IOC is collaborating with UNEP in overseeing the technical implementation of the project.

The total cost of the project until December 1987 amounted to US\$ 1,403,877 broken down as follows:

UNEP Environment Fund	457,766
Caribbean Trust Fund	360,270
Counterpart (PAHO, CARICOM, Government of St. Lucia)	585,841

## **CEP-8**

### **FORMULATION OF A CARIBBEAN OIL SPILL CONTROL PLAN**

This project was implemented by the Organization of American States and was initiated prior to the adoption of the Action Plan. Its main objective was helping the Governments of the Caribbean region in formulating a plan for mutual co-operation in the detection, monitoring, control and clean-up of oil spills. The project provided a direct input to the development of the Caribbean Action Plan elements dealing with the issue of oil pollution. Originally this activity

came up as an initiative of the OAS, later receiving funding from USAID and from the Environment Fund of UNEP.

Two regional meetings were organized as part of the project implementation: a Meeting of the Smaller Caribbean Islands on Oil Spill Contingency Planning (San Juan, Puerto Rico, 16-20 June 1980) and a Meeting of Caribbean Islands on Oil Spill Contingency Planning (Barbados, 2r 4-28 November 1980). Fifteen island countries participated in the first meeting, as well as representatives from international and regional organizations and industry. Twenty one countries from the Caribbean Basin participated in the Barbados Meeting plus representatives from industry and regional and international agencies. The meetings as well as the consultations with Governments and industry, undertaken as part of the project helped to identify immediate and future needs in combating oil spills in the region. The Protocol on Co-operation in Combating Oil Spills in the region which was adopted in Cartagena together with the Convention, and the national, subregional and regional oil spill contingency plans that have been formulated in the Caribbean may be considered as sequels to this project.

The total project cost amounted to US \$101,035, 26,035 from the Fund of UNEP and 75,000 from OAS and USAID.

#### **CEP-9**

#### **DEVELOPMENT OF ENVIRONMENTAL EDUCATION AND PUBLIC AWARENESS IN THE WIDER CARIBBEAN REGION**

This project was implemented by the Caribbean Conservation Association. Its main objective was to develop and strengthen institutional capabilities in the Caribbean to carry out environmental education and public awareness programmes and to establish an information bank of educational materials relevant to the Caribbean region which could be adapted, reproduced and distributed at a relatively low cost. The principal outputs of the project were:

- (a) a directory of Environmental Education institutions in the Wider Caribbean;
- (b) an illustrated educational booklet on "Corals and Coral Reefs in the Caribbean";
- (c) a series of twelve half-hour audio cassettes on various environmental subjects, which were broadcasted on most of the English-speaking Caribbean radio stations;
- (d) a workshop for Caribbean media personnel;
- (e) video tapes on watershed management and coral reefs;
- (f) continuous promotion of the Caribbean Action Plan activities through newsletters, lectures and conferences to non-governmental organizations;

- (g) production of various television public service announcements on slash and burn agriculture, solid waste disposal, watersheds and water pollution;
- (h) production of radio public service announcements on spiny lobster, tar balls, mangroves and coral reefs; and
- (i) preparation of short articles for the print media such as the "The Siege of the Coast", "The Health of the Reef" and "The Caribbean Action Plan".

All information materials were widely distributed throughout the region. The project met, and to some extent exceeded its short-term objectives and was instrumental in promoting an active participation of the English speaking countries in the Action Plan, particularly of the Eastern Caribbean islands. This project was an excellent example of an efficiently organized and implemented programme. The relatively small input of funds from UNEP and the Caribbean Trust Fund generated many concrete and high quality outputs and substantial goodwill to the Caribbean Action Plan, particularly in the smaller Caribbean islands.

The total cost of the project in US dollars was 117,000 broken down as follows:

UNEP Environment Fund	38,000
Caribbean Trust Fund	50,000
Caribbean Conservation Association	29,000

#### **CEP-10**

#### **IMO/UNEP WORKSHOP ON OIL SPILLS AND SHORELINE CLEAN-UP IN THE ISLANDS OF THE WIDER CARIBBEAN REGION**

The immediate objective of this project was to develop a detailed course manual in English and Spanish, on methods and means for oil spill clean-up containing the following elements:

- (a) assessment of major oil spill risk areas in the Caribbean;
- (b) characteristics of shoreline types in the area;
- (c) fate and impact of stranded oil on sandy beaches;
- (d) shoreline protection, clean-up and restoration;
- (e) state of the art in beach cleaning methodology and equipment;
- (f) case study; and
- (g) contingency planning.

A five day workshop was held in Barbados in February 1983 to test the manual and provide field training related to restoration and clean-up techniques in actual coastal sites.

The long term objective was to increase the capability of island authorities to clean and restore recreational beaches affected by chronic or massive accidental oil pollution, by using the most appropriate methods.

The project was implemented by IMO in collaboration with OAS. The high quality manual resulting from this project has been a useful resource for personnel involved in shoreline management. It has been widely distributed by UNEP, IMO and OAS throughout the region and has proven useful even to countries outside of the Caribbean.

The short term objective of the project was definitively met. The present project can be seen as a direct consequence of CEP-8, and it may be considered a pace setter concerning oil spill response activities in the region. Subsequent to the termination of this project, UNEP and IMO have undertaken a number of related activities in the region within the context of the Action Plan. An oil spill contingency plan is now in place for the islands of the Caribbean and a similar arrangement is being negotiated for the northern tier countries of South America and Central America. In a way, the project has also met its long term objective, although the only way to test how successful these efforts have been, is to see how effective the measures taken by the countries of the region to combat an actual spill are, which fortunately has not occurred since the adoption of the contingency plans.

The total cost of the project was US\$ 61,698; 44,698 from UNEP and 17,000 from IMO and OAS.

## **CEP-11 DEVELOPMENT OF SUB-REGIONAL CONTINGENCY PLANS FOR THE ISLANDS OF THE WIDER CARIBBEAN**

The objectives of this project were to assist the islands of the Wider Caribbean in developing bilateral or multilateral subregional operational arrangements to facilitate the implementation of the Protocol Concerning Co-operation in Combating Oil Spills in the Wider Caribbean Region and to survey the extent of oil pollution in the South American subregion of CEP as a first phase to exploring the feasibility of subregional contingency plans.

The outputs of the project included a subregional oil spill contingency plan for the island States and territories of the Caribbean, which was adopted at a Government experts meeting held in St. Lucia from 7-11 May 1984. Seventeen countries participated in the meeting. Another output of the project was a comprehensive report entitled "IMO/UNEP Survey of the Status of Oil Pollution Control in the South American Subregion of the Wider Caribbean Region" including detailed annexes for each State and territory covered by the survey (Colombia, French Guiana, Guyana, Netherlands Antilles, Suriname, Trinidad and Tobago and Venezuela).

The oil spill contingency plan for the island countries has provided the basis for the development of national contingency plans for preventing and combating oil spills, and the development of bilateral and multilateral co-operative arrangements to deal with oil spill emergencies.

The project is being followed up by a second phase through project CEP-22, approved at the Third Intergovernmental Meeting. All expected outputs were delivered by the project, which has contributed in a significant manner to the development of an oil spill response capability in the Caribbean region.

The total cost of the project amounted to US\$ 110,697; 69,697 from the CTF and 41,000 from IMO (including 17,000 from USAID).

## **CEP-12 TOURISM AND ENVIRONMENT IN THE WIDER CARIBBEAN REGION**

This project was implemented by the Economic Commission for Latin America and the Caribbean (ECLAC). Its objectives were to analyze the relationship between tourism, resource utilization, environment and developmental activities by means of three representative case studies in the region and to formulate guidelines and recommendations as to how to introduce the environmental dimension into the tourism industry. The project generated twelve reports on general aspects of tourism planning and its relationship with the environment and case studies of specific tourism and environment situations in Antigua, St. Lucia, Belize, St. Kitts-Nevis, Puerto Rico and Colombia. These reports were analyzed at a meeting of experts held in Port of Spain, Trinidad and Tobago (2-4 December 1985), in which twenty two experts from the countries of the region and representatives of the tourist industry and regional and international organizations participated. The workshop formulated recommendations on: (a) environmental impact of tourism development; (b) socio-cultural impacts; and (c) planning and management mechanisms.

The workshop brought together high level officials from the Ministries of tourism and planning, tourism and environment and natural resources and the tourism promotion sector. It is the first time in the Caribbean region that high level tourism officials met to discuss the relationship between tourism and the environment. Therefore, one of the project's accomplishments was to help raise the awareness of those responsible for tourism planning and promotion in the region to the close relationship between environment and tourism. However, as in other Caribbean Action Plan projects, the question arises as to what follow-up activities are being undertaken to implement the recommendations of the Workshop. The tourism industry is extremely important in the Caribbean to small and large countries alike. It is also one of the development sectors in which environmental integrity is clearly understood to be of essence by all parties involved. At any rate, the implementation of the Action Plan has not taken advantage of this coincidence of interests. It is most unfortunate that the results of the workshop, including the case studies, have not been published and widely circulated among Government and tourist industry officials in the region, and that follow-up activities are not being supported by the

Action Plan. Even UNEP as Secretariat of the Action Plan has not yet received a full set of documents.

The total cost of the project was US \$82,692; 47,892 from the CTF and 34,800 from ECLAC.

### **CEP-13 DIRECTORIES OF MARINE INSTITUTES AND BIBLIOGRAPHIES OF MARINE POLLUTION**

This on-going project is being undertaken in collaboration with FAO. Its objective is to publish scientific directories and bibliographies in the Environmental Sciences (particularly in the marine sciences) on both regional and global levels. The Caribbean component of this project has already published two directories: one on Marine Environmental Centres (1985); and another on Environmental Education (see CEP-9). A bibliography on marine and coastal pollution research in the Caribbean is now at press.

Both published directories have been widely distributed to national focal points and scientific institutions in the region, and have facilitated linkages between national institutions.

The total cost of the Caribbean component of this project has been US\$ 70,780; 49,700 from UNEP and 21,080 from FAO.

### **CEP-14 ENVIRONMENTAL TRAINING PROJECT FOR THE WIDER CARIBBEAN REGION**

This is an on-going project that has been implemented internally by UNEP through the Environmental Training Network which operates out of UNEP's Regional Office for Latin America and the Caribbean. The project objective was to establish a network of co-operating institutions for training activities in the region in the areas of Marine Pollution and Environmental Health. The project has been active in an intermittent fashion. In 1985, a very substantive meeting of marine research centres was convened by the project in collaboration with the National University of Mexico, at the Puerto Morelos Marine Station of this institution. Representatives from seventeen marine research centres of the Caribbean participated in the meeting. They reviewed a status paper, presented by a consultant, analyzed the training and research capabilities of the marine laboratories in the region, identified opportunities for co-operation and adopted a series of guidelines and recommendations for the establishment of a network of institutions interested in marine pollution research in the region. Concrete and novel co-operative programmes were defined including the publication of a regional newsletter, the development of a bibliographic exchange programme and the convening of regional courses in specific areas of interest. The recommendations were never implemented as there were no provisions in the project for co-ordination of follow-up activities.



On the Environmental Health component, a similar overview study of the training capabilities in the region was undertaken. However, the meeting of environmental health institutions expected to be convened, since early 1987, in collaboration with PAHO has never taken place. Less than US\$ 15,000 is left in the project for this activity, and even if the meeting is convened there would be no funds available for follow-up.

This project succeeded in generating a great deal of enthusiasm among the marine research centres of the region. At the Puerto Morelos meeting, the directors or spokesmen of these institutions conceived concrete self supporting co-operative activities. The only element lacking was the co-ordination input for the follow-up which was not foreseen in the project. It is felt that the project deserves to be revised and incorporated into either the marine pollution or the training projects of the Action Plan, focussing on the follow-up of the Puerto Morelos recommendations, postponing indefinitely the environmental health component which is already well developed in the region by PAHO.

The project cost so far has been US\$ 46,322 from the CTF.

#### **CEP-15**

### **IOC/UNEP PROJECT IN SUPPORT OF THE CARIPOL REGIONAL PROGRAMME FOR RESEARCH AND MONITORING OF PETROLEUM POLLUTION IN THE MARINE ENVIRONMENT**

This on-going project is a direct outgrowth of the 1976 Trinidad and Tobago Workshop on Marine Pollution in the Caribbean and Adjacent Areas (see CEP-2). The workshop noted that petroleum pollution was of region-wide concern and recommended that the international organizations sponsoring the workshop initiate a research and monitoring programme to determine the severity of the problem and monitor its effects. IOC initially followed it up by working through a steering committee of regional scientists to design a programme to provide necessary information, and allow laboratories from the region to participate in the monitoring without the need of expensive, sophisticated equipment. In September 1979, a training exercise was conducted at the University of Costa Rica to determine how the monitoring observations were to be carried out. The seminar was conducted in both English and Spanish, and detailed method manuals were published in both languages.

By 1980, the monitoring programme was fully operational with data being reported to a central facility operated by the U.S. National Oceanic and Atmospheric Administration (NOAA), in Miami, Florida. The monitoring programme has concentrated on four parameters (the last one having been added recently) related to oil pollution:

- (a) tar on beaches;
- (b) floating tar;
- (c) dissolved/dispersed petroleum hydrocarbons; and

(d) petroleum hydrocarbon residues in sediments and marine organisms.

CARIPOL participants have provided more than 9000 observations throughout the region. The data set collected is one of the largest and most complete in the world, and has allowed some significant conclusions regarding the status of petroleum pollution in the Wider Caribbean and its effects.

The programme has been strongly supported by the Caribbean Action Plan which has allocated funds to it from the CTF since 1984.

The monitoring programme has been supported by extensive training and intercalibration exercises. In December 1985, a Symposium on research and monitoring of petroleum pollution was held at the University of Puerto Rico, in La Parguera. Thirty nine participants from eighteen countries of the region took part in the Symposium. The results have been published in the Caribbean Journal of Science (Volume 23(1) 1987). A workshop on the analysis of petroleum hydrocarbons in sediments and marine organisms was held in November 1986, in Puerto Morelos, Mexico with the co-sponsorship of the National University of Mexico. Twenty participants from fourteen countries of the region as well as the South Pacific region participated in the two week workshop. Besides the region wide seminars workshops, training has been provided through the project at selected host laboratories such as the Bermuda Biological Station, the University of Puerto Rico and the National University of Mexico.

The programme has been one of the most successful regional activities being supported by the Caribbean Action Plan. The project objectives have been met and exceeded. The project has yielded respectable scientific data for a serious assessment of petroleum pollution in the Caribbean. A team of scientists from the region have recently published an article (Oceanus, Vol. 30, Number 4, Winter 1987/88 pp. 25-32) summarizing some of the findings of the CARIPOL project.

The total cost of the programme from 1984 until 1987 amounts to US\$=285,458 (distributed as follows: 115,958 from CTF; 123,500 from IOC; 12,000 from the Bermuda Biological Station; 5,000 from the University of Puerto Rico; and 30,000 from the National University of Mexico).

#### **CEP-16**

#### **DEVELOPMENT OF SPECIFIC METHODOLOGIES FOR THE PREPARATION OF ENVIRONMENTAL IMPACT ASSESSMENT IN THE WIDER CARIBBEAN**

This on-going project is being implemented by the Government of Mexico through its Secretariat for Urban Development and Ecology. The objective of the project is to develop through three case studies environmental impact assessment methodologies suited to the characteristics of the coastal environments of the States and territories of the Wider Caribbean. The case studies and the methodologies would be reviewed in a region-wide workshop to be held

in late 1988. The case studies selected will involve Mexico, Cuba and Barbados. As the project is still in its initial stages no evaluation of its accomplishments is yet possible.

The total budget of the project is US\$ 151,611; 88,000 from the CTF and 63,611 from the Government of Mexico.

#### **CEP-17**

#### **IUCN'S ASSISTANCE TO INTER-REGIONAL ACTIVITIES ON CORAL REEF MANAGEMENT**

The project, IUCN's Assistance to Interregional Activities on Coral Reef Management, is currently ongoing. Its major activity is the preparation of three regional directories on coral reefs (about 150 pages each) covering the Indian Ocean, the Caribbean and the Pacific regions, altogether including seven Regional Seas Action Plan areas. The directories will contain an inventory and description of physical and biological characteristics of individual coral reefs, as well as of management practices relevant to them.

The project's total commitment is US\$ 59,750, of which US\$ 44,750 is from the Environment Fund. For the Caribbean component, the costs are estimated at US\$ 6,000 from the Environment Fund and US\$ 2,000 counterpart contribution from IUCN.

#### **CEP-18**

#### **DEMONSTRATION WORKSHOP FOR THE TREATMENT OF RUM DISTILLERY WASTES BY METHANIZATION**

This project was implemented by the "Association pour le Developpement des Activites des Ingenieurs Français a l'Etranger" in collaboration with the French Ministry of the Environment. The objective of the project was to assist countries of the Caribbean region in setting up adequate waste treatment practices in their own rum distilleries, the long-term objective being to help control one significant land-based source of coastal pollution, the waste from rum distilleries and sugar mills. The project consisted of the convening of a workshop to demonstrate methanization as a process to recycle wastes from rum distilleries. The workshop held in Guadeloupe in 1986, was attended by fifteen trainees from Caribbean countries. Proceedings and documents from the workshop were limitedly distributed. The project reflected an interesting approach, the choice of economically attractive solutions to environmental problems, in this case, the generation of methane from rum distillery wastes. % However, the project was designed in a limited fashion with no follow-up or widespread dissemination of materials envisaged in its planning. The implementation of one shot workshops has proved to be a dead end strategy for training and transference of technology. The trainees are in most cases not motivated or capable of putting into practice the techniques hastily learned in the workshop.

Although the seminar in itself might be considered to have been partially successful, the project failed to come near to the attainment of its long term objectives.

The total cost of the project was US\$ 68,518; 25,418 from the CTF and 43,100 from the French Ministry of the Environment.

#### **CEP-19**

### **PROMOTION OF THE SURVIVAL AND RECOVERY OF ENDANGERED THREATENED AND VULNERABLE SEA TURTLES IN THE CARIBBEAN REGION**

This on-going project is being implemented by Monitor International and the Wider Caribbean Sea Turtle Recovery Team, assisted by the Wider Caribbean Sea Turtle Conservation Network. Its short-term objective is to provide the Governments of the Wider Caribbean region with sea turtle management recommendations in the form of highly specific sea turtle recovery and conservation plans for their consideration and possible implementation.

Its long-term objectives include providing a demonstration project relevant to future projects for other endangered and threatened species responding to the endangered species section of APCEP 6-1 of the Action Plan. The project carries out its plan writing activities through an international WIDECAST team of eleven members and country WIDECAST task forces within the framework of the Wider Caribbean Sea Turtle Conservation Network.

Fifty-seven percent of the plans are in their first or second stages of development and all plans are scheduled for completion by the end of 1989.

The government delegations of the Third Intergovernmental Meeting on the Action Plan (Cancún, 1985), approved the project, based on the view that the project met the criteria for project acceptance and was in keeping with the objectives of the Action Plan.

The total budget for the project is US\$ 345,000; 27,000 from the CTF and 318,000 from Monitor International and other sources, including \$ 60,000 from the United States of America.

#### **CEP-20**

### **DEVELOPMENT OF ENVIRONMENTAL EDUCATION AND PUBLIC AWARENESS ON MARINE AND COASTAL RESOURCES MANAGEMENT IN THE WIDER CARIBBEAN REGION**

This project is a continuation of CEP-9. It is being implemented by the Caribbean Conservation Association and has as its principal objective the establishment of an information and communication network, to support the development of environmental education in the countries of the Caribbean. The expected outputs are:

- (a) a regional information centre established within CCA to service the Governments and NGOs of the region;
- (b) a network of institutions and experts working on marine environment education;
- (c) publications and resource materials for teachers;
- (d) four issues of the Caribbean Environment News; and
- (e) the design of a pilot workshop for teacher training on marine environment.

This activity was recently initiated and is not yet possible to evaluate its results.

The total budget of the project is US\$ 130,504: 40,504 from the Environment Fund of UNEP (including 18,504 in NCC); 76,000 from the CTF; and 14,000 from CCA.

#### **CEP-21**

#### **FEASIBILITY OF ESTABLISHING BIOSPHERE RESERVES IN THE LESSER ANTILLES NOTABLY AS DEMONSTRATION AREAS FOR REGIONAL CO-OPERATION IN DEVELOPING SOUND ENVIRONMENTAL MANAGEMENT PRACTICES**

This project was recently initiated, implemented by UNESCO in association with the Caribbean Conservation Association. Its chief objective is to determine the feasibility of establishing and nominating one or two multiple site reserves in the Lesser Antilles region for inclusion in the international biosphere reserve network.

The total budget of the project is US\$ 97,900: 64,900 from CTF and 33,000 from UNESCO.

#### **CEP-22**

#### **SUB-REGIONAL OIL SPILL CONTINGENCY PLANNING IN THE WIDER CARIBBEAN (PHASE II)**

This project has just recently started, and is being implemented by the International Maritime Organization (IMO) in co-operation with the Governments of the region. It purports to continue the development of oil spill contingency planning measures for the islands of the Caribbean and for the northern tier countries of South America.

The total budget for this project is US\$ 168,500: 104,500 from the CTF and 64,000 from IMO.

#### **CEP-23**

#### **ENVIRONMENTAL MANAGEMENT OF BAYS AND COASTAL ZONES IN THE WIDER CARIBBEAN**

This activity is being implemented jointly by UNESCO and the Institute of Transport Research of Cuba. Initial activities have included a planning meeting in Mexico City in March 1988. National research institutions of six countries are participating in this project (Colombia, Cuba, Mexico, Nicaragua, Panama and Venezuela). Its main objective is to analyze on a case study basis the environmental situation of several bays and coastal areas in the region using compatible methodologies in order to propose appropriate management schemes.

The total budget for this project is US\$ 341,000: 90,000 from the CTF; 15,000 from UNESCO; and 236,000 from the Government of Cuba.

## ANNEX II

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Secretario Ejecutivo  
Comisión Nacional del Medio Ambiente  
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**NETHERLANDS**

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**NICARAGUA**

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Instituto Nic. de Recursos Naturales  
y del Ambiente (IRENA), Apdo. Postal 5123  
y 1347  
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Nicaragua  
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98/31906  
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Telefax/facsimile:  
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**ST. KITTS AND NEVIS**

Permanent Secretary  
Ministry of Agriculture, Lands, Housing  
and Development, Government Headquarters  
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**ST. LUCIA**

Mr. Cornelius Lubin  
Permanent Secretary  
Min. of Health, Housing, Labour,  
Inform. and Broadcasting  
P.O. Box 926, Chaussee Road  
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**ST. VINCENT AND THE GRENADINES**

His Excellency The Minister  
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St. Vincent and the Grenadines  
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**SURINAME**

His Excellency The Minister  
Ministry of Agriculture, Animal Husbandry,  
Fisheries & Forestry  
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**TRINIDAD AND TOBAGO**

His Excellency The Minister  
Ministry of Food Production, Marine  
Exploration, Forestry and the Environment,  
St. Clair, Port-of-Spain  
  
Trinidad and Tobago  
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**TURKS AND CAICOS**

His Excellency Lewelyn Handfield  
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Ministry of Natural Resources  
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**UNITED STATES OF AMERICA**

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National Oceanic and Atmospheric  
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dcom ur

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-

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Ministerio del Ambiente y de Recursos  
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### ANNEX III

## MEETINGS CONVENED WITHIN THE FRAMEWORK OF THE ACTION PLAN FOR THE CARIBBEAN ENVIRONMENT PROGRAMME

PREPARATORY MEETINGS:	NO. OF PARTICIPANTS
1. Second Session of UNEP's Governing Council, 8 November 1974	
2. IUCN Central American Meeting on Management of Natural and Cultural Resources, Costa Rica, December 1974	
3. Third Session of UNEP's Governing Council, 1975.	
4. IDOE International Workshop on Marine Geology and Geophysics of the Caribbean Region and its Resources, Kingston, Jamaica, 17-22 February 1975	
5. IOC Training, Education and Mutual Assistance (TEMA), Mexico City, April 1975. Report: IOC Workshop Report No. 5	50
6. Ad hoc Group of Experts held in conjunction with IOC and University of Puerto Rico, Mayagüez, 1-4 March 1976.	
7. Latin American Preparatory Meeting for Fourth Session of Governing Council, Caracas, Venezuela, 4-8 March 1976	
8. Fourth International Parliamentary Conference on the Environment, Kingston, Jamaica, 12-14 April 1976	
9. Fourth Session of UNEP's Governing Council, 1976	
10. Interagency Meeting on Regional Seas, Paris, 16-18 June 1976 Report: UNEP/IAMRS	24
11. Joint Programming Meeting, UN/ESA and UNEP, 28-29 October 1976	31
12. IOC/FAO/UNEP Workshop on Marine Pollution in the Caribbean and Adjacent Waters, Port of Spain, 13-17 December 1976. Report: E/CEPAL/PROY.3/L	30
13. UNEP/CEPAL Joint Programming Meeting, Santiago, 21-23 February 1977	19
14. International Workshop on the Prevention, Abatement and Combatting of Pollution from Ships in the Caribbean, Cartagena, 23-27 October 1978 Report: Texas A & M Research Foundation/IMCO	42
15. First Meeting of the Planning Officials of ECLA's CDCC, Havana, Cuba, February 1979	

16. First Workshop of the OAS Caribbean Oil Pollution Task Force, Port of Spain, 7-11 May 1979. Report: OAS, 1979. Framework of a Caribbean Regional Oil Spill Plan. O.A.S., Washington, D.C. PREPARATORY MEETINGS: NO. OF PARTICIPANTS
17. UAOFDA/AID Caribbean Disaster Preparedness Seminar, St. Lucia, 10-20 June 1979 Report: E/CEPAL/PROY.3/L.INF.21-22 155
18. CARICOM Health Ministers, Antigua, July 1979
19. USMAB/CDB/UN/UNEP/UNESCO Conference on Environmental Management and Economic Growth in the Smaller Caribbean Islands, Barbados, 17-21 Sept. 1979 Report: E/CEPAL/PEOY.3/L.INF.17 75
20. ECLA/CDCC/UNSO/UNEP Caribbean Workshop on Environment Statistics, Port of Spain, 7-11 January 1980 Report: E/CEPAL/CDCC/56 30
21. First Meeting of Government-nominated Experts to Review the Draft Action Plan for the Wider Caribbean Region, Caracas, 28 Jan.-1 Feb. 1980  
Report: E/CEPAL/PROY.3/L
- 22.. OAS/IMO/UNEP/USMAB Meeting of the Smaller Caribbean Islands on Oil Spill Contingency Planning, San Juan, 16-20 June 1980 Report: OAS, Washington, D.C 49
23. OAS/IMO/UNEP/MAB Meeting of Caribbean Islands on Oil Spill Contingency Planning, Barbados, 24-28 November 1980 Report: UNEP/CEPAL/WG.48/INF.29 57
24. Second Meeting of Government-nominated Experts to Review the Draft Action Plan for the Wider Caribbean Region, Managua, 23-27 February 1981  
Report: UNEP/CEPAL/WG.48/486
25. Seminar on the Legal Practice for the Protection of the Marine Environment Against Pollution, Bogotá, 4-8 May, 1981 Report: CPPS, Serie Seminarios y Estudios, No. 4, 1981.
26. Meeting of Legal Experts on Draft Regional Agreements for the Wider Caribbean Region, United Nations, N.Y., 7-11 December 1981  
Report: CEPI/14.
27. Second Meeting of Experts on Draft Regional Agreements for the Wider Caribbean Region, New York, 7-16 July, 1982.  
Report: UNEP/WG.74. 31
28. Third Meeting of Experts on Draft Regional Agreements for the Wider Caribbean Region, Cartagena de Indias, 14-18 March 1983  
Report: UNEP/WG.76 42

- 29.. CCA/UNESCO(MAB)/US National Park Service Workshop on Biosphere Reserves and Other Protected Areas for Sustainable Development of Small Caribbean Islands, Caneel Bay, St. John, U.S. Virgin Islands, 10-12 May 1983  
Report: Proceedings (U.S. National Park Service)43
30. IMO/OAS/UNEP Government Experts Meeting on Sub-regional Oil Spill Contingency Planning for Island States and Territories of the Wider Caribbean, St. Lucia, 7-11 May 1984  
Report: IMO/OAS/UNEP/WG.1 35.
31. Environmental Education Workshop for Caribbean Media Personnel, Barbados, 6-8 June 1984  
Report: UNEP ProjectFP/CR/5102-82-12(2364) Rev.1 19
32. UNDP/ECLAC Collective Consultative Meeting to determine the priorities of the Regional Programme for Latin America and the Caribbean for the 4th UNDP Programming Cycle:1987-1991, Mexico City, 25 April 1987  
Report: DP/RCA/3/WP/2

#### B.INTER-GOVERNMENTAL MEETINGS:

1. First Intergovernmental Meeting on the Action Plan for the Caribbean Environment Programme, Montego Bay, 6-8 April 1981.  
Report: UNEP/CEPAL/IG.27/3 85
2. Conference of Plenipotentiaries on the Protection and Development of the Marine Environment of the Wider Caribbean Region, Cartagena de Indias, ¼ 21-24 March 1983  
Report: UNEP/IG.39 72
3. Second Intergovernmental Meeting on the Action Plan for the Caribbean Environment Programme, Cartagena de Indias, 24-26March 1983  
Report: UNEP/IG.42/3 54
4. Third Intergovernmental Meeting on the Action Plan for the Caribbean Environment Programme, Cancún, 24-26 April 1985  
Report: UNEP/IG.55/4 54
5. Fourth Intergovernmental Meeting on the Action Plan for the Caribbean Environment Programme and First Meeting of the Contracting Parties to the Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region, Guadeloupe, 26-28 October 1987  
Report: UNEP(OCA)/CAR IG.2/4 79

### C.MONITORING COMMITTEE MEETINGS

1. First Meeting of the Monitoring Committee on the Action Plan for the Caribbean Environment Programme, New York, 14-16 December 1981  
Report: UNEP/½ IG.30/6 40
2. Second Meeting of the Monitoring Committee of the Caribbean Environment Programme, Cartagena, 17-19 March 1983  
Report:UNEP/IG.38/6 34
3. Third Meeting of the Monitoring Committee of the Caribbean Environment Programme, Havana, 8-11 November 1983  
Report:UNEP/IG.46/6 32
4. Fourth Meeting of the Monitoring Committee on the Action Plan for the Caribbean Environment Programme, Cancún, 21-23 April 1985.  
Report: UNEP/IG.54/55
5. Fifth Meeting of the Monitoring Committee on the Action Plan for the Caribbean Environment Programme, Kingston, 11-13May 1987  
Report: UNEP/IG.67/5 35
6. Sixth Meeting of the Monitoring Committee on the Action Plan for the Caribbean Environment Programme, Guadeloupe, 21-23 October 1987  
Report: UNEP(OCA)/CAR IG.1/5 61
7. Seventh Meeting of the Monitoring Committee on the Action Plan for the Caribbean Environment Programme, Mexico City, 12-14 September 1988  
Report: UNEP(OCA)/CAR IG. 3/ 57

### D: .TECHNICAL MEETINGS OF THE ACTION PLAN:

1. Seminar on the Responsibilities of the On-Scene Co-ordinator Commander during a Pollution Incident, Puerto Rico, 1981
2. Consultants Orientation Workshop CARICOM/UNEP Project for the Protection of the Marine and Coastal Environment of the Caribbean Islands, Castries, St. Lucia, 16-20 February 1981  
Report: CARICOM Rep. 81/1/10 MCE 18
3. First Meeting to Review the UNEP/CARICOM Project FP/0503-80-07 and to initiate work on Coastal Pollution Monitoring Service, Morne, St. Lucia  
15-16 October 1981  
Report: CARICOM 8
4. Second Meeting to Review the UNEP/CARICOM Project for the Protection of the Marine and Coastal Environment of the Caribbean

Islands, St. Lucia, 15-17 March 1982	
Report: CARICOM Rep. 82/2/29 MCE	12
5. First Meeting of the Consultants to review the UNEP/CARICOM Project for the Protection of the Marine and Coastal Environment of the Caribbean Islands, Kingston, Jamaica, 19-21 April 1982	
Report: CARICOM Rep. 82/1/45 C/MCE	8
6. Meeting of the Technical Advisory Committee to the UNEP/CARICOM Project for the Protection of the Marine and Coastal Environment of the Caribbean	
Islands, Barbados, 28 October 1982	
Report: CARICOM	7
7. OAS/IMO/USAID/Govt. of Puerto Rico, Workshop on Oil Pollution Regulation and Enforcement, San Juan, 11-15 October 1982	
Report: O.A.S, Washington, D.C.	
8. IMO/UNEP/OAS Workshop on Oil Spills and Shoreline Cleanup, Barbados, 31 January-4 February 1983.	
9. IMO/OAS/UNEP Sub-Regional Oil Spill Workshop for Central America, Mexico, and Panama, Panama City, 24-29 October 1983	
Report: OAS, 1983, Washington, D.C.	42
10. Fourth Symposium on Research and Control of Marine Pollution and First Workshop on Environmental Management of Bays in the Caribbean, Havana, 19-24 September 1983	
11. Meeting of the Technical Advisory Committee and the Agencies Involved in the Caribbean Environmental Health Institute Project, Castries, St. Lucia, 26-28 October 1983	
Report: CARICOM Rep. 83/1/89 TAC/CEHI	8
12. Eighth Session of the Caribbean Development and Co-operation Committee, Port-au-Prince, 6-8 June 1984	
Report: E/CEPAL/G.1317, E/CEPAL/CDCC/G.118	83
13. Meeting of Officials and Ninth Meeting of the Conference of Ministers and Responsible for Health of the Caribbean Community, Dominica, 22-24, 25-27 July 1984	
Report: 84/9/36 CMH	114
14. USCG On-Scene Co-ordinator Regional Response Team Simulation Exercise, Puerto Rico, May 1984	
15. Seminar on Marine Pollution Response, Tampico, 1-5 Oct. 1984	
Report: OAS, 1984, Mexico National Pollution Contingency Plan, Washington, D.C.	
16. Second Meeting of the Inter-Agency Group on the Caribbean Environmental Health Project, Castries, St. Lucia, 1 December 1984	
Report: CARICOM Rep. 84/2/56 IA/CEHP 7	

17. Second Workshop on Environmental Management of Bay Ecosystems in the Caribbean, Havana, December 1984
18. Meeting of Marine Research Institutions to Review and Adopt Regional Training and Research Co-operative Programmes, Puerto Morelos, 24-27 June 1985 17
19. NOAA/AOML Oil Pollution Monitoring Seminar, Miami, 5-9 August 1985 23
20. ECLAC Expert Meeting on Environment and Tourism in Caribbean Development, Port of Spain, 2-4 December 1985
- Report: WP/ETCD/G.180 49
21. CARIPOL Symposium on Research and Monitoring of Petroleum Pollution in the Caribbean Sea and Adjacent Regions, La Parguera, Puerto Rico, 2-6 December 1985 39
22. Third Meeting of the Technical Advisory Committee of the Caribbean Environmental Health Institute Project, Castries, St. Lucia, 29-30 January 1986
- Report: CARICOM Rep. 86/3/9 TAC/CEHI 14
23. Ninth Session of Caribbean Development and Co-operation Committee of Economic Commission for Latin America and the Caribbean, Port of Spain, 29 May-3 June 1986
- Report: CDCC/9/INF.1
24. Symposium on the Ecological Management of Coastal Zones, 16th Congress of the International Association of Ecology, Syracuse, 11-16 August 1986
25. Coastal Zone and Management in Lesser Antilles, First Annual Technical Review Workshop, Jamaica, 16-20 June 1986
26. UNEP First Inter-oceanic Workshop on Sustainable Development and Environmental Management in Small Islands, St. John's, 22-27 June 1986
27. Caribbean Seminar on Industry, Environment and Development in the Caribbean, Barbados, 28 July - 1 August 1986
28. Workshop on Analysis of Petroleum Hydrocarbons in Sediments and Biota, Puerto Morelos, 9-23 November 1986 21
29. Workshop of Sea Disposal of Waste in the Wider Caribbean Area, Mexico City, 26 November 1986
30. Consultation Meeting of Members of the Greater Caribbean Task Team on the State of Marine Pollution (Health of the Oceans), Kingston, 27-29 July 1987 5
31. First Meeting of IOC/UNEP's Task Team on the Implications of Climatic Changes in the Wider Caribbean Region, Kingston, 30 July - 1 August 1987 9



32. UNEP Drafting Group Meeting on the Development of a Network for Exchange and Transfer of Environmental Information in the Wider Caribbean, Kingston, 15-17 September 1987 7
33. IMO/UNEP/IOC/Government of Mexico Seminar on the Control of Waste Disposal at Sea, Tlatelolco, 28 September - 1 October 1987
34. Second Meeting of IOC/UNEP's Task Team on the Implications of Climatic Changes in the Wider Caribbean, Miami, 2-4 March 1988. 14
35. Meeting of Experts on the Caribbean Environment Programme, Mexico City, 7-9 September 1988. 69
36. Meeting of Experts for the Development of a Protocol Concerning Specially Protected Areas and Wildlife in the Wider Caribbean, St. Croix, U.S. Virgin Islands, 24-26 October 1988 43

**ANNEX IV**  
**COUNTRY PARTICIPANTS AND/OR TRAINEES IN**  
**WORKSHOPS, MEETINGS OR SEMINARS OF THE ACTION**  
**PLAN FOR THE CARIBBEAN ENVIRONMENT PROGRAMME**

IDOE International Workshop on Marine Geology and Geophysics of the Caribbean Region and its Resources, Kingston, Jamaica, 17-22 February 1975.

Ball Mahlon M. (USA)	A. Bellizzia (Venezuela)
O.H. Bohnenberger (Guatemala)	M.H.P. Bott (England)
A.H. Bouma (USA)	L.B. Brown (USA)
W.R. Bryant (USA)	J.F. Case (USA)
R.M. Castillo (Costa Rica)	R. Cruz-Orozco (Mexico)
E. Davin (USA)	L. del Castillo (Mexico)
G. Dengo (Guatemala)	H. Duque C. (Colombia)
K.O. Emery (USA)	J. Ewing (USA)
P. Fox (USA)	J.A. Galavis (Venezuela)
M.G. Georges (Haiti)	G. Giermann (France)
J. Godoy (Guatemala)	A.R. Green (USA)
P. Grim (USA)	J.C. Guerrero (Mexico)
W.W. Hay (USA)	T. van't Hof (Netherlands Antilles)
T.L. Holcombe (USA)	W.T. Horsfield (Netherlands)
R. Llinas (Dominican Republic)	R.A. Lopez (Colombia)
H.J. Mc.Gillavry (Netherlands)	B. Malfait (USA)
F. Maurrasse (USA)	A.A. Meyerhoff (USA)
G. Recchi (Panama)	Sir E. Richardson (Jamaica)

E. Robinson (Jamaica)	M.O. Rodriguez (Nicaragua)
R. Romero (Colombia)	Ing. O.D. Salazar (Guatemala)
J. Sanchez (Colombia)	R.M. Wright (Jamaica)
J. Scott (Trinidad & Tobago)	E.A. Silver (USA)
S. Snelson (USA)	C.I. Tavares (Dominican Republic)
J. Tomblin (Trinidad & Tobago)	J. Watkins (USA)
J.D. Weaver (Puerto Rico)	H. Worries (USA)

**IOC/FAO/UNEP Workshop on Marine Pollution in the Caribbean and Adjacent Regions,  
Port of Spain, Trinidad, 13-18 December, 1976**

S.M. Branco (Brasil)	A. Maglioca (Brasil)
W.G. Miller (Belize)	J. Corredor (Colombia)
J. Escobar R. (Colombia)	H. Santa Cruz (Colombia)
R. Mendoza (Costa Rica)	M. Murillo (Costa Rica)
A. Archer (Barbados)	G. Suarez Alvarez (Cuba)
A. Areces Mallea (Cuba)	I.B.de Calventi (Dom. Republic)
L. Garcia (Guatemala)	R. Santiago M. (Guatemala)
B. Wade (Jamaica)	A. Vazquez Botello (Mexico)
V. Arenas Fuentes (Mexico)	Q. Richardson (Nether. Antilles)
A. Flores A. (Nicaragua)	B. Kwiecinsky (Panama)
C. Arellano L. (Panama)	I. Goodbody (Jamaica)
G. Cintron (Puerto Rico)	M. Hernandez (Puerto Rico)
R. Steer R. (Colombia)	C. Dean (Trinidad)
P. Parker (USA)	W.M. Sackett (USA)

R. Presley (USA)

P.A. Butler (USA)

T. Okuda (Venezuela)

J.A. Monente (Venezuela)

H. Perez Nieto (Venezuela)

A.L. Flowers Jr. (Bahamas)

Invited Lecturers:

D.K. Atwood (USA)

A. Vázquez Botello (Mexico)

E. Mandelli (Mexico)

E.F. Corcoran (USA)

G. Kullenberg (Denmark)

J. Farrington (USA)

L. Ballah (Trinidad)

I. Emilsson (Mexico)

E. Mood (USA)

**International Workshop on the Prevention, Abatement and Combating of Pollution from Ships in the Caribbean (Training Programme), Cartagena, Colombia, October 23-27, 1978.**

G. Aguirre (Colombia)

R. Alvarado R. (Colombia)

R. Alvarez L. (Colombia)

G. Angel M. (Colombia)

H. Arengo B. (Colombia)

D.N. Bernard (Panama)

G. Borda T. (Colombia)

P.L. Brady (Jamaica)

D.D. Cable (Saint Kitts)

J.de D. Calle (Guatemala)

Calm. H. Camacho L. (Colombia)

F. Campbell H. (Nicaragua)

J. Chambers (Dominica)

G.E. Creque (British Virgin Islands)

De Boisfleury (Î Martinique)

G.A. Diaz (Colombia)

B. Escartin H. (Panama)

J.J. Escobar (Colombia)

J. Fonseca T. (Colombia)

R. Garcia B. (Colombia)

P.A. Gelabert (Puerto Rico)

J.F. George (Colombia)

L.T. Giuliani (Venezuela)

A.M. Hann (USA)

R.W. Hann (USA)

O. Howes (Montserrat, W.I.)

M. Lieuw A Paw (Suriname)

J.E. McLean Jr. (USA)

O. Mora (Colombia)

J.H. Orozco (Mexico)

F. Puga A. (Panama)

L. Rice (USA)

G. Salazar (Colombia)

E.K. Strachan (Bahamas)

H. Sylvain (Haiti)

K.L. Williams (Bahamas)

H.N. Young (USA)

J.M.N. Zikusoka (Barbados)

**Caribbean Disaster Preparedness Seminar, St. Lucia, W.I., June 10-20, 1979.**

R.St.A. Archer (Cayman Islands)

M. Arthur (St. Lucia)

H. Wycliffe-Morton (St. Kitts)

C.E. Been (Turks and Caicos)

P. Bergeon (France)

J. Blake (Jamaica)

A.T. Bobadilla (Dominican Republic)

Dr. A.I. Boyd (Antigua)

M. Borel (Trinidad and Tobago)

Sir C. Burton (Barbados)

G. Cabey (Montserrat)

Agr. M. Cantave (Haiti)

G. Charles (St. Lucia)

Dr. W. Chin (Guyana)

L.M. Clark (Bermuda)

H. Cyril (St. Lucia)

C. Dawson (British Virgin Islands)

D. Delance (Turks and Caicos)

D. Devaux (St. Lucia)

C. Facey (Jamaica)

M. Feuillard (Guadeloupe)

A. Forde (St. Lucia)

R. Francis (Grenada)

A. Gajadher (St. Lucia)

T. Gibbs (Barbados)

R. Gonzalez M. (Dom. Republic)

P. Gustave (St. Lucia)

Dr. L. Harney (Barbados)

O. Hector (St. Kitts)

Eng. L. Jadotte (Haiti)

S. James (St. Lucia)	T. James (St. Lucia)
Eng. G. Jospitre (Haiti)	K. Leslie (Belize)
Dr. G. Louisy (St. Lucia)	C.L. Lubin (St. Lucia)
H. Martindale (St. Vincent)	Dr. J.R. Menchaca (Cuba)
F.J. McDonald (Jamaica)	F. McFarlane (St. Lucia)
J. McMaster (Bermuda)	A. B.E.M. Myers (St. Lucia)
Dr. J.A.S. Nicolau (Portugal)	K.H. Nixon (Cayman Islands)
Eng. C.S. Oliveira (Portugal)	C.K.V. Outram (Barbados)
Dr. Oviedo-Javier (Dominican Republic)	G. Pilgrim (Barbados)
S. Pinto (Belize)	J.P. Plormel (France)
R. Roberts (Guyana)	Dr. H. Rodriguez S. (Cuba)
T. Scott (St. Lucia)	L.E. Smith (Bahamas)
L. Smith (Grenada)	L.P. Stevens (Antigua)
D. Sutherland (St. Lucia)	T.W. Sutherland (St. Lucia)
Hon. H. Tannis (St. Vincent)	R. Thelwell (Jamaica)
L.F. Thomas (St. Lucia)	Dr. L.A.M. Victor (Portugal)
Dr. D. Westercamp (Martinique)	K.L. Williams (Bahamas)

**Conference on Environmental Management and Economic Growth in the Smaller Caribbean Islands, St. Michael, Barbados, September 17-21, 1979.**

F. Andic (Puerto Rico)	A. Archbold (Barbados)
A. Archer (Barbados)	I. Bacalao (Venezuela)
C. Barrow (Barbados)	W. Beller (USA)
C. Blackman (Barbados)	T.L. Boothe (Trinidad & Tobago)

R. Burns (USA)	A. Cameau (Haiti)
L. Campbell (Barbados)	M. Cerame-Vivas (Puerto Rico)
E. Chacko (USA)	J. Connel (Barbados)
J. Dellimore (Barbados)	W. Demas (Barbados)
S. Free (Barbados)	P. Gelabert (Puerto Rico)
E. Gittens (Trinidad & Tobago)	T. Gordon-Somers (Guyana)
A. Harris (Trinidad & Tobago)	J. Hurtubia (Mexico)
M. Iriarte (Puerto Rico)	S. Jones-Hendrickson (U.S. Virgin Islands)
A. Lugo (USA)	N. MacLean (Barbados)
D. Marshall (Barbados)	A. Maynard (Barbados)
W. Millanger (Barbados)	B. Miller (Barbados)
K. Miller (USA)	W. Moody (USA)
S. Moss (Barbados)	V. Munson (Barbados)
R. Noel (Guyana)	R. Otto (USA)
I. Peroxo (Venezuela)	A. Putney (U.S. Virgin Islands)
D. Riven (Barbados)	S. Shelton (USA)
J. Sheppard (Barbados)	K. Snaggs (Trinidad & Tobago)
C. Sorhaindo (Barbados)	M. St. Rose (Barbados)
E. Towle (U.S. Virgin Islands)	J. Towle (U.S. Virgin Islands)
W. Whittingham (Trinidad & Tobago)	O.K. Yhap (Barbados)

**Meeting of the Smaller Caribbean Islands on Oil Spill Contingency Planning, San Juan, Puerto Rico, 16-20 June 1980.**

G.L. Archer (Bahamas)	R.G.B. Beswick (Cayman Islands)
J.A. Bonnet (Puerto Rico)	D. Brin (U.S. Virgin Islands)
Dr. M. Cerame-Vivas (Puerto Rico)	F. Charollais (French Antilles)
S. Clarke (Barbados)	L. Coalbrooke (Turks & Caicos)
R. Creque (British Virgin Islands)	R. Cruz-Perez (Puerto Rico)
M.C. Doctrove (Dominica)	C.J.A. Elassaiss (Neth. Antilles)
G.A. Engelbrecht (Neth. Antilles)	J.R.A Fletcher (Grenada)
P. Foye (Barbados)	P.A. Gelabert (Puerto Rico)
O. Howes (Montserrat)	Dr. W. Hughes (Bermuda)
Dr. B. Jimenez (Puerto Rico)	N. Jimenez (Puerto Rico)
K. John (St. Vincent & Grenadines)	B.D. Lauer (Cayman Islands)
Dr. A. Lugo (Puerto Rico)	O. Mueiz (Puerto Rico)
E. Ortiz (Puerto Rico)	J. Ortiz-Torres (Puerto Rico)
M.P.M.J. Piotet (French Antilles)	C. Ramos (Puerto Rico)
Cap. J.L. Royer (French Antilles)	R. Ruiz (Puerto Rico)
D. St. Aimee (St. Lucia)	W. Wernicke (U.S. Virgin Islands)
S. Williams (St. Kitts-Nevis, Anguilla)	

**Meeting of Caribbean Islands on Oil Spill Contingency Planning, Bridgetown, Barbados, 24-28 November 1980.**

S.M. Christian (Antigua & Barbuda)	L.P. Stevens (Antigua & Barbuda)
A. B. Archer (Barbados)	P.C. Foye (Barbados)
K.A. Hall (Barbados)	R.E. Hastings (Barbados)



C.E. Jordan (Barbados)	Capt.H.L. Van Sluytman (Barbados)
Capt. P. Tomlin (Barbados)	Capt. A.A. Spain-Gower (Barbados)
F.J. George (Colombia)	S. Fresquet B. (Cuba)
J.C. Chambers (Dominica)	G.G. Castellanos (Dom. Republic)
F.J. Nodinot (France)	F. Charollais (France)
Capt. J.L. Royer (France)	R. Cassagnol (Haiti)
Cpt. M. LeRoy R. (Jamaica)	L.L. Francis (Jamaica)
T.E. Aldridge (Jamaica)	F.C. Ramirez (Mexico)
Lic. L. Del Valle R. (Mexico)	O.O.H. Howes (Montserrat)
C.J.A. Elassaiss (Neth. Antilles)	L.R. Enriquez (Neth. Antilles)
G.A. Engelbrecht (Neth. Antilles)	P.A. Gelabert (Puerto Rico)
W.A. Warner (St. Kitts-Nevis/Anguilla)	C.S. Flemming (St. Lucia)
K.E. John (St. Vincent & Grenadines)	Lt.C.A.Roach (Trinidad & Tobago)
H.C. Hinds (Trinidad & Tobago)	R.J. Halstead (Turks & Caicos)
Capt. C.R. Corbett (USA)	M.E. McLeod (USA)
T.R. Scully (USA)	D.C. Francois (U.S. Virgin Islands)
L.T. Giuliani (Venezuela)	Capt. G. Gonzalez (Venezuela)

**Workshop on Pollution Management of Caribbean Bays, Havana, Cuba, 16-28 September, 1983.**

M. Alepuz Ll. (Cuba)	L.A. Cabañas O. (Cuba)
Dra. R.C. Cañas P. (Cuba)	A. Diaz A. (Cuba)
G. Garcia (Cuba)	R. Gonzalez C. (Cuba)
L. Guntin del Rio (Cuba)	N.J. Casanova (Cuba)

R. Lopez S. (Cuba)

R.S. Olivier (Cuba)

M. Rodriguez (Cuba)

G. Suarez A. (Cuba)

N. Ablanedo A. (Cuba)

A. Areces M. (Cuba)

J. Blanco H. (Cuba)

M.A. Espinosa G. (Cuba)

R. Garcia G. (Cuba)

R. Mederos B. (Cuba)

D.J. Nuñez C. (Cuba)

E. Perigo A. (Cuba)

M. Ramirez S. (Cuba)

L. Shabalina (Cuba)

J. Albaiges R. (Spain)

G. Cintron M. (Puerto Rico)

B. Kwiecinski (Panama)

R. Pares F. (Spain)

A. Vasquez B. (Mexico)

G. Oliva (Cuba)

D.S. Quiñones M. (Cuba)

D.M. Salabria (Cuba)

A. Villasol N. (Cuba)

R. Acosta M. (Cuba)

M. Armengol A. (Cuba)

L.R. Diaz C. (Cuba)

J.M. Garcia F. (Cuba)

O. Gutierrez P. (Cuba)

C. Mosquera L. (Cuba)

F.M. Palacios P. (Cuba)

H. Quintana N. (Cuba)

I. Ramos R. (Cuba)

A.I. Tur Perez-Castañeda (Cuba)

J.R. Carvajal Z. (Nicaragua)

A. Escofet (Mexico)

A. Maldonado L. (Spain)

A.T. Ocampo (Mexico)

M. Viñas A. (Cuba)

**IMO/OAS/UNEP Sub-Regional Oil Spill Workshop for Central America, Mexico and Panama, Panama City, 24-29 October 1983**

M. Benitez A. (El Salvador)	R.M. Bramwell (Panama)
Cap. A. Cano S. (Mexico)	P. Carrillo (Belize)
J.R. Carvajal Z. (Nicaragua)	O. Castellanos M. (Guatemala)
I. Ceballos G. (Panama)	J.H. Diaz (Panama)
R. Elorriaga (Panama)	D. Funes G. (Honduras)
J.C. Garrido G. (Panama)	Cap. A. Girón A. (Guatemala)
C. Gonzalez A. (Panama)	Cap. R. Hernandez S. (Mexico)
J.A. Lopez Vargas (Panama)	E. Luque (Panama)
A. Mahler (Belize)	G. Marquez (Panama)
R. Mesen Vega (Costa Rica)	M.E. Miranda B. (Nicaragua)
C. Moncayo (Panama)	G. Moss (Panama)
F. Othon (Panama)	P. Palacios S. (Guatemala)
B. Patiño (Panama)	A. Rentería (Panama)
G.A. Sanchez (Honduras)	R. Sanchez (Panama)
J. Silverstein (USA)	H.A. Vaca P. (Panama)
L.C. Vega (Panama)	T.O. Vergara H. (El Salvador)
L. Villalobos (Costa Rica)	C. Von Chong (Panama)

**Caribbean Environmental Education Training, St. Lucia/Dominica/Guadeloupe/St.Croix and home countries, May-December 1984.**

D. Looby (Antigua & Barbuda)	N. Hodge (Anguilla)
A. Gollop (Barbados)	R. Jules (Barbados)
T. Adams (Barbados)	D. Kirton (Barbados)

L.L. Perriot (Belize)	E. Gillett (Belize)
K. Thomas (Cayman Islands)	M.J. Edwards (Dominica)
C. Jijón (Ecuador)	L. St. Bernard (Grenada)
G. Philip (Grenada)	U. Hetsberger (Guyana)
C. Parks (Guyana)	W. Gager (Jamaica)
G.A. Howe (Montserrat)	I. Joseph (St. Kitts-Nevis)
P. Wiltshire (St. Kitts-Nevis)	A. Mathurin (St. Lucia)
C. d'Auvergne (St. Lucia)	M. Cros (St. Lucia)

**IMO/OAS/UNEP Government Experts Meeting on Sub-Regional Oil Spill Contingency Planning for Islands States and Territories of the Wider Caribbean, St. Lucia, 7-11 May 1984.**

G. W. Benjamin (Antigua & Barbuda)	L.H. Flowers (Bahamas)
W.L.E. Conliffe (Barbados)	M. Allen (Br. Virgin Islands)
Cap. B. Sallah (Br. Virgin Islands)	P.C. Foye (Cayman Islands)
E.P. Armenteros L. (Cuba)	E. Reyna A. (Dominican Republic)
J.P. Fletcher (Grenada)	J. Thebaud (Haiti)
Lt.Cmdr. M. LeRoy R. (Jamaica)	Sgt. G.N. Fough (St. Kitts-Nevis)
C. Lubin (St. Lucia)	M. Williams (St. Lucia)
A. Dolcy (St. Lucia)	J.V. Augustin (St. Lucia)
S. James (St. Lucia)	S.M. Johnny (St. Lucia)
C.M. John (St. Vincent & Grenadines)	H.C. Hinds (Trinidad & Tobago)
R. Callender (Trinidad & Tobago)	M. Hanchell (Turks & Caicos)
Cdr. R.T. Rufe (USA)	S.A. Hajost (USA)

Lt.Cdr. T.W. Josiah (USA)

**UNEP/CAP Workshop for Media Personnel, Barbados, 6-8 June 1984**

P. Bishop (Trinidad & Tobago)	J. Clarke (Barbados)
M. Cros (St. Lucia)	M.J. Edwards (Dominica)
W. Gager (Jamaica)	A. Gollop (Barbados)
O. Hetsberger (Guyana)	N. Hodge (Anguilla)
I. Joseph (St. Kitts-Nevis)	R. Jules (Barbados)
D. Looby (Antigua & Barbuda)	S. Osborne (Montserrat)
C. ParkÚ s (Guyana)	G. Philip (Grenada)
K. Thomas (Cayman Islands)	P. Wiltshire (Cayman Islands)

**V Symposium on the Investigation and Control of Marine Pollution and II Workshop on Environmental Education of Bays in the Caribbean, Havana, Cuba, 11-14 December 1984.**

G. Garcia F. (Cuba)	S. Fernandez R. (Cuba)
V. Antuña T. (Cuba)	T. W. Saenz (Cuba)
M. Alepuz Ll. (Cuba)	H. Ferrer G. (Cuba)
J. Kourí F. (Cuba)	O. Pascual F. (Cuba)
G. Oliva G. (Cuba)	G. Garcia M. (Cuba)
A. Diaz A. (Cuba)	G. Rey R. (Cuba)
R. Valdés A. (Cuba)	V. Echemendía F. (Cuba)
H. Moreno J. (Cuba)	A. Alvarez R. (Cuba)
N. Jaime C. (Cuba)	A. Villasol N. (Cuba)
A. Mata J. (Costa Rica)	F. Paez O. (Mexico)
J. A. Gomez (Panama)	M.E. Blank de Garcia (Venezuela)

D. Moore G. (Venezuela)	I.M. Moroto J. (Costa Rica)
V. Alvarez (Dominican Republic)	R. Vazquez M. (Panama)
C. Mosquera L. (Cuba)	R. Acosta M. (Cuba)
D. Salabarría F. (Cuba)	E. Perigó A. (Cuba)
M. Armengol A. (Cuba)	A. Areces M. (Cuba)
R. Garcia G. (Cuba)	J.M. Garcia F. (Cuba)
M. Viñas C. (Cuba)	D.J. Nuñez C. (Cuba)
L. Cabañas O. (Cuba)	I. Ramos R. (Cuba)

**Meeting of Marine Research Institutions to Review and Adopt Regional Training and Research Co-operative Programmes, Puerto Morelos, Quintana Roo, Mexico 24-27 June, 1985**

V. Alvarez V.H. (Dominican Republic)	V.H. Camacho (Costa Rica)
G. Cedeño (Venezuela)	J. Claassen (Neth. Antilles)
J.E. Corredor (Puerto Rico)	A. Haynes (Jamaica)
M. Hernández A. (Puerto Rico)	W. Hunte (Barbados)
N.M.J. Casanova (Cuba)	A. King (Trinidad & Tobago)
P. Macdonel Martínez (México)	V.A. Martínez Vega (Panamá)
G. Mathison (Barbados)	A. Robertson (USA)
S. Snedaker (USA)	R. Steer-Ruiz (Colombia)
A. Vázquez-Botello (México)	

**Wider Caribbean Expert Meeting on Tourism and Environment in Caribbean Development, Port of Spain, Trinidad and Tobago, 2-4 December 1985.**

R. Andrews (Trinidad & Tobago)	C. Belmar (Trinidad & Tobago)
B. Browne (St. Vincent & Grenadines)	P. Bruchet (France)
R. Chavenni P. (Costa Rica)	J.C. Delpace (Guatemala)
O. De Freitas (Panama)	C. Dillon (Trinidad & Tobago)
M.A. Febres O. (Venezuela)	S. Gardiner (Bahamas)
F. Gregoire (Dominica)	S.M. Herrera (Neth. Antilles)
M. Hinkson (Trinidad & Tobago)	D. Hudson (Trinidad & Tobago)
M. Insan A. (Guyana)	W. Ironside (Trinidad & Tobago)
W. G. Liburd (St. Kitts-Nevis)	G. Manwaring (Trinidad & Tobago)
C. Miller (Barbados)	E. A. O'Neal (British Virgin Is.)
S. Osborne (Montserrat)	T. Peters (Antigua & Barbuda)
K. Picou (Trinidad & Tobago)	A. Pierre (á Trinidad & Tobago)
J. Pobicki (U.S. Virgin Islands)	M. Salvador (Trinidad & Tobago)
J. Shaw (Belize)	F. Srenade N. (Trinidad & Tobago)
J. Vega (Mexico)	N. Verpile (Haiti)
G.A. Vincent (Grenada)	F. Watkins (Honduras)
M. Williams (St. Lucia)	

**CARIPOL Symposium on the Review of Petroleum Hydrocarbons in the Caribbean (IOC/UNEP/University of Puerto Rico), La Parguera, Puerto Rico, 1-6 December 1985.**

J.A. Acuña (Costa Rica)	D.K. Atwood (USA)
S. Braithwaite (Grenada)	F.J. Burton (Cayman Islands)
G. Cedeño (Venezuela)	L. Celis G. (Mexico)

J. Claassen (Netherlands Antilles)	J.E. Corredor (Puerto Rico)
J.M. Cortes-Vazquez (Mexico)	R. Dawson (USA)
G.C. Ebanks (Cayman Islands)	J.A. Garay T. (Colombia)
G. Harvey (USA)	J. Horrocks (Barbados)
R. Lankford (Puerto Rico)	N. Lawrence (St. Lucia)
S. Loewenthal (USA)	G. de Mahieu (Venezuela)
M.A. Maldonado (Puerto Rico)	M. Martinez (Cuba)
A. Mata-Jimenez (Costa Rica)	R. Mederos (Cuba)
L. Millar (Guyana)	G. Mille (France)
D. Moore (Venezuela)	J. Morell (Puerto Rico)
E.R. Morris (Puerto Rico)	E. Newton (Netherlands Antilles)
E. Otero (Puerto Rico)	A. Pion (Colombia)
M. Provan-Watson (Jamaica)	Q.B. Richardson (Neth. Antilles)
G. Case R. (USA)	R. Steer R. (Colombia)
A. Vázquez-Botello (Mexico)	E.S. Van Vleet (USA)
B. Wade (Jamaica)	

**IOC/UNEP/UNAM Training Course on Petroleum Hydrocarbons, Puerto Morelos, Mexico, 9-23 November 1986.**

G. Gold B. (Mexico)	J. Rendon V. (Mexico)
J.A. Acuña (Costa Rica)	B. Chial (Panama)
J.M. Beltran G. (Cuba)	R. Jacinto A. (Neth. Antilles)
J. Horrocks (Barbados)	C. Rondon-Jeffrey (Trinidad/Tob.)
M.A. Palacios M. (Colombia)	A.M. Hudson (Jamaica)



J. Singh (Trinidad & Tobago)

J.A. Garay T. (Colombia)

G. Cedeño (Venezuela)

O.M. Rodriguez B. (Costa Rica)

L. Celis G. (Mexico)

J. Morell R. (Puerto Rico)

M. Martinez C. (Cuba)

**CARIPOL I Techniques Training Course-CEHI, St. Lucia, 6-9 October 1987**

T. Howe (Montserrat)

D. Paul (St. Kitts)

S. Joseph (St. Vincent)

A. Scotland (Dominica)

R. Thomas (Grenada)

W. Robinson (Turks & Caicos)

B. Laljit (British Virgin Islands)

J.M. Morell (Puerto Rico)

**Consultation Meeting of Members of the Greater Caribbean Task Team on the State of Marine Pollution (Health of the Oceans), Kingston, 27-29 July 1987**

J.M. López (Puerto Rico)

C. Goenaga (Puerto Rico)

M. Alvarez (Puerto Rico)

G. de Mahieu (Venezuela)

R. Mederos (Cuba)

**First Meeting of IOC/UNEP's Task Team on the Implications of Climatic Changes in the Wider Caribbean, Kingston, 30 July - 1 August 1987**

K. Aiken (Jamaica)

A. Alm (Colombia)

A. Gallegos G. (Mexico)

G. Giese (U.S.A.)

C. Gray (Jamaica)

M. Hendry (Jamaica)

J.M. López (Puerto Rico)

G. Maul (U.S.A.)

N. Singh (St. Lucia)

**UNEP Drafting Group Meeting on the Development of a Network for Exchange and Transfer of Environmental Information in the Wider Caribbean (CAPNET), Kingston, 15-17 September 1987**

A. Chambers (Trinidad & Tobago)	J. Coiner (U.S.A.)
G. Greene (Jamaica)	S. Lampart (Jamaica)
S. Laurent (Trinidad & Tobago)	C. Marrett (Jamaica)
R. Thelwell (Jamaica)	

**Second Meeting of IOC/UNEP's Task Team on the Implications of Climatic Changes in the Wider Caribbean, Miami, 2-4 March 1988.**

R. Aparicio C. (Venezuela)	J. Broadus (U.S.A.)
D.P. De Sylva (U.S.A.)	J. Evans (U.S.A.)
G. Giese (U.S.A.)	C. Gray (Jamaica)
K. Hanson (U.S.A.)	M. Hendry (Jamaica)
G. Maul (U.S.A.)	A. Mercado (Puerto Rico)
L. Shapiro (U.S.A.)	V.P. Vincente (Puerto Rico)
M. White (Jamaica)	J. Whiteheadä (Barbados)

**Meeting of Experts on the Caribbean Environment Programme, Mexico City, 7-9 September 1988**

G. A. Engelbrecht (Aruba)	M. Griffith (Barbados)
C. Padmore (Barbados)	L. Smith (British Virgin Islands)
G. Garcia Durán (Colombia)	M. Astrálaga (Colombia)
J. B. Lugari (Costa Rica)	F. Paredes (Costa Rica)
H. Ferrer Gracia (Cuba)	M. Barquet Farah (Cuba)
F. Gregoire (Dominica)	P. Maugain (France)

J. E. Portecop (France)	M. Pilon de Pacheco (Guatemala)
W. Chin (Guyana)	J. Pompilus (Haiti)
P. David (Haiti)	M. Anderson (Jamaica)
L. Gardner (Jamaica)	S. Reyes Luján (Mexico)
J. F. Bueno Zirion (Mexico)	H. Perez Eugenio (Mexico)
J. López Medina (Nicaragua)	J. E. Illueca Bonett (Panama)
C. Lubin (St. Lucia)	L. Handfield (Turks and Caicos)
R. Robinson (Turks and Caicos)	P. Gelabert (U.S.A.)
A. Paterson (U. S.A.)	N. Andrade Colmenares (Venezuela)
H. Perez Nieto (Venezuela)	N. Singh (CEHI, St. Lucia)
E. Moore (U.W.I., Barbados)	M. Alepuz (Cuba)
M. Brossard (France)	A. de Levis Mirepoix (France)
F. Alba Reyes (Mexico)	R. Govela Autrey (Mexico)
A. L. Valdes (Mexico)	E. Perez Velasquez (Nicaragua)
M. L. Dalton (United Kingdom)	W. L. Kruczynski (U.S.A.)
D. Lipka (U.S.A.)	S. A. Chacin Sanchez (Venezuela)
I. de Odreman (Venezuela)	M. Prado Briceño (Venezuela)
C. Velásquez de Visbal (Venezuela)	J. Enoch (UNLOS, Jamaica)
S. Clarke (UNESCO, Jamaica)	A. Vázquez-Botello (IOC, Jamaica)
G. R. McEachin (IMO, Puerto Rico)	H. Weitzenfeld (PAHO/WHO, Mexico)
A. P. Castillo (IDB, U.S.A.)	A. Pereira da Silva (IDB, U.S.A.)
R. Costales (IDB, U.S.A.)	W. Lawrence (CDB, Barbados)
J. Fonseca (CPPS, Colombia)	J. Escobar (CPPS, Colombia)

G. A. Maul (AOMæ L/NOAA, U.S.A.)

H. Hume (ICOD, Canada)

J. M. López (UPR, Puerto Rico)

C. Bohorquez (AWAWANA, Colombia)

A. Toledo Ocampo (CECODES, Colombia)

G. Maihold (FFE, Mexico)

L. Davidson (Greenpeace, U.S.A.)

B. Hagerhall (Greenpeace, U.K.)

Ronald Nigh (Greenpeace, Mexico)

F. J. Palacio (Greenpeace, Costa Rica)

M. Kaufmann (WIDECAS, U.S.A.)

**Meeting of Experts for the Development of a Protocol Concerning Specially Protected Areas and Wildlife in the Wider Caribbean Region, St. Croix, U.S. Virgin Islands, 24-26 October 1988**

J. Fuller (Antigua and Barbuda)

D. Freestone (Antigua and Barbuda)

F. Duque Tobon (Colombia)

A. Megret (France)

P. Robinson (Jamaica)

N. Winklaar (Netherlands Antilles)

J. Sybesma (Netherlands Antilles)

R. H. Alvarado Quiros (Panama)

D. Robles (Panama)

R. Bickram (Trinidad & Tobago)

M. Dalton (United Kingdom)

R. Robinson (Turks and Caicos)

W. B. Lockwood Jr. (U.S.A.)

R. Baker (U.S.A.)

D. Bodansky (U.S.A.)

N. Foster (U.S.A.)

P. A. Gelabert (U.S.A.)

A. Palmer (U.S.A.)

H. Raffaele (U.S.A.)

L. Ragster (U.S.A.)

C. Rogers (U.S.A.)

A. D. Smith (U.S.A.)

J. Uravitch (U.S.A.)

J. L. Vivaldi, (U.S.A.)

F. A. Hernández Arocha (Venezuela)

I. de Odreman (Venezuela)

M. Prado Briceño (Venezuela)

G. R. McEachin (IMO, Puerto Rico)

D. A. Simmons (CCA, Barbados)

M. Wecker (COL, U.S.A.)

L. Davidson (Greenpeace, U.S.A.)

T. R. Garrett (Greenpeace, U.S.A.)

E. Towle (I.S.F., U.S. Virgin Islands)

M. Kaufmann (WIDECAST, U.S.A.)

J. Sobel (U.S.A.)

C. A. Carr (U.S.A.)

T. Agardy (U.S.A.)

B. Hagerhall (Greenpeace, U.K.)

A. Putney (IUCN, U.S. Virgin Islands)

J. Dobbin (U.S.A.)

K. Eckert (WIDECAST, U.S.A.)

T. Van't Hof (Netherlands Antilles)

J. Gibson (Belize)

K. Gjerde (U.S.A.)

**ANNEX V**  
**TECHNICAL PUBLICATIONS AND REPORTS DEVELOPED**  
**WITHIN THE FRAMEWORK OF THE CARIBBEAN**  
**ENVIRONMENT PROGRAMME**

1. Aldridge, T.E. (1982) Grenada: Land Based Sources of Pollution-Waste Disposal Practices: Solid Waste Management. CARICOM/UNEP Project of the Marine and Coastal Environment of the Caribbean Islands (23 pages).
2. Aldridge, T.E. (1982) St. Lucia: Land Based Sources of Pollution-Waste Disposal Practices: Solid Waste Management. CARICOM/UNEP Project of the Marine and Coastal Environment of the Caribbean Islands (21 pages).
3. Archer, A. (1981) Antigua: Country Report. CARICOM/UNEP Project for the Protection of the Marine and Coastal Environment of the Caribbean Islands (28 pages).
4. Archer, A. (1982) Bahamas: Country Report. CARICOM/UNEP Project for the Protection of the Marine and Coastal Environment of the Caribbean Islands (61 pages).
5. Archer, A.B. (1982) St. Kitts-Nevis: Country Report. CARICOM/UNEP Project of the Marine and Coastal Environment of the Caribbean Islands (38 pages).
6. Archer, A.B. (1983) St. Vincent: Study of the Coastal Environment. CARICOM/UNEP Project of the Marine and Coastal Environment of the Caribbean Islands (30 pages).
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