

Life on small islands

THE PROBLEM

Small islands have special problems. They tend to be isolated, have high rates of migration and a limited skills base. Communities tend to concentrate around the coastal fringe where their social, economic and cultural activities are focused, as well their physical infrastructure for waste disposal and storm protection. Economic growth frequently leads to land clearance for building and agricultural intensification. This can result in severe soil erosion, which contributes to declining coastal resource quality, particularly where there are coral reef systems. Stakeholders who rely on fishing and coastal tourism for their livelihoods often bear the costs of such resource degradation.

Tobago, in the Caribbean, is a typical small island economy. It is a peripheral economy in the two-island state of Trinidad and Tobago - the so-called 'second island' problem. It is more dependent on tourism and agriculture than the national economy in general. The intensive use of its marine and coastal resources for tourism and for commercial and subsistence use ensures that the major resource conflicts in Tobago are played out in the land water interface.



Tourism is a growing industry in Tobago. More tourists means improved livelihoods not just for the hoteliers but also for local traders, boat owners, divers, restaurateurs and growers. But it also means more sewage effluent and more mangrove clearance for buildings. Sewage, which is mostly discharged untreated, pollutes coastal waters as does the sediment from soil erosion resulting from poor agricultural



'Anything that happens on a small island ends up in the sea and affects everyone' VILLAGE COUNCIL MEMBER

practices and land clearance activities. This damages the coastal ecosystem – the mangroves, the sea grasses and the coral reefs - on which the tourism depends.

Buccoo Reef Marine Park is central to the island's tourist trade and is located close to two centres of population, Buccoo Reef and Bon Accord Lagoon Complex. This is a protected area and comprises a large reef system with an extensive shallow reef lagoon bordered by a fringing mangrove wetland covering an area of some 300ha. In 1995 the Institute of Marine Affairs, based in Trinidad, developed a management plan for the Park. But it was not greeted with enthusiasm. The plan did not take account of the views of those most affected by it and there was no participation from them in setting it up.

Both the Tobago House of Assembly (THA) and local stakeholders felt that if the plans for implementing a sustainable coastal resource use



'We recognise that development should always put people first....isn't that sustainable development? Sustainable development ...I like those words'

VILLAGE COUNCIL MEMBER

strategy were to succeed then it was vital that they contributed to it. So with the help of the University of East Anglia in UK, they embarked on a research project to develop and promote sustainable resource use strategies that had the consensus of those most affected by the developments. Together they set about analysing the conflicts and trade-offs between different uses and users of marine protected areas. This was an important analytical tool, which provided the forum for participation, and if it proved successful, could be of immense help to other small island developing states and coastal regions with similar development problems.

The main questions to be answered were - How can the competing demands for economic development be reconciled with needs to conserve the environment? Are these two objectives compatible or not? Interestingly there is increasing evidence from around the

world that excluding local people from protected areas and resources, does not bring about better conservation. Greater involvement of local communities in managing the environment is more likely to result in long term positive outcomes - but how can this be done? Finally what mechanisms and institutions can facilitate this involvement?

TRADE-OFF ANALYSIS

The approach

Trade-off analysis was developed to help people address the problems of managing potential conflict. At Buccoo Reef Marine Park it was used to engage with local stakeholders in order to understand and analyse the conflicts that might come from various development options, and propose a means of finding trade-offs between the different uses and users of the Park. Trade-off analysis was used in three main stages. The first stage was stakeholder analysis, which revealed the critical interest groups that are important to or influential over the management of the Park. The second was the development of a multi-criteria analysis model to assess the impact of various management options. This involved setting up a number of development options in consultation with stakeholders; defining key criteria of economic, social and ecological change; quantifying the impact of the development options on each of the criteria; deriving weights for each criteria by asking the stakeholder groups about their priorities and then using the model generated as the basis for stakeholder participation in decision making.

Four options were tested ranging from limited tourism to expansive tourism with and without complementary environmental management.



Although the model showed that the expansive tourism option dramatically increased local job opportunities and economic revenues, the ecology suffered even when combined with environmental management. The mangroves were predicted to decline in area, sea grass would also decline and coral viability could fall to poor levels, well below the internationally accepted minimum level of 20% coral cover. The third stage involved working closely with the different stakeholders. A series of meetings were convened with each of the stakeholder groups to discuss their priorities for development. These enabled people to articulate their concerns about the resources, explore their perception of conflicts in a non-threatening environment, and build a rapport among themselves and with the research team. Stakeholder groups included fishers, local communities, businesses such as reef tour and water sports operators, recreational users, and technical personnel from various departments of the Tobago House of Assembly. Although significant numbers were in favour of economic growth, overwhelmingly the consensus was for maintaining the health of their eco-system. Finally a consensus-building workshop brought together the stakeholder groups to find trade-offs between the various uses of the marine park and to prioritise management actions. People were also asked to address very specific questions such as ‘what can I and my group do?’ as well as ‘what can the government do?’

Comments on what can be done immediately focused on avoiding direct physical damage to the reef from boats, jet skis and oil spills whereas the medium term priority was wastewater treatment. Long term concerns were about educating everyone in the community about their environment, starting with children in school, and ensuring that stakeholders continued to play a role in the planning and

management process. One economic planner commented that ‘once stakeholders participate in decisions, 75% of the work is done.’ One result of the project has been the formation of the Buccoo Reef Stakeholder Group, which brings together people who were previously in direct conflict about the use of resources. They are continuing to work with local Government to develop a co-management strategy for the Park.

WIDER APPLICATION

Trade-off analysis has clearly demonstrated that it is possible to successfully incorporate stakeholder views and values into a rigorous planning framework, which makes sense to politicians, regulators and planners. The ability to bring together participatory approaches with more technical decision-support tools, such as multi-criteria analysis, is a significant achievement.

The research is being extended in the Caribbean, examining the opportunities and constraints to institutionalising stakeholder approaches to natural resource management. The approach has also been widely disseminated regionally and internationally. It is being adapted for use in other ecosystems and countries. An example is its use in forest resources management in Canada.

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