



Coral island

While pictures of Caribbean coastlines and beaches may evoke images of peaceful relaxation to outsiders, the reality for local people is sadly very different.

In the village of Laborie in St Lucia, typical of the many small island communities in the region, they are feeling the uncomfortable effects of globalisation and the way this can economically marginalise people. Unemployment among young people has grown from 22 percent in 1991 to over 50 percent in 2001 and indications are that this is getting worse.

Central to the well-being of such communities are the coral reefs which surround the islands. They protect the coastline and provided food and a source of income. More than 450 million of the world's people live within 40 miles of coral reefs, with the majority directly or indirectly deriving benefit from them.

Opportunities and threats

In recent years the Caribbean has seen a rapid increase in the number of tourists who want to visit the reefs, to sail, swim, dive and fish. This has brought new prosperity to the islands but paradoxically it threatens the reefs on which the tourism depends. Tourists swell coastal populations and want modern roads, hotels and marinas and land must be cleared for construction and agriculture. This increases pollution from oil, gas and pesticides that poison coral and marine life. Eroded soils reach the reefs as mangrove trees and seagrasses, which normally act as filters, are cut for firewood and to open up beaches. Human and animal waste and fertilisers are washed into the sea increasing nitrogen levels that cause algae overgrowth that smothers reefs by cutting off their sunlight. Urban rubbish kills coral reef animals. Turtles choke on plastic bags and fish and other marine animals are strangled on discarded fishing nets. To all this can be added the natural stresses from severe storms and hurricanes, coral bleaching resulting from the warming effects of El Niño and the proliferation of coral diseases.

Local people face a difficult dilemma. They wish to see their communities prosper but they also wish to conserve the mangroves and the coral reefs on which their economic growth is based. How can they strike the balance?

Protecting the reef

Most of the region's experience in protecting and managing coral reef resources has taken place in areas of outstanding ecological value and in almost every instance it has led to the creation of marine parks or reserves managed by autonomous organisations set up specially for the purpose. Some have been successful but this has depended to a large extent on their ability to generate funding through user fees and tourism. But not all areas are well suited to this form of management and in general they have failed to address the broader concerns of social and economic development and in particular the issues of poverty.

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Laborie is typical of the poor communities that are too small to take full advantage of the benefits of tourism while at the same time they suffer the consequences of manmade pollution and natural forces. They need alternative strategies that promote reef conservation and natural productivity while continuing to focus on ways of sustaining and improving the livelihoods of coastal communities.

A team from the Caribbean Natural Resources Institute (CANARI) supported by the Institute of Development Studies, University of Sussex, UK has been helping the community to achieve this. Their aim was to develop a proto-type for new institutional structures by testing and developing tools for sustainable development that would initially help the people of Laborie but would have wider application in other similar communities. The tools



included participatory methods for planning and management and new technologies for natural resource management. Existing participatory approaches were used that were adapted and developed to the local situation and their impacts assessed. Technologies tested included mariculture, application of management tools, and alternative livelihood activities that could result in reduced reef degradation.

Sea urchin fishery

One technology that has proved to be important to the community at Laborie is the harvesting of edible white-spined sea urchins. This was a well-established industry some 20 years ago and provided seasonal income for many households. But it fell into decline because of continual poor harvests. Recently there have been encouraging signs of recovery and harvesting began again in 2001. Unfortunately this was marred by conflicts. People from other villages also came to harvest in Laborie Bay but it was not so much the sharing of the harvest that caused the problem as much as the way it was done. Because of the many years of inactivity some harvesters, who were new to the fishery, were unaware of previous harvesting practices. The outsiders cleaned the urchins on board their boats and discarded the empty shells in the sea. The people of Laborie believe this is what drove away the urchins from their shores.

Following the harvest a series of community meetings were convened that confirmed the need to improve harvesting practices if there was to be a harvest in 2002. A priority issue was the need for better and wider community awareness of the resource and its potential in order to build ownership of and support for its management. To assist this process a public exhibition was set up prior to the harvest and national media were used to disseminate information.

Sorting out the rules for harvesting was one problem but making sure that there were enough urchins for future harvests was another. The community, through the key stakeholders, took on the responsibility of routinely monitoring urchin stocks throughout the year to provide sound data on which to base future

decision-making. The results of this and the implications for harvests were discussed publicly and the outcome was a set of recommendations made to the Department of Fisheries that decided the timing and conditions for the 2002 harvest.

The community meetings and consultations also highlighted the need for fairer marketing arrangements so that harvesters could maximise their profits. A one-day festival was organised that enabled harvesters and other members of the local community to sell a variety of sea-urchin dishes, while at the same time giving wider publicity and validity to the management efforts that had created a successful harvest.

The result of all this activity was significant changes in the 2002 harvest. There were noticeably fewer conflicts and a greater positive impact on the community. More people were involved in the harvest and benefited from it, most significantly the poorer members of the community.

Seaweed

Seaweed, known locally as seamoss, is another reef product that can be cultivated and harvested for food. Research on seamoss cultivation began in St Lucia in the 1980s in response to the over-harvesting and decline of natural stocks in the region. Laborie is now one of three areas in St Lucia where this is cultivated commercially. But the problem is that they chose to grow a variety that is easily cultivated rather than one of better quality or in greatest demand. Investigations were



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made to determine the potential for cultivating these improved varieties and to develop good propagation methods. At the same time assessments were made of the issues and institutions that affect seaweed production. This is now being used to formulate a development plan for Laborie and to identify the public policy requirements for the expansion and viability of the industry at the national level.

Tourism

Although the community is small and is unlikely to be a major tourist attraction there may be some potential on a modest scale for community tourism. This is at an early stage of discussion and the research team are facilitating an informal process aimed at shaping a local vision for tourism development in the area.

There are challenges to face and public health is high on the agenda. For some time there has been concern in the community that the quality of water in the bay has declined and that sewage, pesticides and fertilisers were the most likely causes, although no quantitative information was available. Water sampling revealed unacceptably high levels of coliform bacteria associated with sewage contamination. These greatly exceed the levels in guidelines for bathing waters. The results are now being shared with relevant agencies and groups at local and national levels with a view to producing a coordinated action plan.

The challenge

Although the research continues what is clear is that the combination of new technologies and community participation can be an effective vehicle for change. The challenge now is to put all the pieces together and to see what lessons have been learnt that would be helpful to other communities in similar situations. When communities are small and do not have a dedicated coastal resource management organisation, how can local stakeholders remain directly involved in formulating and implementing resource management and what should be their roles? What are the public policies required to make local management effective? What are the technologies available to sustain and improve coastal livelihoods, whether in tourism, in fishing or in aquaculture? What are the planning processes that can be used to empower people, especially the poor?

These are some of the questions for which the research will propose some answers as it moves into its final phase.

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