The Regional Training Workshop on Methodologies for Coastal Inventories & Information Management

Appendix X

COUNTRY : **ANTIGUA AND BARBUDA**

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SUBJECT : **COASTAL RESOURCE INVENTORIES AND EXISTING COASTAL RESOURCES IN ANTIGUA AND BARBUDA.**

INTRODUCTION AND OVERVIEW:

Coastal resources-including mangroves, beaches, seagrass beds, and coral reefs dominate the physical, social and economic landscapes of Antigua and Barbuda. Existing data on these resources tend to be sparse, qualitative in nature, with the presence of gaps being a critical feature. The scant data available makes it extremely difficult to analyse the coastal resources of Antigua and Barbuda over any specific period.

In general this report will seek to identify and describe major projects involving coastal resources inventories and existing coastal resources in Antigua and Barbuda. In addition, other related projects will be highlighted including specific studies for smaller areas of Antigua and Barbuda.

It is expected that at the end of this project, the list of coastal resources inventories will be more comprehensive and appropriate quantitative and qualitative data will be available in GIS format for use throughout the region.

In relation to the status of coastal resources inventories for Antigua and Barbuda, the following may be characterised as general conditions, which exist:

- The main purpose of the inventories is to identify the status of the resource with a view to prioritise for conservation and other uses.

- Inventories relied heavily on existing maps, available literature, local knowledge, photographs and actual fieldwork, as sources of data.

- Generally the data collected tend to be rather qualitative but some qualitative data is also available.

- Priority issues focus on the resource base, resource use, changing conditions due to human and other impacts. In recent times a major issue is biodiversity and sustainable development of resources.

- Data collected is generally used to assess the state of the resources especially in relation to user conflicts. They form the basis of decision making especially in relation to conservation and protected areas or reserves.
- In spite of many agencies involved in the management of coastal resources, there is generally a lack of sufficient technical staff to undertake comprehensive inventories. Adopting an integrated approach is therefore a serious challenge.

Existing coastal inventories will form the basis for future studies. These should be more formalised and will be used in a GIS for Antigua and Barbuda.

SPECIFIC INVENTORIES/COASTAL RESOURCES PROJECTS

The Status of Mangrove Conservation in the Caricom Islands of the Eastern Caribbean.: Peter R. Bacon.

This study used a combination of existing qualitative data, maps, fieldwork and photos, to determine the extent of mangrove ecosystems with a view to prioritise them for conservation.

Important data collected included mangal type and areal extent as well as general and specific descriptions of mangal formations. A major constraint was the difficulty experienced in the determination of the extent and causes of mangrove destruction.

An Inventory of Mangrove Systems of Antigua and Barbuda: EAG & IRF.

1 This inventory is presently on-going. Topographical maps, aerial photographs, existing literature and actual fieldwork form the basis of the project. Data collected so far focus on profiles of specific wetland sites, community use and changes to the systems especially from human impacts. The general aim is to value and prioritise wetland sites in Antigua and Barbuda.

It is expected that the data generated will be used to update present GIS and assist in developing restoration and conservation programmes.

Reef watch Project - Antigua's Reefs: A Status Report 1989: Major R.C. Leigh.

The Reefwatch project was designed to provide information about the increasing environmental threats to coral reefs. Information gathered contributed to the general database of knowledge on coral reefs around Antigua and Barbuda.

Using spot dives and/or transacts, some twenty-two (22) sites including one (1) off Barbuda form the major element in the project. In spite of the fact that no marine Biologist was part of the study team some useful information were collected. These included: reef type and location, degree of coral and algal cover and the extent of environmental damage. The average number of important species of fauna was estimated and indices of reef quality and environmental impact were calculated.

In spite of the rough weather conditions during the period of study Reefwatch represented a thoroughly worthwhile conservation project.

Inventory and Assessment of Mangals in Antigua: Keith Nichols

This rapid inventory sought to identify existing Mangal systems, assessing the physical conditions of each system and evaluating surrounding environmental and other threats. The major aim is to prioritise the sites for further protective action.

In addition to the use of topographic maps and local knowledge, the study utilised the work of Bacon (1991), to provide a superficial assessment of the general conditions of mangrove systems: including a relative description of dominant mangrove species and avifaunal activity, where evident.

It was indicated that there was a general lack of primary data and as a result it was difficult to really prioritize the mangals. However, based on several distinctive characteristics, the critical mangrove sites were identified for future conservation programmes.

A Survey of the Codrington Lagoon System: John Mussington.

This survey focused on the identification of environmental conditions, species diversity and human impacts upon the Barbuda lagoon ecosystem. This involved the use and analysis of information gathered through interviews, photographic records and actual fieldwork.

Information provided was rather descriptive. It includes general ecological information on existing flora and fauna. Specific environmental conditions such as water temperature, salinity and pH were also recorded.

In spite of the problems encountered, including inadequate staff and bad weather conditions, the project was a great success. The project provided useful data for assessing the state of resources and, for decision making especially in relations to development of marine parks and the Birds Sanctuary.

North East Coast Management Area and the Bird Island Marine Reserve and Wildlife Sanctuary: Characterization of Marine Resources - IRF, and Management Plan for the Bird Island Marine Reserve: IRF

The objectives of these studies include: Improving available data on the marine resources of the area and developing potential historic, environmentally based tourism product in light of conservation which is considered important to a deteriorated area.

Using aerial photographs and mapped information from Weiss & Multer (1988), current conditions were compared with the past to identify actual and potential changes. A characterisation terrestrial and marine resources of the region and their use by major stakeholders was devised. A strategy for the management of the natural resources was also proposed. This addressed the social and economic needs and concerns of stakeholders while preserving the environmental values of the area.

OTHER RELATED PROJECTS

Several programmes which are either directly or indirectly related to coastal resources inventories can be identified for Antigua and Barbuda. These are listed and briefly described below:

CFRAMP (Caribbean Fisheries Resources Assessment and Management Programme)

This programme is funded by CIDA (Canadian International Agency). Included in its goal is the establishment of a database on fish catch and effort throughout the Caricom region. Re: Antigua and Barbuda, other related activities of CFRAW include general habitat assessment of the country, using aerial photography, satellite imagery and ground truthing.

COSALC (Coast and Beach Stability in the Lesser Antilles)

UNESCO and the University of Puerto Rico Sea Grant College Program sponsor this regional project, which includes Antigua and Barbuda. The project is designed to develop local capacity to measure, assess and manage beach resources within an overall framework of integrated coastal management. Within the program the Fisheries Division and the DCA (Development Control Authority) have established a regular beach-monitoring program in Antigua since 1991 and in Barbuda 1995. Data have been recorded from 1991 to the present.

OECS-NRMU Coastal Resources Management Project

For the OECS countries, the OECS-NRMU will be preparing coastal inventories using aerial photographs, satellite imagery and ground truthing. These inventories are expected to be incorporated into the country's geographical information system.

UNEP Impacts and Adaptations Country Study

Antigua participated in an 18 month long study designed to focus on how climate change will impact several different sectors within the country, including the coastal zone, fisheries, water resources, human health, human settlements and agriculture. A general coastal resources inventory was included in the report on the coastal zone sector.

CPACC (Caribbean: Planning for Adaptation to Climate Change)
This six-year project which started in early 1997 is funded by GEF (The global environmental Facility) and the World Bank but is executed by the OAS (Organisation of American States). For Antigua and Barbuda, the project includes the measurement of sea level changes through the establishment of a tide gauge, climate monitoring, a partial resource inventory, strengthening of coastal zone management and an economic valuation of coastal resources.

University of Georgia Sea Turtle Project

Since 1987, The University of Georgia in conjunction with the Jumby Bav Resort has been participating in a project, which monitors the nesting Hawksbill Turtle population at Pasture Bay, Long Island. A limited amount of data is available.

CONCLUSION

Major coastal resource inventories have been implemented for Antigua and Barbuda within the last 15 years. Although no single inventory or study has comprehensively dealt with all the coastal resources, important aspect of each will contribute significantly to the establishment and development of a geographical information system. While there is no general lack of information on coastal resources, the type and format of data are more critical in the determination of their use. Existing information tends to be qualitative rather than quantitative. New inventories can be structured to collect specific data and will assist in helping to improve existing data and maintaining geographical information systems in Antigua and Barbuda.

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