AGENDA

MONDAY MAY 21ST

8:30 – 9:00	**Registration**
9:00 – 10:15	**Opening Ceremony** *Chairperson: Mr. Clifford Mahlung, CPACC, National Focal Point, Jamaica.*
9:00 - 9:10	Chairperson's Opening Remarks
9:10 – 9:30	Welcome: *Dr. Joan Neil, Director, OAS Jamaica.*
9:30 – 10:00	Keynote Address: Caribbean Climate Change Perspectives- our future in the balance *Dr. U. O'D Trotz, Project Manager, CPACC Barbados.*
10:00 – 10:30	**COFFEE BREAK**
	Component 5 Overview and Workshop Introduction *Chairperson: Mr. Philbert Brown, Sn. Director, Ministry of Water and Housing, Jamaica.*
10:30 – 11:00	Component 5 Overview: *Ms. Marcia Creary, CPACC Component 5 Coordinator, Jamaica.*
11:00 – 11:30	Workshop Introduction: *Mr. Clifford Mahlung CPACC, National Focal Point, Jamaica.*
11:30 – 12:00	Logistical and Housekeeping Announcements
12.00 – 1.30	**LUNCH BREAK**
	Linkages between CPACC Project Component 5 and Components 3 and 4. *Chairperson: Mr. Anthony Mackenzie, Sn. Director, CZMU, National Environment & Planning Agency (NEPA), Jamaica.*
1:30 – 1:50	Linkages between Component 5: Coral Reef Monitoring for Climate Change Impacts and Components 3: Inventory of Coastal Resources and Uses, *Mr. Ian King, GIS Specialist, CPACC, Barbados.*
1:50 –2:05	Status of GIS in Pilot Countries • The Bahamas – *Ms. Tamica Rahming, Fisheries Dept., Bahamas.* • Belize – *Mr. Ian Gillette, Coastal Zone Management Institute (CZMI), Belize.* • Jamaica – *Ms Cecille Blake,National GIS Coordinator,Office of the Deputy Prime Minister, Minister of Lands and Environment, Jamaica*
2:05 – 3:00	Discussion
3:00 – 3:15	**COFFEE BREAK**
3:15 – 3:45	Linkages between Component 5: Coral Reef Monitoring for Climate Change Impacts and Components 4: Policy Framework for Climate Change Adaptation *Mr. George de Romilly, CPACC, Barbados.*

3:45 – 4:45 Discussion

5:00 – 7:00 **COCKTAIL RECEPTION – GARDEN TERRACE, THE COURTHLEIGH HOTEL**

TUESDAY MAY 22ND

Country Reports
Chairperson: Dr. Jeremy Woodley, McMaster University, Canada.

8:30 – 9:00 The Bahamas – *Ms. Tamica Rahming, Fisheries Dept., Bahamas*
Mrs. Eleanor Phillips, Department of Fisheries, Bahamas.

9:00 – 9:30 Belize – *Ms. Nadia Bood, CZMI*, Belize.

9:30 –10:00 Jamaica - *Mr. Peter Wilson-Kelly, NEPA, Jamaica.*

10:00 – 10:30 Discussion of Country Reports

10:30 – 10:45 **COFFEE BREAK**

Review of Monitoring Protocol,
Chairperson: Dr Mike Risk, McMaster University, Canada.

10:45 – 11:05 Overview of the Component 5 Monitoring Protocol – *Dr. Jeremy Woodley, McMaster University, Canada.*

11:05 – 12:05 Discussion: Progress and constraints in the implementation of the C5 Monitoring Protocol. Strategy for ongoing monitoring.

12:05 – 1:30 **LUNCH BREAK**

Data Requirements for Assessing Climate Change Impacts on Coral Reefs
Chairperson: Mr. Peter Murray OECS, Natural Resources Management Unit, St. Lucia.

1:30 – 1:50 Summary of Barbados Brainstorming Meeting – *Mr. Leslie Walling, Dept. Project Mang., CPACC, Barbados.*

1:50 – 2:50 Discussion

2:50 – 3:05 **COFFEE BREAK**

Data Analysis and Management Requirements.
Chairperson: Dr Judith Lang

3:05 – 3:25 QA/QC and Benthic Features Manual – *Ms. Marcia Creary, CPACC, Jamaica.*

3:25 – 3:45 Data Capture, Processing and Analysis – *Mr. Jeff Miller US Geological Service, USVI.*

3:45 – 4:45 Discussion

WEDNESDAY MAY 23RD

Field Excursion: Kingston to Discovery Bay Marine Laboratory.
Diving on Component 5 and CARICOMP monitoring sites

5:30 – 6:00 Buffet breakfast

6:00 – 8:30 Travel to Discovery Bay Marine Laboratory

8:30 – 9:00 Snacks

9:00 – 11:00 Dive on CPACC/CARICOMP monitoring site

12:00 – 1:00 Lunch

1:00 – 7.00 Return to Kingston via Ocho Rios

THURSDAY MAY 24TH

8:30 – 10:30 **Planning for expansion of C5 to the eight CPACC partner Countries in the Eastern Caribbean (Antigua and Barbuda, Barbados, Dominica, Grenada, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, and Trinidad and Tobago).**
Chairperson: Mrs. Dulcie Linton, Data Manager, CMS, Jamaica.

8:30 – 9:00 Planning Considerations for the Expansion for Coral Reef Monitoring for Climate Change Impacts to the Wider Caribbean – *Mr. Leslie Walling, CPACC, Barbados*

Statistical analysis for Component 5 - Mr. Henri Valles, CERMES, Barbados

9:00 – 9:30 Applications for Managing Environmental Resource Data – *Mr. Robert Deakin, Halcrow, UK.*

9:30 – 10:00 Discussion

10:00 –10:15 **COFFEE BREAK**

10:15 – 12:00 **Overview of Institutional Capacities and National Priorities in Coral Reef Monitoring within the Region**
Chair: Dr. George Warner, Director, CMS, Jamaica.

10:15 – 10:45 Institutional Capacity and National Priorities in Coral Reef Monitoring in the OECS States – *Mr. Peter Murray, OECS/NRMU, St. Lucia.*

10:45 – 11:30 Institutional Capacity and National Priorities in Coral Reef Monitoring in Barbados – *Ms. Angelique Brathwaite, Coast Zone Management Unit, Barbados*

11:30 - 12:00 Discussions

12:00 – 1:30 **LUNCH BREAK**

Planning for Monitoring, Data Analysis and Reporting in 2001 and 2002
Chairperson: Mr. Clifford Mahlung CPACC, National Focal Point, Jamaica

1:30 – 1:50 The Bahamas – *Ms. Tamica Rahming, Fisheries Dept., Bahamas*
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1:50 – 2:10 Belize – *Ms. Nadia Bood CZMI, Belize.*

2:10 – 2:30 Jamaica - *Mr. Peter Wilson-Kelly, NEPA, Jamaica.*

2:30 – 3:00 Discussion

3:00 – 3:15 **COFFEE BREAK**

3:15 – 4:15 **Discussion: Strategy for Phase 2 Implementation**
C*hairperson: Mr. Leslie Walling, CPACC, Barbados.*
Workgroup discussions

FRIDAY MAY 25TH

This day is held open for informal meetings and networking.

Economic Valuation fo coral reefs in selected Caribbean countries - *Herman Cesar, Environmental Economist, The Netherlands*

Workgroup discussions continued

Component 5 - Coral Reef Monitoring for Climate Change Impact

Component 5 represents one of the nine components of the CPACC project that was established in 1998 and is one of five pilot based components. The objectives of Component 5 was to establish a long-term monitoring program, which over time will be expected to show the effects of global warming factors (temperature stress, sea level rise, and hurricanes) on coral reefs. Component 5 would also increase the knowledge about the extent and sources of coral reef degradation in three pilot countries (the Bahamas, Belize, and Jamaica).

A sub-regional forum of specialists from governments, NGOs, and CARICOM institutions, as well as experts from the scientific community, consulted and formulated the methodology employed in this monitoring programme. Three monitoring sites were selected from each country based on the criteria of pristine, moderately impacted and severely impacted. The data was collected using underwater digital videography to permanently record the status of the reefs, the resultant videotapes were processed, and analyzed using specially developed video software.

The first year of monitoring (2000) has been completed at all three monitoring sites in each of the pilot countries. For the Bahamas and Belize the data has been process within these countries and copies sent to Caribbean Coastal Data Centre (CCDC) of The Centre for Marine Sciences (CMS), UWI in Jamaica for archiving, while all the processing, analysis and archiving of the Jamaican data was carried directly at the CCDC. The Data stored at the CCDC includes videotapes, captured images and data in the form of spreadsheets.

Component 5 - Planning and Technical Review Workshop

Essential to the implementation of Component 5 is the holding of regional meetings to review the monitoring programme and to train country specialist from other countries on the monitoring methodologies and the lessons learned. This *Planning and Technical Review workshop* represent one such regional meeting which include participants from the pilot countries as well as coral reef scientists, coastal zone management specialists and government representatives.

The aims of the workshop are to:

- report on and review of monitoring data collected in 2000 by the three participating countries, The Bahamas, Belize and Jamaica;
- review and revise the monitoring methods and strategies used to detect and quantify climate change impacts on coral reefs;
- discuss the technical and institutional aspects of the planed expansion of the pilot project to eight countries[1] in the Eastern Caribbean in 2002;
- review strategies for mainstreaming coral reef data into national decision making processes of Caribbean Countries;
- review progress in the incorporation of coral reef data into GIS based decision-making systems;
- initiate discussions on modeling coral reef health and integrity as the basis for the economic valuation of coral reef ecosystems.

[1] The eight countries that will be involved in the second phase of the monitoring programme are, Antigua and Barbuda, Barbados, Dominica, Grenada, St. Kitts and Nevis, St. Lucia, St. Vincent, and Trinidad and Tobago.

The CPACC Project

Project Background

The members of the Caribbean community (CARICOM) are primarily small island states with fragile coastal ecosystems. Agriculture and tourism are the principal sources of employment and foreign exchange earning. Coastal areas, which hold the majority of the population and economic activity, are vital to the prosperity of these countries. In recent years the coastal resources have come under increasing stress from;

- Intensification of human population and activity
- Concentration of tourism related infrastructure
- Inadequate disposal of liquid and solid wastes
- Decaying drainage infrastructure
- Uncontrolled and often ill-conceived development schemes
- Severe weather events which have brought about record losses and a reinsurance crisis
- Mismanagement of coral reefs, seagrass beds, mangroves and wetlands.

These factors exist within the context of an inadequate information systems and an un-coordinated institutional structure that prevents the integrated management of these resources.

The anticipated global warming and consequent changes in sea level, sea surface temperature and wind and ocean currents are likely to compound these problems. Sea level rise, in particular, would likely affect freshwater supply, increase beach and coastal erosion, increase permanent coastal inundation and aggravate the impact of tropical storms. It also threatens the industrial, tourism, energy, transport and communication infrastructure concentrated on the coastal zone. The Intergovernmental Panel on Climate Change (IPCC) has calculated the initial costs for protection of Caribbean shorelines from future sea level rise, including low coasts, cites, harbours, island elevations, beach nourishments but excluding unprotect dry land or ecosystems that may be lost, and the impact of saline intrusion and increased storm frequency. For the Caribbean, the projected costs for new construction for protection alone would be US$11.1 billion, well beyond the combined economic capacity of these economies. Other more cost effective adaptation measures are therefore needed.

Global climate change has emerged in the past few years as one of the world's major long-term challenges. The IPCC, established in 1988 under the auspices of the United Nations, verified the high probability of global climate change if greenhouse gas (GHG) emissions keep increasing. The IPCC has concluded that the urgency of implementing strategies for adapting to sea level rise could be large compared to the size of their economies. The IPCC recommended that the coastal nations should begin adapting to climate change urgently because there are now opportunities to avoid the adverse impacts, opportunities that may be lost if action is delayed. It was also recommended that small island developing countries undertake to reduce vulnerability to sea level rise through improved coastal zone management.

The Global concern about accelerated climate change and its repercussions prompted the international community to begin negotiating a United Nations sponsored Framework Convention on Climate Change (FCCC) in 1991. This Convention established a legal framework for responding to climate change through the promotion of measures aimed at mitigating emissions of GHG and preparing for adaptation to the adverse effects of climate change. The Intergovernmental Negotiating Committee (INC/FCCC) agreed that adaptation to these adverse effects would require short, medium and long term strategies which would be cost effective, should take into account important socio-economic implications, and should be implemented on a stage-by stage basis in the developing countries that are Parties to the Convention. The FCCC has been ratified by most Caribbean countries.

Project Origin

The Caribbean: Planning for Adaptation to Global Climate Change Project has its origin in the Global Conference on the Sustainable Development of Small Island Developing States which took place in Barbados in April/May 1994. During this conference, the small island developing states of the Caribbean requested OAS assistance in developing a project on adaptation to climate change for submission to the GEF. The project was submitted for consideration of the GEF endorsed by CARICOM's Ministers of Foreign Affairs.

The GEF Council approved the project as part of its Work Program in May 1995. The countries and CARICOM have maintained an active level of participation throughout the project preparation phase. A Project National Focal Point (NFP) has been designated for each country.

Project Objectives

The project's overall objective is to support Caribbean countries in preparing to cope with the adverse effects of global climate change (GCC), particularly sea level rise, in coastal and marine areas through vulnerability assessment, adaptation planning, and capacity building linked to adaptation planning. More specifically, the project will assist national governments and the University of the West Indies Centre for Environment and Development (UWICED) to: (i) strengthen the regional capability for monitoring and analyzing climate and sea level dynamics and trends, seeking to determine the immediate and potential impacts of GCC; (ii) identify areas particularly vulnerable to the adverse effects of climate change and sea level rise; (iii) develop an integrated management and planning framework for cost-effective response and adaptation to the impacts of GCC on coastal and marine areas; (iv) enhance regional and national capabilities for preparing for the advent of GCC through institutional strengthening and human resource development; and (v) identify and assess policy options and instruments that may help initiate the implementation of a long-term program of adaptation to GCC in vulnerable coastal areas.

Project Description

The project will follow a regional approach; it will be executed through the cooperative effort of all twelve participating countries and through a combination of national pilot/demonstration actions and regional training and technology transfer linked to adaptation planning. This approach seeks to strengthen regional cooperation and institutions, and to provide cost-effective means for adaptation planning, data collection, and sharing of information, skills, and project benefits. The project will seek to build on existing institutions and experiences, and to liaise with other important regional initiatives and programs underway in the Caribbean. Project activities will focus on planning for adaptation to GCC in vulnerable areas, including regional sea/climate data collection and management, impact and vulnerability studies, and the assessment of policy options through a series of regional activities and pilot studies. These enabling activities will be complemented by selective capacity-building activities, aimed at creating or strengthening endogenous conditions and capabilities necessary to prepare a long-term program for adaptation to GCC. The project will execute a comprehensive program of human resource development for upgrading the skills of technicians and officials from participating countries in areas relevant to GCC and adaptation planning. Project execution will take four years and involve both regional and pilot-based components. The four regional components include the following:

1) Design and Establishment of Sea Level/Climate Monitoring Network.

2) Establishment of Databases and Information Systems.

3) Inventory of Coastal Resources and Uses

4) Formulation of a Policy Framework for Integrated Coastal and Marine Management

The pilot-based components include the following:

5) Coral Reef Monitoring for Climate Change.

6) Coastal Vulnerability and Risk Assessment.

7) Economic Valuation of Coastal and Marine Resources.

8) Formulation of Economic/Regulatory Proposals

9) Enabling the preparation of national Communication in Response to Commitments to the UNFCCC.

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