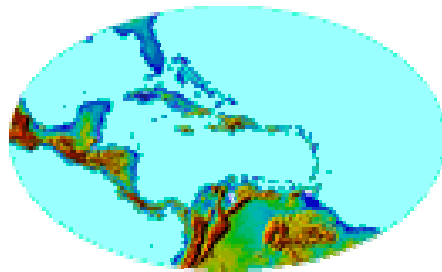


**INTEGRATING WATERSHED AND
COASTAL AREAS MANAGEMENT IN
SMALL ISLAND DEVELOPING STATES
OF THE CARIBBEAN**

**REPORT OF
SECOND REGIONAL WORKSHOP**



**JAMAICA CONFERENCE CENTRE
KINGSTON, JAMAICA
6 - 9 FEBRUARY 2001**

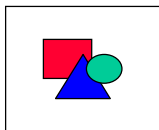


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ACRONYMS

CARICOM	The Caribbean Community
CEHI	Caribbean Environmental Health Institute
CPACC	Caribbean Planning for Adaptation to Global Climate Change
GEF	Global Environment Facility
ICWM	Integrated Coastal and Watershed Management
IWRM	Integrated Water Resources Management
NEPA	Nation Environmental Protection Agency of Jamaica
NRCA	Natural Resources Conservation Agency of Jamaica
OAS	Organisation of American States
PDF	Project Development and Preparation Facility of the GEF
SIDS	Small Island Developing States
POA	SIDS Programme of Action
UNDP	United Nations Development Programme
UNEP CAR/RCU	United Nations Environment Programme Caribbean Regional Coordinating Unit
USEPA	United States Environmental Protection Agency

1.0 Background

At the Eleventh Meeting (March 1998) of the Forum of Ministers of Environment of Latin America and the Caribbean, one of the priority areas identified for inclusion in the Regional Programme of Action was the **integrated management of water and coastal resources**. This project, Integrating Watershed and Coastal Area Management in Small Island Developing States of the Caribbean, directly addresses this particular issue and primarily focuses on coastal areas management and biodiversity, land and marine based sources of pollution and protection of water supplies. In addition it links into the GEF Operational Strategy that recognises the special conditions and needs of Small Island Developing States (SIDS) in developing more integrated approaches to land and water management as a mechanism to address threats to their water resources. Specifically, the GEF Strategy identifies that integrated freshwater basin-coastal area management is essential for a sustainable future for island states.

The overall objective of this project is to develop a fully costed Project Brief (for submission to the Global Environment Facility) and establish an agreed institutional framework for execution of the full project activities. The full project will, in the final analysis, strengthen institutional capacity at the national and regional level; provide assistance to countries in understanding the linkages between problems in the freshwater and marine environments; assist countries in integrating their management of watersheds and coastal areas; and address national priorities within the regional context.

Activities within the various phases of the project are:

1. Establishment of coordinating mechanisms and network of participating institutions
2. Hosting of a regional inception workshop
3. Preparation of National reports
4. Regional synthesis of common issues and actions
5. Development of Project Brief

This, the second Regional Workshop on Integrating Watershed and Coastal Area Management in Small Island Developing States of the Caribbean falls within the ambit of Activity 4. It was held at the Jamaica Conference Centre from 6-9 February 2001. The Workshop was attended by twelve participants from among the thirteen project countries as well as by representatives of the sponsoring agencies and consultants commissioned to assist in the design of the Project Brief. A list of participants is carried at Appendix I of this Report.

1.1 Workshop Objectives

The objectives of the Workshop were to:

- (a) obtain consensus on the possible priorities, goals and common issues associated with Integrated Water Resources Management (IWRM);
- (b) advance finalisation of National Reports on IWRM;
- (c) advance finalisation the Regional Synthesis;
- (d) advance the project formulation process toward the completion of the Project Brief

2.0 Opening Remarks

The Opening of the workshop took the form of remarks by Mr. Tim Kasten, Acting Deputy Coordinator, of UNEP CAR/RCU and Mr. Vincent Sweeney, Executive Director of the Caribbean Environmental Health Institute (CEHI). The special guest speaker was Mr. Franklyn Mc.Donald Chief Executive Officer of the National Environmental Protection Agency (NEPA) and the Natural Resources Conservation Agency (NRCA) of Jamaica.

In his remarks Mr. Kasten expressed delight at the partnership that had been forged between CEHI and UNEP RCU/CAR, to move the project forward. He noted that each institution was bringing its own strengths to bear on the process: CEHI with its strengths in Water Resources Management and UNEP CAR/ RCU with its strengths in Coastal Resources Management. He noted however, that the project did not belong to the Executing nor the Implementing Agencies, but to countries. He therefore urged delegates to take full ownership of the design process and to participate fully in the Workshop.

In his remarks, Mr. Sweeney traced the origins of the project. He informed participants that CEHI's involvement sprung from its responsibility for Water Resources Management issues, under the SIDS Programme of Action (POA). He emphasised that the execution of this mandate called for CEHI to assume a proactive role in order to assist its Member States to effectively manage their water resources. From this standpoint, CEHI was happy to be associated with CARICOM, UNEP CAR/ RCU and the OAS in conceptualising the PDF project. Mr. Sweeney thanked the Government of Jamaica for agreeing to host the Workshop. He observed that that the Workshop was being held in the wake of the recent heavy

rains and consequent flooding in Montego Bay, which in the opinion of Jamaica's Minister for the Environment was linked to deforestation, inappropriate garbage disposal and failure to maintain proper drainage facilities. In concluding his remarks, Mr. Sweeny looked forward to a successful Workshop and project.

The Guest Speaker, Mr. Franklyn Mc. Donald began his address by acknowledging his Agency's responsibility for Watershed Management and Coastal Areas Management. He too, alluded to the heavy rains and flooding which had occurred in Montego Bay in January 2001. He revealed that fisher-folk in the area had linked the floods to the construction of a golf course in the area. While noting that efforts had been made by the NRCA to reduce the negative impacts from hotel construction, he admitted that there was some uncertainty as to whether the mitigative measures had been adequately enforced, or whether the rains had been exceptionally heavy.

Mr. Mc. Donald informed participants that the NRCA was trying to introduce comprehensive eco-system management and to put in place more stringent measures to ensure that development within watershed areas are sound. He acknowledged however, that the average Jamaican does not place high value on biodiversity. Local farmers were questioning the need to invest in proper soil conservation. This attitude, he noted, strengthened the value of bringing local communities fully on board, in environmental management initiatives.

Mr. Mc. Donald shared with participants the following initiatives being pursued by the NRCA/NEPA:

- the development of an Environmental Management Strategy which outlines the processes by which major actors can assist in environmental management;
- the on-going amalgamation of the physical planning and natural resources management agencies, into a seamless whole.

Mr. Mc Donald closed his address by encouraging CEHI and UNEP CAR/ RCU to begin to focus on preparations for the upcoming RIO + 10 and SIDS+ 10 review Conferences. He was of the view that these two fora offered a golden opportunity to share with the global community, the myriad of lessons learnt from the Caribbean's experience with Integrated Water Resources Management.

3.0 Presentation of National Reports

National Reports were presented by Dr. Brian Cooper (Antigua and Barbuda); Ms. Rochelle Newbold (Bahamas); Mr. Joaquin Diaz (Cuba); Mr. Mark John (Dominica); Mr. Alejandro Herrera (Dominican Republic); Mr. Joseph Toussaint (Haiti); Ms. Anthony Mckenzie (Jamaica); Mr. David Lewis (Grenada); Ms. Deborah Bushel (Saint Lucia); Mr. Reynold Murray (Saint Vincent and the Grenadines); and Dr. Utam Maharaj (Trinidad and Tobago).

A Draft Synthesis of the National reports was later presented by Ms. Sacha Gottlieb, Specialist, with the Unit of Sustainable Development and Environment at the Organisation of American States (OAS). A copy of the Synthesis is attached as Appendix II.

Each of the reports were critiqued by the consultants. The critiques were meant to assist the participants in refining the National reports, on returning to their respective countries. Generally, the reports were deemed to have conformed to the guidelines set for their preparation, which were agreed to at the Inception Workshop held in March 2000. A summary of the critiques is carried as Appendix III.

The Reports confirmed that:

- watersheds and coastal areas in all countries are being seriously impacted by land-based sources of pollution linked to Agriculture (agro-chemical contamination and land degradation, siltation and soil erosion), Tourism and Manufacturing (pollution from the improper use and disposal of industrial chemicals and metals)
- human and financial constraints affect all countries to varying degrees
- there is a very low level of understanding and appreciation of the economic and social value of watersheds and coastal areas among decision-makers and the general public
- integrated management of watersheds and coastal areas (ridge to reef) is not effectively being practised, although encouraging attempts are being made in Trinidad and Tobago, Cuba, Haiti, and the Dominican Republic
- legal support arrangements for environmental management in general and Integrated Watershed and Coastal Area Management in particular, are severely fragmented
- institutional responsibility for environmental management is dispersed
- the environmental impacts associated with irrigation has not been properly assessed
- additional research is needed in all the countries, especially on the availability and quality of groundwater and on water resource and climate change issues

4.0 Presentations by Mr. David Vousden

In the first of two presentations, Mr. Vousden shared with participants his perspectives - gleaned from years of involvement as a UNDP consultant - on

Integrated Coastal and Watershed Management. The presentation focused on the features, principles and approaches to the subject. He identified the key features of ICWM as including the following:

- participatory process for decision making
- preventing, controlling, or mitigating impacts from human activities throughout the watershed and coastal environment
- involving stakeholders
- planning for multiple uses, based on the precautionary approach and ecosystem principles
- response to the reality that terrestrial freshwater and marine ecosystem and human impacts are inextricably inter-woven.

The key principles and approaches of ICWM identified by Mr. Vousden were as follows:

- (a) ***using integrated approaches and methods.***
 - linking top-down, bottom-up approaches through frequent dialogue
 - close collaboration of technicians, administrators and managers
 - clarifying mandates for responsibility between agencies
 - making early adjustments to legal instruments.
- (b) ***stakeholder participation***
 - stakeholder participation strengthened by public discussion
 - participation throughout process including monitoring and evaluation
 - government endorsement and involvement at all levels
 - sustained collaborative support from NGOs and the donor community.
- (c) ***strategic programme focus***
 - prioritise threats and responses
 - identify critical biodiversity hot-spots
 - conduct early analyses of institutional capacity
 - give early consideration to institutional arrangements for ICWM strategy
 - review existing information/studies
 - conduct frequent analyses of end-user and scientific studies, data collection etc.
 - consider demonstration activities as a prelude to full-blown exercises
 - take account of political cycles.
- (d) ***commit to adaptive learning***
 - refocus project activities and review long-term objectives
 - undertake full annual review of progress
- (e) ***commit to building the requisite human and institutional capacity for ICWM.***
 - incorporate training/education programmes
 - build public awareness as a continuous process

- include in-country and on-the-job training
- share workshop experiences

In his final presentation, Mr. Vousden introduced participants to the Project Proposal Development process, endorsed by the GEF. He detailed the various components of a GEF Proposal as follows:

1. the Overview
2. a description of the context in which the project has being conceived
3. a description of baseline activities
4. the elaboration of alternative courses of action
5. a description of the proposed implementation arrangements
6. elaboration of financial arrangements
7. a description of the ways in which the project's results will be sustained
8. a description of monitoring and evaluation arrangements

The presentation was well received by participants, many of whom were being exposed to the GEF process for the first time. However, participants lamented the fact the GEF process was not sufficiently well known and understood by practitioners within the Caribbean and recommended that GEF hold regular training programmes within the region.

5.0 Presentation by Mr. Patrick Cotter

Mr. Cotter's presentation focused on a description of the USEPA's institutional arrangements for Water Resources Management. He introduced participants to the key components of the USEPA's Watershed Approach for Resource Protection, which are as follows:

- Partnerships and participation with representatives from many different groups
- Geographical focus in which watersheds are treated as nature's boundaries
- continuous improvement based on sound science - data, tools and management techniques.

The major features of the USEPA's Watershed Protection approach are as follows:

- assessing and characterising natural resources and communities
- setting goals and identifying environmental objectives, based on vulnerable resources, including the needs of eco-systems and people within the community
- promotiing a high level of stakeholder involvement
- targeting of priority problems
- integrating solutions using the expertise and authority of many agencies
- measuring success through monitoring and data gathering
- refining management measures based on an evaluation of effectiveness.

Mr. Cotter concluded his presentation by sharing with participants the following ten (10) Watershed Lessons learned by USEPA staff over the years:

1. The best plans have clear visions, goals and action items.
2. Good leaders are committed and empower others.
3. Having a coordinator at the watershed is desirable.
4. Environmental, economic and social values are compatible.
5. Plans only succeed if they are implemented.
6. Partnerships equal power.
7. Good tools are available.
8. Measure, communicate and account for progress.
9. Education and involvement drive action.
10. Build on small successes.

6.0 Synopsis of Work Group Sessions

On Day 3 of the workshop, participants were assigned to two Work Groups and instructed to identify the Threats, Root Causes and Desired Outputs associated with environmental, socio-economic, institutional, policy and legal issues.

The groups were composed as follows:

Group 1

Cuba
Trinidad and Tobago
Dominica
Haiti
OECS Secretariat
Grenada

Group 2

Antigua and Barbuda
Bahamas
Saint Vincent and the Grenadines
Dominican Republic
Saint Lucia
Jamaica

6.1 The findings of the groups.

Participants identified the following as priority issues/concerns to be addressed in the proposed project.

1. Economic Development

2. Ridge to reef spatial dimensions
3. Population growth
4. Socio-economic changes
5. Lack of Institutional capacity
6. Environmental pollution
7. Unplanned changes in land-Use
8. Institutional fragmentation
9. Natural resource conservation
10. Data/Information Management
11. Lack of a coherent system of natural protected areas
12. Human resource deficit
13. Supply demand deficit
14. Over-exploitation of resources
15. Lack of public awareness
16. Lack of stakeholder participation
17. Salt water intrusion
18. Improper waste management
19. Post-project financial sustainability
20. Monitoring and evaluation
21. Politically favourable projects
22. Research/ development Projects

7.0 Summary of Plenary discussions on Potential Demonstration Projects

Following the identification of key issues, concerns, and threats, by the Work Groups, a plenary discussion ensued on the identification of potential demonstration projects as well as potential national and regional projects.

7.1 Demonstration Projects

The Demonstration Projects identified were as follows:

- A. Development of Model Watersheds (Ridge to Reef)
 - Potential sites include Antigua and Barbuda and Saint Lucia (Soufriere Marine Management Area) Bahamas and Trinidad and Tobago
 - development and sharing of “Best Management”
 - Effect on water resources
 - downstream effects
 - institutional cooperation
 - coincidence with land degradation/biodiversity
 - re-afforestation (long term)
 - application of Geographic Information Systems (GIS) both as an end in itself and as a tool in watershed management

*suggestion that in designing projects, that consideration and emphasis be given to :

- wider implementation outside of pilot countries

- the inclusion of other on-going initiatives in other islands for example work being done by OECS/NRMU in Saint Vincent and the Grenadines
 - the treatment of different aspects of eco-system management for e.g. urban/rural and tourism aspects
 - comparisons between different types of watersheds
 - multi-lateral/trans-boundary management of watersheds e.g. Haiti and the Dominican Republic
 - projects that are (a) global in scope; (b) express regional needs; (c) are in consonance with other projects and (d) that can be implemented in the short to medium term.
- B. Identification of Waste Water Treatment (emphasising the use of natural systems)
- assessment of the impact of waste water on coastal areas
 - comparisons between the effectiveness of different waste water treatment systems
 - assessments of the impact of eco-tourism activities on coastal areas
 - identification of appropriate technologies for reuse/recycling of waste water
 - country expressing interest (Cuba).
- C. Management of Land based sources of pollution
- strengthening of institutional systems
 - design and promotion of education and awareness activities
 - establishing criteria for discharges
- D. Legislative Processes
- harmonization of legislation
 - development of model legislation
 - strengthening the legal/ institutional nexus (Bahamas/Antigua and Barbuda)
 - examine the relevance of an Island System Management approach to the formulation of legislation:
 - In formulating this aspect of the project designers should (a) promote dialogue with Attorneys General; (b) should pay close attention to institutional framework with a view to streamlining the institutional arrangements for monitoring and enforcement of the law; (c) include activities that build the capacity of national and regional environmental agencies; emphasise public education and awareness activities; (e) seek to establish consonance between national legislation and international Treaties, Conventions and Protocols; (f) engage in consultations multi-sectoral agencies with a view to promoting sustained participation during and after project implementation.

7.2 National Projects

The following National Projects were recommended:

7.2.1 Antigua and Barbuda

It was felt that Antigua and Barbuda was a prime candidate for a National Project, because of its unique circumstances, notably its almost total reliance on desalination plants, its heavy dependence on tourism and its adverse soil and hydrological conditions. It was agreed that such a project should yield important lessons for managers of Integrated water resources in other islands, especially those operating in resource-poor conditions.

7.2.2 Haiti - Lessons in Stakeholder Participation

Participants agreed that given its present situation Haiti presents ideal conditions for testing stakeholder participation techniques and strategies within an IWRM context.

7.2.3 Design of model economic instruments that support IWRM.

Participants supported the inclusion of activities that would produce a model package of economic instruments that would underpin IWRM. It was felt that such instruments would complement legal enforcement measures, by providing financial inducements for businesses and individuals to engage in environmentally friendly practices.

7.3 Regional Projects

The following regional projects were recommended:

- A Hydrological assessment of Groundwater Potential
- Identification of Technological Options for IWCM including a cost/benefit analysis of various options. Countries expressing an interests were Trinidad and Tobago, Antigua and Barbuda, Bahamas and Barbados;
- An Analysis/study of Climate Change on Watersheds and Coastal Areas. Actual/potential links between this project and the CPACC were emphasized.
- Establishment of Regional Information Network for IWCM;
- A review of Decision-Support Systems (using appropriate models). Countries expressing an interest were Saint Lucia which is already doing some preliminary work in this area and Trinidad and Tobago
- The development of IWCM models emphasising a programmed approach for sustainability.

8.0 Next Steps

It was agreed that the following post-workshop activities would be undertaken:

- refinement and completion of the National reports, incorporating the critiques provided by the consultants, within 3 weeks (by March 3, 2001).
- Dissemination of the critiques within one week
- Completion of Regional Synthesis and design of Draft Project Brief, for dissemination to National Focal Points and the relevant agencies by end of May 2001.
- The Draft Project Brief to be reviewed at a Final Workshop, to be held no later than July 2001, in order to facilitate submission at October meeting of the GEF Board.
- Letters of Agreement and completion of final financial disbursements will be made after completion of the Project Brief.
- National Focal Points to advise CEHI of any on-going/planned projects in their respective countries that might be treated as co-financing.

9.0 Closing Remarks

The workshop was brought to a close with remarks by Mr. Sweeny and Mr. Kasten. Both speakers expressed satisfaction with the outcome of the workshop. Participants were urged to continue to take a keen interest in the remaining stages of the project design process and to share with the agencies and the consultants, any new information that might be of assistance to them in preparing the project brief. Thanks were conveyed to the Mr. Vousden and Cotter for their informative presentations and to the consultants for their technical support.

Miss Rochelle Newbold (Bahamas) thanked the organising agencies and her fellow participants for providing her with such a “rich and rewarding experience”.