



**JOINT MEETING OF THE SMALL ISLAND DEVELOPING STATES
OF THE CARIBBEAN AND THE AGENCIES MEMBERS OF THE
INTER-AGENCY COLLABORATIVE GROUP (IACG),**

11 April 2003, San Juan, Puerto Rico

LC/CAR/G.728

SIDS/IACG/2

7 March 2003

ORIGINAL: ENGLISH

DRAFT

**REVIEW OF THE IMPLEMENTATION OF THE PROGRAMME OF ACTION
FOR THE SUSTAINABLE DEVELOPMENT OF
SMALL ISLAND DEVELOPING STATES
IN THE CARIBBEAN SUBREGION
1994-2004**

TABLE OF CONTENTS

PART I: GENERAL OVERVIEW OF IMPLEMENTATION OF THE SIDS POA AND THE CARIBBEAN SUBREGION	1
Chapter 1: Background.....	1
Introduction	1
The United Nations Global Conference on the Sustainable Development of Small Island Developing States (UNGCSIDS) and the Programme of Action for the Sustainable Development of Small Island Developing States (SIDS POA).....	2
<i>Review of the Implementation of the SIDS Programme of Action in the Caribbean Subregion</i>	3
1994-1997: The early beginnings	4
1997-1999: Intensification of implementation efforts at the national, subregional, regional and global levels	7
<i>The Caribbean Model for the Implementation of the SIDS POA</i>	9
<i>The SIDS Bureau</i>	9
<i>The Inter-Agency Collaborative Group (IACG)</i>	10
<i>The Joint Work Programme (JWP)</i>	10
<i>The Caribbean model in action</i>	11
<i>The SIDS Programme of Action, Environment and Sustainable Development in the Organisation of Eastern Caribbean States (OECS): Development of a Framework for Implementation</i>	15
<i>Issues in the Implementation of the SIDS POA in the Caribbean subregion, 1997-1999</i>	18
<i>Review of the Major Constraints to More Rapid and Effective Implementation of the SIDS Programme of Action in the Caribbean Subregion</i>	23
<i>Issues Relating to the Arrangements for Implementation of the SIDS Programme of Action in the Organisation of Eastern Caribbean States</i>	25
The Period 2000-2002	26
<i>Issues in the Implementation of the SIDS POA, 2000-2002</i>	29
The Period 2003-2004	28
<i>SIDS + 10</i>	29
Conclusion.....	30
 PART II: HIGHLIGHTS OF ASPECTS OF THE IMPLEMENTATION PROCESS OF THE SIDS PROGRAMME OF ACTION IN THE CARIBBEAN SUBREGION	32
Introduction	32
Climate Change and Sea-Level Rise	32
<i>Caribbean Planning for Adaptation to Climate Change (CPACC) Project and follow-up Climate Change Projects in the Caribbean</i>	33
<i>A Permanent Mechanism to Address Climate Change</i>	37
<i>Follow-up Projects to be executed by the Caribbean Community Climate Change Centre (CCCCC)</i>	
<i>The “Adapting to Climate Change in the Caribbean” (ACCC) Project</i>	38
<i>The Mainstreaming Adaptation to Climate Change (MACC) Project</i>	40
Coastal and Marine Resources.....	41
<i>Threats to sustainable development of coastal and marine resources</i>	41
<i>Tourism impacts</i>	44
<i>Health impacts</i>	44
<i>Data, information management and research</i>	44
<i>Stakeholder participation/awareness and education</i>	44
<i>Ocean management</i>	45
<i>Fisheries development</i>	47
Natural and Environmental Disasters	50
<i>Framework for collaboration on natural disasters</i>	63
Freshwater Resources	63
<i>Threats to sustainability of water resources</i>	65

<i>Supply and demand dynamics</i>	65
<i>Land use</i>	66
<i>Climate change and natural disasters</i>	67
<i>Transboundary threats</i>	68
<i>Pollution</i>	68
<i>Tourism impacts</i>	69
<i>Health impacts</i>	69
<i>Data, information management and research</i>	70
<i>Stakeholder participation/awareness and education</i>	70
<i>Institutional frameworks</i>	71
Tourism resources.....	75

NOTE

This document contains a review of the implementation, in the Caribbean subregion, of the Programme of Action for the Sustainable Development of Small Island Developing States (SIDS POA). It is divided into two Parts. Part 1 sets out an overall review of the implementation experience and identifies the activities pursued, the achievements recorded, as well as the constraints that were encountered in the process. This Part also addresses some of the more general issues arising from the implementation process as the subregion and the international community, in general, sought to come to terms with the SIDS POA, in search of a more comprehensive sustainable development ethos. Part 1 also documents the operational implications of these aspects over the decade that has elapsed since the adoption of the POA. The presentation of the review findings by reference to more or less precisely defined time periods represents an attempt to chronicle the subregional experience in a manner which permits an appreciation of the evolution of the implementation process.

Part 11 of the document highlights details of the implementation process in the subregion by reference to five of the Priority Areas identified in the SIDS POA namely: Climate Change and Sea-level Rise; Coastal and Marine Resources; Natural and Environmental Disasters; Freshwater Resources; and Tourism Resources.

The document is styled “*Draft*” inasmuch as it represents a *work in progress*. The final version is envisaged for presentation to the *Second Caribbean Ministerial Meeting on the implementation of the SIDS Programme of Action* which will convene later in 2003. Critical inputs into the finalization process of the document are expected to be furnished by the responses to the questionnaires which were administered by the Economic Commission for Latin America and the Caribbean (ECLAC) Subregional Headquarters for the Caribbean to Caribbean Development and Cooperation Committee (CDCC) member countries and also to agencies of the Inter-Agency Collaborative Group (IACG) in February 2003.

Apart from a subregional overview of the general aspects of implementation along the lines of Part 1 of the present document, the final version will contain details of the implementation, in the Caribbean subregion of all 14 substantive chapters of the SIDS Programme of Action, in addition to details of the implementation of socio-economic issues from among those that were identified by the twenty-second special session of the United Nations General Assembly in 1999 and also by the World Summit on Sustainable Development (WSSD) which convened over the period, 26 August – 4 September 2002.

Finally, this document finds a useful supplement in its companion LC/CAR/G.727 which has also been prepared for the Joint Meeting of Caribbean SIDS and Agencies of the IACG entitled, *Framework for Implementation of the Outcomes of the World Summit on Sustainable Development (WSSD) in the Small island Developing States of the Caribbean Subregion*.

PART I: GENERAL OVERVIEW OF IMPLEMENTATION OF THE SIDS POA AND THE CARIBBEAN SUBREGION

CHAPTER 1: BACKGROUND

Introduction

In terms of breaking new ground, the manifestation of the deep preoccupation with *sustainable development* issues at the international level, achieved its greatest degree of prominence with the convening in Rio de Janeiro, Brazil, over the period, 3-14 June 1992, of the United Nations Conference on Environment and Development (UNCED). Subsequent global conferences such as the United Nations Global Conference on the Sustainable Development of Small Island Developing States (UNGCSIDS), including its review process, in the context of the twenty-second special session of the General Assembly and, subsequently, the WSSD would, however, take the process further. The path-breaking aspect of UNCED can be traced to the relationship to which attention was directed in the course of its deliberations and which defined the parameters of those deliberations, namely, the relationship between "*Environment*", on the one hand, and "*Development*", on the other. The "*Earth Summit*", as the Conference also came to be popularly known, reaffirmed the *Declaration* of the 1972 *United Nations Conference on the Human Environment*, "*the Stockholm Conference*" and sought to "*build on it*". The profound, comprehensive and epoch-making outcomes of the "*Earth Summit*" are enshrined in the "*Rio Declaration on Environment and Development*" and in "*Agenda 21*", the latter having been conceived and adopted as a blueprint for global sustainable development.

Exploiting the momentum generated by the activism of the Alliance of Small Island States (AOSIS) in the negotiations on a United Nations Framework Convention on Climate Change (UNFCCC), which began in the late 1980s, the delegates of SIDS to the Preparatory Meetings of UNCED sought to extract "*concessions*" from the developed countries. The primary concession envisaged was of a conceptual nature, approaching a *paradigm shift*, and called for an acknowledgment on the part of the developed countries, that SIDS were inherently disadvantaged entities and therefore warranted special treatment in the economic and environmental relations that were forged between themselves and the developed countries, whether at the bilateral or multilateral level. The origins of this approach can be traced to the international debates of the 1960s in forums including the United Nations Conference on Trade and Development (UNCTAD), in which island States drew attention to the unique and special challenges faced by them, by reference to an array of economic, social and ecological vulnerabilities.

Thus, during the Preparatory Meetings for UNCED, which were held between 1990 and 1992, delegates from island States of the Caribbean, Pacific and Mediterranean regions developed the nomenclature "*Small Island Developing States*" (SIDS) to call attention to the special circumstances and characteristics of these geo-political entities. Moreover, during the course of those meetings, a number of arguments were advanced in support of a call for "*new and additional resources*" to be channelled to SIDS in order to help them to more effectively confront the challenges posed by their unique economic, social and ecological circumstances.

Eventually, in response to this sustained campaign, the United Nations General Assembly provided the platform of the UNGCSIDS which, significantly, convened in Barbados, a small Caribbean island developing State, in 1994, for discussion of the relevant issues.

By virtue of the convening of the UNGCSIDS, the first global conference to have been dedicated to the consideration of issues of direct concern to SIDS, formal recognition was given by the international community to the special characteristics and needs of those States and a specific Programme of Action was adopted to address these needs. *The Programme of Action for the sustainable development of small island developing States* was adopted as a blueprint for the sustainable development of SIDS and articulated a considerable range of actions and policies in that regard.

The United Nations Global Conference on the Sustainable Development of Small Island Developing States (UNGCSIDS) and the Programme of Action for the Sustainable Development of Small Island Developing States (SIDS POA)

The United Nations Global Conference on the Sustainable Development of Small Island Developing States (UNGCSIDS) convened in Barbados, over the period, 25 April-6 May 1994. The "*Barbados Declaration*" and the *Programme of Action for the Sustainable Development of Small Island Developing States*, the latter popularly referred to in the Caribbean as the *SIDS POA*, that were adopted at that Global Conference, elaborate principles and set out strategies for development that are intended to, at the same time, protect the fragile environments of small island developing States. These documents build on the "*Rio Declaration on Environment and Development*" and "*Agenda 21*" which were adopted at UNCED. Moreover, the UNGCSIDS itself, was seen as the first test of the global partnership that was formed at UNCED, by virtue of which, rich and poor countries agreed to work together for sustainable development. In the "*Introduction*" to the SIDS POA, "*sustainable development*" is defined as "*development that meets present needs without jeopardising the welfare of future generations by undermining the environment on which all life depends.*"

In order to illustrate the very close relationship between the UNGCSIDS and UNCED, attention might be drawn to Principle 6 of the *Rio Declaration on Environment and Development* which provides that:

"The special situation and needs of developing countries, particularly the least developed and those most environmentally vulnerable, shall be given special priority. International actions in the field of environment and development should also address the interests and needs of all countries."

It is in the convening of the UNGCSIDS that this perceived need to direct particular attention to "*the special situation and needs of developing countries*" has found its maximum expression, to date. That Conference was convened at the request of the United Nations General Assembly in December 1992, on the recommendation of UNCED itself. The Conference represented an attempt to translate "*Agenda 21*" into specific policies that are set out in 15

chapters, each representing a priority area relevant to addressing the special challenges faced by SIDS in the context of their sustainable development. The specific chapters of the SIDS Programme of Action cover, respectively:

1. Climate Change and Sea Level rise;
11. Natural and Environmental Disasters;
111. Management of Wastes;
- IV. Coastal and Marine Resources;
- V. Freshwater Resources;
- VI. Land Resources;
- VII. Energy Resources;
- VIII. Tourism Resources;
- IX. Biodiversity Resources;
- X. National Institutions and Administrative Capacity;
- XI. Regional Institutions and Technical Cooperation;
- XII. Transport and Communication;
- XIII. Science and Technology;
- XIV. Human Resource Development;
- XV. Implementation, Monitoring and Review.

Within the SIDS POA, activities developed in the context of this collection of conceptually discrete, as well as "*cross-cutting issues*" were envisaged for implementation at the national, regional and international levels and provided the regional or subregional operational context for the sustainable development of SIDS within the wider global framework that had been developed at UNCED.

Review of the Implementation of the SIDS Programme of Action in the Caribbean Subregion

The review of the implementation of the SIDS POA in the Caribbean subregion may conveniently be conducted by reference to activities executed at the national, subregional, regional and global levels, during four periods, as follows:

- 1994-1997: This period marked the early beginnings of *the SIDS process*: a period of intense learning and a search for approaches to solutions that would deliver *the promise of Barbados* i.e. the sustainable development of the subregion.
- 1997-1999: This period spans the convening of a number of significant meetings, as well as the launching of a number of other important initiatives at the national, subregional, regional and wider international levels, related to the implementation of the SIDS POA.
- 2000-2002: This was a period dedicated to the assimilation and internalization of the outcomes of, in particular, the global meetings that took place during the preceding period; further implementation efforts; and preparation for the *Rio + 10* review which eventually convened as *the World Summit on Sustainable Development (WSSD)*.

- 2003-2004: The *Johannesburg Declaration on Sustainable Development* and the *Plan of Implementation* adopted at the WSSD, in particular given the considerable attention directed to the *Millennium Development Goals*, have imparted a greater degree of focus to the implementation of *Agenda 21* and the SIDS POA. These outcomes of the WSSD provide a re-engineered context for the implementation process.

A review of activities undertaken by the subregion, or in which the subregion was otherwise involved, in the context of the implementation of the SIDS POA during the four periods indicated, is set out in the following section.

1994-1997: The early beginnings

Having been very actively engaged in the preparatory process leading up to the UNGCSIDS, from the moment of the adoption of the SIDS POA, the SIDS of the Caribbean subregion displayed a profound appreciation of its relevance; the urgency of its implementation; the need, nevertheless, to identify priorities; and the imperative of establishing appropriate mechanisms, including financial provisions, to ensure that the subregion derived the greatest possible benefit from its implementation. At the operational level, within the Caribbean subregion, the need was recognised, at a very early stage, for a mechanism, or for a coordinated system of mechanisms, to promote and generally facilitate the implementation process. The challenge has always been and, indeed, for the most part, remains that of translating the appreciation of these elements into corresponding actions, against the backdrop of the existence of a number of constraints, whether of a financial or institutional nature, or related to human resources, among other aspects.

Barely six months after the adoption of the SIDS POA, at a Caribbean Meeting of Experts coordinated by the Subregional Headquarters of ECLAC for the Caribbean, in collaboration with the United Nations Development Programme Special Unit for Technical Cooperation Among Developing Countries (UNDP/TCDC); the United Nations Environment Programme (UNEP); the University of the West Indies Centre for Environment and Development (UWICED) and the Caribbean Community (CARICOM) Secretariat, on 17-19 May 1995, all these aspects were recognized and explored. Significantly, the elements identified in that forum, in large measure, continue to inform the basic agenda of the subregion, as far as implementation of the SIDS POA is concerned.

The elements identified by the 1995 Caribbean Meeting of Experts included the following:

- The priorities of the Programme of Action and/or sustainable development approaches, more generally, had not been explicitly integrated into national policy-making, even though the primary responsibility for the implementation of the POA lay with governments;
- An apparent perception on the part of governments that abundant resources were available for environmental and related issues at the international level, hence the

lack of ownership and therefore of responsibility, at the subregional and national levels, for implementation of the SIDS POA;

- The related responsibility of the international community to facilitate the efforts of SIDS given, *inter alia*, their narrow resource base;
- The need to involve NGOs, the private sector and other major groups in all aspects of sustainable development and to improve public awareness, education and understanding in this area; and
- Recognition that the SIDS POA required, in addition to an “environment” focus, a broader perspective that encompassed issues related to gender equity, poverty alleviation and sustainable livelihoods, among others.

With specific reference to implementation of the POA, among the key issues identified by the Meeting of Experts were:

- Capacity-building: involving, *inter alia*, training, information management and organizational, as well as behavioural approach, targetting not only governments, but also, other segments of society that are to be involved in implementation of the POA, emphasising the human dimension and equity;
- The proposal for the establishment of an appropriate mechanism at the national level e.g. a Sustainable Development Commission, to provide an overarching strategy that represents the collective goals of all social partners for sustainable development.

In seeking to identify priority areas for action, which was one of the principal objectives of the Meeting of Experts, note was taken of the proposals advanced by the countries of the Organisation of Eastern Caribbean States (OECS)¹ namely, coastal management; integrated development planning; protection of the Caribbean Sea; waste management; and capacity-building. Related proposals, in the wider Caribbean SIDS context, were in respect of, *inter alia*, coastal and marine resources; human resources development; institutional capacity-building; and information gathering. Evidently, a concert of ideas had emerged.

Among the criteria utilised for the identification of priority areas, were the following:

- Potential to impact the greatest number of countries;
- Potential to enhance implementation capability;
- Potential to impact other programme areas, for example, with reference to cross-sectoral areas such as climate change and sea-level rise, national institutions and administrative capacity; and human resource development, which are all relevant to the implementation of such sectoral areas as tourism resources; biodiversity; and coastal and marine resources, among others.

¹ The Treaty establishing the OECS entered into force on 1 July 1981. Annex A to the Treaty embodies an Agreement establishing the East Caribbean Common Market. The objectives of the OECS include cooperation, the harmonisation of foreign policy; and the promotion of economic integration. The members of the OECS are Antigua and Barbuda; Dominica; Grenada; St Kitts and Nevis; St Lucia; and St Vincent and the Grenadines. The Associate Members are: Anguilla; the British Virgin Islands; and Montserrat.

Caution was however sounded with respect to the need to avoid the identification of priority areas having the unintended effect of reducing the scope of action of regional agencies and even of governments.

With respect to *Mechanisms for Coordination and Implementation*, the Meeting of Experts agreed, *inter alia*, that:

- The absence of a coordinating mechanism at the Caribbean subregional level was a critical factor accounting for the slow pace of implementation at both national and subregional levels;
- Pending the establishment of such an institutional device, *the CARICOM and ECLAC/CDCC² Secretariats .. should be requested to jointly provide a regional coordinating mechanism, on an interim basis, for one year; and that the secretariats should, for this purpose, seek the full cooperation and support of other organisations, particularly, the UNDP, UNEP and UWICED.*
- The institutions identified to coordinate the implementation of the SIDS POA should be provided with the resources required to fulfil their mandates. This should occur at both national and regional levels.

Of great interest, are the functions envisaged by the Meeting of Experts for the *Interim Regional Coordinating Mechanism*. These were as follows:

- Support and facilitate the implementation of the Programme of Action at the national level, by serving as a source of information and technical assistance on aspects of its implementation, including resource mobilization;
- Serve as a focal point for information and for regional and international liaison;
- Identify and take action on transboundary and other subregional sustainable development issues in the Caribbean, including the formulation of regional projects and the mobilization of resources for same;
- Encourage political support for the SIDS POA and ensure that relevant aspects are brought to the attention of policy makers in the various sectors and in international fora;
- Serve as the secretariat for an appropriate regional consultative or advisory body, which would include NGOs and other interest groups; and
- Examine the feasibility of establishing a permanent arrangement for the coordination of the implementation of the POA, at the regional level and depending on the outcome of this examination, seek the funding required for its establishment.

² The Caribbean Development and Cooperation Committee (CDCC) is a permanent subsidiary organ of ECLAC, established in 1975 to promote cooperation towards economic and social development. The members of the CDCC are Antigua and Barbuda; The Bahamas; Belize; Cuba; Dominica; the Dominican Republic; Grenada; Guyana; Haiti; Jamaica; Saint Kitts and Nevis; Saint Lucia; Saint Vincent and the Grenadines; Suriname; and Trinidad and Tobago. The Associate Members are Anguilla; Aruba; British Virgin Islands; Montserrat; The Netherlands Antilles; Puerto Rico; and the United States Virgin Islands.

1997-1999: Intensification of implementation efforts at the national, subregional, regional and global levels

The period 1997-1999 spans the convening of a number of significant meetings and other initiatives at the subregional and wider international levels related to the implementation of the SIDS POA. Given its central importance to the progress of implementation in the subregion, it is important, at the outset, to highlight the *Caribbean Ministerial Meeting on the implementation of the Programme of Action for the Sustainable Development of Small Island Developing States*.

Convening of the Caribbean Ministerial Meeting on the implementation of the Programme of Action for the Sustainable Development of Small Island Developing States

Following the near comprehensive *statement of the problem* by the 1995 Caribbean Meeting of Experts, accompanied by the formulation of a number of *criteria of relevance*, informed by the recognition that little progress had, in fact, been made in the adoption of sustainable development approaches and in the integration of the SIDS POA into decision-making at the national level, the subregion created the opportunity to undertake a review, as technical as it was political, of the implementation of the SIDS POA within its geographical area. The occasion of the review was “*The Caribbean Ministerial Meeting on the Implementation of the Programme of Action for the Sustainable Development of Small Island Developing States*”.

The Caribbean Ministerial Meeting on the implementation of the SIDS POA, Barbados, 10-14 November 1997: The watershed in subregional implementation

With responsibility as a regional commission to undertake activities associated with global summits and prompted by the concern with respect to the recognised deficit in implementation of the SIDS POA, the Subregional Headquarters of ECLAC for the Caribbean had seized the opportunity to convene the 1995 Caribbean Meeting of Experts, which represented the first of a series of inter-agency meetings that had as their ultimate objective, the convening of a subregional technical-cum-ministerial meeting to discuss the status of the implementation of the SIDS POA in the subregion.

As a result of this initiative, the Subregional Headquarters, with the support of a number of regional and international agencies, convened the subregion's first and, to date, only Ministerial Meeting in the specific context of the implementation of the SIDS POA. The agencies which collaborated in the convening of the meeting included the Caribbean Centre for Development Administration (CARICAD), CARICOM, the Caribbean Development Bank (CDB), the Department of Economic and Social Affairs-Division for Sustainable Development-Small Island Developing States of the United Nations (DESA-DSD-SIDS), the Food and Agriculture Organization (FAO) of the United Nations, the Organization of American States (OAS), the OECS, the United Nations Centre for Human Settlements (UNCHS), UNDP and UNEP.

The meeting was hosted by the Government of Barbados, over the period, 10-14 November 1997 and was essentially geared to address three main aspects, namely, the status of implementation of the Programme of Action in the subregion in the context of, *inter alia*, the pending review in the context of *SIDS + 5* in 1999; the level of political commitment to the process; and the way forward. The meeting was attended by, *inter alia*, representatives of 18 Caribbean SIDS, 10 United Nations bodies; 18 other intergovernmental organizations; 24 NGOs; three developed country observers (Canada, the Netherlands and the United States of America); and three Special Guests.

Fundamentally, to outline the matter in slightly greater detail, the Ministerial Meeting was convened with an eye to the twenty-second special session of the United Nations General Assembly which was to convene on 27-28 September 1999; to provide the subregion with an opportunity to identify and prioritize actions; to effectively allocate resources; to share information; and to generally recommit to the process of implementation of the SIDS POA. By the time of its conclusion, it was evident that, overall, the Meeting had served its major underlying purposes, namely, that of providing the context for an urgently needed process of reflection on the status of implementation of the SIDS POA in the subregion and, also, that of prompting intensive action on the basis of decisions adopted at the subregional level.

Perhaps, the fundamental realization, in that context, as might be gauged from the decisions adopted by the Ministers, was the dire need for a system of coordination as an effective means of coming to terms with the very modest degree of progress that had been recorded to date in the implementation of the SIDS POA in the subregion. Already, three years into the five-year period at the end of which the review of progress was to be undertaken, the subregion had very little to report. Nor was there even a reporting mechanism.

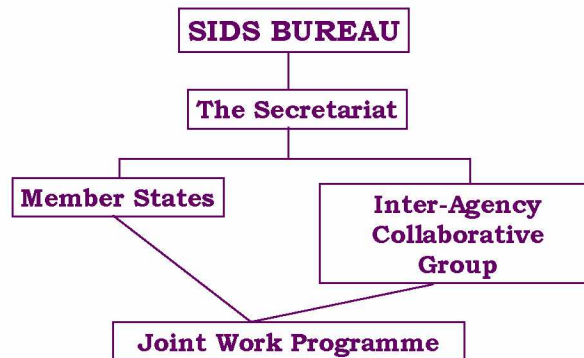
The Ministerial Meeting confirmed and highlighted the subregion's lack of a strategy to coordinate, implement and report on activities undertaken or envisaged under the POA. Nor were resources available for these purposes. It had also become clear that, while there were several sustainable development initiatives underway in the subregion, these had fallen within the framework of the POA, not by design, but by default, given the broad and general nature of its formulations.

Reflecting the success of the Ministerial Meeting, more specifically, the fact that its decisions effectively set the stage for the significant achievements that have since been recorded in the implementation of the SIDS POA in the subregion, the convening of this high-level event constituted a veritable watershed in the Caribbean sustainable development experience. In effect, the corpus of decisions adopted by the Meeting, has served to define the structures and mechanisms that have now become entrenched within the subregion for the implementation of the SIDS POA, to which must now be added, other related international decision, for example those adopted at the twenty-second special session of the General Assembly and the World Summit on Sustainable Development.

The Caribbean Model for the Implementation of the SIDS POA

The *Caribbean Model for the implementation of the SIDS POA* crystallized by virtue of the adoption, though in most cases, the formalization, by the *Caribbean Ministerial Meeting*, of arrangements that had been earlier fashioned and promoted by the Subregional Headquarters of ECLAC for the Caribbean. This development conveyed the recognition by the subregion of the need to develop and implement mechanisms that would help it to overcome the financial, technical, manpower and other constraints which had hitherto foreclosed many options identified by its SIDS towards their sustainable development within the specific framework of the SIDS POA. As adopted by the Ministers, the model comprises four elements, namely, a *Joint Secretariat* and a *SIDS Bureau*, together with an *Inter-Agency Collaborative Group (IACG)* for the implementation of a *Joint Work Programme (JWP)*.

Structures for Implementation



The *Joint Secretariat*, which has already acquired the character of an entrenched institution, was however conceived as a temporary regional coordinating mechanism whose functions were entrusted to the Secretariat of the Subregional Headquarters of the ECLAC for the Caribbean and the CARICOM Secretariat. Within this mechanism, the former functions as the operational or technical secretariat, while the latter engages in the political outreach needed to maintain issues related to the SIDS POA on the international agenda, among other important aspects. The principal functions of the technical or operational *Secretariat* are in respect of the coordination, implementation and general follow-up activities; the convening of meetings; the dissemination of information; reporting; and acting as an intermediary between the *Inter-Agency Collaborative Group* and the *SIDS Bureau*.

The SIDS Bureau

The Ministerial Meeting entrusted its own Bureau, referred to as “*the SIDS Bureau*”, with the task of political oversight of the implementation of a *Joint Work Programme* extrapolated from the several Chapters of the SIDS POA. In addition, reflecting the context in which the

Meeting was convened, the SIDS Bureau was entrusted with oversight of overall preparations for the 1999 review of the SIDS POA by the United Nations General Assembly.

The Inter-Agency Collaborative Group (IACG)

The Joint Work Programme (JWP) was envisaged for implementation by an IACG, comprising, *inter alia*, some 24 regional institutions, regional non-governmental organizations (NGOs) and United Nations agencies, including, the Caribbean Development Bank (CDB), the Caribbean Policy Development Centre (CPDC), the United Nations Development Programme (UNDP), the Secretariat of the Organisation of Eastern Caribbean States (OECS), the University of the West Indies (UWI), the Caribbean Centre for Development Administration (CARICAD), the Caribbean Environmental Health Institute (CEHI) and the United Nations Environment Programme/Regional Coordination Unit (UNEP/RCU).

The concept of an IACG, conceived by the Subregional Headquarters of ECLAC for the Caribbean and formalized by the Ministerial Meeting, may also be viewed as a major innovative device to promote inter-agency collaboration of a scope unprecedented in the region. Significantly, the agencies concerned supported the JWP, fully aware that no extrabudgetary funds would have been forthcoming for its implementation. In addition to its direct involvement in the literal implementation of the projects that comprise the JWP, the IACG supports the Joint Secretariat, principally in the execution of the reporting function, in the context of which Lead Agencies are identified in the implementation of specific projects within the respective priority areas of the SIDS POA.

Through the IACG, the Subregional Headquarters of ECLAC is centrally involved in the coordination of implementation at the subregional level. Its basic contribution is to maintain a focus on the implementation of the SIDS POA across the region. More generally, its contribution spans, in addition, the convening of meetings for the development of regional positions for presentation at international fora; the representation of regional concerns at international meetings such as the *Donors' Meeting* of February 1999; Meetings of the Commission on Sustainable Development (CSD) and Special Sessions of the United Nations General Assembly (UNGA); and the preparation of documents and other publications.

In addition to the activities conducted within the subregion, in an effort to ensure even greater cohesion through the effective flow of information, the Subregional Headquarters of ECLAC for the Caribbean also holds briefing sessions with Caribbean representatives in such strategically important diplomatic centres as Brussels, New York and Washington. The organisation of such briefing sessions and the regular provision of information packages on issues of concern to the subregion, are in the nature of ongoing activities.

The Joint Work Programme (JWP)

In an effort to accelerate the modest rate of implementation of the SIDS POA as was evident up to the time of its convening, as well as to facilitate a system of monitoring and reporting, the Ministerial Meeting adopted a JWP comprising some 130 concrete activities

extrapolated from the several Chapters of the SIDS POA and agreed for implementation by the IACG.

This concept of grouping project activities in accordance with the respective Chapters of the SIDS POA, to be supported by agencies responsible for implementation, represents another element that had been earlier initiated by the Subregional Headquarters and was merely formalized by the ministerial meeting. This format, together with the corresponding activities identified, evolved into the subregion's Joint Work Programme. Thus, with the Subregional Headquarters at the centre of the process, from very modest beginnings, the Caribbean Model for the coordination of implementation of the SIDS POA, evolved.

Other activities undertaken during the 1997-1999 period

In order to fill the gap created by the lack of information on the status of implementation of the Programme of Action at both the national, as well as subregional levels, the Subregional Office of ECLAC for the Caribbean, utilising the instrumentality of a questionnaire administered by staff who travelled to the respective member States, produced a publication entitled, *“Implementation of the SIDS POA-A Caribbean Perspective”* (LC/CAR/G.520). This publication detailed the implementation activities of 15 Caribbean SIDS, as well as those of a number of regional and regionally-based agencies. Until the convening of the *Subregional Preparatory Meeting of the Caribbean for the World Summit on Sustainable Development*, which convened in Havana, Cuba, 28-29 June, 2001, it had the distinction of being the only document that summarized the experience of implementation of the SIDS Programme of Action in individual countries of the Caribbean and in the subregion as a whole.

Following the path-breaking Caribbean Ministerial Meeting, the mechanisms and processes unleashed by the decisions taken at that forum gave rise to intense activism as the subregion sought to come to grips with the effective implementation of the SIDS POA.

The Caribbean model in action

In 1998, the technical and operational arm of the Joint Secretariat, convened four meetings of the SIDS Bureau and the IACG, either jointly or separately. Documentation was prepared and disseminated by the Subregional Headquarters of ECLAC, as the subregion prepared for the *Meeting of representatives of International Donors and Representative of SIDS, “the Donors’ Meeting”*, of February, 1999. A similar process was followed in connection with CSD-7, which convened in April 1999 and the twenty-second Special Session of the General Assembly which convened in September 1999.

The more important meetings convened in the context outlined above, within the subregion, included the following:

- The Informal Meeting of the SIDS Bureau, 23 March 1998;
- The Meeting of the IACG, 15 June 1998, to review the status of implementation of the SIDS POA and also of progress in the implementation of the JWP;

- The Meeting of the SIDS Bureau and the Joint Secretariat, 16 June 1998. This was the first official meeting of the SIDS Bureau, an informal meeting having taken place on 23 March 1998. The main objectives of the meeting were to review the status of implementation of the SIDS POA, more specifically, to evaluate progress in the execution of the JWP adopted at the Ministerial Meeting of November 1997. In this regard, this Meeting received a report on the Meeting of the IACG which convened on 15 June 1998;
- The Joint Meeting of the SIDS Bureau, the IACG and the Joint Secretariat, which convened on 6 November 1998. This meeting was convened to evaluate progress in the implementation of the POA and to advance subregional preparations for the twenty-second special session of the United Nations General Assembly that would undertake a review of the implementation of the POA in the context of the *Five-year review*, commonly referred to as *SIDS + 5*. In this connection, the Subregional Headquarters of ECLAC for the Caribbean prepared and circulated across the Caribbean, a *Report on the state of implementation in the Caribbean of the Programme of Action for Small Island Developing States*. This document was the focus of attention at the meeting which was convened by the Subregional Headquarters to generate consensus on a Caribbean position on the implementation of the POA as an input into CSD-7 and into the overall process of preparation for the twenty-second special session of the General Assembly. The document was ratified by consensus. The region had begun to speak with one voice, a not insignificant achievement. Moreover, the Subregional Headquarters of ECLAC received from the Department of Economic and Social Affairs, a request for permission to circulate this Report to other SIDS regions as a model.
- The Joint Meeting of the SIDS Bureau, other Caribbean SIDS, the Joint Secretariat and the IACG, on 14 August 1999. This meeting, which was convened and also hosted by the Subregional Headquarters, convened to engage the region in final preparations for the twenty special session of the General Assembly. At this meeting, a document entitled “*The Caribbean Consensus on the Further Implementation of the SIDS Programme of Action*”, developed by the Subregional Headquarters was circulated for discussion. The objective of this document was singular, namely, to provide the last comprehensive briefing for Caribbean delegations in the final days leading to the special session. While some misgivings were expressed, for the most part by the agencies there represented, with respect to the nomenclature of the document, its content received general endorsement.
- *The Meeting on Inter-Agency Collaboration in the Caribbean: Towards a Framework for Collaboration*, 8-9 March 2001. This Meeting covered a number of themes in the context of “*A Possible Agenda for Inter-Agency Collaboration*”. Among the themes addressed was *Preparation for Rio + 10* under which were included a number of sub-themes related to the SIDS POA.

Within the Caribbean subregion, this period, 1997-1999, witnessed the effective commencement of focused implementation of the SIDS POA; the identification of the challenges confronting the subregion; and preparations for, as well as participation in, the *five-year review* that would take place in the context of *SIDS + 5*.

At the wider international level, among the meetings that convened during the period, 1997-1999, were:

- The Meeting of Representatives of Prospective Donors and Representatives of SIDS, the so-called “*Donors’ Meeting*”, New York, 24-26 February 1999;
- the Seventh Meeting of the Commission on Sustainable Development, New York, 19-30 April 1999; and
- The twenty-second special session of the United Nations General Assembly for the review and appraisal of the implementation of the Programme of Action for the Sustainable Development of Small Island Developing States, New York, 27-28 September 1999.

As envisaged in the *Implementation, Monitoring and Review* chapter (Chapter XV) of the SIDS POA, there was to be a direct relationship between implementation activities at all levels: national; subregional; regional; and global. Consonant with this perspective, a summary note on each of these three selected meetings will help to relate all these levels of activity each to the other, from the standpoint of the SIDS of the Caribbean, with particular attention to the more critical *feedback loops* as the implications of activity on a given level manifest themselves at other levels of the implementation process.

The Meeting of Representatives of Prospective Donors and Representatives of SIDS, 24-26 February 1999

Of the 312 projects proposals submitted to the *Donors’ Meeting* by SIDS of the three designated geographical regions, Caribbean SIDS accounted for 149, or almost 50%. Of the Caribbean project proposals presented, 20% were devoted to *Human Resource Development*; 11% to *Biodiversity*; 11% to *Management of Waste*; and 9% to *National Institutions and Administrative Capacity*. Other projects were distributed among all the other priority areas of the SIDS POA, with the exception of *Transport and Communication*.

In addition to the project proposals submitted by the SIDS, four Regional Project Proposals were submitted by the Subregional Headquarters of ECLAC for the Caribbean on behalf of the subregion, for execution in the context of the SIDS POA. Respectively, these project proposals, which illustrate the salience of the institutional constraint faced by the subregion, referred to:

- The establishment of a Regional Coordinating Mechanism (RCM) for the Implementation of the SIDS Plan of Action;
- Application of Economic Instruments in the Caribbean;
- Strengthening Information Management for Sustainable Development in the Caribbean; and
- National Legislation to Implement International Conventions.

Contrary to the expectation harboured by many SIDS, the *Donors’ Meeting* did not materialize in the form of a “*Pledging Conference*”, with expressions of commitment to the provision of resources for the implementation of specific project proposals presented by them.

Indeed, by the eve of the meeting, it had become all too clear that, in any event, a forum of that size and composition would not have been appropriate for the review of such a large number of proposals, even though arrangements were made and, in fact, exploited, for the convening of a number of bilateral contacts between representatives of SIDS and prospective donors. From the perspective of the Under-Secretary-General of DESA, as stated in his *Introductory Remarks*, the *Donors' Meeting* was in the nature of "*a special and unique and, in some ways experimental Meeting in the implementation of the decisions of United Nations Conferences.*"

In effect, the *Donors' Meeting* provided the occasion for the elaboration of procedures for the reformulation and resubmission of project proposals, together with a recommendation for the *regionalization* of projects wherever this was deemed feasible. The basic conclusion to be drawn from this *Meeting of representatives of Prospective Donors and representatives of SIDS*, is to the effect that the results of this encounter did not meet the expectations of Caribbean SIDS, among others, which were eager to exploit the benefits of international cooperation promised by the implementation of the SIDS POA. The benefits anticipated were expected to accelerate the implementation process: a development that would have enhanced the level of commitment of Caribbean SIDS to the further implementation of the SIDS POA.

Subsequently, in the context of the desirability expressed by the donor community at the Donors' Meeting, the Subregional Headquarters of ECLAC, with the concurrence of its member States, embarked on the process of consolidating into *subregional projects*, a series of overlapping or otherwise related project proposals that had been originally presented in the form of national submissions. No concrete achievements were recorded, however, beyond the preparation of draft regionalized project proposals.

Notwithstanding the essentially unfavourable outcome of the *Donors' Meeting*, Caribbean SIDS continued to express commitment to the SIDS POA, encouraged in the belief that the positive results achieved, to date, in a number of areas, could have been further enhanced and even replicated in others, subject, however, to the satisfaction of certain conditions.

The Twenty-Second Special Session of the United Nations General Assembly, 27-28 September 1999

As has been foreshadowed, this special session remedied a major shortcoming of the SIDS POA, as identified by Caribbean SIDS, among others, through the incorporation of elements that presented major challenges to their sustainable development but which, to date, had found no expression in the SIDS POA, in explicitly operational terms. Among the elements incorporated at the special session, were *trade, investment, commodity issues, capital markets, unemployment, and poverty eradication*. In summary terms, the emphasis on the need to incorporate socio-economic issues into the implementation of the SIDS POA may be illustrated by reference to the corresponding emphasis placed in the Report of the Special Session, on the fact that "*Eradication of poverty is therefore a serious issue and an objective of high priority for small island developing States, and requires the integration of economic, environmental and social components of action to achieve sustainable development.*" (UNGA resolution S/22/2,annex)

In addition, as regards the contribution of the Subregional Headquarters, as the technical arm of the Joint Secretariat, in its intervention at the special session, in outlining its role in the subregional process of implementation of the SIDS Programme of Action, attention was drawn to the need to deepen the POA to encompass, in a focused, operational sense, the social and economic issues, which, in addition to their environmental counterparts, had been recognised to present major obstacles to the sustainable development of Caribbean SIDS, among others. This element had been incorporated into “*the Caribbean Consensus*”. Reference was made to the role of the ECLAC Subregional Headquarters for the Caribbean in a number of interventions at the special session. In this context, particular reference was made to the efforts made by this Regional Commission to ensure that the Caribbean region was fully prepared to promote and defend its interests at that very important and critical review of the implementation of the SIDS Programme of Action.

More generally, the special session also provided the occasion for the formal and explicit recognition of the role played by regional commissions. For example, it recognised that the United Nations should continue to play its catalytic and supportive role, particularly through the regional commissions, which were regarded as playing an integral role in the overall implementation of the SIDS POA. This recognition of the contribution of regional commissions by the General Assembly, a sentiment earlier expressed by the CSD-7 held in April, 1999, quite apart from being a source of encouragement to the Subregional Headquarters of ECLAC, also facilitated its activities as it continued to solicit the support of other regional entities in the pursuit of the sustainable development of the Caribbean subregion. Reference was also made to the need for strengthening of the institutional arrangements through the more efficient use of resources in the United Nations to maximize support for small island developing States, so that the United Nations, its agencies and regional commissions would become more effective in promoting and assisting sustainable development in island States.

The SIDS Programme of Action, Environment and Sustainable Development in the Organisation of Eastern Caribbean States (OECS): Development of a Framework for Implementation

In September 1999, the same year in which the twenty-second session of the General Assembly was convened, the Ministers of the Environment of the countries of the OECS requested the then OECS Natural Resources Management Unit (OECS/NRMU) of the OECS Secretariat, subsequently renamed the *Environment and Sustainable Development Unit (ESDU)*, to develop an *OECS Charter for Environmental Management* and “*a regional strategy...that will become the framework for environmental management*” in the subregion. The *St. George’s Declaration of Principles for Environmental Sustainability in the OECS* adopted in Grenada, in April 2001 sets out the general framework requested by the Ministers.(OECS website: <http://www.oecsnrmu.org/>).

The 21 *Principles* embodied in the *St George’s Declaration* are as follows:

1. Foster Sustainable Improvement in the Quality of Life;
2. Integrate Social, Economic and Environmental Considerations into National Development Policies, Plans and Programmes;

3. Improve on Legal and Institutional Frameworks;
4. Ensure Meaningful Participation by Civil Society in Decision-Making;
5. Ensure Meaningful Participation by the Private Sector;
6. Use Economic Instruments for Sustainable Environmental Management;
7. Foster Broad-based Environmental Education, Training and Awareness;
8. Address the Causes and Impacts of Climate Change;
9. Prevent and Manage the Causes and Impacts of Disaster;
10. Prevent and Control Pollution and Manage Waste;
11. Ensure the Sustainable Use of Natural Resources;
12. Protect Cultural and Natural Heritage;
13. Protect and Conserve Biological Diversity;
14. Recognize Relationships between Trade and Environment;
15. Promote Cooperation in Science and Technology;
16. Manage and Conserve Energy;
17. Negotiate and Implement Multilateral Environmental Agreements;
18. Coordinate Assistance from the International Donor Community towards the Organisation of Eastern Caribbean States Region;
19. Implementation and Monitoring;
20. Obligations of Member States;
21. Review

Significant definitions set out in the *Definition of Terms*, which prefaces the *St George's Declaration* include:

- *Environment* : The components of the earth, and includes:
 - (a) air, land and water;
 - (b) all layers of the atmosphere;
 - (c) all organic and inorganic matter and living organisms; and
 - (d) the interacting natural systems that include components referred to in paragraphs (a) to (c).
- *Sustainable Development*: Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

With respect to the basic *approach* of the OECS countries to *sustainable development*, and the relationship postulated between *environment* and *sustainable development*, the *Preamble* to the *St George's Declaration* was adopted as proclaiming “*the principles of sustainable development by which human conduct affecting the Environment is to be guided and judged.*” It commences with the declaration to the effect that the States of the OECS are:

Persuaded that the effective management of environmental resources at local, national, regional and international levels is an essential component of sustainable social and economic development, including the creation of jobs, a stable society, a buoyant economy and the sustaining of viable natural systems on which all life depends;

The *Declaration* also recognizes “*the need to address the relevant priority areas of the SIDS Programme of Action to ensure follow-up action to the United Nations Global Conference on Sustainable Development of Small Island Developing States...*”

Placing *the environment* at the centre of the sustainable development process, the *Preamble* also affirms the commitment of the OECS States “*to the principles of sustainable development in order to minimize inherent environmental vulnerability.....*”

In its *Principle 1 (Foster Sustainable Improvement in the Quality of Life)*, the *Declaration* indicates that:

Each Member State agrees to develop, promote and implement programmes to address poverty, health, employment, education, social development and provision of basic human needs to sustainably improve the quality of life within the carrying capacity of its natural resources, and giving due consideration to levels of acceptable change.

In *Principle 2 (Integrate Social, Economic and Environmental Considerations into National Development Policies, Plans and Programmes)*, each member State agrees to, *inter alia*:

- (a) Pursue sustainable development policies aimed at poverty alleviation, the general improvement of social, economic and cultural conditions, the conservation of biological diversity, the mitigation of adverse effects of climate change and the maintenance of essential ecological processes and life support systems;
- (b) Formulate, promote and implement integrated development policies, plans and programmes to ensure that environmental management is treated as an integral component of planning processes in pursuit of sustainable development;

Other aspects embodied in this *Principle* address the need for prior assessment of actions that are likely to cause significant impact on human health or the existing environment; the development of adequate prevention or mitigation measures; the need to restore environmentally degraded areas and to ensure the sustainable use of natural resources; and for the OECS countries to collaborate among themselves and with regional and international agencies to develop and implement methods for environmental auditing and measures of vulnerability to natural phenomena, the impact of human activity on the natural environment and progress towards sustainable development.

On the basis of the *Principles* enshrined in the *St George's Declaration*, the *OECS Environmental Management Strategy* has been developed as the mechanism for their implementation. The “*central challenge*” for environmental management in the OECS States, as identified within that *Strategy*, “*is to ensure levels of environmental quality that maximise opportunity for economic and social development for present and future generations, without compromising the integrity and sustainability of biological diversity, environmental and cultural assets.*”

Further:

The Vision for environmental management in the OECS is informed by the draft OECS Development Strategy, insofar as the achievement of economic growth, international competitiveness and improved quality of life are largely dependent on the appreciation and management of the environment.

At the level of the OECS subregion, the primary responsibility for coordinating implementation of the *Environmental Management Strategy (EMS)* is the OECS Secretariat, through its recently renamed *Environment and Sustainable Development Unit (ESDU)*. Other regional agencies are also recognised to have “key roles” to play.

In this regard, *Principle 18 (Coordinate Assistance from the International Donor Community towards the Organisation of Eastern Caribbean States Region)* indicates, *inter alia*, that the OECS member States agree to: *Collaborate through the OECS Secretariat and other regional organizations to ensure that the environmental needs and requirements of the Member States are clearly articulated to the international community.*

Likewise, in the context of the *Commitments* adopted by the OECS membership as set out in Annex A to the *Declaration*, regional organisations would need to undertake a series of actions, among them:

- Facilitate cooperation between Governments in adopting and implementing appropriate programmes to give effect to the goals of the Declaration and the OECS EMS;
- Facilitate the requirements of reporting and implementation as laid down in the Declaration and the OECS EMS;
- Coordinate technical assistance and programmes in support of national activities to give effect to the Declaration and the OECS EMS.

Issues in the Implementation of the SIDS POA in the Caribbean subregion, 1997-1999

Priorities of Caribbean SIDS within the SIDS POA

On the basis of the questionnaire that was developed and administered by the Subregional Headquarters of ECLAC for the Caribbean, towards the preparation of an operational framework for implementation of the POA in the subregion and, also, with an eye on the twenty-second special session, Governments of the subregion were invited to rank the 14 substantive priority Areas of the SIDS POA. Overall, respondents identified *Coastal and Marine Resources* and *Natural and Environmental Disasters* as the two areas requiring the most urgent attention. Also high on the list were the related issue of *Climate Change and Sea-level Rise*; and *Management of Wastes*. At the subregional level, *Energy Resources* was considered the least important. In general, however, most respondents ranked all issues as being of more or less equal importance, with all but four of the 14 substantive issues receiving an average weighting that could be

equated with “high”. Significantly, also, the ratings for any given priority area were consistent across the subregion, indicating the existence of a considerable degree of consensus.

The ranking of the substantive Priority Areas of the SIDS Programme of Action by Caribbean SIDS, at the subregional, as opposed to the national level, was as follows:

- i. Coastal and Marine Resources
- ii. Natural and Environmental Disasters
- iii. Land Resources
- iv. Management of Wastes
- v. National Institutions and Administrative Capacity
- vi. Climate Change
- vii. Freshwater Resources
- viii. Tourism Resources
- ix. Biodiversity
- x. Science and Technology
- xi. Transport and Communication
- xii. Human Resources
- xiii. Regional Cooperation
- xiv. Energy Resources

With respect to Cross-Sectoral Issues, priorities were ranked at the subregional level, as follows:

- i. Financing
- ii. Capacity-building
- iii. Legislation
- iv. Poverty Alleviation
- v. Information Management
- vi. Policy
- vii. Training
- viii. Technical
- ix. Involvement of Marginal Groups

The prioritisation as set out above, was incorporated into the report that was submitted by the SIDS of the Caribbean subregion to the Seventh Meeting of the Commission on Sustainable Development (CSD-7). Also conveyed in the report was the fact that, notwithstanding this prioritisation, there was, nevertheless, consensus among Caribbean SIDS, that all priority areas enshrined in the SIDS POA remained profoundly relevant to their sustainable development and that significant progress had been made by many of these SIDS in their implementation. Reviews conducted on an individual country basis in preparation for the *Caribbean Ministerial Meeting on the implementation of the SIDS Programme of Action* in November 1997, nevertheless served to highlight the unevenness of progress in implementation, as a marked feature of the Caribbean experience. Accounting for this factor was, evidently, the difference in capability, including financial resources, among the respective countries.

Notwithstanding this state of affairs, encouraged by the generally acceptable levels of progress in the region, Caribbean SIDS have been striving to maintain and even enhance the contribution of the implementation of the SIDS POA to national, as well as subregional development, through a focussed and sustained effort. However, a number of constraints have been encountered. Overcoming these constraints would involve, *inter alia*, the following:

- The explicit integration of the SIDS POA into national planning and decision-making across the region;
- The adoption of more rigorous sustainable development approaches;
- The acquisition of much needed financial resources;
- Effective programmes of education and public awareness of the Programme of Action.

Two additional factors worthy of mention in connection with the foregoing as elements that also help to explain the situation refer, respectively, to the fragmented institutional arrangements that exist to deal with sustainable development issues at both national and subregional levels, as well as the absence, in explicit operational terms, within the POA, until fairly recently, of socio-economic elements which are also major factors in the sustainable development process.

Approached from this perspective and against the backdrop of the multifaceted nature of the *sustainable development* process, the Programme of Action, whose environmental prescriptions are incontestable, was effectively regarded as manifesting certain shortcomings, from the point of view of the holistic policy-making that is required for sustainable development.

The relevance of this observation might be illustrated by reference to Caribbean SIDS which, while pursuing activities under the various Chapters of the Programme of Action often see their activities distracted and even frustrated by issues related to a number of other concerns and processes such as those related to poverty alleviation; unemployment; trade; agriculture, including its relationship to the environment; the alienation of young males from, *inter alia*, the education system and from society in general; the increase in crime; drug abuse; and the AIDS pandemic. While these issues were not new, their salience in policy terms had either emerged or been magnified since the time of the convening of the UNGCSIDS, aided by, *inter alia*, aspects of the globalisation phenomenon.

The relevance of the foregoing was, *inter alia*, the recognition by Caribbean SIDS of the Programme of Action as an instrument that provided a generic framework for activities geared towards their sustainable development, with particular emphasis on the environmental dimension. What this recognition implied was the parallel appreciation of the document as one that was not sufficiently dynamic and multidimensional. Likewise, its general prescriptions denied policy-makers the specificity that would have transformed it into a more effective operational tool. This absence of breadth, in the sense of its failure to incorporate all the principal elements of the sustainable development paradigm, in addition to the lack of specificity of the various prescriptions, translated, from the perspective of Caribbean SIDS, into a paradigm or an operational framework that was less than comprehensive in its coverage of critical elements and

with policy prescriptions that were muted with respect to the precise site and scope of their application.

In addition to the foregoing, it is relevant to observe that, in the course of the implementation of the SIDS POA, the SIDS of the Caribbean have had to contend with a number of disappointments in a number of critical areas. Chief among these is what has been referred to as *the retreat on the part of the international community from the financial and other commitments made at UNCED*. These disappointments were perhaps most keenly experienced in the context of *the Donors' Meeting* and also in the financial sphere.

On the other hand, faced with the unavailability of the effective means, including adequate, predictable, new and additional financial resources that were to be provided by the international community in accordance with chapter 33 of Agenda 21, the SIDS of the Caribbean were motivated to maximize the benefits that could be derived from the utilization of the very limited resources at their disposal. The creation of the *Caribbean Model* for the implementation of the SIDS POA in the subregion, as depicted above, cogently illustrates this phenomenon. The disappointments encountered by Caribbean SIDS have therefore served to unleash their creative energies towards self-reliance, recognizing that solutions to many aspects of their sustainable development problematique necessarily had to be generated within the subregion.

Notwithstanding the disappointments with the outcomes of the implementation of UNCED and the UNGCSIDS and with the non-application of many key elements of the corresponding processes and procedures that were adopted at the international level to govern their implementation, a number of noteworthy achievements have been recorded by Caribbean SIDS, among them, the following:

- The invaluable experience acquired by Caribbean representatives to international conferences in the negotiation of international environmental and sustainable development agreements;
- The commitments adopted by the World Bank, the Commonwealth Secretariat, the CARICOM Secretariat and other organisations to pursue in-depth studies on economic, social and environmental aspects of the vulnerability of SIDS prompted by, *inter alia*, the substantive arguments advanced at those conferences by the representatives of SIDS.
- The creation of the *Caribbean Model* for the implementation of the SIDS POA, based on existing subregional capacity;
- The promotion of a transformed scope of operationalization of the SIDS POA, in conjunction with the SIDS of other geographical regions and the eventual endorsement of this initiative by the twenty-second special session of the United Nations General Assembly.

Reference might also be made to a number of other positive aspects of the experience of Caribbean SIDS in the implementation of the SIDS POA. Among the lasting achievements in this regard, is the fundamental element of a vastly enhanced understanding of sustainable development issues that continues to emerge from the process. Evidence of this is afforded by, *inter alia*, the improved identification of environmental, as well as socio-economic concerns and

projects throughout the subregion. In addition, Caribbean governments and civil society have responded to the demands of the SIDS POA and, more generally, of *sustainable development*, by seeking to forge innovative partnerships for collaboration at unprecedented levels, both in terms of intensity, as well as scope. Further, the role of civil society, including the private sector, in identifying, as well as achieving the objectives of the SIDS POA, has been recognized and encouraged through novel attempts at co-management of natural resources, in setting standards and in preparing environmental policies and action plans.

Efforts at co-management of natural resources are exemplified by the establishment of Sustainable Development Councils or Commissions that have been established in a number of Caribbean SIDS to provide for broad-based participation in national sustainable development planning and policy formulation. For a number of reasons, however, including lack of resources, the establishment of these bodies was not evenly spread across the region. Moreover, while the establishment of these bodies has not been an unmitigated success and their basic objectives remain to be achieved in a number of instances, in those countries in which they have been established, they were approached as key mechanisms in the organization of national consultations on issues related to sustainable development. The basic point, however, is the recognition, on the part of Caribbean SIDS, of the need for coordinating mechanisms, whether in the form of Sustainable Development Councils or Commissions, or through integrated approaches to planning, in which the social, economic, environmental and other policies might be coordinated, in the context, for example, of a national budget.

Related to the priority concerns, as well as to the constraints encountered by the Caribbean subregion, the appreciation of the importance of the critical area of “*institutional strengthening*” must also be included among the lasting gains from the implementation of the SIDS POA. Such institutional strengthening has been pursued through capacity-building, the enactment of environmental legislation, the application of management tools such as Environmental Impact Assessments (EIAs) and the adoption and, in some cases, the implementation of Environmental Action Plans and National Biodiversity Strategies and Action Plans. These forms of institution-building, together with the establishment of Environmental Ministries and Authorities, are among the mechanisms through which Caribbean SIDS have given explicit recognition to the need for an adequate institutional framework for the promotion and advancement of their sustainable development.

Finally, as Caribbean SIDS give further expression of their global citizenship, strenuous efforts have been made to ensure their ratification and implementation of a number of vitally important Multilateral Environmental Agreements (MEAs), among them the Convention on Biological Diversity (CBD) and the United Nations Framework Convention on Climate Change (UNFCCC), which, themselves, constitute significant elements of the “*UNCED process*”.

A major difficulty encountered in evaluating the progress of implementation of the SIDS POA in the Caribbean, arises from the lack of effective monitoring of the funds that have been explicitly directed to sustainable development projects and programmes. Such an evaluation would require the assessment of all projects implemented, on an individual country basis, with reference, in the case of each project, to, *inter alia*, the source of funding. Some significant efforts have already been made to remedy this situation and, as the subregion pursues the further

implementation of the POA, these efforts will continue, with a view to achieving a more specific identification and tracking of inputs of resources into the sustainable development process, on a continuous and consistent basis.

In this regard, mention might be made of the Small Island Developing States Information Network (SIDSnet), which represents the response to the need for a mechanism to facilitate the exchange of information and experiences among SIDS and which also provides a very useful tool in the tracking of inputs and related activities. Attention might also be drawn to the project that has been implemented by the Subregional Headquarters of ECLAC for the Caribbean with UNDP funding, directed towards the identification of projects related to the implementation of the SIDS POA, by reference to, *inter alia*, their operational area of focus; their status, whether already implemented, in progress or envisaged; and the source, as well as the quantum of their funding. By virtue of the implementation of this project, information has been compiled on over 1,200 projects. The Subregional Headquarters is about to continue the project using its own budgetary resources.

In respect of the foregoing, a most significant observation in the evaluation of the Caribbean experience in implementing the SIDS POA is the fact that many activities relevant to that POA and undertaken in the subregion, were neither conceived nor implemented in direct response to the adoption of that international instrument. Indeed, the commencement of such activities, in many cases, pre-dated the adoption of the SIDS POA and some of these activities continue to be pursued in the context of national sustainable development action plans. Significantly, though, the SIDS POA has been able to impact these activities, imparting greater focus and renewed emphasis on them, in a comprehensive sustainable development context. By this means, the POA contributes to a more holistic approach to their management and also to the development of new projects and programmes in response to national needs.

Review of the Major Constraints to More Rapid and Effective Implementation of the SIDS Programme of Action in the Caribbean Subregion

The major constraints encountered by Caribbean SIDS in the implementation of the SIDS POA fall into three main categories, namely, financial; institutional; and human resources and training.

1. Financial Constraints

Many of the constraints identified in the implementation of the SIDS POA can be ultimately traced to the difficult financial situation being experienced by most Caribbean SIDS, notwithstanding the sustainable development commitments adopted in Rio in 1992. This factor, in large measure, explains the significant gaps in the implementation of the POA, for many critically needed projects lie beyond the resources of Caribbean SIDS. Overall, financial constraints present insurmountable handicaps to essential efforts at the establishment and strengthening of infrastructure, institutions and capacity-building, among other important developmental imperatives. Caribbean SIDS therefore continue to emphasise, as a matter of

urgency, the honouring of commitments on the part of the international community, in this critical area.

2. Institutional Constraints

Institutional constraints have also been identified as critical factors retarding the pace of implementation of the SIDS POA at both national and subregional levels. Specific elements identified under this category include the following:

1. The uneven situation across the subregion with respect to the explicit integration of the SIDS POA and, more generally, of sustainable development approaches, into national policy-making;
2. The need for, *inter alia*, enhanced awareness, capacity-building, training, information management and adjustments in organizational behaviour;
3. The widespread lack of expertise in the preparation of project proposals and in the monitoring and implementation of projects;
4. The gaps in the establishment of National Sustainable Development Councils or Commissions across the subregion to serve as coordinating mechanisms for a more systematic approach to sustainable development issues and for the development of strategies that respond to the collective sustainable development goals of all the social partners;
5. National reporting on the implementation process continues to present a challenge to a number of Caribbean SIDS, given, *inter alia*, their small institutional systems;
6. The need for a permanent, adequately resourced and dedicated mechanism for coordination of the implementation of the SIDS POA at the subregional level.

From the perspective of Caribbean SIDS, the institutional aspect constitutes a major priority area of concern. The potential contribution of effective mechanisms at the national, as well as subregional levels to propel sustainable development initiatives, remains an aspect which Caribbean SIDS are eager to pursue.

3. Human Resources and Training Constraints

The shortage of relevant skilled human resources affects all aspects and levels of the implementation process. The very wide range of skills that are implied in the sustainable development process creates very heavy demands on the societies of SIDS and remains a critical factor to be addressed.

The Constraints to Implementation in Perspective

Caribbean SIDS have made explicit the observation that the constraints identified to the rapid implementation of the SIDS POA are by no means to be interpreted as detracting from the fundamental relevance, validity and viability of that instrument. It is on the basis of this summary rationale that Caribbean SIDS advanced their primary expectation from the twenty-second special session in the form of a recommendation to the effect that the SIDS POA be maintained. This recommendation was reinforced by the important decision taken by the

Conference of Heads of Government of the Caribbean Community (CARICOM) at its Nineteenth Meeting held in Castries, St Lucia, in July 1998.

At that Meeting, following its consideration of the Item on its Agenda entitled “*Caribbean Preparations for the 1999 Special Session of the United Nations General Assembly on the Review of the Programme for the Sustainable Development of Small Island Developing States*”, the Conference, *endorsed the need for the implementation of the SIDS POA to be continued following its review at the Special Session*. In the event, reflecting a consensus among Caribbean SIDS, the proposal, as tabled, was to the effect that, while the SIDS POA should be maintained, it should nevertheless be supplemented and reinforced by means of the incorporation of those social and economic issues that had long been recognized to present obstacles to the sustainable development of the SIDS of the Caribbean.

Thus, notwithstanding the significant constraints encountered in the implementation of the SIDS POA, Caribbean SIDS remained convinced of the long-term viability of the POA. They also recognised that the primary responsibility for implementation lay with themselves. It was nevertheless recalled that the SIDS POA was adopted, not only by SIDS, but by the international community as a whole.

Issues Relating to the Arrangements for Implementation of the SIDS Programme of Action in the Organisation of Eastern Caribbean States

Significantly, with the OECS constituting a subregion within CARICOM, in addition to the overlapping of its membership with that of the ECLAC/CDCC, these latter two organisations are among the regional agencies that are consulted by the OECS Secretariat in the context of the implementation of the *OECS Environmental Strategy*. In this context, it is useful to recall that “...*the Strategy builds on a series of other relevant planning documents, including....the Small Island Developing States (SIDS) Programme of Action (POA)* in support of environmental management. It is also useful to recall that, in the context of the CDCC membership, ECLAC/CDCC has the responsibility for coordinating the implementation of the SIDS POA.

Moreover, within the ECLAC/CDCC and the *Caribbean Model* that has evolved for the implementation of the SIDS POA in relation to the SIDS of the Caribbean, the ECLAC/CDCC and CARICOM Secretariats together provide the Joint Secretariat for the implementation process. In addition, within the same *Caribbean Model*, the OECS Secretariat is itself a member of the IACG of agencies which jointly implement a Joint Work Programme extrapolated precisely from the SIDS POA and other relevant international decisions, such as those emanating from the twenty-second special session of the General Assembly and the WSSD. With this multi-dimensional overlap of membership and functions, there is an evident need for the articulation of a joint understanding and even convergence of approaches, in relation to *sustainable development* and related concepts.

As regards the concepts used, attention has already been drawn to the narrow definition of environment within the *Strategy* itself. This however did not prevent the very first principle to have been formulated for environmental management in the format of: *Improved environmental management to enhance the quality of life for all members*. According to the rationale set out in the *OECS Environmental Management Strategy*: “*Applications of enhanced levels of*

environmental management are required that consider carrying capacity of environmental resources, levels of acceptable change and which are based on sustainable development. Only through this approach can OECS states achieve sustainable social and economic growth, and enhanced well-being for all members of society.”

It is quite evident, therefore, from the OECS approach, that the countries concerned are fully aware of the internationally endorsed approach to *sustainable development*, namely, *the integration of economic, environmental and social components of action*, or as stated by the WSSD, of the need to *advance and strengthen the interdependent and mutually reinforcing pillars of sustainable development- economic development, social development and environmental protection*.

ECLAC-CDCC, CARICOM and the OECS: The Scope for Convergence

Notwithstanding the differing degrees of emphasis placed on *sustainable development* in the official documentation of CARICOM and the OECS, as well as the significant difference as regards the general approach to the concept, the scope for convergence outside of those confines nevertheless remains considerable. In the first place, all the countries concerned share the profile of small island developing States as spelled out in the SIDS POA. Secondly, with the OECS being a subregion of CARICOM, both sets of countries are accommodated within the same forum, so that communication and general collaboration are facilitated. Further, the participation of members of both entities in the ECLAC/CDCC all of whose members have been brought under the SIDS umbrella and which currently execute a Joint Work Programme, serves to render the achievement of convergence in the approach to sustainable development not only desirable, but necessary. The utility of joint understandings and approaches is also relevant in the facilitation of inter-subregional outreach, as well as in the adoption of joint positions for articulation in wider international fora. Thus, in summary terms, on the basis of their generally shared economic, social and environmental profiles; their overlapping membership; the existence of common problems requiring common or even joint approaches; as well as the existence of other common concerns, a situation exists which would appear to militate in favour of the desirability and even the necessity of convergent approaches to *sustainable development* among ECLAC/CDCC, CARICOM and the OECS. Fundamentally, all three entities draw their inspiration in this area of activity, from the SIDS POA.

The Period 2000-2002

This period was essentially dedicated to the assimilation of the outcomes of the subregional, regional as well as global meetings that took place during the period, 1997-1999; further implementation efforts; and preparation for the *Rio + 10* review which eventually convened as *the World Summit on Sustainable Development (WSSD)*. Preparation for the WSSD provided yet another opportunity for Caribbean SIDS to conduct a detailed review of the implementation of the SIDS POA, given its very close relationship with *Agenda 21* whose implementation was the focus of that global Summit.

In early 2000, the Subregional Headquarters of ECLAC for the Caribbean, in its continuing pursuit of collaboration towards the sustainable development of the Caribbean subregion, was part of a larger ECLAC delegation that accepted an invitation to attend the *Twelfth Forum of Ministers of the Environment of Latin America and the Caribbean*, which convened, in Barbados, on 2-7 March under UNEP auspices. At that meeting, the ECLAC delegation was successful in advancing the incorporation into one of the resolutions adopted, the agreement of the Ministers to support the further implementation of the SIDS POA and to promote its recognition as the framework for the pursuit of sustainable development by the small island developing States of the Caribbean subregion.

Also, in order to advance the further implementation of SIDS POA in the subregion, the Subregional Headquarters of ECLAC for the Caribbean convened a meeting of representatives of Caribbean SIDS and of regional and regionally-based organizations of the IACG, on 7 March 2001. The meeting was directed towards two major objectives, namely, to undertake a final review of the status of implementation of the Joint Work Programme adopted in 1997 and to develop an updated version, even as the subregion embarked on preparations for the WSSD.

By early 2001, with the 1997 Joint Work Programme almost fully implemented, an updated Joint Work Programme was adopted, coordinated by the Subregional Headquarters. In adopting an updated version of the JWP, attention was given to the few outstanding elements of the 1997 prototype, to the extent that they remained relevant, as well as to the new socio-economic elements that were incorporated into the implementation process of the SIDS POA in explicitly operational terms, by the twenty second special session of the United Nations General Assembly. In addition to the elements identified by the special session, attention was also given to issues such as *crime*, including the illicit traffic and use of drugs, which are also recognized to very closely impinge on the sustainable development prospects of the SIDS of the Caribbean, among others.

In effect, the amplified scope of implementation of the SIDS POA, through the explicit incorporation of socio-economic issues, presented the subregion with new opportunities when it set about the preparation of an updated JWP in March 2001. The agencies which constitute the IACG were very active collaborators in the process. Necessarily, the membership of the IACG has had to be amplified in order to reflect the incorporation of the new elements that were identified for implementation. The Updated Joint Work Programme for the further implementation of the SIDS POA, incorporating elements introduced at the twenty-second special session of the General Assembly, together with its 1997 predecessor, are set out in Annex 1 to this Paper.

In further preparations for WSSD, the *Preparatory Meeting of the Caribbean for the World Summit on Sustainable Development* convened in Havana, Cuba, on 28-29 June 2001. This meeting was jointly coordinated by the Subregional Headquarters and UNEP/ROLAC, Mexico. As a fundamental input into the subregional preparations, the Subregional Headquarters presented extensive basic reference documentation to this meeting and, subsequently, to the *Regional Preparatory Conference of Latin America and the Caribbean for the World Summit on Sustainable Development* which convened in Rio de Janeiro, Brazil, on 23-24 October, 2001. For example, the publication entitled, *The SIDS Programme of Action-Agenda Twenty-One: The*

Road to Johannesburg (Document LC/CAR/G.649), set out the status of implementation of the SIDS POA in the Caribbean subregion up to the eve of the WSSD, identifying, in the process, the constraints encountered by the subregion, as well as its achievements, in the implementation of the respective Chapters of the Programme of Action. The document also articulated the challenges and issues that remained to be confronted in the future implementation of *Agenda 21* and the SIDS Programme of Action. A number of national reports on implementation of the Programme of Action, as well as the updated Joint Work Programme were also incorporated.

Yet another dimension of the activities of the Subregional Headquarters of ECLAC for the Caribbean in relation to preparations for the WSSD, is reflected in the considerable assistance that was provided to the SIDS of the subregion, specifically to their Permanent Representatives to the United Nations, New York, in the form of Briefs, prepared at their request, to inform the participation of the respective countries and the subregion as a whole at the *International Conference on Financing for Development*, which convened in Monterrey, Mexico, over the period, 18-22 March, 2002.

Issues in the Implementation of the SIDS POA, 2000-2002

For Caribbean SIDS, the approach to the Programme of Action during the preceding period, 1997-1999, in terms of seeking to acquire a profound understanding of its prescriptions in the overall sustainable development context, constituted what was regarded as “*the First Phase*” of the *SIDS Process*. Such an understanding has been vital to this subregion in the context of a *learning curve*, in the context of which, Caribbean SIDS came to understand, identify and articulate the nature, as well as the extent, of their deficiencies. Informing their approach was the concern to give a dynamic aspect to the Programme of Action in an effort to make it work for them and deliver *the promise of Barbados*. In other words, the challenge lay in determining the optimum mode of its application within individual SIDS and, also, among all the SIDS of the subregion as a group. For Caribbean SIDS, the effective operationalization of the Programme of Action in a dynamic manner and with the required specificity, even within a wider range of sustainable development issues, was envisaged as the hallmark of “*the Second Phase*” of the *SIDS process*.

Further, as Caribbean SIDS prepared for the WSSD, a major concern was that the SIDS POA and all SIDS-related issues that provided scope for the articulation of holistic sustainable development strategies, covering *inter alia*, economic, social and environmental parameters, should be restored to a central place on the international agenda, following a perceived dilution of focus in this regard by the wider international community since UNCED and notwithstanding the outcomes of the twenty-second special session of the General Assembly. Fundamentally, the concern was for the SIDS POA and related international decisions to be entrenched as the framework for pursuing the *sustainable development* of SIDS at the international, as well as at the regional and national levels.

The Period 2003-2004

The convening of the World Summit on Sustainable Development over the period, 26 August- 4 September 2002, in the context of what had earlier been envisaged as the 10-year

review, referred to as *Rio + 10* was an event of great significance for the further development of Agenda 21 and its progeny, the SIDS Programme of Action. The major outcomes of the WSSD, the *Johannesburg Declaration on Sustainable Development* and the *Plan of Implementation*, particularly given the considerable attention directed to the *Millennium Development Goals* within their respective provisions, have imparted a greater degree of focus to the implementation of Agenda 21 and the SIDS POA. In addition, the very clear identification of the constraints to implementation and the entrenchment of the sustainable development approach at global, regional, subregional and national levels, feeds an expectation of many concrete achievements in the implementation of sustainable development, in the context of, *inter alia*, Agenda 21 and the SIDS POA. The decision by the General Assembly to convene an international meeting in 2004 to undertake a full and comprehensive review of the implementation of the POA as called for in the Plan of Implementation of the WSSD, would appear to provide a very significant incentive in this regard. Within the Caribbean subregion, among the major activities envisaged towards the further implementation of the SIDS POA in this context is the adoption of a further revised Joint Work Programme that takes into account the outcomes of the WSSD.

SIDS + 10

The decision of the fifty-seventh session of the General Assembly in its resolution *Further Implementation of the Programme of Action for the Sustainable Development of Small Island Developing States* (A/C.2/57/L64), to convene an international meeting in 2004 to undertake a full and comprehensive review of the implementation of the SIDS Programme of Action, as called for in the *Plan of Implementation* adopted at the WSSD, provides ample opportunity for preparation for this very important event during 2003. The resolution establishes a preparatory process for the international meeting, including regional and interregional meetings and makes repeated reference to the role of regional commissions in the preparatory process. Thus, a framework already exists in this regard. Within the Caribbean, the details of the subregional process will be developed on the basis of consultations among the member countries of the subregion and also with the agencies which collaborate in the implementation of the SIDS POA. The Subregional Headquarters of ECLAC will coordinate the process.

What is envisaged in this regard, is, necessarily, further mobilisation of the *Caribbean Model* for the implementation of the SIDS POA. Thus, relevant meetings of the Caribbean SIDS and the collaborating agencies will be convened. Such meetings are currently scheduled for 10-11 April 2003. All documentation pertaining to the implementation experiences at the subregional level, will be prepared by the Subregional Headquarters. Such documentation would cover, *inter alia*, a comprehensive review of the implementation of the SIDS POA in the subregion up to the present time; and proposals for the development of a further updated Joint Work Programme to reflect, *inter alia*, the outcomes of the WSSD. Draft proposals in the latter regard, might be extrapolated from the elements of the *Plan of Implementation* adopted at the WSSD.

National Reports are also being prepared and the Subregional Headquarters is seeking to assist the process of the compilation of these reports through, *inter alia*, the administration of a questionnaire, following the procedure used, quite successfully, in preparation for the 1997

ministerial meeting. National Reports are critical to ensuring that the specific concerns of the subregion are adequately reflected in all relevant fora.

What is already envisaged by the Subregional Headquarters as the centrepiece of the execution of the preparatory process, is the convening of the *Second Caribbean Ministerial Meeting* on the implementation of the SIDS Programme of Action, along the lines of its outstandingly successful 1997 predecessor. The international meeting scheduled for 2004 will be a meeting of critical importance and the expectation is that a renewed commitment will be articulated by the subregion and, in particular, by the wider international community, to the implementation of the SIDS POA whose expansion to embrace key social and economic issues, in addition to the environmental dimension, was entrenched at the WSSD. This proposed *Second Caribbean Ministerial Meeting* is also expected to provide overall political direction to the subregional participation in the international meeting in 2004. The dates for the proposed Second Caribbean Ministerial Meeting is are yet to be determined.

Following the approach that informed the development of the updated Joint Work Programme for execution by the subregion to take into account the amplified scope of implementation of the SIDS Programme of Action as endorsed by the twenty-second special session of the General Assembly, a wider coverage of agencies is being pursued to collaborate in the preparatory process to reflect the correspondingly wider coverage of areas endorsed by the WSSD.

Conclusion

Efforts towards the implementation of the SIDS Programme of Action in the Caribbean subregion have yielded considerably less than the assumed unilinear progress towards sustainable development, which the international community, including SIDS, appeared to have internalised when that Programme of Action was adopted and advocated as a *blueprint*.

Notwithstanding the solid grounding that the SIDS of the subregion have acquired, both as individual countries and also as a subregion, in the area of sustainable development approaches since the adoption of the SIDS POA, non-materialisation of adequate, predictable, new and additional financial resources; coupled with the non-materialisation of adequate lack of the required institutional capability, including the required skilled manpower resources ensured that the implementation process took some considerable time to effectively get off the ground and that, once underway, progress evolved in a very uneven manner across the subregion and in a format that was less than sustained.

Yet, recognizing, *inter alia*, some of the lasting achievements, such as the *Caribbean Model* that have been developed, in addition to the structures that have been fashioned by the countries of the OECS in an effort to overcome some of the critical constraints that have been encountered, the experience of the first decade of the SIDS Programme of Action, including the disappointments mentioned, could, nevertheless be viewed, in retrospect, as having been very useful. For example, that experience might be viewed as setting the stage of a more focused approach to a process that is now more comprehensively understood by stakeholders at all levels, particularly following its more recent revitalisation, by virtue of the adoption of the

Johannesburg Declaration on Sustainable Development and the *WSSD Plan of Implementation* with the emphasis placed by these documents on *sustainable development* and on the pursuit of the *Millennium Development Goals*. The experience might also serve to underline the importance of the identification of priorities and even of the mobilization of additional resources from within the subregion itself, notwithstanding the commitments that are to be honoured by the wider international community.

At a later stage of the preparatory process for *SIDS + 10* when the subregion will have undertaken a more comprehensive evaluation of the SIDS experience, particularly at the level of individual SIDS, a firmer basis will have been provided for the development of national as well as subregional perspectives, together with the corresponding strategies that might inform the positions to be articulated in the context of *SIDS + 10* and future implementation of the Programme of Action.

PART 11: HIGHLIGHTS OF ASPECTS OF THE IMPLEMENTATION PROCESS OF THE SIDS PROGRAMME OF ACTION IN THE CARIBBEAN SUBREGION

Introduction

In the context of the subregional meeting to which this Paper is specifically addressed, the review of the details of the implementation of the SIDS POA will be undertaken, as in the preceding section, essentially from a subregional perspective. The priority areas identified in the Programme of Action inform the headings for the review. Implementation activities undertaken in five priority areas are highlighted. At a later stage of the preparatory process leading to the 2004 *international meeting*, more specifically, at the proposed Second Caribbean Ministerial Meeting on the implementation of the SIDS Programme of Action, a more comprehensive review will be presented informed, for the most part, by the responses to a questionnaire that is currently being administered by the Subregional Headquarters to all its member countries and also to the agencies that comprise the IACG.

The present review highlights development and issues related to the implementation process in the following five priority areas:

- Climate Change and Sea-Level Rise
- Coastal and Marine Resources
- Natural and Environmental Disasters
- Freshwater Resources
- Tourism Resources

Climate Change and Sea-Level Rise

Over the past few years, Global Climate Change (GCC) has emerged as one of the world's major long-term challenges. Anticipated global warming and consequent changes in sea level, sea-surface temperatures, precipitation, wind and ocean currents can have a serious impact on the sustainable development of the SIDS and low lying coastal States of the Caribbean.

Low-lying SIDS depend on the protective functions performed by tropical coastal ecosystems for their economic survival, physical existence and social viability. Global climate change will compromise the integrity of these ecosystems (coral reefs, sea grass beds and mangroves), undermining their ability to deliver the protection that they offer to coastlines, anchorages, beaches, buildings and coastal infrastructure³. It will also compromise their ability to provide food (fisheries), employment (tourism, fishing, recreation), and building materials. These impacts will occur at the very time when the natural protection of coastal ecosystems will be needed most, in the face of sea level rise and an escalation in the frequency and intensity of tropical cyclones.

³ IPCC WG2 Third Assessment Report, Chapter 17.

Five years after the adoption of the SIDS POA, the United Nations General Assembly convened a Special Session (September 1999) to review the progress made in its implementation. The United Nations Secretary-General's report on the status of the implementation of the SIDS POA highlighted two key constraints related to institutional capacity building: the limited availability of human resources and a lack of financial resources for developing and strengthening institutions and their mechanisms.⁴ Both of these constraints create significant challenges for effective and timely action to address Global Climate Change in individual Caribbean SIDS.

In the SIDS POA, 'climate change and sea-level rise' figures as the first of the 14 priority areas requiring "urgent action" for the achievement of sustainable development in SIDS. Adverse effects of GCC such as sea-level rise with associated coastal erosion and salt water intrusion, an escalation in the frequency and intensity of hurricanes and typhoons, and disruptions in precipitation and fresh-water supply threaten the very existence of island nations and low lying coastal states of the Caribbean.

Caribbean SIDS are highly vulnerable to natural disasters, especially those caused by short-term climate variability manifested in extreme weather events. The consequences of this vulnerability are destruction of infrastructure and productive capacity, interruption of economic activity and irreversible changes in the natural resource base. Affected by a series of hurricanes since 1995, as before, many Caribbean SIDS continue to be confronted by situations in which scarce resources formerly earmarked for development projects find themselves diverted to relief and reconstruction following disasters, thus impeding sustainable growth.

Caribbean Planning for Adaptation to Climate Change (CPACC) Project and follow-up Climate Change Projects in the Caribbean

In the area of climate change, the major initiative to have been developed and executed in the Caribbean is the *Caribbean Planning for Adaptation to Global Climate Change*.

The Caribbean Planning for Adaptation to Climate Change (CPACC) Project (1998-2001)

The CARICOM Secretariat, several Caribbean countries and the OAS prepared a proposal for a regional project that would assist the countries in preparing to deal with the impacts of climate change. In 1997, the Caribbean Planning for Adaptation to Global Climate Change project (CPACC) was approved by the GEF, and funding was made available through the World Bank. The project is being executed by the OAS in conjunction with UWICED, through a Regional Project Implementation Unit (RPIU) located in Barbados.

⁴ UN Economic and Social Council, "Report of the Secretary-General: Addendum, National Institutions and Administrative Capacity in Small Island Developing States," p.5. and "Report of the Secretary General: Addendum: Regional Institutions and Technical Cooperation for the Sustainable Development of Small Developing States (E/CN.17/199)," pp. 5 and 6.

The project's objective is to assist Caribbean countries in coping with the adverse effects of climate change, particularly sea level rise, in coastal and marine areas, through vulnerability assessment, adaptation planning and related capacity building in its twelve member countries.

These countries are Antigua and Barbuda, Bahamas, Barbados, Belize, Dominica, Grenada, Guyana, Jamaica, Saint Lucia, St. Kitts and Nevis, Saint Vincent and the Grenadines and Trinidad and Tobago, and the specific activities are coordinated by National Focal Points (NFPs) in each country.

The Project consists of nine components:

- a. Design and establishment Sea-level / Climate monitoring network
- b. Establishment of databases and information systems
- c. Inventory of coastal resources and use
- d. Formulation of a policy Framework for Integrated Coastal and Marine Management
- e. Coral reef monitoring for climate change impacts
- f. Coastal vulnerability and Risk Assessment
- g. Economic Valuation of Coastal and Marine Resources
- h. Formulation of Economic / Regulatory proposals
- i. Preparation of First National Communications for St. Vincent and the Grenadines

Components (i) to (iv) were implemented in all 12 participating countries while components (v) to (ix) were pilot projects implemented in selected countries. The Project has developed a successful model of regional cooperation in addressing the countries' concerns with Climate Change impacts and has made good progress towards the establishment of expected technical and institutional outputs. It has also emerged as the focal point for regional initiatives aimed at satisfying the region's obligation under the UNFCCC.

Specific achievements of the project are:

- a) Establishment of Climate Change Committees / Focal Points. All countries have National Focal Points (NFP's) and National Implementing Coordinating Units (NICU's) and In some countries, National committees have been established to address climate change.
- b) Establishment of a sea-level and climate monitoring system that contributes to global and regional assessment of the issues. The monitoring stations and related information network installed in 12 countries have improved the CC monitoring and evaluation capacity in the region. The data's primary use is to document sea-level rise and changes in sea surface temperature (SST), thus assisting in the global monitoring of the impacts of climate change. The contribution and place of this Caribbean monitoring activity within the global monitoring efforts are being assessed. Additional applications in areas such as shipping, tourism and monitoring of extreme events are being promoted.

- c) Improved access to and availability of data. The project has developed an extensive database for coastal zone management and climate change monitoring, accessible to a wide range of environment and development agencies in each country.
- d) Increased appreciation of climate change issues at the policy-making level and technical support to regional positioning at the Convention CPACC has made policy makers, decision-makers, technical personnel and the wider public aware of climate change and has increased the appreciation for the complexity and integrated nature of climate change issues. The project has enabled a more unified and better documented positioning of the region before the Convention and the Conference of Parties.
- e) Meeting country needs for expanded vulnerability assessment and economic evaluation techniques
- f) Establishment of methodology for vulnerability assessment. Pilot studies have expanded the knowledge of vulnerability assessment and economic evaluation tools and methods and have facilitated an increased awareness of the most physically vulnerable sectors in the Caribbean sub-region as well as the possible magnitude of loss of coastal resources.
- g) Establishment of coral reef monitoring protocols. Coral reefs have proven to be key barometers of climate change. As a result of ongoing efforts within CPACC, monitoring and early warning capabilities are being enhanced. The data is assisting in documenting the pace of coral bleaching and impacts on coral reefs caused by changes in SST. Like with SST and sea-level change, efforts are being undertaken to link the CPACC coral reef monitoring activities with the global networks.
- h) Development of National Climate Change Adaptation policies and action plans
- i) Creation of a network for regional harmonization. Through its collaborative efforts with a number of existing agencies⁵ CPACC is introducing climate change as a factor in these agencies' agendas, and is establishing programmatic linkages between CC and other activities.

Results of the two comprehensive evaluations:

(a) *World Bank Mid-Term Evaluation.* The mid-term review of CPACC (September 1999) concluded that implementation performance throughout the first half of the project was satisfactory and constituted a sound basis on which to continue CPACC activities. The mid-term review also identified several areas where CPACC needed to dedicate increased attention and/or resources to meet its objectives.⁶

⁵ (i.e. the Caribbean Tourism Organization (CTO), the Caribbean Alliance for Sustainable Tourism (CAST), the Centre for Resource Management and Environmental Studies (CERMES) of the University of the West Indies, the Caribbean Energy Information System (CEIS), the Caribbean Development Bank (CDB), the Caribbean Conservation Association (CCA), the Caribbean Environmental Health Institute (CEHI), the Caribbean Disaster and Emergency Response Agency (CDERA), private sector interests such as Petrotrin of Trinidad and Tobago as well as the insurance and banking sector).

⁶ Whereas some of these areas have been addressed since the mid-term report became available, further efforts are needed in the following areas: a) Sea level and climate monitoring system. Staff at national agencies responsible for the operation and maintenance of the equipment require an update in their training to reduce the down-time of the equipment. Procedures for intervention by the Regional Network Coordinator located at CIMH need to be refined and agreed upon with the national offices; b) Use of data collected by the monitoring stations. Several countries still are not using the data. Data stream reliability and ease of access need to be improved, and regional agencies such as the University of the West Indies, CIMH and IMA will need to intensify their efforts with national agencies on developing applications of the data with clear national benefit; c) Appreciation of climate change issues at the policy-making level. Notwithstanding the efforts of the CPACC national focal points and the RPIU,

(b) *GEF Secretariat Review of GEF-Funded Climate Change Projects in the Caribbean.* The GEF Secretariat commissioned (first quarter 2000) an evaluation of the GEF-UNDP funding for National Communications, the GEF-UNDP National Communications Support Program⁷, (a regional project), and the CPACC.⁸ The report states that the GEF funded efforts are meeting the objectives of assisting CARICOM countries to: (a) develop the capacity to assess and adapt to the possible adverse impacts of Climate Change, and (b) to meet their respective obligations under the UNFCCC, with respect to Initial National Communications. The report points out that prior to the start of CPACC, the Caribbean was characterized by a general weakness of the policy and institutional arrangements for environmental management and sustainable development, constraining the effect of the capacity building activities of CPACC. This weakness is identified as a principal cause for poor linkages between Climate Change and the other areas of environmental and economic management in the countries. The report indicates that sustainability of CPACC and the National Communications process is being threatened by a low appreciation of Climate Change issues at the level of the political directorate, and the lack of capacity for in-depth research into these issues.⁹

The CPACC approach to its design involved national and regional consultations as it was felt that a generic prescriptive methodology would be inappropriate, and this would ensure that countries felt ownership regarding project activities. It is in this regard that, through a series of national consultations with relevant stakeholders, CPACC countries have begun the process of designing National Climate Change Adaptation Policies and Implementation Plans. To date, the government of St. Lucia has approved its

climate change issues are rarely included in the development decision making in participating countries. Capacity building by CPACC has been concentrated in short term technical training directly related to project activities. The sponsoring of a policy dialogue at the country and regional level, and longer term training in critical areas for environmental management will need to be supported in order to have a lasting impact on this issue; d) Meeting country needs for expanded vulnerability assessment. Whereas CPACC was designed to focus on climate change vulnerability and adaptation in the coastal area, CPACC countries have identified additional vulnerabilities and adaptation needs in their National Communications mainly in the agricultural sector, in the supply and management of fresh water resources, and in human health.

⁷ *Enabling Activities: National Communications Projects Implemented by UNDP.* The UNDP National Communications Support Program (NCSP) provides technical support to CPACC participating countries, Haiti, Suriname and the Dominican Republic. Regional experts in the field of climate change are contracted to support countries in their efforts to prepare their National Communications. Training workshops are offered in the preparation of green house gas inventories, vulnerability assessment, and other key areas.

⁸ A Synthesis of Performances and Experiences of Caribbean States Participating in GEF-Financed Climate Change Projects, Impact Consultancy Services, July 2000.

⁹ The following recommendations in the report are of relevance to CPACC and its follow-up:

- Future interventions should be preceded by a thorough assessment of the policy and institutional arrangements for addressing Sustainable Development
- An evaluation of the effectiveness of training provided under both projects should be undertaken, against an overall review of the human resources management in each country.
- Future training activities should be broadened beyond the narrow focus of the project's activities, and long term training in critical areas should be considered.
- A concerted effort is required, preferably with support from the political directorate, to integrate climate change into the curriculum of non-scientific disciplines in secondary and post-secondary education.
- The Caribbean should seek technical and financial support for the establishment of a Regional Sustainable Development Agency, which would, amongst other things, help strengthen cooperation and collaboration among regional environmental agencies.

national policy and overall successful implementation in all CPACC countries is expected.

A Permanent Mechanism to Address Climate Change

At the 1997 Caribbean Ministerial Meeting on the implementation of the SIDSPOA, Caribbean countries were mandated to ensure that an adequate institutional mechanism was established to address climate change issues after the completion of CPACC. Consistent with the recommendation of the ministerial meeting, the CPACC team initiated extensive consultations with various regional institutions, and developed a concept proposal for the establishment and functioning of a Caribbean Climate Change Centre.

The concept paper was considered at the ministerial level in the participating countries, and was approved by the Eighth Meeting of the Council of Ministers for Trade and Economic Development (COTED) in February 2000, one of the political decision making organs of CARICOM. COTED forwarded the proposal with their endorsement to the meeting of the CARICOM Heads of Government, held in Canouan, St. Vincent and the Grenadines, in July 2000, where the Heads gave their approval for the establishment of a Caribbean Climate Change Centre.

The Centre will serve as a regional mechanism to anchor, support and sustain the program of action on climate change adaptation for the Caribbean, consistent with the Region's position before the Conference of Parties (COP) and the meeting of the Subsidiary Bodies on Science and Technology (STAP) to the United Nations Framework Convention on Climate Change (UNFCCC).

The Centre's main functions relate directly to its mission to support the program of action on climate change for the region. It will act as:

- i. An executing agency for regional climate change programs and projects,
- ii. An advisory mechanism on climate change policy to CARICOM Secretariat and its member countries;
- iii. A source of scientific and technical information on climate change and its potential impacts in the region.

Establishment of a Climate Change Centre in the region mirrors similar initiatives for the strengthening of institutional capacity in this field in Latin America and the rest of the world. It also is in direct response to the recommendations contained in the Institutional Development Initiative (IDI) of the UNFCCC, which has called for the establishment of "Regional Centers of Excellence in Climate Change" at the fifth Conference of Parties. The island nations of the South Pacific have recently taken a similar initiative in articulating the Pacific Islands Climate Change Adaptation Programme (PICCAP).

On 5 February 2002, the Agreement establishing the *Caribbean Community Climate Change Centre* (CCCCC) was signed in the context of the thirteenth Inter-sessional meeting of

Conference of Heads of Government of the Caribbean Community (CARICOM). The Centre will be located in Belize.

Follow-up Projects to be executed by the Caribbean Community Climate Change Centre (CCCCC)

At present, two projects have been earmarked by the Centre for execution. The first project, “Adapting to Climate Change in the Caribbean” is funded by the Canadian Climate Change Development Fund (CCCCDF). This project commenced implementation in October 2001, and will contribute to the establishment of the Centre, by funding the development of a business plan for the Centre. The CIDA funded project aims to build upon the experiences gained under CPACC, in order to consolidate, extend and make sustainable the climate change responses identified under that project. It is also designed to maintain momentum on climate change issues after CPACC ends, and to lead into a later follow-on project to CPACC.

The second project to be executed by the Centre is the follow-on project to CPACC, entitled “*Mainstreaming Adaptation to Global Climate Change*” (MACC). Like CPACC, this project will be funded by the Global Environment Facility (GEF), with co-funding from several other donors. The CPACC team is presently preparing the MACC project document, with the assistance of a small project development grant (PDF-B) from GEF. The MACC project received endorsement of the GEF council at their December 2001 meeting, following which the World Bank Board of Directors presented it for approval in October 2002.

The principal areas of activity of MACC will be: (a) the introduction of climate change in national and sectoral planning and investment decisions; (b) assisting countries with activities considered under the UNFCCC Stage II Adaptation; and (c) expanding the region’s participation in global climate change monitoring, modeling and impact assessment in support of adaptation planning.

The “Adapting to Climate Change in the Caribbean” (ACCC) Project

Purpose and Objectives

A key objective of this project was to create conditions under which the region would be able to sustain climate change activities at the conclusion of the CPACC project in December 2001. This proposed Programme was designed to strengthen and make sustainable, private and public sector institutional capacities, to respond to climate change in the Caribbean region. It builds upon and consolidates the successes of the CPACC initiative.

Description of Activities

The following nine projects will be managed locally by the CPACC/RPIU and, later, the Caribbean Community Climate Change Centre (CCCCC), with technical support provided by Canadian companies, government agencies and academic institutions according to project needs. The projects outlined below are built upon CPACC activities and will be complementary to those envisaged under IMPACC.

Project 1: Detailed Project Design and Business Plan for Regional Climate Change Centre -

Project 1 will provide for the detailed design of all nine projects with plans to be agreed by all Partners and the Project Management Committee. This Project will also involve development of a business plan for the Regional Centre on Climate Change to make it sustainable after this CCCDF Program is completed. Funding strategies, involving governments and private sector of the Region, and sustainable management strategies will be prepared and adopted.

Project 2: Public Education and Outreach (PEO) - Project 2 will further develop and implement a climate change PEO program for Caribbean nations extending the initial CPACC efforts.

Project 3: Integrating Climate Change into a Physical Planning Process using a Risk Management Approach - The objective of Project 3 is to build capacity for integrating adaptation to climate change risks into the physical planning process, in the private sector and governments. This will follow a risk management approach building on experience with Canadian municipalities and in the Caribbean.

Project 4: Strengthening Technical Capacity - Project 4 is designed to respond to specific gaps and needs in regional and national technical capabilities identified in the first three years of the CPACC Program. Development of the necessary scientific and technical expertise in the Region is essential to ensuring sustainability. The project also provides for strengthening of linkages with similar programs in the Southwest Pacific Islands.

Project 5: Integrating Adaptation Planning in Environmental Assessments for National and Regional Development Projects - The goal of this project would be to integrate adaptation planning into the project cycle for international and national development activities.

Project 6: Implementation Strategies for Adaptation in the Water Sector) - Climate models suggest increasingly dry conditions for much of the Caribbean region and water demands are increasing. The objective of this project is to establish, with water management agencies, a comprehensive set of adaptation strategies in the water sector.

Project 7: Formulation of Adaptation Strategies to Protect Human Health - The objective of this project is to build upon the risk management assessment in the health sector identified in Project 3 and develop a strategy for the protection of human health from adverse climate change impacts. IPCC studies indicate the likelihood of increasingly adverse conditions in the region for vector and water borne diseases and those related to heat stress.

Project 8: Adaptation Strategies for Agriculture and Food - The objective of this project is to develop national and regional strategies that will provide for food security and sustainable rural livelihoods in the Caribbean region.

Project 9: Fostering Collaboration/Cooperation with non-CARICOM Countries - This project will focus on the formulation of a strategic framework to foster closer collaboration/cooperation

in the implementation of climate change adaptation activities in CARICOM countries and other non-CARICOM countries in the Caribbean region.

The Mainstreaming Adaptation to Climate Change (MACC) Project

Purpose and Objectives

The overall objective of the proposed project is to build capacity in the CARICOM Small Island Developing States (SIDS) to develop Stage II adaptation strategies and measures, according to the United Nations Framework Convention on Climate Change (UNFCCC) and the guidance issued at the Conference of Parties. This will be pursued through support to:

- (i) the mainstreaming of climate change considerations into development planning and sectoral investment projects;
- (ii) appropriate technical and institutional response mechanisms for adaptation to global climate change; and
- (iii) regional climate change monitoring and modelling.

Description of Activities

The project will build capacity in the CARICOM Small Island Developing States (SIDS) to develop Stage II adaptation strategies and measures through the mainstreaming of adaptation into the general planning process of the countries in the region. This will be sought through:

- (a) *Mainstreaming adaptation to climate change in national development planning and public and private investment decisions.*
- (b) *Assisting Institutional and Technical Support mechanisms:*
 - (i) *Assisting participating countries with Stage II adaptation under the UNFCCC;*
 - (ii) *Support and coordination for the preparation of the 2nd National Communications;*
 - (iii) *Creating a Permanent Institutional Mechanism to Address GCC in the Caribbean*
- (c) *Expand GCC monitoring and impact assessment as a basis for national and regional level decision making on adaptation.*
- (d) *Project Management*

Coastal and Marine Resources

The enjoyment by coastal States under the 1982 United Nations Convention on the Law of the Sea of sovereign rights for the exploration and exploitation of an Exclusive Zone (EEZ), has placed enormous tracts of ocean space at the disposal of these States. According to Article 57 of the 1982 Convention, the EEZ *shall not extend beyond 200 nautical miles from the base lines from which the breadth of the territorial sea is measured*. In many cases, this provision places under the jurisdiction of coastal States, areas of maritime space that are several times as large as their respective land spaces. Significantly, many such States, including the small island developing States of the Caribbean subregion, lack the financial, manpower, institutional and other prerequisites that would permit them to derive optimum benefits from this internationally sanctioned regime.

The challenges confronting these States are in respect of, *inter alia*:

- The development of national ocean policies inclusive of coastal zone management accompanied by the necessary legislation and regulations;
- The strengthening and development of institutional, administrative, scientific and technological capacity to effectively manage and utilise the resources of the EEZ;
- The development of a comprehensive inventory of living and non-living resources of the EEZ;
- The establishment of additional marine protected areas;
- Reduction of land-based sources of marine pollution;
- The adoption of measures and procedures for the effective prevention of pollution from ships and the establishment of mechanisms for rapid response to emergencies such as oil spills;
- The establishment of monitoring mechanisms for marine eco-systems and development of an integrated environmental database, utilising technologies such as remote sensing and geographic information systems (GIS);
- Promoting an Integrated Management Approach to the Caribbean Sea in the context of Sustainable Development.

The coastal environments of the Caribbean possess a diversity of habitats including coral reefs, seagrass beds, mangrove, wetlands and rocky shores. All the islands have established some aquatic preserves to protect valuable habitat, but the authorities lack the necessary manpower and funding to enforce the corresponding regulations. The threats to the coastal ecosystems include both sea-based and land-based contamination, development, over-fishing, sand mining, and increased storm activity.

Threats to sustainable development of coastal and marine resources

Living and non-living marine resource exploitation

The impact of the exploitation of non-living marine resources varies across Caribbean SIDS. Sand mining is a particular problem in Saint Vincent and the Grenadines and Saint Lucia due to the existence of an active construction industry in these islands. The respective

governments have introduced policies to encourage sand importation. Relevant legislation has also been drafted. However, these legal instruments have either not been enacted or are not being adequately enforced.

Extraction of living marine resources is a significant threat in all reporting countries. Jamaica reports that coral harvesting, particularly harvesting of the black coral, continues to be a problem.¹⁰ Other threats to coral include physical damage from anchorages, fishing equipment and divers. In addition, the use of bleach to harvest reef fish has damaged coral in the Bahamas.¹¹ Fisheries have been severely depleted in some countries. In Barbados, recourse was had to a three-year moratorium on the harvesting of sea urchins in an attempt to restore the population.¹² Many islands report the deforestation of mangroves for fuelwood, often by squatters. In the Dominican Republic, mangrove roots are cut during the harvesting of oysters (*Crassostrea rizophorae*).¹³

Aquaculture is practiced on many islands but has not been found to have a significant impact on any coastal areas. Cuba's aquaculture industry produces over 1,600 tons of white-shrimp annually.¹⁴

Climate change and natural disasters

There is a widespread need for disaster management plans within Caribbean SIDS. Recent years have witnessed an increase in the number and intensity of tropical storms. As Saint Vincent and the Grenadines reports, "If climate change is responsible for the intensity of storms and storm surges over the last five years, then it is responsible for major coastal erosion on Saint Vincent. Some areas on the northern windward side of the island have had as much as 25 meters of shoreline recession over the last five years. Hurricane Lenny (1999) destroyed 10 meters of coastal forest that had stood for over 50 years."¹⁵

The possible effects of climate change on coastal water levels and temperatures are a threat to the fragile coral-reef ecosystems. The coastal region is the most economically valuable area on most islands and even small changes could produce permanent environmental damage, severely affecting the islands' economies.

Transboundary threats

The most common transboundary threats to the islands are oil spills. Thousands of large vessels transporting oil, gas, and chemicals pass through the islands annually.¹⁶ In several countries, National Oil Spill Contingency Plans are in place. However, a regional spill-response plan is needed. This might best be pursued within the initiative being piloted through the United Nations General Assembly by Caribbean SIDS for *Promoting an Integrated Management Approach to the Caribbean Sea Area in the context of Sustainable Development*, with due regard

¹⁰ Jamaica National Report, p. 26.

¹¹ The Bahamas National Report, p. 23.

¹² Barbados National Report, p. 32.

¹³ Dominican National Report, p. 25.

¹⁴ Cuban National Report, p. 115.

¹⁵ St. Vincent and the Grenadines National Report, p. 20.

¹⁶ Trinidad and Tobago National Report, p. 70.

to other regional and wider international initiatives. In addition, the discharge of solid waste, wastewater and bilge water by both commercial and cruise ships, pollutes the coasts. All Caribbean SIDS are signatories to the MARPOL Convention 1973/78 and the 1989 Basel Convention on the Transboundary Movement of Hazardous Wastes and Their Disposal, but none has signed the Basel Protocol on Liability and Compensation.

The Dominican Republic reports that Haitian nationals are overexploiting the fisheries in border regions of the Dominican Republic, particularly shrimp and lobster. Cross-border trade creates a lucrative market for Haitian fishermen who sell their catch to the Dominican market.¹⁷

The southern islands, particularly Trinidad and Tobago, face a transboundary threat from the Orinocco River on the South American mainland. The river brings a heavy sediment load to the waters, notably increasing turbidity on the west coast of Trinidad.¹⁸

Land-based pollution

Many nations lack coastal zone management and development plans. Trinidad and Tobago is examining, in detail, the components, implementation and integration of coastal management plans with development plans.

There is general concern over land-ownership issues and a need for better coordination between the central government and local town councils regarding land planning and the approval of construction projects.¹⁹ Canal building and dredging to create harbours have damaged many mangrove forests and wetland areas.

Rapid population growth and urbanization have resulted in increased solid and liquid pollution. Wastewater treatment facilities are inadequate in many locations. For instance, in Castries, Saint Lucia, the wastewater is discharged directly into the sea without treatment, and only 13 per cent of the population is connected.²⁰

Surface-water runoff is a problem on all the islands and is a significant cause of pollution in coastal areas. Rivers carry solid waste directly to the coast because of the lack of adequate solid waste disposal. Point-source pollution, such as mining and industrial waste discharges, has been measured in rivers and can be assumed to reach coastal regions although no specific studies have been undertaken to validate this. Cuba reports that increased development has brought with it, an increase in the amount of hazardous chemicals and biomedical waste. Over 1.2 million tons of industrial hazardous wastes are produced in Cuba annually.²¹ In an effort to reduce such waste, Cuba is encouraging the inclusion of methods to reduce hazardous waste production in the design of new industrial plants, as well as retrofits, whether through source reduction or recycling.

¹⁷ Dominican Republic National Report, p.27.

¹⁸ Trinidad and Tobago National Report, p. 71.

¹⁹ The Bahamas National Report, p. 18.

²⁰ Saint Lucia National Report, p. 31.

²¹ Cuba National Report, p. 131.

Non-point-source pollution such as agricultural runoff, fertilizers, pesticides, and herbicides is a significant problem for all Caribbean SIDS. Nutrient loading from nitrogen and phosphorus is causing eutrophication of rivers and increasing algae and turbidity in coastal areas. Many islands report uncontrolled deforestation by land squatters for fuelwood and agriculture.²² Cuba reports that 11.8 per cent of its forestland has been converted to agriculture in recent years, resulting in increased water turbidity in deforested areas.

Tourism impacts

Tourism is an important factor in coastal area management. Tourist activities and developments significantly affect the health of the area through buildings that are sited too close to high water marks, harbour dredging, cutting down of mangroves, mooring on reefs and sea-grass beds, exceeding carry capacity, and pollution. The issue of construction in coastal areas is illustrated in Antigua and Barbuda, where 39 of the country's 55 hotels have a beach-front location.²³

Health impacts

Health concerns related to coastal area management are generally linked to land-based pollution, such as the disposal of untreated sewerage and surface run-off from agricultural and industrial sectors, streets, and construction sites. These pollutants have been known to cause diseases such as gastroenteritis, diarrhoea, jaundice, rashes and various other infections, in Caribbean SIDS.

Data, information management and research

Similar to the situation with freshwater resources, data information management and research is conducted by a variety of agencies and organizations, including:

- Non-governmental organizations;
- Private consultants;
- Government agencies responsible for environment, fisheries, natural resources, transportation, forestry, etc.;
- Academic institutions;
- International organizations.

Data, information management and research needs are generally related to capacity-building. Some countries have highlighted the need for additional water level, meteorological, and pollution monitoring and equipment, as well as studies on various coastal ecosystems.

Stakeholder participation/awareness and education

Throughout the region, there are reports of increased stakeholder participation in the decision-making process for coastal area management and increased awareness and education

²² Trinidad and Tobago National Report, p. 66.

²³ Antigua and Barbuda National Report, p. 13.

programmes. Government agencies are making intense efforts to reach out to non-governmental organizations and community-based organizations and to promote public awareness regarding coastal area issues. Listed below are some examples of governmental efforts in this area:

- Educational and training programmes for students, teachers, public sector officials, and other stakeholders;
- Establishment of Local Area Management Authorities;
- Involvement of stakeholders in monitoring, management, and conservation activities;
- Media campaigns;
- Public awareness activities ;
- Public consultations;
- Training on sustainable tourism.

Notwithstanding these activities, many countries still do not consider that there is sufficient public involvement in the decision-making process for coastal area management. Saint Lucia is moving to address this problem, by developing an Integrated Approach to Development Planning.

Significant strides are being made in Trinidad and Tobago in the promotion of the role of women in coastal resource management. The Gender Studies Department of the University of the West Indies, St. Augustine, has been working towards the empowerment of women and the sustainable development of the communities in the area of the Nariva Swamp.”²⁴

Ocean management

At the fifty-seventh session of the United Nations General Assembly, the countries of the Caribbean secured the passage of a Resolution entitled: *Promoting an Integrated Management Approach to the Caribbean Sea in the Context of Sustainable Development*. This follows the adoption, at earlier sessions of the General Assembly, of resolutions 54/255 and 55/203 which bear the same title.

²⁴ Trinidad and Tobago National Report, p. 81.

Text Box 1

The Caribbean Sea Proposal

The proposal for *Promoting an integrated management approach to the Caribbean Sea area in the context of sustainable development*, that is now before the United Nations General Assembly, has its origin in a decision adopted at the Caribbean Ministerial Meeting on the implementation of the Programme of Action for the Sustainable Development of Small Island Developing States, Barbados, 10-14 November 1997. The original proposal as adopted by the Ministerial Meeting was for *the international recognition of the Caribbean Sea as a "special area" in the context of sustainable development*.

The fundamental objective of the proposal was the international recognition of the Caribbean Sea as a special area, not by reference to any single mode of use or abuse of that sub-oceanic basin, but in the comprehensive context of *sustainable development*. The proposal would build on a range of regional and wider international instruments as it pursues global acknowledgement of the unique environmental, economic and social values of the Caribbean Sea and of the significance of these to the peoples of the region. Its detailed elaboration would also be informed by, *inter alia*, the recognition in the SIDS Programme of Action (Paragraph 25) that sustainable development in small island developing States depends largely on coastal and marine resources, because their small land area means that those States are effectively coastal entities. What is ultimately envisaged is the development of an international instrument with an extended range of characteristics and attributes under which would be subsumed all activities aimed, not only at the preservation of the Caribbean Sea environment, but beyond that, to address the sustainable development of that environment, including its resources and with due regard to the social and economic dimensions, in addition to as the environmental.

The resolution adopted at the fifty-seventh session of the UNGA, notwithstanding the continuing very strong environmental thrust that characterised both its predecessors, recognises, *inter alia*, *the heavy reliance of most Caribbean economies on their coastal areas, as well as on the marine environment in general, to achieve their sustainable development needs and goals*. It also recognises *the diversity and dynamic interaction and competition among socio-economic activities for the use of the coastal areas and the marine environment and their resources*.

In its operative paragraphs, the resolution, *inter alia*, *encourages the further promotion of an integrated management approach to the Caribbean Sea area in the context of sustainable development, in accordance with the recommendations contained in resolution 54/225, as well as the provisions of Agenda 21, the Programme of Action for the Sustainable Development of Small Island Developing States, the outcome of the twenty-second special session of the General Assembly, the Johannesburg Declaration on Sustainable Development, the Johannesburg Plan of Implementation, and in conformity with relevant international law, including the United Nations Convention on the Law of the Sea*.

The Secretary-General of the United Nations is requested to report on the implementation of this resolution at the fifty-ninth session of the General Assembly in 2004.

UNEP has been working with CARICOM to establish a regional network to monitor resources of the Caribbean Sea. Aspects to be included in this approach include:

- Environmental and safety aspects of shipping;
- Pollution monitoring and assessment;
- Control of pollution from land based sources;
- Development of common methodologies for integrated coastal zone management;
- Conservation of biological diversity;
- Exploitation of fisheries and other marine resources;
- Exploitation of non-living resources;
- Information and data exchange;
- Security concerns;
- International and regional cooperation and coordination.

A Protocol to the Convention for the Protection and Development of the Marine Environment of the Wider Caribbean, “*the Cartagena Convention*”, on Land-Based Sources of Marine Pollution (the LBS Protocol) was adopted in 1999. Within the Caribbean, seven major categories of point sources of land-based pollution have been identified, namely, domestic sewage; oil refineries; sugar factories and distilleries; food processing; beverage manufacturing; pulp and paper; and the chemical industry. While the Protocol largely pursues a source-specific approach and the application of the most appropriate technologies, its initial focus is to be on domestic sewage and agricultural non-point sources. UNEP/RCU has also implemented projects on appropriate and environmentally sound technologies for sewerage treatment and best management practices. In addition, a Waste Oil Management Programme for the Caribbean is being developed by UNEP in collaboration with the Basel Secretariat and PAHO.

Fisheries development

Fisheries play an important and sometimes underrated role in the economies of Caribbean SIDS, providing employment and contributing to food security and national income. Current methods of evaluating the contribution of fisheries to economic and social development have tended to overlook the incremental economic benefits arising from of the export market, as well as support services.

Within the OECS, the following major issues have been identified in the context of fisheries development:

- Near-shore demersal fisheries resources are coming under increasing pressure and, in some instances, are already showing signs of collapse;
- Exports are constrained and regulated;
- Strong internal markets exist in the region;
- There is an increased need to diversify the industry;
- There is limited knowledge of potential resources;
- Accessing financial resources is difficult;
- Human and financial resources are limited.

Sustained fisheries development will require action in the following areas:

- Improving national fisheries management framework, through training in fisheries management planning, compliance and conservation;
- Increasing accessibility to varied markets through the diversification and improved quality of fisheries products;
- Increasing the overall production by the fisheries sector; and
- Facilitating regional action by inter alia defining mechanisms for the exploitation and management of shared resources and outlining roles and responsibilities of various regional and international agencies.

The following actions have already been pursued:

- Development by the Caribbean Law Institute (CLI) of the legislative apparatus in relation to the integrated management of fisheries;
- Convening by UNDP of Workshops to promote a methodology for resource management in the Caribbean Sea;
- Development by the OECS Secretariat of a Fisheries Development Strategy.

On 4 February, 2002, the *Agreement Establishing The Caribbean Regional Fisheries Mechanism* was signed in the context of the Thirteenth Inter-Sessional Meeting of the Conference of Heads of Government of the Caribbean Community (CARICOM). Signatories to the Agreement include Barbados, Belize, Grenada; Guyana; Jamaica; St Vincent and the Grenadines; Suriname; and Trinidad and Tobago.

According to Article 4 of the Agreement, the Mechanism shall have as its objectives:

1. The efficient management and sustainable development of marine and other aquatic resources within the jurisdictions of Member States;
2. The promotion and establishment of co-operative arrangements among interested States for the efficient management of shared, straddling or highly migratory marine and other aquatic resources;
3. The provision of technical advisory and consultative services to fisheries divisions of Member States in the development, management and conservation of their marine and other aquatic resources.

According to Article 5, in pursuance of its objectives, the Mechanism shall be guided by the following principles:

1. Maintaining bio-diversity in the marine environment using the best available scientific approaches to management;
2. Managing fishing capacity and fishing methods so as to facilitate resource sustainability;
3. Encouraging the use of the precautionary approaches to sustainable use and management of fisheries resources;

4. Promoting awareness of responsible fisheries exploitation through education and training;
5. According due recognition to the contribution of small scale and industrial fisheries to employment, income and food security, nationally and regionally; and
6. Promoting aquaculture as a means of enhancing employment opportunities and food security, nationally and regionally.

The Caribbean Fisheries Mechanism is scheduled to be launched in Belize, on 26 March 2003. The first meeting of the Forum of the Mechanism is scheduled to convene on 27 March 2003. According to Article 9 of the *Agreement establishing the Caribbean Fisheries Mechanism*, subject to the determination of the overall policy of the Mechanism by the Ministerial Council, the Forum “*shall determine the technical and scientific work of the Mechanism....*”

The Forum comprises:

1. One representative of each Member and Associate Member of the Mechanism;
2. Representatives of
 - i Fisher Folk Organisations and Private Fishing Companies within the Caribbean Region;
 - ii Regional bodies and institutions and regional organisations whose work in the area of fisheries contributes to the work of the Mechanism; and
 - iii Non-Governmental Organisations whose work in the area of fisheries contribute to the work of the Mechanism.

Even more recently, when the Fourteenth Inter-Sessional Meeting of the Conference of Heads of Government of the Caribbean Community (CARICOM) convened in Trinidad and Tobago, on 14-15 February, 2003, a proposal was tabled by one of the signatory countries to the CRFM for the adoption of a Regional Fisheries Policy for the joint exploitation and conservation of the fishing resources of the region for the benefit of its peoples. Issues identified for consideration in this regard include:

1. Establishment of a single maritime authority to manage the resources, cooperate in research and provide technical support for ongoing fisheries projects in the region;
2. The issuing of licenses to operate in the identified “fishery zone”;
3. Research to determine an “allowable yearly sustainable catch”, with catches and landings thereof being recorded;
4. Making fishing operations without a license “illegal and punishable”;
5. Effective security procedures for reporting by fishing vessels to Coast Guard, Customs and Immigration services when entering and leaving national jurisdictions.

Significantly, in this context, the CARICOM Secretariat has been mandated to carry out the necessary research with a view to developing a framework for the exploitation and conservation of fisheries resources in the region, based on stipulated guidelines. Further, in the

conduct of the research, the Secretariat is to take note of the overlapping maritime areas between Member States of the Community and Third States. The framework is to be presented to the Twenty-fourth meeting of the Conference of Heads of Government of CARICOM, which convenes in July 2003.

Natural and Environmental Disasters

Like many other areas, the Caribbean is subject to meteorological (hurricanes, floods and droughts) and geophysical (earthquakes, landslides, volcanoes) hazards. Depending on the degree of vulnerability of given States/territories, exposure to hazards may result in natural disasters that, in small island countries such as these, can have devastating economic, social and environmental effects.

Arguably, tropical cyclones are the most frequent of the natural hazards that affect the region. The decade of the nineties was one of contrasts. Landsea²⁵ reported that the first half of the decade saw the least active four-year period in at least fifty years²⁶. However, in the second half of the decade, the region experienced an upsurge in the incidence of hurricanes. Indeed, Guy Carpenter reported that 1999 saw the highest number of category 4 hurricanes since records began in 1886²⁷. In 1999, Hurricane Irene crossed western Cuba; Hurricanes Dennis and Floyd and tropical storm Harvey made landfall in the Bahamas and in the Turks and Caicos Islands; and the northern Leeward Islands were exposed to Hurricanes Jose and Lenny. Because of its unusual East to West track, Hurricane Lenny also caused damages in the Windward Islands.

The increased incidence may indicate that the region has entered a new multidecadanal period of heightened hurricane activity. This would follow the period of the 1970s to the middle of the 1990s, which was relatively quiet and from the 1920s to the 1960s, which was relatively active²⁸. This long-term cycle would be more important than any impacts of climate change, because its effects could affect development patterns and outcomes over at least the next decade. Furthermore, current research seems to indicate that neither the frequency nor the intensity of hurricanes will be very much influenced by climate change²⁹. This issue continues to be debated, however.

Hurricanes remain the major cause of loss of life due to natural disasters, with a death toll of 1,745 persons during the decade. In the insular Caribbean, the largest loss of life occurred in Haiti, caused by Hurricane Gordon in 1994 and in the Dominican Republic by Hurricane Georges in 1998.

²⁵ Landsea et. al. 1996

²⁶ A distinction must be made between the impact of individual hurricanes and frequencies. While the period 1991 - 1994 was the least active four year period on record it included hurricane Andrew (1992) which caused an estimated US\$ 33 billion in damage and hurricane Gordon (1994) which caused 1,122 fatalities in Haiti.

²⁷ Guy Carpenter, 2000

²⁸ Landsea et.al. 1999

²⁹ See for example the publications by Landsea or Henderson-Sellers et.al. 1998.

Loss of Life caused by Natural Disasters in the Insular Caribbean and Belize³⁰

PERIOD	LOSS OF LIFE			
	Total	Floods	Windstorms	Other
1990 - 1998	1966	155	1745	66
1980 - 1989	1640	925	584	131
1970 - 1979	1829	265	1561	3
1964 - 1969	953	0	953	0
TOTAL	6388	1345	4843	200

Source: EM-DAT: The OFDA/CRED International Database³¹, Université Catholique de Louvain, Brussels, Belgium.

Haiti with 2,598 deaths and the Dominican Republic with 1,862 fatalities over the period 1964 to 1998 account for almost 70 per cent of the death toll in the region. This is a reflection of social vulnerability caused by poverty, environmental degradation and policy failures³². This high degree of vulnerability was highlighted in 1994, when rainfall, associated with, then, tropical storm Gordon, caused floods and mudslides which resulted in 1,122 fatalities, even though the centre of Gordon did not pass over Haiti. The Dominican Republic and Haiti are not alone in this vulnerability, as many of the characteristics are shared with other low-income countries or with the poor in higher income countries.

Increasingly fatalities caused during the passage of tropical cyclones are not wind related but stem from secondary disasters like flood or land- and mudslides³³. This highlights the role of environmental degradation and policy failures as major factors that account for the loss of life.

If population growth is taken into account, the data show that there has been only a slight reduction in the crude annual disaster death rate over the last 35 years.

³⁰ For the Guianas, there are no recorded deaths in the EM-DAT database.

³¹ To be included in the database, at least one the following criteria has to be satisfied: 10 or more people killed; 100 people reported affected; a call for international assistance or the declaration of a state of emergency.

³² The interpretation is only indicative because inter-country comparisons can be carried out only if the data are normalized for population and for hazard probabilities.

³³ ECLAC

Normalized loss of life in the Insular Caribbean and Belize

Period	Ave. no. of deaths/year	Mid-decade population (millions)	Crude annual disaster death rate per 100,000 people
1990 - 1998	218.4	35.13	0.62
1980 - 1989	164.0	31.14	0.53
1970 - 1979	182.9	25.16	0.67
1964 - 1969	158.8	22.90	0.69

Source: ECLAC based on EM-DAT and US Bureau of the Census data

The limited progress is disappointing, especially in view of the advances made in early warning techniques and in prevention and mitigation technologies. Environmental degradation and policy failures may well have offset the application of technological progress, which should have resulted in a faster decline of the crude annual death rate.

Data on economic impacts are less readily available. While ECLAC has carried out a number of immediate post disaster assessments³⁴ of projected economic losses for some individual islands, there remains a dearth of evaluations to assess the longer-term economic impact of disasters³⁵.

Clearly, even a small disaster, in terms of monetary damages can have major economic implications in a small country, even when larger countries may be susceptible to a larger number of disasters. However, during the second half of the decade, the small islands of the North-Eastern Caribbean seemed to be particularly vulnerable.

The graph below illustrates the impact of the 1995 hurricane season on the economic performance of the ECCB area³⁶. During 1995 Hurricanes Marilyn and Luis and tropical storm Iris hit the Eastern Caribbean. The 1995 storm season caused a drop from 3.0 to 0.7 in the annual rate of growth of real GDP in the ECCB area, even though non-affected Grenada and St. Vincent and the Grenadines continued to register high rates of growth. The impact on the individual countries was even more severe with Antigua and Barbuda and Anguilla experiencing a decline in the growth rate to -5.0 and -4.1 respectively³⁷. Tourism, agriculture and real estate and housing were the sectors most affected. In Anguilla tourist arrivals did not recover until 1997³⁸, while by 1999 Sint Maarten had still not recovered.

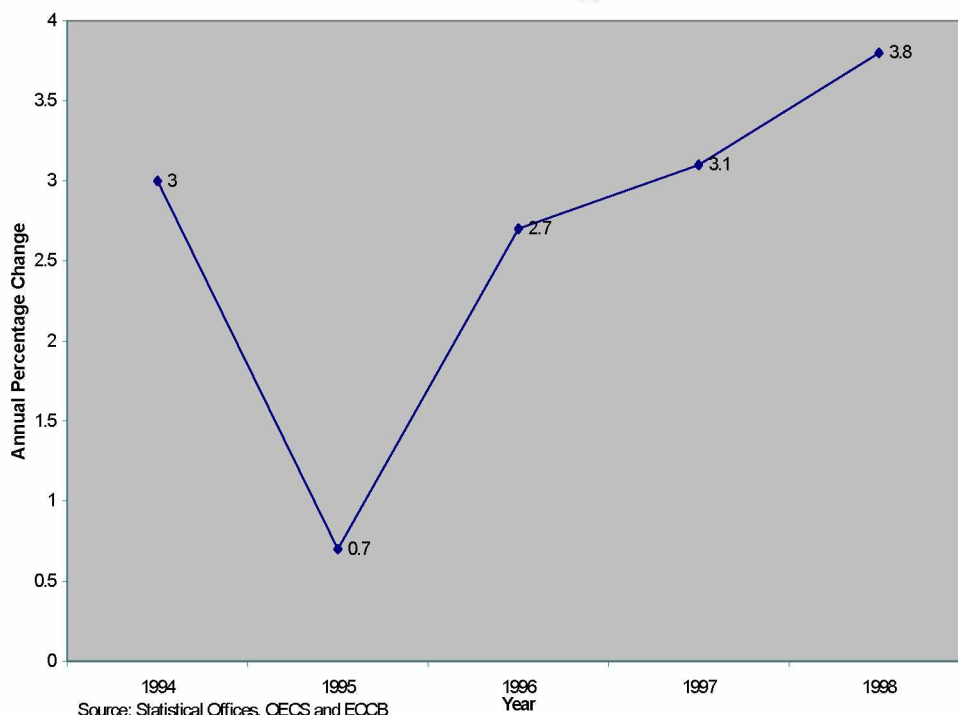
³⁴ See for example the assessments of Anguilla and St. Maarten in 1995, the assessment - with ECCB - of St. Kitts Nevis in 1998 and the assessment of Anguilla in 1999.

³⁵ A notable exception is Crowards, 1999.

³⁶ The ECCB area is the OECS less the British Virgin Islands

³⁷ Based on data from ECCB.

³⁸ See ECLAC, 2000.



In a large continental or archipelagic country, the economic impacts on given sectors/areas can either be diluted or offset by robust growth in other areas. For example, Hurricane Floyd was classified as a category 4 hurricane when it struck the Family Islands in the Bahamas. Here, the impacts of the extensive damages on Eleuthera and Abaco were counteracted by a strong improvement in tourism in the other islands, notably in Nassau and Paradise Island. Coupled with reinsurance inflows and reconstruction activities, the result was a real economic growth of about 5.5 per cent. On the other hand, the IMF noted that the long-term economic impact of Hurricanes Luis and Marilyn in Sint Maarten contributed to the continued economic malaise which is facing the Netherlands Antilles³⁹.

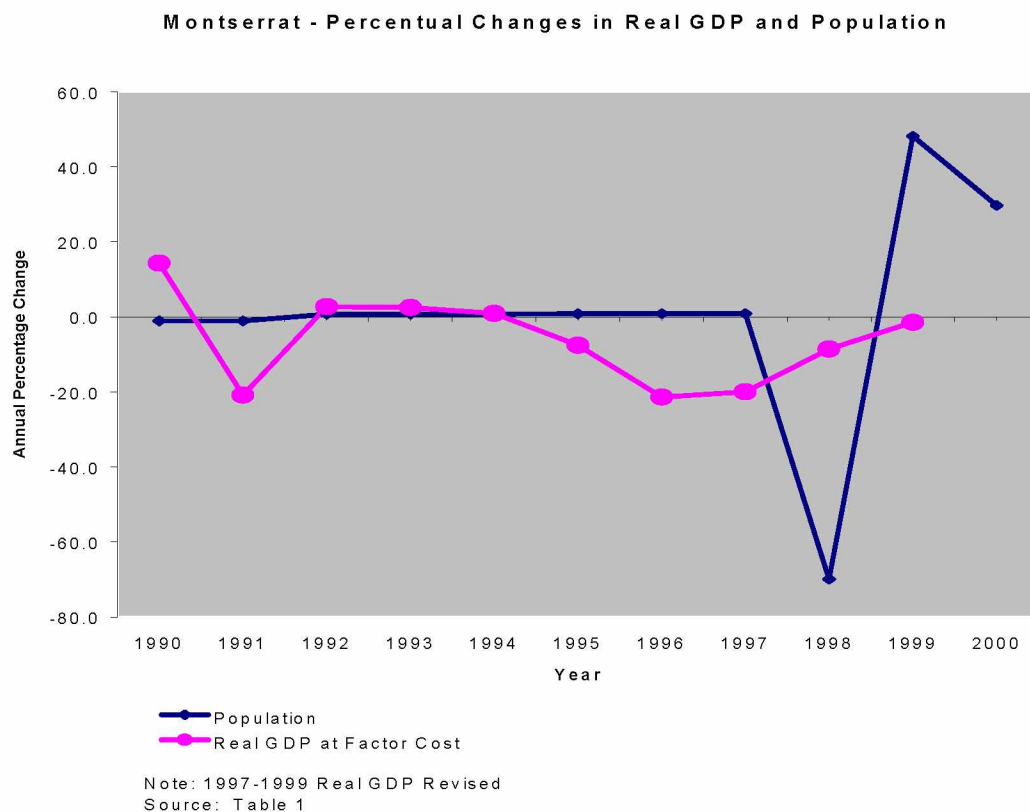
In the Dominican Republic, Hurricane Georges caused an estimated US\$ 2.2 billion in economic damages in 1998. The sectors most affected were housing, with over 49,000, mostly low-income houses destroyed, tourism and agriculture⁴⁰. Nevertheless, the high buoyancy which characterized the economy in the second half of the decade, was maintained albeit, at an estimated loss of 1 percentage point of real GDP growth.

³⁹ IMF.

⁴⁰ CEPAL, 1998.

The volcanic eruptions in Montserrat had catastrophic consequences on the island's economy, social fabric and its natural environment. Real GDP declined from EC\$ 132.1 million in 1994 to EC\$ 68.3 million in 1998 as shown in the graph below. This graph also shows the decline in population, which accompanied the eruptions. The graph for Montserrat is particularly interesting because it also shows the after effects of Hurricane Hugo, which struck Montserrat in 1989. The GDP increase in 1990 was fuelled by a 60 per cent increase in construction, as compared with 1989⁴¹. This increase more than compensated for the decrease in tourism, manufacturing and banking and insurance. The year thereafter and in 1992, most sectors returned to pre hurricane levels and the temporary boost of reconstruction activities was no longer felt in the economy.

Crowards (1999) concluded that, although broad patterns could be observed in selected macro-economic variables, the considerable variation in individual events and country results made meaningful inter-country comparisons impossible. The table below sets out the broad patterns on selected economic variables in Caribbean countries.



⁴¹ 1989 saw already a more than doubling of construction

Table: Economic impacts following a natural disaster

Variable	Year of event	Year after	Subsequent years
GDP	Immediate drop in GDP growth	Rise in GDP growth from reconstruction	Slow down in 2 nd and 3 rd year as boost subsides
Exports of goods	Reduction in rate of growth	Return to previous levels (1)	Continuation of year after
Imports of goods	Considerable increase in rate of growth	Return to pre-disaster level	Further drop, possibly caused by reduced incomes
Tourist arrivals	Considerable drop	Some recovery	Recovery continued
Cruise ship arrivals	Considerable drop		
External debt	Increase in rate of growth	Drop of the rate of increase to below pre-disaster levels	

Notes: (1) Depending on crop season, the reduction for agricultural exports, etc. may occur in the year following the disaster.

Source: Crowards, 1999

The economic vulnerability of the region to natural hazards has been increased as a result of population growth, economic development, a focus on coastal tourism together with policy failures and environmental degradation.

While economic development tends to reduce social vulnerability through improved housing, increased insurance and improved social welfare systems; it obviously increases the economic vulnerability because of the accumulation of wealth.

Caribbean environments have evolved in the presence of disasters. Arguably then, the region's natural systems depend on such disasters for ecosystem resilience and diversity. However, many of the region's ecosystems are significantly degraded, a process which continues. In such cases, additional stress caused by a disaster can result in damage that is irreparable. Ecosystem restoration may no longer be feasible and vulnerability may be reduced only by recourse to man-made investments etc.

The cumulative impacts of environmental degradation increase social as well as economic vulnerability. The effect of terrestrial degradation, combined with policy failures, may

very well be the increased loss of life as was experienced in Hispaniola following Gordon and Georges, or in Puerto Rico, following the floods and landslides in 1985.

Marine and coastal degradation tend to aggravate economic vulnerability through the increased exposure of coastal infrastructure to high energy wave action and storm surge because natural barriers such as mangroves, sand dunes or coral reefs have lost much of their protective functions.

Because of the concentration of economic activities in the coastal zone (e.g. tourism) the increased exposure of coastal infrastructure results in increased economic vulnerability. For example, the earlier quoted drop in real GDP growth rates in the ECCB area following the 1995 hurricane season was mostly caused by an 11.3 per cent contraction in the value added for hotels and restaurants. Likewise over 80 per cent of the economic damages in Anguilla following Hurricane Lenny are tourism related and a consequence of cumulative environmental degradation⁴².

Policy failures pertain to both the public and private sector and largely stem from a corresponding failure to incorporate disaster prevention and mitigation measures. Policy failures can include the absence of a system whereby pre disaster information can be made available to the public. This was identified as a contributory factor for the high death toll in the Dominican Republic following Hurricanes Georges in 1998 and in Puerto Rico following the floods in 1985. Policy failures might also relate to poor or corrupt building and construction practices resulting from the non-existence or non-compliance with building standards, or from the lack of incorporating risk into insurance rates. In view of the existence of high levels of environmental degradation and a correspondingly high level of economic vulnerability, the continuing policy of granting permission for the construction of hotels and residences in obviously high-risk environment is to be construed as an important policy failure.

Table: Safir-Simpson Hurricane Scale Values

S-S Category	Maximum sustained wind speed (m s⁻¹)	Maximum sustained wind speed (mph)	Minimum Surface pressure (mb)	Storm Surge (m)	Relative Damage Value
Tropical storm	18 to 32				
1	33 to 42		>980	1.0 to 1.7	1
2	43 to 49		979 to 965	1.8 to 2.6	10
3	50 to 58		964 to 945	2.7 to 3.8	50
4	59 to 69		944 to 920	3.9 to 5.6	250
5	> 69		< 920	> 5.6	500

Source: Landsea et. al. 1999.

⁴² ECLAC, 2000.

TROPICAL STORMS AND HURRICANES IN THE CARIBBEAN

YEAR	CLASSIFICATION	NAME	AREA	DATES
1990	Tropical Storm	Arthur	Tobago/St. Vincent and the Grenadines	22-27 July
	Hurricane	Diana	Yucatan	3-7 August
	Tropical Storm	Fran	Trinidad	11-14 August
	Hurricane	Klaus	Virgin Islands	2-9 October
1991	Tropical Storm	Fabian	Cuba	14-15 October
	Hurricane	Caesar	Trinidad & Tobago/Netherlands Ant.	24-29 July
1992	Hurricane	Andrew	Bahamas	16-27 August
1993	Tropical Storm	Bret	Trinidad/ Belize	4-11 August
	Tropical Storm	Cindy	Martinique	14-17 August
1994	Tropical Storm	Debby	St. Lucia	9-11 Sept.
	Tropical Storm	Gordon ⁴³	Jamaica/Cuba/Bahamas	8-21 Nov.
1995	Hurricane	Erin	Bahamas	31 July – 06 August
	Hurricane	Iris	Leeward Islands	22 Aug–04 Sept
	Hurricane	Marilyn	Virgin Islands ⁴⁴ /Netherlands Antilles/Leeward Is./Dominica/Puerto Rico	12 – 22 Sept
	Hurricane	Luis	Leeward Islands ⁴⁵ /Netherlands Antilles	27 Aug – 11 Sept
1996	Hurricane	Lili	Cuba/ Bahamas	14 – 27 October
1997		N O N E		
1998	Hurricane	Georges	Leeward Is./Netherlands Antilles/Puerto Rico/Dominican Republic/Haiti/Cuba	15 Sep – 01 Oct
1999	Hurricane	Floyd	Bahamas	7-17 Sept.
1999	Hurricane	Jose	Anguilla/Netherlands Antilles/Leeward Islands/British Virgin Islands	17-25 Oct
	Hurricane	Lenny	Netherlands Antilles/ Virgin Islands	13-27 Nov.
	Hurricane	Irene	Cuba	13-19 October
	Hurricane	Dennis	Bahamas	24 Aug– 07 Sept.

Source: NHC

⁴³ Haiti severely affected. Rain/Floods

⁴⁴ US and British Virgin Islands

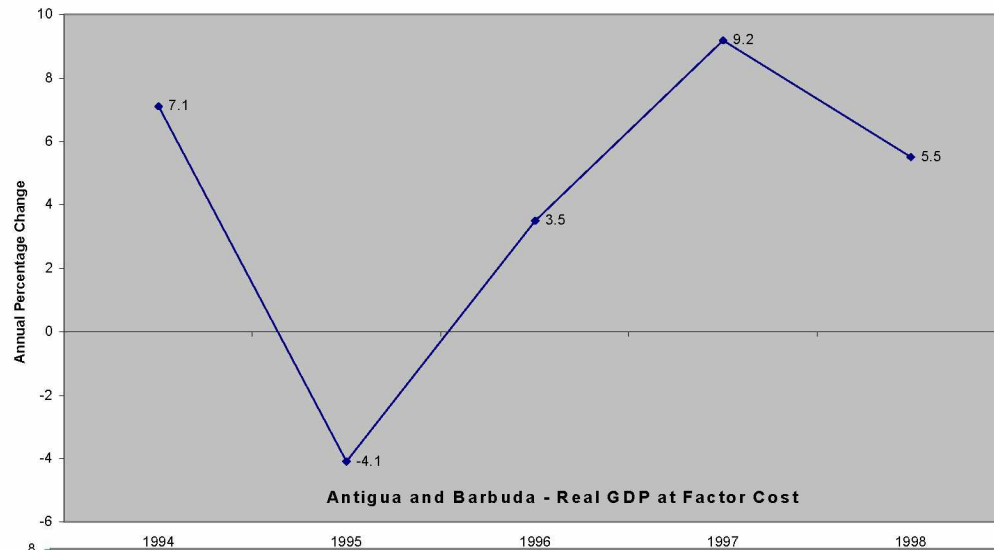
⁴⁵ Antigua and Barbuda, St. Barts, St. Maarten, Anguilla

Fatalities Insular Caribbean and Belize

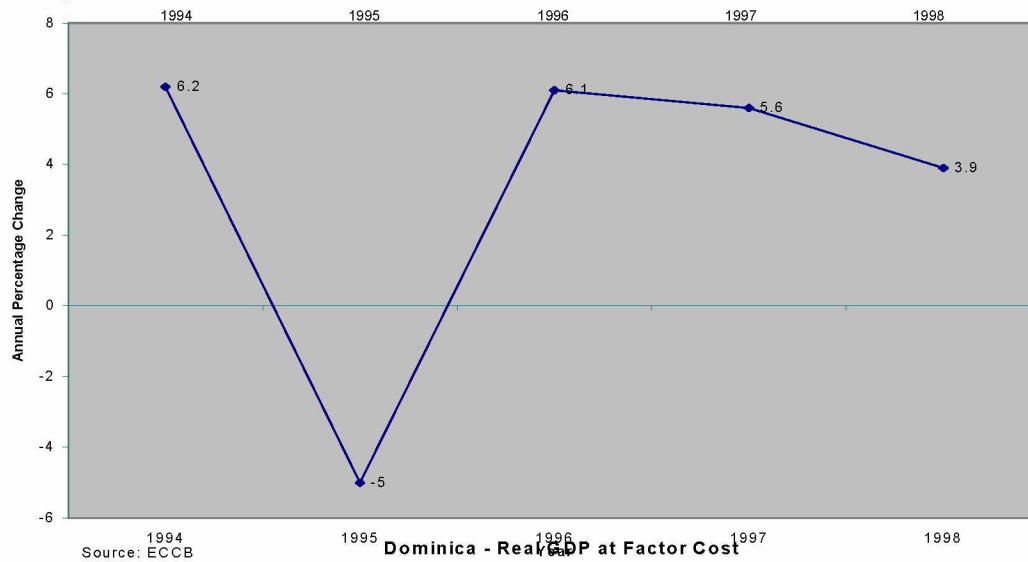
	1990-1998				1980-1989				1970-1979			
Countries	Total deaths	Floods	Windstorms	Other	Total deaths	Floods	Windstorms	Other	Total deaths	Floods	Windstorms	Other
Caribbean	1966	155	1745	66	1640	925	584	131	1824	265	1556	3
Anguilla	0	0	0	0	0	0	0	0	0	0	0	0
Antigua & Barbuda	4	0	4	0	2	0	2	0	0	0	0	0
Bahamas	4	0	4	0	0	0	0	0	0	0	0	0
Belize	0	0	0	0	0	0	0	0	5	0	5	0
Cayman Islands	0	0	0	0	0	0	0	0	0	0	0	0
Cuba	92	65	15	12	63	35	28	0	34	7	26	1
Dominica	1	0	1	0	2	0	2	0	40	0	40	0
Dominican Republic	387	43	322	22	42	20	22	0	1432	32	1400	0
Grenada	0	0	0	0	0	0	0	0	0	0	0	0
Haiti	1365	13	1352	0	567	208	354	5	86	78	8	0
Jamaica	8	8	0	0	172	110	62	0	91	85	6	0
Montserrat	32	0	0	32	11	0	11	0	0	0	0	0
Netherlands Antilles	2	0	2	0	1	0	1	0	0	0	0	0
Puerto Rico	42	18	24	0	676	550	0	126	89	60	29	0
St. Kitts and Nevis	5	0	5	0	1	0	1	0	0	0	0	0
St. Lucia	0	0	0	0	54	0	54	0	0	0	0	0
St. Vincent & the Grenadines	3	3	0	0	0	0	0	0	2	0	0	2
Suriname	0	0	0	0	0	0	0	0	0	0	0	0
Trinidad & Tobago	5	5	0	0	2	2	0	0	2	0	2	0
Turks and Caicos Islands	0	0	0	0	0	0	0	0	0	0	0	0
British Virgin Is.	0	0	0	0	0	0	0	0	0	0	0	0
US Virgin Is.	8	0	8	0	0	0	0	0	0	0	0	0
Source: EM-DAT												

Approaches to Disaster Management

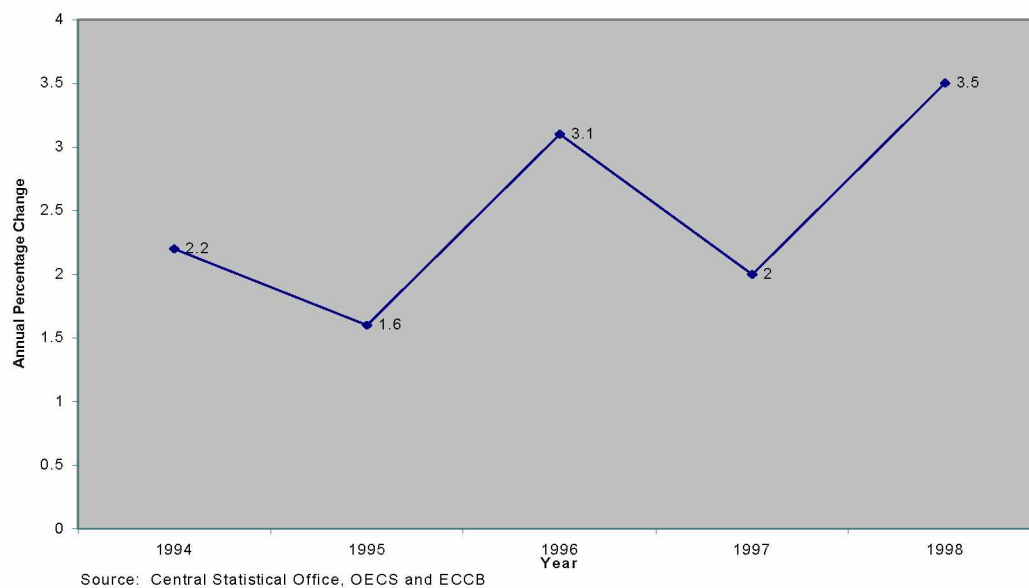
Anguilla - Real GDP at Factor Cost



Antigua and Barbuda - Real GDP at Factor Cost



Dominica - Real GDP at Factor Cost



The traditional approach to disaster management in the Caribbean, which prevailed until the late 1970s, was characterised by an uncoordinated and often ad-hoc response to rescue victims and the repair of damages. Preparedness planning was introduced during the 1980, due largely to the efforts of the Pan Caribbean Disaster Preparedness and Prevention Project (PCDPPP) which also succeeded in raising general awareness on the need for preparedness and prevention. Upon completion of the PCDPPP, CARICOM Heads of Governments recognized the need for a permanent mechanism to coordinate regional disaster management activities and created the Caribbean Disaster and Emergency Response Agency (CDERA) in 1992. The mandate of this agency is focused on disaster preparedness and the coordination of disaster response.

Since the early 1980s, the Pan American Health Organization (PAHO) has operated an extensive programme of disaster preparedness and response in the health sector. It also made significant contributions to vulnerability reduction in health sector infrastructure. Also, during the 1990s, disaster mitigation in housing and infrastructure was the focus of a six-year Caribbean Disaster Mitigation Project (CDMP), financed by the United States Agency for International Development (USAID) Office of Foreign Disaster Assistance (OFDA), and executed by the OAS. The CDMP focused on hazard vulnerability reduction in six primary areas: community preparedness, hazard assessments and risk mapping, hazard-resistant building practices, vulnerability audits of lifeline infrastructure, linking property insurance to quality of construction, and comprehensive mitigation planning.

In 1999, the World Bank launched the Emergency Recovery and Disaster Management loan and credit programme for the OECS countries (OECS/ERDMP). The programme aims to support the physical and institutional efforts of five member countries of the OECS in disaster-recovery and emergency preparedness and management.⁴⁶ The programme consists of individual country-lending operations in the five countries. It is structured as an Adaptable Program Lending (APL) activity phased over approximately six years. The loan and credit program totals \$55.0 million and supports the following activities:

- Physical investments: Key social and economic infrastructure will be protected and strengthened so as to reduce the likelihood of loss of life and assets arising from disasters. Alternatively, such infrastructure will be rehabilitated or reconstructed in the aftermath of a disaster;
- Capacity building: The capacity of national emergency management agencies will be strengthened;
- Institutional strengthening: This involves increasing the ability and interest of the private insurance industry to share disaster-related risks, and improving and supporting the enforcement of building codes and sound land-use planning;
- Community preparedness: Community-level disaster committees will be organized, trained and equipped to enhance their role in disaster preparedness, mitigation and recovery;
- Contingency funding: To assist participating OECS member nations should a severe natural disaster strike them during the program period.

⁴⁶ The countries associated with the programme are: Dominica, Grenada, St. Kitts & Nevis, Saint Lucia, Saint Vincent and the Grenadines.

The Inter-American Development Bank (IDB) has several lending programmes addressing aspects of coastal vulnerability reduction in Caribbean SIDS. The South Coast Sustainable Development programme in Jamaica (\$15m) includes investments in conservation of coral reefs and infrastructure for low impact tourism development. In the Bahamas, a \$30m loan is under preparation for rehabilitation of coastal infrastructure damaged by Hurricane Floyd. In Barbados, the IDB has completed a first loan programme in support of coastal conservation, and a second phase for \$21m. is starting. The Barbados government established a Coastal Zone Management Unit (CZMU) to implement these loan programs. The CZMU has been and still is an important resource to the CPACC project, especially in the area of vulnerability assessment.

Belize has been the beneficiary of a Hurricane Rehabilitation and Disaster Preparedness loan, with \$21 million IDB funding and co-financing of \$8 million by the CDB. The project was aimed at reducing the country's vulnerability and at improving its response capacity to disasters through:

- (a) The adoption of structural vulnerability reduction measures; and
- (b) The improvement of institutional capacity focused on national and local emergency management, building codes, hazard analysis and risk assessment, public awareness, education and training programmes.

Text Box 2
Post-disaster assistance to Belize

The provision of assistance to Belize was based on a post-disaster assessment undertaken by the Subregional Headquarters of ECLAC for the Caribbean, utilizing the methodology developed by the Regional Commission. The mission was undertaken over the period, 12-20 December 2000 and was mounted in response to a request from the national authorities following the passage of Hurricane Keith from 30 September-1 October 2000. The assessment embodied sectoral analyses leading to an overall damage assessment and in addition to appraising the macroeconomic, social and environmental impacts, it also proposed guidelines for rehabilitation and reconstruction in the form of a number of project profiles. The mission was supported not only by the national authorities, but also, by a number of international agencies. The Mission Report was presented to a meeting of bilateral donors and international financial agencies, among them, the Department for International Development (DFID), the Inter-American Institute for Cooperation on Agriculture (IICA), the International Monetary Fund (IMF) and the World Bank, on 7 December 2000 to discuss the damages resulting from Hurricane Keith, as well as rehabilitation plans including financing and technical assistance requirements. The ECLAC Mission Report, which had been earlier identified as a key document for the discussions, was well received and pledges were made in respect of some of the accompanying project proposals.

In the aftermath of 1997/1998 El Nino, Guyana received an emergency loan from the World Bank for regeneration of agriculture, improving drainage and irrigation, and restoration of flood protection.

Text Box 3
**Natural Disasters: Activities of the Subregional Headquarters
of ECLAC for the Caribbean**

As a result of an initiative spearheaded by the Subregional Headquarters in consultation with ECLAC Offices in Mexico and Santiago, a version of the methodology originally developed within ECLAC, Mexico, for the assessment of the macro-economic impacts of natural disasters, but which reflected the realities of continental Latin America, was prepared for use among the SIDS of the Caribbean subregion in 2002. The scope of the evaluation process has also been amplified to embrace, in addition, the social and environmental impacts. Within the last four years, the Subregional Office has conducted or otherwise participated in evaluation missions to Anguilla (Hurricane Lenny, November, 1999; Belize (Hurricane Keith, November 2000); Jamaica (Hurricane Michelle, November 2001); and St Kitts and Nevis (Hurricane Georges, November 1998).

The findings of the assessments, incorporating mitigation measures and draft project proposals, are presented to the respective Governments.

Following the convening of a Regional Workshop on the use of the Methodology in July 2000, requests were received for technical support in the conduct of workshops at the national level. To date, such Workshops have been held in British Virgin Islands, Belize, Jamaica and St Lucia and represent the commencement of a process aimed at the development of a core of experts with multidisciplinary skills, in various parts of the subregion, to permit the rapid deployment of assessment teams comprising personnel from within or in close proximity to affected countries. The success of this approach was demonstrated by the team of locally trained personnel who undertook a comprehensive assessment of the impact of Hurricane Luis on Belize in 2001.

In order to overcome the financial and other constraints attendant upon the convening of national workshops, training materials, incorporating, inter alia, a field guide and an audio-visual data base have been prepared. All materials used in the assessment as well as the training processes will be kept under review. The Subregional Headquarters has earned the recognition of the international donor community which has expressed the view that the application of the methodology developed within ECLAC should be a precondition for the consideration of requests for financing for reconstruction in the aftermath of natural disasters.

The more pressing needs identified by Caribbean SIDS include:

- Training in information collection for disaster assessment;
- Additional support beyond that provided by USAID/UNDP to initiate a Regional Strategic Programming framework for Disaster Management. This is required for undertaking stakeholder consultations in key sectors, such as agriculture, tourism, education and infrastructure; institutionalization of disaster management training and research in regional universities; hazard mapping and vulnerability assessment.

In an attempt to meet the needs of Caribbean SIDS, in the area of natural disasters, the Subregional Headquarters of ECLAC for the Caribbean identified as a priority and has taken action on two main fronts, namely, the conduct of post-disaster assessments utilising the ECLAC Methodology for Assessing the Macroeconomic, Social and Environmental Impact of Natural Disasters; and the conduct of training workshops, at national and regional levels, on the use of the ECLAC Methodology.

Framework for collaboration on natural disasters

There is ongoing collaboration between ECLAC/CDCC and CDERA in the management of responses to natural disasters. The issue remains therefore, one of expanding the scope for collaboration between the two organizations taking into account the differences in their respective foci. Further areas of collaboration might include:

- Undertaking joint missions in the aftermath of natural disasters with funding possibly from IDB and UNDP⁴⁷;
- Continued collaboration in the implementation of the SIDS Programme of Action;
- Structured exchange of information;
- Collaboration in appropriate areas of research, including joint formulation of technical assistance packages for presentation to prospective donor agencies;
- Coordination of regional positions for presentation at fora, such as the general meeting between representatives of the United Nations System and the Caribbean Community (CARICOM) and its Associate Institutions.

Freshwater Resources

The emerging developments in international markets, fuelled by globalisation and the recent WTO rulings on preferential access for agricultural commodities, present serious threats, while also offering new opportunities for Caribbean economies. However, those sectors that are widely regarded as providing opportunities for investment and growth, such as agriculture and tourism, face a critical constraint to their sustained development. That constraint is water.

In all Caribbean SIDS, rainfall is the primary source of water, yielding three basic water resources types: direct rain, surface water and ground water. In Antigua and Barbuda, the Bahamas, Barbados, Saint Lucia and Trinidad and Tobago, desalination is used to augment the water supply. In the Eastern Caribbean States, surface water is the main water type and exhibits variability in flow. In the dry season, yields decline significantly, with livestock and farm irrigation being the main casualties. In Belize, a high incidence of cholera and diarrhoeal diseases is reported to be associated with the domestic supply, while in Jamaica, discharges from the rum and bauxite/alumina industries are reported to have polluted significant surface and groundwater resources. Saline intrusion is a major constraint to water availability in Antigua and Barbuda as well as in Barbados.

Groundwater availability varies significantly from country to country. In some countries, such as Antigua and Barbuda, Grenada, Saint Lucia, Saint Vincent and the Grenadines, no groundwater is utilized.⁴⁸ On the other extreme, all freshwater in the Bahamas and Barbados is in the form of groundwater within limestone aquifers. The Bahamas has no surface water.⁴⁹

⁴⁷ Both IDB and UNDP have in the past provided partial funding to countries for their emergency response missions of CDERA and/or the macroeconomic/social assessments of ECLAC.

⁴⁸ St. Vincent and the Grenadines National Report, p. 10.

⁴⁹ The Bahamas National Report, p. 10.

Trinidad and Tobago has both surface water and groundwater available. In the past, saltwater intrusion has been a problem as a result of over-exploitation of groundwater resources. The government has responded by limiting abstraction in order to permit recovery. Additionally, measures are now in place to avoid this problem in the future, including safe-yield amounts, the siting of wells farther inland and frequent monitoring.⁵⁰

Text Box 4
Cuba's Water Resources Monitoring Network

Cuba has developed a monitoring system for its groundwater resources, which include three nationwide networks: the Systematic Observation Network for Groundwater (Red de Observación Sistemática de los Niveles de las Aguas Subterráneas), the Network for Observation of Hydrochemical and Bacteriological Composition (Red de Observaciones de la Composición Hidroquímica y Bacteriológica), and the National Basic Hydrogeological Network (Red Básica Nacional Hidrogeológica). The first two networks monitor water quality and, specifically, salinity. The hydrological network is made up of over 1,900 wells (observation stations) and monitors their status regularly. Some of the other countries in the region do not have any sort of monitoring or evaluation system established. This is partly because they may not be exploiting their groundwater resource.

Apart from Barbados, Cuba, Jamaica and Trinidad and Tobago, no other Caribbean SIDS has completed a full assessment of its water resources. Jamaica has the most complete assessment, with an inventory of water availability, as well as present and projected demands.

Notwithstanding these deficiencies, all Caribbean SIDS are moving to expand their agriculture and tourism sectors, while improving the delivery of water to the local population.

If this goal is to be achieved, Caribbean SIDS would need to urgently address the following deficiencies:

(a) *Fragmentation in water resources management*: in all countries, there are multiple institutions involved in water resources management and conservation. Information provided suggests that the number of national institutions vary from 9 to 23. Moreover there is no mechanism to facilitate integration of the respective priority actions, or to predict their individual or combined impact on development planning for water resources management;

(b) *Inadequate data collection*: The paucity of information on water resources and on water demand and supply, points to weaknesses in data-gathering and information generation;

(c) *Poor inventory of water resources*: Adequate assessment of the nature and distribution of water resources, including current and future demands, are essential to effective management;

⁵⁰ Trinidad and Tobago National Report, p. 32.

(d) *Weak technical capabilities:* Human resource development is a major concern in the water sector. Training and research programmes at the tertiary level are lacking;

(e) *Failure to treat water as an economic good:* Water rights, water markets and pricing are not used to improve water resources management and to ensure that water is treated as an economic good. Issues relating to reuse, recycling and conservation are addressed in only a few of the States and on a very limited basis;

(f) *Absence of participatory and integrated approaches to planning:* There is a general lack of participatory and integrated approaches to policy formulation for water resources management in general and watershed management in particular. Stakeholder participation is not widely practiced in the design, organization and management of these resources, in order to enhance ownership and sustainability;

(g) *Lack of interaction between freshwater, groundwater and coastal waters:* All but three Caribbean SIDS are Island Systems. In addition, Antigua and Barbuda, the Bahamas, Guyana and Jamaica are experiencing saltwater intrusion into their freshwater systems. Yet the coastal waters are not included in the planning processes for freshwater management.

Threats to sustainability of water resources

The major threats to the management of watersheds and freshwater ecosystems are primarily related to supply/demand dynamics, land-use patterns, pollution, and the competing interests of different stakeholder groups. These threats are not mutually exclusive. As watersheds and ecosystems demand an integrated and holistic approach to their management, the threats must necessarily be viewed in like manner.

Supply and demand dynamics

Due to economic and demographic changes, demand for water resources is increasing rapidly. Some Caribbean SIDS still have more than sufficient available water resources but find that their infrastructure capacity is inadequate to provide the necessary services. Others simply lack the necessary water resources.

Exacerbating this issue is the structure of water tariffs and rates. For the most part, there is no incentive for consumers to use water efficiently. For example, in Barbados, all metered customers must pay a minimum charge. Accordingly, customers within this category end up paying for water they may not have used. Fixed-rate (un-metered) customers also have no incentive to conserve because they pay the same amount regardless of the volume of water used.⁵¹ Additionally, many countries have noted that water charges generally do not cover the base cost of the necessary construction and maintenance of infrastructure and the base environmental protection/conservation costs. Essentially, the government subsidizes water use. This, in turn, creates unsustainable market conditions and significant destruction of the environment.

⁵¹ Barbados National Report, p. 16.

In particular, the agricultural sector is stressing the system with its increasing demand for water for irrigation. Increasingly, both small and large-scale irrigation practices are being used. In Barbados, irrigation is the second highest water consumer, after domestic use, amounting to 16.2 million cubic metres a year. This amount has been forecast to increase by 15 to 20 per cent over the next 10 to 15 years if export markets can be gained and by about 8 per cent, if only local markets are supplied.

The issue of food security as it relates to irrigation is also articulated in the National Report of Saint Vincent and the Grenadines. It reads, "The system is being used by the banana industry to maintain fruit quality and quantity during the dry season, thus maintaining a place in the European market. The irrigation system is just emerging, hence its demand for water is still growing. Currently the system supports 1,200 acres, with plans to extend to 2,000 acres by 2001. This acreage is expected to utilize most of the available dry season river flow in the country."⁵² There are plans to improve extension services available to farmers regarding rain-fed agriculture. This is a deliberate attempt on the part of the Government to encourage crop diversification, improve food security and lessen the increasing water demand by the agricultural industry.

Another concern regarding irrigation was highlighted by Barbados, where there is also a growing demand for water, due to the development of golf courses. It is estimated that, given current plans, the demand for irrigation water for golf courses will increase to five times its present level.⁵³ Supply and demand are also closely related to the tourism industry. Other issues pertaining to that sector will be addressed below in the section dedicated to *tourism resources*.

It is also important to note that the interests of stakeholders often conflict when it comes to the use of water resources, watersheds and freshwater ecosystems. For example, a particular agricultural stakeholder may promote the diversion of a stream for irrigation reasons, whereas hydro-electricity stakeholders might require that flow for a dam. Or, for ecological reasons, a decision may be made to keep the public out of a particular watershed, whereas, simultaneously, the population might assume that it is their right, as citizens, to use it.

As the availability and use of these resources vary significantly country to country, so does the approach to their conservation. Some countries have reported a sense of complacency and very little acceptance of water reuse, recycling, and conservation. Others encourage conservation through their pricing schemes, licensing fees for drilling and systematic control of the resource.

Land use

Improper land use is one of the factors that most strongly affects the health of freshwater ecosystems and watersheds in the region. As the proposed Land Policy document of Jamaica points out, there is a "*direct relationship between the use of land for domestic, commercial,*

⁵² St. Vincent and the Grenadines' National Report, p. 5.

⁵³ Barbados National Report, p. 15.

industrial or agricultural purposes, the generation of waste by these uses and the impact on the quality of both surface and groundwater resources."⁵⁴

In most countries, land-clearing practices, inefficient and unsustainable irrigation and the use of agro-chemicals in the agricultural sector are causing significant damage. Within the domestic sector, land clearing and construction on previously uninhabited land are producing sedimentation, deforestation, and pollution. Ecotourism is also not a benign activity. Nature walks through watersheds are resulting in sedimentation, erosion, and pollution. Some nations also report problems related to industrial effluents and their impact on freshwater resources, although, for the most part, this appears to be more significant in the larger islands.

Within the agricultural sector, land use presents potential conflicts, since it involves issues of land tenure, traditional use, and economic livelihood. Some farmers are often not using sustainable farming techniques. This may be due to insecurity regarding land tenure, limited economic resources, or lack of knowledge of different farming techniques. The Dominican Republic has noted an increase in the use of agro-chemicals over the last decade because of reduced soil fertility and increased resistance to pests and diseases.⁵⁵ Also contributing to this development is the growing use of low-lying wetlands for rice cultivation, which brings with it, increased pesticide use. Saint Vincent and the Grenadines reports that poorer farmers are increasingly deforesting protected areas or planting crops on marginal lands because they have been driven off farmland that they have traditionally cultivated.

Floods and drought are obviously of concern, and their impact is often exacerbated by unsustainable land-use patterns. Jamaica and Saint Lucia have experienced severe floods over the past 10 years. Droughts occur periodically throughout the region, Antigua and Barbuda has noted that animal grazing on sparse vegetation during droughts exposes topsoil to the elements. Later, during periods of precipitation, these areas are more prone to erosion.⁵⁶

Climate change and natural disasters

While Caribbean countries have not yet been able to measure whether the sea level has risen as a result of global climate change, they are nonetheless examining the possible scenarios and the corresponding methods of dealing with them. The national report of Trinidad and Tobago outlines the potential impact in the various sectors. This analysis is consistent with the expectations of the other Caribbean nations.

National disasters constitute a serious issue for the Caribbean. The region is routinely hit by hurricanes. Less frequent, but still damaging, are tornadoes, oil spills, earthquakes and volcanic eruptions. These events often bring about flooding and landslides due to anthropogenic activities, such as deforestation and construction in vulnerable areas. Owing to the frequency of hazards, and the extensive damage caused, many countries have focused their efforts on post-disaster response, rather than on mitigation. Not all countries have early-warning systems in operation, nor do all countries have disaster management plans.

⁵⁴ Jamaica National Report, p. 11.

⁵⁵ Dominican Republic National Report, p. 14.

⁵⁶ Antigua and Barbuda National Report, p. 4.

Because of its petroleum-based industry, Trinidad and Tobago continues to have a higher risk of occurrence of oil spills both inland and within its coastal and marine regions. In fact, serious spills have continued to occur and have had short term damaging impacts on the coastlines, particularly within the Gulf of Paria. The beaches of Vessigny, La Brea and Mayaro in the south of Trinidad continue to be affected by the presence of petroleum-based residues emanating from the nearby oil industries and oil tankers.⁵⁷

Transboundary threats

The only countries that experience transboundary threats in their freshwater ecosystems and watersheds are the Dominican Republic and Haiti. Four watersheds are shared by these countries, which share the island of Hispaniola. On the Dominican side, the principal threat to these watersheds is the indiscriminate exploitation of natural resources by Haitians who are reportedly in the area illegally. Specifically mentioned are indiscriminate fishing practices, which have reportedly affected 15 species.⁵⁸

Pollution

Land-based pollution is a noteworthy problem in the Caribbean region emerging from activities in all sectors. In the agricultural sector it is primarily due to agro-chemical leaching, direct agro-chemical influx from aerial spraying and the indiscriminate and improper disposal of solid waste. Another source of agricultural pollution is waste from agricultural production.⁵⁹ St. Kitts and Nevis also reports a problem of pollution from the agricultural industry, partly because a significant water source is located at a lower elevation than agricultural activities.⁶⁰

The industrial sector contributes to the problem through the discharge of liquid waste. Countries indicate that, often, their industrial sectors discharge effluents directly into rivers and/or store them in unlined holding ponds. Jamaica also contends with the problem of the “*discharge of industrial effluent into sinkholes, resulting in the rapid movement of waste towards local aquifers and nearby springs.*”⁶¹ Industrial pollution is a particularly pressing problem for Trinidad and Tobago, given its high level of industrialization, in comparison with its neighbours. Its industries range from sugar and oil refining, rum distillation, manufacturing of petrochemicals, paint and metal finishing, and agroprocessing. The impact of industrial effluents on the water resources is predominant along the foothills of the Northern Range and the western coast of Trinidad. Industrial activity in Tobago is relatively modest, being concentrated in the south-west part of the island. Effluents from oil and sugar cane refining particularly affect the rivers in south Trinidad. Other areas in the country are also affected by petroleum products, which are discharged into the water courses from leaking tanks, washings, and improper disposal of waste oils.⁶²

⁵⁷ Trinidad and Tobago National Report, p. 32.

⁵⁸ Dominican Republic National Report, p. 11.

⁵⁹ Dominican Republic National Report, pp. 13, 14.

⁶⁰ St. Kitts and Nevis National Report, p. 10.

⁶¹ Jamaica National Report, p. 14.

⁶² Trinidad and Tobago National Report, p. 37.

Waste from households continues to be a problem. Throughout the region, the countries lack sufficient solid-waste-collection systems and wastewater-treatment systems. As a result, many citizens inappropriately dispose of their waste in gullies and along riverbanks, thereby polluting rivers, streams, and ultimately the coastal waters into which they drain.⁶³

All these pollution problems are compounded by sedimentation and erosion, due to deforestation. Siltation is so significant that, often, water for domestic use is heavily laden with sediment, despite having passed through the treatment processes. Additionally, as *“a further consequence of the erosion of this thin layer of soil cover, there is also a reduction in the pollution attenuation capacity of the watershed, with potential negative impact on groundwater quality.”*⁶⁴

Tourism impacts

The tourist industry is having a significant impact on freshwater resources, for a variety of reasons. Often, when large hotels or golf courses are developed, vegetation is cleared from the area, which can lead to flooding, soil erosion, destruction of habitat, and poor aquifer recharge. The high demand for freshwater contributes to over-extraction from aquifers and the rapid depletion of surface resources. Waste produced by the tourist industry can contaminate the watershed. The Dominican Republic groups the principal impacts of tourism on watersheds into four categories: (a) changes in natural drainage patterns due to reductions in vegetation and surface absorption; (b) excessive use of water and other resources; (c) pollution of watersheds; and (d) transformation of land and water habitats.⁶⁵

Watersheds are also being damaged by the emerging ecotourism industry. Tour operators are now leading groups through forest reserves. The trails that are being cut for mountain biking and hiking are causing additional erosion, resulting in sedimentation. Additionally, many groups leave waste behind in the forest. The Jamaica National Report explains, *“The more recent focus on tourism based on natural ecological systems such as wetlands, natural forests and geological features such as the Cockpit Country requires a system of control. The number of persons accessing these natural environments and the types of activities, which are allowed within these natural environments, if not regulated, may result in the gradual or rapid destruction of these natural environments. The challenge therefore is to meet the need to generate foreign exchange and increase economic activity throughout Jamaica, with the need to maintain the integrity of these environments, through carefully considered guidelines and restrictions on the use of these ecosystems.”*⁶⁶

Health impacts

Caribbean SIDS have expressed serious concerns regarding water quality and its relation to the health of their populations. Cuba reports that its health problems related to water supply primarily affect the rural population. In order to address and combat the related illnesses in the rural population, the National Institute of Water Resources, together with the United Nations

⁶³ Jamaica National Report, p. 14.

⁶⁴ Barbados National Report, p. 20.

⁶⁵ Dominican Republic National Report, p. 18.

⁶⁶ Jamaica National Report, p. 15.

Children's Fund (UNICEF), is constructing aqueducts and basic sanitation projects, with a view to providing all rural communities with populations of over 300 people, with access to water.

Data, information management and research

In many countries, the data information management and research on water resources are carried out in a fragmented manner by a variety of agencies and offices. The data are often not easily accessible or well organized. This appears to be caused, principally, by inadequate human and institutional capacity, including substandard or insufficient equipment, lack of training, poor organization, high levels of dependency on outside consultants and inadequate funding.

Additional research and data interests and needs include:

- Alternative treatments and reuse of waste water;
- Assessment of effectiveness of zoning policy and restrictions;
- Climate and agro-climate studies;
- Conservation of biological diversity;
- Design and application of a GIS for watershed management;
- Determination of hydro-geological parameters;
- Early alert system for droughts;
- Environmental education;
- Evaluation of potential impact of climate change on watersheds and water resources;
- Identification and quantification of spring sources;
- Impact of agriculture and other land uses on water quality;
- Impact of brackish water abstractions on freshwater lenses;
- Modelling of the groundwater systems;
- Routine measurement of sediment loads in primary river systems;
- Soil conservation, management, improvement;
- Soil management;
- Use and management of natural resources on a watershed basis.

Stakeholder participation/awareness and education

The countries consistently report an increase in stakeholder participation in regard to freshwater resources. Activities promoting this management approach include:

- Agricultural extension courses and training on sustainable farming practices and other technical workshops;
- Media campaigns and regular coverage;
- Annual exhibitions;
- Production and distribution of brochures and pamphlets;
- Use of national television stations for broadcasting short educational films on watershed/coastal area management;
- Educational program for students;

- Teacher training;
- Public involvement in environmental impact assessments.

Some Caribbean SIDS place a high premium on consultations with women and women's groups. Cuba, for example, considers women as integral stakeholders in the watersheds. The Cuba Report acknowledges the need to remain vigilant in ensuring female participation in the management of watersheds, which can be done through training, education, employment opportunities and incorporation of the tenets of sustainable development in the mountainous region.⁶⁷ St. Kitts and Nevis, on the other hand, cited the treacherous location of watersheds as an impediment to female input into their management.⁶⁸

Institutional frameworks

The above weaknesses cited above, reinforce the need in the water resources sector, for an adequately resourced and properly mandated regional organization to:

- Design efficient and cost effective projects and programmes that will help build national capacity in Water Resources Management (WRM);
- Coordinate the management of all elements of programming for an integrated approach to WRM, especially resource mobilisation, implementation, monitoring and evaluation aspects;
- Interact with national governments and regional and international institutions on WRM-related issues;

A fair amount of work is being done CEHI, which has been designated by Caribbean Ministers of the Environment, as “*Lead Agency*” for WRM under the SIDS Programme of Action. The Institute has been undertaking extensive research on water quality. World Health Organization (WHO) Guidelines for Safe Recreational Water Environments have recently been released. Regional workshops have been convened on certification of laboratories on microbiological testing, and a Global Drinking and Sanitation Survey is being conducted.

CEHI and PAHO, through the Pan American Centre for Sanitary Engineering and Environmental Sciences (CEPIS), are collaborating to further the accreditation of laboratories within CARICOM Member States. This is being done through a project entitled: *Monitoring and Surveillance in Relation to Water Quality*. These efforts will build on the work already conducted jointly and would also involve the Canadian Association of Environmental Accredited Laboratories (CAEAL)

⁶⁷ Cuba National Report, p. 73.

⁶⁸ St. Kitts and Nevis National Report, p. 22.

ENCORE: The Environment and Coastal Resources Project: A Water Quality Monitoring Programme in the Eastern Caribbean – a Case Study

Location: The countries that participated in the ENCORE Project were: Anguilla, Dominica, St. Kitts and Nevis, Antigua and Barbuda, Grenada, St. Lucia, British Virgin Islands and St. Vincent and the Grenadines⁶⁹

1. Start Date: September 1991
2. End Date: September 1998
3. Extension: October 2000
4. Total Budget: US\$10M (Water Quality Monitoring Component US\$500,000)
5. Responsible Organization(s);

USAID approved funding for the ENCORE Project and the USAID Office in Jamaica acted as fund administrator. The OECS/NRMU and the Caribbean Environmental Health Institute executed the Project. The Project Implementation Unit was at the OECS/NRMU in St. Lucia.

GRANT AND PROJECT SUMMARY	
Source of Grant:	The United States Agency for International Development (USAID)
Grant Recipient/Executing Agency:	The Organisation of Eastern Caribbean States, Natural Resources Management Unit OECS/NRMU) and The Caribbean Environmental Health Institute
Beneficiaries:	Anguilla, Dominica, St. Kitts and Nevis, Antigua and Barbuda, Grenada, St. Lucia, British Virgin Islands & St. Vincent and the Grenadines
Responsible Organizations:	USAID approved funding for the ENCORE Project and the

Project Background

The goal of the ENCORE project funded by USAID during the period 1994-1998 (with an extension to 2000) was to foster “sound environmental management in the Eastern Caribbean

⁶⁹ Eastern Caribbean countries in the Organisation of Eastern Caribbean States (OECS) are: Anguilla, Dominica, St. Kitts and Nevis, Antigua and Barbuda, Grenada, St. Lucia, British Virgin Islands and St. Vincent and the Grenadines

through a partnership with national agencies, non-governmental organisations, community-based organisations and the private sector”. This partnership was intended to stimulate people and governments of the Eastern Caribbean to improve efforts to enhance, preserve and restore coastal marine ecosystems and to coordinate solutions to regional environmental problems. ENCORE is a regional conservation and development project aimed at demonstrating that collaboration between public, private and community interests can protect the natural resource base and enhance bio-diversity conservation, while promoting viable economic development.

Project Description

The project components included a Local Site Management (LSM) component and the Regional Environmental Management (REM) component, which was implemented by the Organisation of the Eastern Caribbean States- Natural Resource Management Unit and the Caribbean Environmental Health Institute. The activities under the REM component implemented by CEHI addressed environmental quality issues and reinforced the capacity of relevant Eastern Caribbean institutions involved in the collection, analysis and dissemination of water quality data and other environmental resource management information. CEHI program activities implemented under the ENCORE project focused on Environmental Quality Monitoring and included the following:

- Enabling institutions to efficiently develop and implement strong water quality monitoring program and initiative throughout the region;
- Developing and promoting regional approaches and guidelines for responsible environmental monitoring;
- Developing and implementing community-based water quality monitoring programs in Dominica and St. Lucia to enhance the dissemination of relevant water quality data and information at the community level and to contribute to increasing public awareness on these issues and;
- Developing and implementing a training program on sanitary surveys to enhance national capabilities to perform sanitary inspections.

Activities implemented under this agreement built on the above activities and focused on drinking, surface and coastal water quality within a regional context. Activities addressed the issues of data gathering through the use of sanitary surveys, development of data processing and interpretation capacity and the utilization of information to influence policy making at the national and regional levels, and the development for a strategy of water quality improvement in a selected country. The strategic objective was to develop effective stewardship of key natural resources in selected ecosystems in countries of the Eastern Caribbean with a view to improving the capacity of key stakeholders to more effectively manage the natural resources. The component executed by CEHI focused on the upgrading and installation of water quality and database in six countries

Results Achieved

As a result of the Project, reliable water quality data are now available in all the OECS member states. These states have been equipped with adequate laboratory facilities and trained personnel for the collection, analysis, generation and interpretation of good water quality data.

This has strengthened the ability of water utility Authorities and the ministries of health in the relevant countries to apply a number of parameters to test the quality of water to determine the suitability for consumption. The critical role of the Ministry of health to perform its role as a regulatory agency has also been strengthened.

Assistance was provided to the countries to develop and implement sanitary surveys. The generic regional approach developed for the conduct of sanitary surveys was adapted to establish country specific methodologies for the collection of sanitary hazard information along with the collection of sanitary hazard information. CEHI collaborated with PAHO and national counterparts on the implementation of the activity.

A regional training course on Water Quality Data Processing and Interpretation was implemented for managers of laboratories and officers directly responsible for converting raw data to reports. Emphasis was on the use of spreadsheets, databases, graphics and statistical software packages necessary for the processing and interpretation of water quality data.

A regional workshop was held to present approaches on the application of water quality data and analysis to inform policy-makers on water resources management at the national level. The workshop was attended by participants from the OECS countries responsible for policies pertinent to water resource management.

CEHI conducted an assessment that contributed to the development of a strategy for the improvement of drinking water quality in one pilot country. A pilot activity identified three countries which a situational analysis was conducted to inform the process required for the implementation of a water quality improvement strategy for the region. Under this pilot activity, ENCORE funded an assessment in one island-state. The assessment examined the status and current approaches for drinking water quality management and identified requisite elements of a national action plan in order to achieve improved water quality. This information served as the basis for the implementation of the recently endorsed policy for drinking water quality in the pilot country. In addition, the findings from all the pilot sites were incorporated by CEHI to develop a regional action plan for improved water quality in the Caribbean.

The outputs included the generation of data on drinking and coastal waters for determination of compliance with the recognized criteria and guidelines, training course material on water quality data interpretation, development of methodologies for sanitary survey systems, an action plan for improved water quality in small island states and a small cadre of policy-makers trained to interpret the implications of water quality data.

Lessons Learnt: The Design of the Water Quality Monitoring Programme

1. Designing of the Programme with the active participation of all the main partners to ensure that the real needs and priorities of the beneficiaries, as well as the objectives of the regional implementing agency and the external funding agency were taken into consideration.
2. Conduct of the national consultations for contextual analysis and good understanding of the nature of the eco-logical, socio-economic, institutional and

historical issues which would have impacted on or would be impacted by the Programme

3. Assessment of capacity of the collaborating organizations so that the design reflects the various national circumstances
4. Targeting of well defined institutions-national laboratories, as opposed to more nebulous groups
5. Development of monitoring bench marks and indicators with the active participation of the beneficiaries
6. Projects involving multi-stakeholder collaboration need mechanisms to avoid raising unrealistic expectations
7. Natural resources management projects with built-in mechanism for monitoring and adjustment activities during implementation improve their chances of success.
8. Real community participation: promoting “real community participation in environmental management is time-consuming and requires commitment, patience and skill.

Other initiatives being pursued by CEHI include:

- Strengthening of Environmental Health Units in collaboration with PAHO;
- Implementation of Waste Minimisation/Reduction Projects with the United Nations Industrial Development Organization (UNIDO) Cleaner Production and Environmental Management Branch;
- Establishment of a Caribbean Network for Environmental Compliance and Enforcement (CARIBINECE) with UNEP;
- Establishment of a Workers Health Surveillance System with PAHO and the International Labour Organisation (ILO);
- Preparation of Environmental Health Status Report for the Caribbean with PAHO, the Caribbean Epidemiology Centre (CAREC) and CEPIS;
- Development of Environmental Health Indicators for Sustainable Development with CAREC.

Tourism resources

Tourism is one of the most important economic activities in the Caribbean, contributing between 30-50 per cent of the GDP of most countries. It is the only industry in Caribbean SIDS that can claim to be internationally competitive, as it thrives without the protection and preferential treatment that have characterised the development of other productive sectors, like agriculture and manufacturing. The competitive advantage of the region is due largely to its natural, historical and cultural attributes. Over the past 20 years, the member States of the Caribbean Tourism Organization (CTO) with less than 1 per cent of the world’s population, have consistently received more than 6 per cent of the world’s tourism arrivals.

However, the resource base upon which all of this economic activity is based is fragile. Therefore, sustaining the tourism sector and the economic benefits that it brings will require that the environmental resources, on which the sector relies, be well managed.

The tourism sector in Caribbean SIDS is plagued by a number of major weaknesses. Some of these are inherent in the industry itself, while others derive from the countries themselves. These weaknesses include:

- Vulnerability to economic shocks in the source markets;
- Susceptibility to natural disasters in the destinations;
- The small size of countries/communities.
- The high import content of tourism expenditure which arises from the un-competitiveness of the sectors that feed tourism and which is causing leakage of precious foreign exchange earnings;
- High operating costs, high investment costs, and the consequent lack of profitability;
- The high failure rate of small, indigenous hotels;
- Inadequate/inappropriate policy, planning and institutional mechanisms to enable the adoption of integrated approaches to tourism development, that balance economic growth with human and social development and which preserve the natural environment, cultures and heritage of local communities;
- The absence of effective measures to strengthen backward and forward linkages between tourism and other productive sectors of the economy.

There is a need to take a broader view of the nature of the environment on which tourism depends and the threats faced by it. Although attention has focused on tourism-induced threats, these are not the only ones and may not even be the most important. External threats to the tourism sector appear to be important in some jurisdictions. Governments are seeking to take a more integrated view of population centres and tourism areas and to design environmental interventions, such as sewage treatment and waste management services that can reduce the threat to the tourism resource.

There have been some noteworthy developments in this regard, both at the national and regional levels. Overall, there is a growing awareness of the importance of the environment in sustaining the social and economic benefits derived from tourism. Several countries have introduced Nature Heritage Tourism Programmes. Some, notably Belize, Dominica and Guyana, are consciously targeting the growing pool of heritage tourists. The private sector is also becoming involved. A growing number of hotels have gone “*green*” with the introduction of a range of environmental conservation measures, which is promoted by CHA through CAST.

Text Box 5

Sustainable Tourism: Development of a Regional Marine-based Tourism Strategy

At the 1997 Caribbean Ministerial Meeting on the Implementation of the SIDS POA, it was observed, inter alia, that while progress was being made on the environmental sustainability of land-based tourism, much less had been recorded in the marine-based sector of the industry. Marine-based Tourism (MBT) is that segment of tourism that focuses on the use of the marine environment and includes yachting, diving, whale watching, recreational fishing and an array of support and ancillary services, such as marinas or boat-maintenance facilities. Further growth in this sector is anticipated in the Eastern Caribbean. The Subregional Headquarters of ECLAC for the Caribbean is currently implementing a project covering the British Virgin Islands, the OECS countries and Trinidad and Tobago, which seeks to address weaknesses in the marine-based tourism sector, while maintaining the strengths and dynamism of the subsector and providing bases for national policies to promote sustainable marine-based tourism. The main outputs of the project are expected to be the preparation of national reports on issues pertinent to marine-based tourism; preparation of draft national marine-based strategies; a regional assessment of the economic and environmental impacts of marine-based tourism; and a Draft Regional Strategy and Action Plan on marine-based tourism. This project is being implemented under the Netherlands/ECLAC Technical Cooperation Programme.

The Caribbean Hotel Association (CHA), through the Caribbean Alliance for Sustainable Tourism (CAST), has also been facilitating the design and implementation of programmes aimed at boosting the adoption of sound environmental practices among its members.

Text Box 6

Caribbean Alliance for Sustainable Tourism

CAST is a collaborative venture between the CHA, CAREC, the Governing Council of USAID, UNEP, Green Globe and IHEI. It emerged from a recognition of the pressing need to proactively manage the region's natural and cultural resources so as to ensure that they would continue to sustain development, in general and the tourism industry, in particular.

CAST delivers practical, hands-on services to the several operators within the region's hotel and tourism industries, through a suite of education and training activities. It also promotes the industry's efforts and successes to the travelling public and other stakeholders, and serves as a vital link between its immediate constituency and others in the Wider Caribbean with an interest in sustainable tourism.

Both the CHA and the CTO have identified the need for support with:

- The establishment of a Sustainable Development Unit to facilitate implementation of the Regional Sustainable Tourism Strategy and Plan of Action;
- The development of environment standards and indicators for sustainable tourism in the Caribbean to provide a basis for harmonising regional tourism standards;
- The establishment of an appropriate institutional framework for the sector, including laws, regulations and control mechanisms, in order to monitor the possible negative social, economic and environmental impact of tourism development;
- Formulating and implementing Tourism HRD plans;

- Supporting information and marketing measures.
- Taking full advantage of the telecommunications industry, especially in light of the increasing use of Internet services in hotels.