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Do Reefs Matter?
Coral reef conservation, sustainable livelihoods and poverty reduction
in Laborie, St. Lucia

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Introduction

There is a growing global awareness of the rapid decline of many of the world's coral reefs (Wilkinson 1992) and a consensus on the importance of conserving and managing these ecosystems and the resources they contain. In the Caribbean the destruction and degradation of coral reef ecosystems has been documented (Smith et al. 1997) and attributed to a range of factors, including reduction in water quality, siltation and sedimentation, and overfishing.

In response to these trends, the International Coral Reef Initiative (ICRI) was launched at the International Conference on the Sustainable Development of Small Island Developing States (SIDS) in Barbados in 1994. This led to the formation of a Global Coral Reef Monitoring Network (GCRMN) under the sponsorship of IOC/UNESCO, UNEP and IUCN. The Network emphasises the involvement of resource users in gathering data on reef resources and trends. The Caribbean region participates in the GCRMN, with support from the UNEP Caribbean Environment Programme.

Coral reefs are resilient ecosystems that have been recovering from major environmental impacts for millions of years. However, the natural ability of reefs to recover rapidly from events such as hurricanes is being impaired by the increasing negative impacts and stresses of human activities.

The rationale for protecting and managing coral reefs is based largely on the contention that coral reefs are important to people and economies, particularly because of their contribution to fisheries and tourism. Indirectly, reefs contribute to coastal protection and provide natural shelters which benefit the transportation sector.

While there is a clear appreciation of the economic benefits of reefs, many of the efforts aimed at coral reef management and conservation in the Caribbean are initiated and implemented with insufficient consideration paid to the most pressing development needs of the communities who live near and depend on these resources to sustain their livelihoods.

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There is therefore need to examine, analyze and understand the contribution of reefs to local livelihoods, in economic, social and cultural terms. Only then will it be possible to design and implement new management initiatives which integrate conservation and livelihood concerns, and place reef conservation and management activities in the context of sustainable development.

People and the Sea, a research project

The Caribbean Natural Resources Institute (CANARI) has initiated a research project in the village of Laborie, on St. Lucia's southwest coast. *People and the Sea: a Study of Coastal Livelihoods in Laborie, St. Lucia* is funded by the Natural Resources Systems Programme (NRSP) of the United Kingdom Department for International Development (DFID), and is implemented by CANARI in collaboration with the Laborie Development Planning Committee and the Department of Fisheries in the Government of St. Lucia. Technical assistance is provided by the Institute for Development Studies (IDS) at the University of Sussex in the United Kingdom.

Focusing on the use and management of coral reef resources in this small coastal village, this project will:

- test, develop and disseminate methods of participatory planning suited to the conditions of small islands in the Caribbean, for dissemination to managers, policy makers, community animators and development workers;
- test institutional arrangements and management instruments for reef resources which do not require the creation of new management agencies or protected areas, and are able to function effectively as partnerships among existing organisations;
- test, develop and disseminate technologies for the sustainable use of commercially important resources (e.g. the reef fishery, and edible seaweeds, locally known as seamoss);
- assess the impact of its interventions (in participatory planning, institutional design and resource use technologies) on coastal livelihoods, poverty alleviation, and the maintenance of natural capital.

The project is structured in three phases:

- assessment: over the first six months, the project has focused on the conduct of assessments, including an evaluation of the status of the natural resource, an analysis of social, human and financial capital, a stakeholder analysis, and a description of current livelihood strategies;
- experiments: on the basis of the results of these assessments, the project will conduct a number of experiments, and will monitor their impacts on the resource and on the livelihoods of people. These experiments are likely to involve an exercise in institutional

design for reef management, a communication programme focusing on pollution issues, a set of activities aimed at testing the development of small-scale community-managed tourism enterprises, and a project to expand the cultivation of selected seamount species.

- analysis: the concluding phase of the project, in early 2003, will conduct a detailed analysis of results and lessons learned, and will disseminate these to resource management and training organisations in the region.

Participation will be an integral part of the research process, particularly through: the involvement of stakeholders at all stages of the process; the experimental design of institutions that provide a mechanism for effective participation; and the on-going documentation and analysis of participation and its impacts throughout the life of the project.

Project activities to date

People and the Sea began in March 2000, and initial activities have included:

- the formation of a Steering Committee, comprising representatives from the main organisations (regional, national, local) involved in the project;
- a review of methods relevant to the initial assessment phase In order to guide its selection of methods, the group then examined selected methods and approaches available from the literature, using papers by Brock (1999), Brown *et al.* (1998), Ramirez (1999) and Scoones (1998);
- the preparation of a digitised map including information on resources, uses, place names, traditions and other site-specific information;
- the preparation of case studies of people and places;
- a survey of the fishing industry;
- an analysis of stakeholders in coastal resource use and management;
- a continuing process of community dialogue and exchange of information using local media and an exhibition;
- a workshop which analysed preliminary results and identified research priorities.

These activities have begun to demonstrate the value of participation, as they have generated a wealth of information that has contributed to the understanding of the distribution of reefs and patterns of resource use.

Preliminary results on reefs and poverty

Research results from the assessment stage suggest that:

- there is evidence of pollution from land-based sources. Consequently, there is gradation of reef condition, with nearshore reefs showing high algal cover as a result of eutrophication, and an increase in coral cover further from shore;
- there has been excessive harvesting of reef resources in the past (e.g. the over-exploitation of the wild stocks of the two principal species of seamoss), but the decline in some resources is apparently due to natural disturbances (e.g. the edible sea urchin);
- external influences and users (e.g. Venezuelan boats fishing for snappers and groupers, Martinique fishers harvesting conch) have played a major role in processes of resource depletion;
- this natural capital is not used extensively to support economic activities at present (e.g. the volume of fish and other landings from the area is small). Traditional uses such as seamoss, conch and sea urchin harvesting have almost disappeared because of the depletion of the resource base. This does not mean that the resource is not valuable and important to people. Preliminary observations suggest that:
 - these reefs and the ecosystems associated with them do support the livelihoods of a small number of people;
 - these include older folks, who may themselves be involved in fishing, or who have other people placing fish pots for them;
 - the Bay plays very special functions, for example to store lobsters under safer conditions before landing;
 - ▶ the Bay environment has served, and continues to serve, as a place for learning (to swim, to fish);
 - while the reef fishery is small in volume, it has a very important cultural significance, it is part of the local identity;
 - the Bay environment is very familiar, it is known and named, it is a 'domesticated' territory;
- while the reefs and associated resources of the Laborie Bay may not presently have a significant impact on income, employment and subsistence, they have the potential to do so, especially if appropriate management structures are put in place and resources replenish. Reef fishing, conch harvesting, seamoss farming and harvesting, sea urchin harvesting and marine-based tourism all have such potential;
- changes are important, and need to be understood. For example, it appears that changes in marketing arrangements over the past few years have had a major impact on several aspects of local life (availability of fish, opportunities for employment, use of beach space). Similarly, technological changes have had major impacts on the use of the beach and nearshore area;

- while the focus of this study is on one village, preliminary observations highlight the importance of users from other geographic communities. In some respects, the near-shore reefs of that village are more important to a diver from another community than they are to a full-time fisherman from the village;
- the beach area should be looked at with particular attention. It is a densely used space, which is very important to fishing families in many ways, and where there are existing and potential conflicts coming from changes in land use, privatisation and increased demands on limited space.

Research issues and challenges

The findings of the assessment phase raise the following research questions:

- ▶ What are the current livelihood strategies and what is the place of reef resources within them?
- What are the methods and mechanisms that facilitate effective participation and go beyond the easy route of favouring the visible, the organised, those who talk the loudest and attend meetings?
- What kind of organisations and institutions favour participatory natural resource management?
- How can popular knowledge be verified through experimentation, particularly where common perceptions affect the development of, and participation in, management strategies and interventions?
- ▶ How do participation, sustainable use, environmental sustainability relate to each other? Does one help the other? Is the fight against poverty really served by participation? If so, how?

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