COASTAL RESOURCE MANAGEMENT IN SAINT LUCIA: HAVE WE PUT THE CART BEFORE THE HORSE?

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Background

The scarce marine resources of the Caribbean island of Saint Lucia have long been recognized as worthy of conservation and protection. Being a volcanic isle, the country's population and many of its economic activities are huddled along a narrow coastal strip, perched over an equally narrow underwater shelf area which supports many of the island's fisheries resources. With the rapid evolution of the tourism industry, use of the coastal zone has suddenly expanded to include yachting, scuba diving, jet-skiing, sunfish sailing, snorkeling, tour boating, not to mention sun tanning. Thus the traditional resource users (the artisanal fisherman and the recreating local) now vie for use of this limited coastal zone, a situation which has often lead to verbal and even physical disputes.

Saint Lucia had traditionally been an island with need for minimal law enforcement since most communities had managed to deal with resource use and management issues in a relatively informal way. As technology transfer and largely foreign funded development occurred, legislation was promoted as a proactive means for preventing resource degradation where it had not yet arisen and solving it where it had already occurred. Thus, where the coastal zone is concerned, a comprehensive Fisheries Act and corresponding regulations were devised covering a broad range of fishery development and resource management issues.

This paper assesses the degree of success in implementing this

legal framework in light of the available human and financial resources along with the continued resource conflicts which exist, and suggests that the more adaptable the legislation in terms of allowing for community based management, the more successful it is in fostering resource management.

Implementation of Fisheries Legislation

An array of legislation exists as a tool for regulating the use of marine resources. Since 1987, Saint Lucia has had regulations (eg. size limits, close seasons) referring to lobsters, conch, and turtles, and allowing for prohibition against removing coral, sponges and sea urchins from the fishery waters. The Fisheries Act of 1984 includes resource use laws which control foreign and local fishing activities, allow for the leasing of areas for aquaculture, and the establishment of marine reserves, fishing priority areas, and local fisheries management areas.

It was envisaged that implementation of the fisheries laws would include a combination of public awareness efforts and actual enforcement. All Fisheries Officers were given powers of arrest, and a Marine Police unit was created in 1984. Workshops have been held with Police and Customs officers in an attempt to increase their awareness of rationale behind this legislation. In addition, much effort has been centered around making the resource user and the general public aware of the need for the many rules and regulations.

The task of updating the island's police officers with current fisheries laws and regulations proves to be a continually demanding task. As the fisheries legislation evolves, and there is turnover of police personnel, there is a need for regular workshops highlighting what is expected of them as law enforcement officers.

Fisheries Officers are often faced with a conflict of interests when they find themselves being extension personnel on the one hand and enforcement officers on the other. Often they are called upon by Police officers to be present on fisheries related maneuvers and this can retard their effectiveness as extension officers in the future. The marine police face the formidable task of patrolling a comparatively vast marine area with limited personnel and equipment. Police stations in coastal communities are not equipped with sea going vessels and thus response time for reports of marine offenses are often too long for successful apprehension.

The persons in the community who are probably most aware of the fisheries laws are the schoolchildren. The fact that they assemble daily at a known location and time and are "forced" to be relatively attentive, makes them an easy target group for public awareness efforts. The fishermen, charcoal producers, conch divers, seamoss harvesters, and coral collectors are not so easy to track down, and educational efforts with such user groups are often far more tedious, fragmented, and less likely to be successful. These persons are also the ones feeling the crunch of resource

conflicts and are justified in feeling somewhat defensive and reluctant to cut back and conserve when they see so many other impacts infringing on their resource base and livelihood.

In the short term the most important target group is, however, the resource user. With the highly limited nature of our coastal resources, one can not afford to wait for the youth of today to become the custodians of tomorrow. What is crucial is to ensure that resource conservation starts today!

The process of implementing certain facets of the fisheries legislation is still being undertaken. Marine reserves and fishing priority areas were established in 1986 but still await proper demarcation and effective management. Despite the presence of small-scale commercial seamoss (Gracilaria) cultivation since the mid 1980's, no farmers have taken advantage of the option to lease their area (despite continual problems with theft). Illegal coral collection and sale to tourists continues to be a problem, despite efforts to increase visitor awareness of this prohibited activity.

Despite the limitations which the Department of Fisheries has experienced in ensuring effective enforcement of the 1984 Fisheries Act and 1987 Regulations, revision of the Fisheries Regulations to include additional controls on areas such as scuba diving, sportfishing, seamoss harvesting, and mesh sizes of fish traps and nets were seen as essential to ensure the sustainable use of the marine area. Yet these new subject areas along with more

comprehensive regulations now given for sections detailed in the 1984 Act and 1987 Regulations are to place additional demands on the existing enforcement system (fisheries officers, marine and land-based police) and further threaten its effectiveness.

Successes and Failures

It has long been recognized that community support for resource management measures is strongest when resource users and other community members are involved in structuring of the process- from assessing the status of the resource, and deciding on management solutions, to implementing/enforcing the management measures established. In most cases, the existing marine resource legislation was designed by fisheries officers, reflecting their knowledge of legislation elsewhere in the world and their understanding of the existing marine resource use problems and needs.

Indeed, the Department's experience indicates that the degree of success in effectively managing these resources through use of existing laws reflects the degree of resource user participation in finalizing the management details. The following two case studies will, I hope, illustrate the benefits of fully utilizing resource user input in coastal zone management.

CASE STUDY 1 - MANAGEMENT OF THE SEA URCHIN RESOURCE

In Saint Lucia the White Sea Egg (Tripneustes ventricosis) has traditionally been harvested during late summer, its gonads being

considered a delicacy. Over-harvesting and subsequent hurricane damage forced the Department of Fisheries to implement an indefinite moratorium on the harvesting of sea eggs in 1987. Since the resource was severely depleted, there was little illegal harvesting during this ban, and populations had recovered sufficiently to consider allowing controlled harvesting by 1990.

The open-access harvesting of previous years was, however, not considered to be a sustainable method of utilising this resource. Therefore, a regulation set up in 1987 which required the written permission of the Chief Fisheries Officer (in accordance with any such conditions as he may require) in order for anyone to disturb, take from the fishery waters, possess or sell sea eggs, allowed for a system of controlling both the amount and form of fishing effort for this marine species.

Over the past four years the Department has been establishing a community based management approach for the sea urchin resource in Saint Lucia. Research carried out by Allan Smith of Canari (Smith and Berkes, 1991) on the history of sea egg harvesting in southern communities and the current biological characteristics of the populations within these areas, indicated that the system of community control which had existed in one community (Laborie) had prevented the devastating collapse of populations in the Vieux Fort area. The study also suggested that a size limit of 85mm test diameter be implemented if harvesting were to be reinitiated.

It was decided that, in the new system, future harvesters would be selected based on their participation in various pre-harvest activities such as population surveys and meetings where sea urchin biology and management issues were reviewed. Group discussions were used to identify harvest factors which required controlling (eg. the extent of each harvest zone, the number of harvesters, a size limit for sea eggs, and appropriate system for the disposal of shells). These then became official conditions attached to permit letters and, although "required by the Chief Fisheries Officer", they are in fact seen as essential by all prospective harvesters.

The Department has seen considerable success within this system of management. Each year the amount of effort required from the fisheries officers becomes less as the harvest "community" become more and more familiar with what is required for sustainable use of the resource. Each year the harvesters advise the Department as to when to revoke permits (based on the harvest nearing the size limit). Last year the group made the joint decision, based on the status of the stocks, to limit the number of persons granted extensions once the original permit had expired, and also devised a system of merit to select these individuals. The degree to which fisheries officers are required to police the situation has decreased due to the intense "nurturing" attitude which the harvesters have developed, making them major actors in excluding illegal harvesters from their zone. Harvesters recognize that their own management of the harvest zone is the key to

ensuring a successful harvest the following year.

CASE STUDY 2 - MANAGEMENT OF THE CORAL REEF MARINE RESERVES AND FISHING PRIORITY AREAS

Despite their existence since 1986, these marine protected areas have remained hot spots in terms of resource use conflicts in coastal areas. These mostly arise between the traditional users (the fishermen) and the new tourism related users (yachtsmen, divers, tour boat operators, etc.). The Fisheries Act specifies that no person can remove flora or fauna, fish or attempt to fish, pollute, dredge, remove sand or any other extract, within any area declared as a marine reserve, and that all vessels anchored within a fishing priority area must immediately give way to fishing activities (eg. beach seining for schooling coastal pelagics).

Since a large proportion of the coral reef habitat of the central west coast is recognized as the most productive and diverse in the country, a significant amount of the available reefs have been declared marine reserves. Some fishermen who have traditionally set fish traps and gill nets within this area are now excluded from many of their traditional reef fishing grounds, a situation which is further exacerbated by the Department's inability to date to acquire funds to clearly demarcate the seaward and coastal limits of the reserves. Conflicts have increased since 1986, largely because local persons see the scuba diving activity of tourists going unrestricted within these reserve areas.

Much of this fisheries-tourism conflict is caused by lack of awareness on the part of visiting yachtsmen as to the existence of fishing priority areas, and thus their reluctance to move when requested to do so by fishermen in hot pursuit of a school of tuna or jacks. Collaboration with the tourism sector is now allowing for joint production of user guides detailing all necessary restrictions for visitors.

New regulations relating to the operation of dive companies were designed to ensure adequate diver supervision and ceiling limits on the diver totals placed in an area at a specific time. Despite attempts to hold consultations prior to their implementation, the regulations have met resistance from the dive community who feel that they are already regulating their operations and deny causing any detrimental impact on the reef resource. Attempts to introduce user fees for persons entering marine reserves (mostly scuba divers) so as to generate funds for demarcation and the establishment of a marine park have also met opposition from dive operators, who feel that the substantial service tax imposed on them by government should be channeled into projects such as this.

This case study is indicative of the problems which may be generated by "putting the cart before the horse". Marine reserves were identified with minimal consultation with resource users and other management authorities, and now users are less congenial in terms of supporting restrictions, no matter how logical and

essential they are.

Conclusion

Certain restrictions, such as size limits for lobsters and turtles, must be specified within the law. This is largely because the biological nature of the resource dictates that, on average, a Saint Lucian spiny lobster achieves sexual maturity at a certain size, and this is a condition which will change only on the evolutionary time-scale. Likewise, the law must provide the means for prosecuting persons who misuse the coastal areas and resources, thus specific offenses need to be detailed within the letter of the law.

In regards to utilization of the existing fisheries legislative framework the Department's experience strongly supports the need, wherever possible, to establish flexibility within the legislation. There must be a conscientious attempt to design legislation which allows for and encourages the community based approach to resource management. Thus, as far as possible, there must be means to develop finer details of the law in conjunction with the resource user.

Limitations in terms of the personnel, time, and materials available for law enforcement and public education are likely to persist for years to come. It is therefore essential that the onus for resource management be placed on the resource user. This cannot, however, be dictated from above. The resource user not

only knows the problems, but also feels the problems. It must be acknowledged that, if he or she is not allowed to become active in the conservation of these resources, management efforts are doomed to fail. How better to instill concern and enthusiasm than to allow each individual to devise the means to ensure a prosperous future for their own community.

References

Smith, A. and Berkes, F. 1991 Solutions to the `Tragedy of the Commons': sea urchin management in Saint Lucia, West Indies. Environmental Conservation, Vol 18, No. 2, Summer 1991.