

Component 5: Coral Reef Monitoring for Climate Change (The Bahamas, Belize, and Jamaica)

Introduction

The goals for 2001 will be to:

- Present reports on the results of Component 5 Coral reef Monitoring activities conducted in 2000. Repeat the coordinated monitoring of reefs in the three pilot countries, the Bahamas, Belize and Jamaica.
- Review and improve the implantation of C5 in the pilot countries.
- Plan and initiate the extension of C5 to the eight remaining CPACC countries with coral reefs.
- Develop strategies for the information generated by C5 activities to inform the climate change adaptation policymaking process at the national and regional levels.
- Develop public awareness and education products tailored to inform the general and technical communities of coral reef management issues as they relate to global climate change and C5 activities.

Component 5 Planning and Review

The three-tiered planning and review process will be completed in the first quarter of 2001. Phase I will involve the RPIU and the OAS in budgetary and operations plan development and review. Phase II will be completed in January 2001, and will involve the Deputy Project Manager/Coastal Zone Management Specialist, DPM/CZMS), the C5 Coordinator, the Director of the Centre for Marine Sciences, UWI, Mona, the Data Manager at the CMS and a technical consultant, Dr. J.D. Woodley. The purpose of Phase II will be to refine the technical aspects operations plan.

Phase III involves the Pilot Country team members in the review and refinement of the Operations Plan. Phase III purpose is to ensure consensus on the operational approach; that planned activities meet the needs of country partners, and that planned activities are tailored for successful execution in the context of the respective national realities. Phase III will begin immediately after Phase II has been concluded. The review and discussion of the Component operations plan for 2001 will be initiated through the CC-Reefs e-group. The C5 Technical Workshop will serve as the forum in which the operations plan will be finalized. Phase III will be completed by the end of March 2001.

The following specific tasks are planned under Phase II:

- Sign MOU between CPACC and the Centre for Marine Sciences (CMS), UWI, Mona;
- Discuss CPACC/CMS project proposal for building CMS capacity to support ongoing C5 development;
- Plan C5 Technical Workshop, prepare and circulate notice and preliminary agenda to C5 team members for comment;
- Review monitoring data from pilot countries and finalize arrangements for the preparation of reports on 2000 coral reef monitoring data;
- Public awareness: the Production of a C5 compact disk and book;
- Plan Jamaica's 2001 monitoring campaign; and
- Discuss United Nations Environment Programme (UNEP)/CPACC collaboration.

Under Phase III (C5 Planning and Technical Review Workshop – March 26th to 29th, 2001) the following activities will be carried out:

- Progress on the establishment of IMPACC and the CCCC.
- Planning for the expansion of C5 to other CPACC and non-CPACC countries during IMPACC.
- Country reports on management and monitoring for 2000.
- Review monitoring data and results
- Review methods and procedures and Component design.
- Developing models for indicators of coral reef health and integrity.
- Public awareness and education strategies and materials – The production of a C5 Compact Disk and book.
- Linkages with C3 – Utilization of the CRIS.
- Linkages with C4 – Policy Interface.
- Linkages with C7 – Economic indicators of reef condition.
- Design and Plan Regional C5 Workshop.

Sustainability, Intra- and Inter-Institutional Arrangements for Coral Reef Monitoring

- (a) The CMS, UWI, Mona, Jamaica.

The nature of the role that the CMS is expected to play in providing technical support for the implementation and expansion of C5 has been set out in an MOU that will be signed by February 2001. Further discussions have been held on developing a proposal to access the funds that will be necessary to ensure that the CMS has the capacity to provide the necessary technical support to the expanded, regional C5 programme.

The current draft proposal envisages the adoption of the CPACC coral reef monitoring protocol by the Caribbean Community Productivity (CARICOMP) network. The CPACC protocol is seen as a means to facilitate the wider sampling of coral reefs in the region, while addressing some of the manpower constraints being experienced by some of the research facilities currently involved in the monitoring programme.

The CMS has suggested that the sea surface and coral reef monitoring data that has been collected over the past 10 years by CARICOMP and stored at the Caribbean Coastal Data Centre (CCDC) could be used to augment data collected through the CPACC Project. Data sharing arrangements between the CPACC and CARICOMP monitoring networks should be discussed at the CPACC Caribbean/Global Networks meeting on March 2nd, 2001.

- (b) UNEP-Caribbean Regional Co-ordinating Unit (CAR/RCU)

The UNEP-CAR/RCU has expressed an interest in being involved in the follow-up to the CPACC Project. Particular interest has been expressed in two areas of coral reef monitoring, and information management.

The Caribbean Environment Programme (CEP) has reiterated its commitment to continue supporting coral reef monitoring in the region as a contribution to the Global Coral Reef Monitoring Network.

Under C5 there is an opportunity to formalize arrangements with the UNEP-CEP/RCU to have CPACC/CMS function as the node for the Northern Caribbean Region and to coordinate coral reef monitoring and reporting for the Northern Caribbean. The

CPACC/IMPACC collaboration with the Data Management Centre at the CMS/UWI is viewed by the UNEP-CEP/RCU as the ideal mechanism to support both functions.

Discussions will be held with Alessandra Vanzella-Khoury of UNEP-CEP/RCU in Kingston Jamaica, during the C5 Planning and Review Mission to Jamaica from January 23rd to 27th, 2001.

UNEP-CEP/RCU is also interested in collaborating with CPACC/IMPACC in the area of information management under the C3-CRIS and CEPNET Program. It has been suggested that there might be collaboration in a number of areas including, databases development, the development of national and regional web-based State of the Coasts reports, training and capacity building within national agencies for environmental information management.

Another area for possible collaboration would be land-based sources (LBS) of marine pollution as it relates to adaptation planning for the sustainable management of coral reefs.

Although the CEP does not currently include climate change as one of its areas of focus the abovementioned activities provide obvious links.

(c) NOAA

Geo-referenced C5 monitoring sites will be registered with the NOAA Hot Spots Programme to derive ongoing site-specific information on thermal stress being experienced by coral reefs. The NOAA satellite-derived Degree Heating Week (DHW) is an experimental product designed to indicate the accumulated thermal stress that coral reefs experience. This information will provide a useful contextual dimension for the interpretation of coral reef monitoring data.

Discussions will be held with Dr. Clement Lewsey and Dr. Steve Rohmann (NOAA National Ocean Service) in early March 2001 to discuss the offer of possible assistance in developing digital maps for the characterization of coral reefs in the Eastern Caribbean moderate and high resolution remotely sensed imagery.

The opportunity will also be taken to discuss opportunities for participating in the NOAA Coral Health and Monitoring Programme. The mission of the NOAA Coral Health and Monitoring Program is to provide services to help improve and sustain coral reef health throughout the world.

(d) Sub-regional Node for C5 in the Eastern Caribbean

The eight CPACC countries that will join the C5 programme are located in the Eastern Caribbean. The establishment of a sub-regional node for C5 in the Eastern Caribbean would compliment the function currently performed by the CMS for the Northern Caribbean. There would be logistic and strategic advantages to such an arrangement. The function of C5 sub-regional node would be in keeping with the role that the Coastal Zone Management Unit (CZMU) has adopted.

The Marine Resources Environmental management Programme (MAREMP), formerly Centre for Resources Management and Environmental Studies (CERMES), at the Cave Hill Campus of the UWI in Barbados should also be considered for the role of sub-regional node.

(e) Links With C3

Discussions will be held with C5 country representatives to determine how they will actively use the C3 CRIS to support C5 work, and what specific data and information products will be required to support the coastal resource management decision and policy making process.

Preliminary discussions have been held with the ESSA Technologies Consultant Colin Daniel on configuring the CRIS to generate annual coral reef monitoring reports, and national state of the reef reports for C5 countries.

The manually prepared 2000 coral reef monitoring report for Jamaica will be used to guide the design process for the design and content of CRIS C5 reports.

- (f) Linkages with C4 – Developing the interface between research and the climate change adaptation policymaking process.

The strategy by which C5 will inform adaptation policy and planning at both the national and regional levels must be defined with the guidance of the C4 Coordinator and consultants during the first quarter of 2001.

The C4 Consultants Dr. Leonard Nurse and George de Romilly will be asked to participate in the C5 technical Workshop scheduled to be held in Jamaica from March 27th to 30th, 2001. Specifically de Romilly will be asked to:

- Describe the rationale behind C4, its aims and objectives
- Discuss the concept and the need for an interface between coral reef pre and applied environmental (coral reef) research and the policy and management processes in the context of policy failure
- Describe the C4 process
- Update participants on progress in C4 implementation in the C5 Pilot Countries
- Lead discussions on the role of the national C5 institutions in the C4 process for developing National Adaptation Policy and Strategy, and strategies for informing the process in respect of coastal marine resources and ecosystems, and the public awareness and public education process.
- Post C4 notices, progress reports and schedules to C5 team members via the CC-Reefs e-group.
- The C4 and C5 Coordinators plan and facilitate the involvement of C5 team members in the national consultative processes of their respective pilot countries.
- Assess the feasibility of the C5 Coordinator participating in C4 visits to the C5 Pilot Countries.

- (g) Links with C7 – Economic indicators for describing impacts to coral reefs.

Issues relating to the strategy for communicating coral reef monitoring information to decision makers for adaptation policy development and planning, and the form and content of the information communicated, require the coordinated effort across components, requiring particular support from C4 and C7.

Discussions on the future needs of C5 have identified a need to develop a model that facilitates the transformation of data on coral reef status or condition into an index of economic value or potential. The model would provide a link between parameters of coral reef condition such as percentage coral cover, fleshy algal cover, presence or absence of certain species, and reef fish populations, and a coral reef health/integrity indicator which would in turn be transformed into an economic indicator for the benefit of decision makers.

The development of a model for generating an index or indices of coral reef health/integrity will be discussed with Dr. J. Woodley during C5 planning meetings scheduled for Jamaica for the period January 23rd to 26th, 2001. Further review of the issue will take place via CC-Reefs in February 2001. A strategy for implementation will be developed at the C5 Technical Workshop scheduled for March 26th to 30th, 2001.

- (h) Memorandum of Understanding (MOU) between CPACC/IMPACC and National Governments Institutions Responsible for Execution of C5.

A draft MOU will be tabled for discussion at the C5 Planning and Technical Review Workshop in March 2001. Consensus among C5 Pilot countries on the final document should be reached before the CPACC Regional Workshops where the MOU will be discussed with the appropriate representatives of prospective C5 countries.

Monitoring

Coral reef monitoring for 2001 will be scheduled to take place from April and August 2001.

Data Processing and Analysis

Based on the gains in experience achieved during the 2000 monitoring year, pilot country lead agencies will be requested to undertake all of the data processing and at least 50% of the analysis associated with the monitoring data collected during 2001. A completion deadline of September 2001 will be necessary to provide time for report completion in November 2001. These matters will be discussed and finalized at the C5 Technical Workshop in March 2001.

Public Education and Awareness

- (a) The Internet

CC-Reefs. Discussions on how to improve the management and utilization of the CC-Reefs e-group will be held during Phases II and III of the Planning and Review process. The goal will be to (a) increase the level of usage for discourse and decision-making among professionals involved in CPACC and coral reef management; (b) give the e-group a stronger climate change image; and (c) define the management and resource requirements necessary to achieve these goals. These matters will be discussed and finalized at the C5 Technical Workshop in March 2001

CPACC Web Site. Coral reef subject matter provides an excellent vehicle for the presenting climate change issues in a Small Island Developing States (SIDS) context. The design, cost and development of a dedicated C5/Coral Reefs and Climate Change area within the CPACC Web Site will be discussed with the ISC and subsequently with the participants of the C5 Technical Workshop in March 2001. Implementation would be considered under IMPACC, although improvements on the current CPACC site could be incorporated into the ongoing strategy.

- (b) Component 5 Book

Details on the design and content of the C5 publication will be finalized by the end of March 2001. Options for technical review, editing, publication and production will be reviewed and presented by the end of March 2001. A preliminary outline of the contents will be circulated for discussion and amendment.

- (c) Component 5 Compact Disk

A CD will be produced to provide an efficient means of disseminating and communicating the information and experiences of C5. Consideration is being given to employing the C3 CRIS as the framework in which documentary, graphic, attribute and geo-referenced information will be presented. The deadline for delivery has been set for October 2001.