A Co-management Pilot Project for the Lobster Fishery at Sauteurs, Grenada

ROLAND BALDEO, PATRICK McCONNEY, PAUL PHILLIP, PAUL WILLIAMS, SANDRA FERGUSON, JOHNSON ST. LOUIS, and MORAN MITCHELL

1Fisheries Division, Ministry of Agriculture, Forestry, Lands and Fisheries
St. Georges Grenada
2Coastal and Marine Management Program, CCA
3St. Patrick's Fishermen's Cooperative
4Agency for Rural Transformation

ABSTRACT

The current fisheries regulations of Grenada prohibit the use of nets for harvesting lobsters, and the use of trammel nets for any species. Trammel nets are unselective and destructive fishing gears that operate through entanglement and are prohibited in most eastern Caribbean countries. Prior to these regulations, the fishermen of Sauteurs on the mainland and the offshore Isle de Ronde customarily used trammel nets for harvesting lobster. As the regulations were introduced, the fishermen sought and received reprieves from government to allow them time to switch to alternative gear on their own. However, trammel nets remained the primary gear for lobster with no evidence of alternatives being introduced. In 2001, the Government of Grenada decided to no longer tolerate trammel nets, but wanted a collaborative phase out to include introduction of alternative and acceptable fishing gear by the Fisheries Division. A co-management pilot project was initiated for this purpose. The project informed fishermen about the Code of Conduct for Responsible Fisheries and the Grenada draft fishery management and implementation plans for lobster. A brief co-management agreement was formalized between the fisheries authority and Sauteurs fishermen. Acquiring and demonstrating alternative fishing gear proved logistically problematic, and no new gear types were introduced. Training in leadership, negotiation and conflict management was provided to build capacity and sustain the co-management effort. This case illustrates that unorganised fishermen can wield considerable power in management compared to a fisheries authority with limited capacity. Fishermen selected which regulations to obey or ignore based on their sense of fairness and other criteria. Conditions for co-management were not very favourable from either side, but there exists a willingness to continue working together in areas of mutual interest.

KEY WORDS: Co-management, Grenada, lobster
Un Proyecto Experimental de la Co-gerencia para la Industria Pesquera de la Langosta en Sauters, Grenada

Las regulaciones actuales de las industrias pesqueras de Grenada prohíben el uso de las redes para capturar langostas, y el uso de las redes de trasmallo para cualesquiera especies. Las redes de trasmallo son los engranajes de pesca unselective y destructivos que funcionan con el encanto, y se prohíben en la mayoría de los países del Caribe del este. Antes estas regulaciones los pescadores de Sauters en el continente, y la Isla costa al surea de de Ronde, utilizaron acostumbradamente las redes de trasmallo para cosechar la langosta. Mientras que las regulaciones fueron introducidas los pescadores buscados y recibió suspensiones temporales de un castigo del gobierno para no prohibirles hora de cambiar a alternativo engranar en sus el propios. Sin embargo, las redes de trasmallo seguían siendo el engranaje primario para la langosta sin la evidencia de los alternativos que eran introducidos. En 2001, el gobierno de Grenada decidió a tolera no más de larga redes de trasmallo, pero deseó un de colaboración elimina para incluir la introducción del engranaje de pesca alternativo y aceptable por la división de las industrias pesqueras. Un proyecto experimental de la co-gerencia fue iniciado para este propósito. El proyecto informó a pescadores sobre el código de la conducta para de la puesta en práctica de las industrias pesqueras y de Grenada del bosquejo los planes responsables de la gerencia de la industria pesquera y para la langosta. Un breve acuerdo de la co-gerencia fue formalizado entre de las industrias pesqueras de la autoridad y los pescadores de Sauters. Adquirir y demostrar el engranaje de pesca del alternativo probaron logísticamente problemático, y no se introdujo ningunos nuevos tipos del engranaje. Entrenando en la dirección, proporcionaron a la capacidad de la estructura y sostiene la gerencia de la negociación y del conflicto el esfuerzo de la co-gerencia. Este caso ilustra que unorganised a pescadores puede manejar energía considerable en la gerencia comparada a una autoridad de las industrias pesqueras con capacidad limitada. Los pescadores seleccionaron a que las regulaciones para obedecer o para no hacer caso basaron en su sentido la imparcialidad del y otros criterios. Las condiciones para la co-gerencia no eran muy favorables de cualquier lado, pero existe una buena voluntad de continuar trabajando junto en áreas del interés mutuo.

PALABRAS CLAVES: Co-gerencia, Grenada, langosta

INTRODUCTION

Around Sauters and Isle de Ronde in the north of Grenada fishermen have used trammel nets as the main method for harvesting lobsters since the 1980s. Nowhere else in Grenada is this gear used primarily for lobsters. These nets are non-selective and wasteful of finfish that die and decay, self-baiting the nets during the soak period. Hauling the nets physically destroys productive
bottom habitat. Use of trammel nets was recently prohibited in Grenada. The nets were prohibited in neighbouring countries several years earlier.

While recognizing the illegality of their actions and agreeing to stop using the nets, fishers at Sauteurs and Isle de Ronde have argued that they need to be first provided with alternative, legally acceptable fishing gear that yields adequate returns. Dialogue between the fishers and Fisheries Division on this issue has been ongoing for several years. Fishers argued successfully, at policy level, for relaxing enforcement of the legislation until the Fisheries Division introduced suitable alternative gear. The Fisheries Division’s work with the fishers on alternative gear and persuading them to comply with the fisheries regulations is an attempt at co-management. Due to the relatively remote location of the fishing areas, voluntary compliance with the legislation is critical.

This paper describes the lobster fishery and a co-management pilot project to address the issue of irresponsible trammel net fishing for lobster. The project results discussed here may be applicable to other Caribbean fisheries.

SAUTEURS SPINY LOBSTER FISHERY

The Caribbean spiny lobster (Panulirus argus) is widely distributed in the western central Atlantic, supporting fisheries with total reported landings of between 27,000 and 30,000 metric tons per annum over the last decade, valued at hundreds of millions of dollars. However, recent assessments undertaken under the auspices of the Western Central Atlantic Fisheries Commission (WECFAC) have indicated that the resource is being fully or over-exploited over much of its range (Cochrane and Chakalal 2000). In most countries there is an urgent need to control or reduce fishing effort for the species. According to Grenada’s current draft fisheries management plan for lobster, their fishery is fully or over-exploited, with habitat degradation also as an issue.

Conservation measures for spiny lobster in Grenada presently include:

i) Minimum length and weight,
ii) No-take molting lobsters,
iii) No-take lobsters with eggs,
iv) No impaling of lobsters,
v) Hand, loop trap and pot only,
v) Closed season (May-Aug),
vii) No landing lobster not whole, and
viii) Trammel nets are prohibited.

The trammel net fishery for spiny lobster took place on the northern shelf of Grenada through to the island of Carriacou. According to fishermen, the area is characterised by rocky bottom featuring live coral outcrops and patches of sand. Currents in the area, especially in the channels between islands, are reported to be swift. There areas of shallow coral reef and seagrass near islands (Figure 1).
A trammel net consists of three walls (panels) of webbing suspended from a float line and attached to a lead line. It is fished at the bottom as an entangling net. The net used by the Sauteurs fishers varies from 100 m to 150 m long and is approximately 1 m to 1.5 m in depth with 10 cm mesh on the inside and 30 cm outer panels. The net is heavily leaded since setting the nets in channels of 20 - 80 m water depth where strong currents run is common. It is usually set in the daytime during the period of slack current (preferably in the morning), and it floats upright in the water column. When the current begins to run, the water pressure forces it to lie flat on the bottom. In this position, the net entangles much of the substrate with which it comes into contact and it may also be damaged in the process.

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the net spoils quickly, baits the net, and attracts lobsters. A relatively small number of boats (about 10) use these nets. Two fishers usually haul the nets, and the entangled coral, sponges, and other organisms are removed as it comes aboard. Scouring from the “debris” pulled up with the nets is evident on the side of the small (< 7 m) outboard-powered wooden boats. The contents of trammel nets have not been systematically recorded, but the nets apparently entangle a large number of fish species of limited commercial value, sponges, algae and small crustaceans. They break off hard and soft coral. Fishers complain of the hard work of pulling the nets and cleaning them of unwanted items. Fishers report that net maintenance is high.

A boat will typically catch 30 - 60 kilograms of lobster per week in a season of 16 - 24 weeks. Between 6 and 10 boats are usually operating, so landings of about 10 metric tons per season of whole lobster from Sauteurs and Isle de Ronde are possible. Lobsters may be landed immediately in Sauteurs or taken to holding pens in shallow water for accumulation. Landings are usually taken by road to the Grenville fish market for sale, and some also find their way to the capital, St. George’s. The market accepts lobster caught by the illegal fishing gear as well as lobster caught by SCUBA divers by hand or using loops.

The efficiency of the trammel nets reduces the time a vessel needs to remain at sea, saving fuel and labor costs compared to alternative gear such as traps. With time to spare, many of the fishers also do other fishing, and a few have other part-time occupations. During the closed season for lobster, bottom fishing (for snappers and groupers) is prevalent, while beach seining is an alternative or supplement all year round. Although the Sauteurs fishers exploit several fisheries, lobsters and hinds are their mainstay. It is the lobster fishery that they say provides them with their fishing identity and main livelihood. Estimates of personal and fishery-wide income vary considerably. However, fishers are said to expect about US$2,000 per eight-month season. The seasonal value of the lobster fishery at these locations may be around US$100,000, not counting indirect employment and value-added income through final marketing through hotels.

PROJECT

Use of efficient and unselective fishing gear like trammel nets is considered irresponsible under the Code of Conduct for Responsible Fisheries. Their use has been prohibited or severely restricted in many countries of the Caribbean and elsewhere. Use of nets for harvesting lobster has been against the law in Grenada since 1987 (although some fishers claim that they never knew this), and from 7 January 2001 the trammel net was banned from all fisheries in Grenada.

For many years fishers at Sauteurs requested and received reprieves for enforcement of the regulations against using nets for lobster. They generally observed the closed season and most of the other regulations, but refused to comply with the net ban. They asked for stays of enforcement on the basis of requiring more time in which to find adequate alternative fishing gear. There is no evidence, however, that the fishermen actively sought such alternatives.
The co-management pilot project was intended to make progress in finding alternative gear through collaboration between the fishers and fisheries authority. Neither the fisheries authority nor fishers were well equipped or prepared for co-management. Joint problem solving between these stakeholders is likely to be the most promising means of instituting collaborative relations.

The co-management pilot project on "Responsible alternatives to trammel nets for lobster fishing at Sauteurs and Isle de Ronde" started on 1 October 2001. It was implemented by the Fisheries Division of the government of Grenada, a Sauteurs fisher group, the Agency for Rural Transformation (ART), and the Coastal and Marine Management Program (CaMMP) of the Caribbean Conservation Association (CCA).

The general objective of the project was to build capacity in the fishing industry and the Fisheries Division for participation in co-management by the Division assisting the trammel net lobster fishers of Sauteurs and Isle de Ronde to adopt more responsible fishing methods, and to establish co-management arrangements for their lobster fishery. Specifically the project was to:

i) Increase awareness of responsible fishing practices and the problems of trammel net use,

ii) Identify and promote acceptance of alternative methods to using trammel nets for lobsters, and

iii) Suggest alternative livelihoods for fishers who use trammel nets to harvest lobster.

These objectives were to be achieved through collaboration where possible.

RESULTS

Table 1 sets out the activities and results of the project initiated by the CCA and continued by the Fisheries Division of Grenada after project termination.

The co-management agreement made at inception stipulated that the fishing trials would only take place during the remaining lobster season (Feb-May 2002). The decision to try single panel nets on an experimental basis by special permission was due to the fishers' initial resistance to consider traps, and the idea that the law could be changed to allow these nets if they proved acceptable in their fishing performance. The one trial attempted before the close of the season was inconclusive. It was also agreed that lobster pots would be tried at the same time, but this did not take place due to various delays.

Towards the end of the project a critical policy decision had to be made on whether to allow trammel net use to continue into the next lobster season despite the lack of results on alternative gear. The Minister responsible for fisheries decided to end the relaxation of enforcement and told a delegation of fishers that the illegal trammel net fishing had to end. A high level ministry management committee decided that any use of nets in the lobster fishery (even if only on an experimental basis) was unacceptable, and that all effort should be put into the introduction of lobster traps.

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<table>
<thead>
<tr>
<th>Activity</th>
<th>Progress</th>
</tr>
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<tbody>
<tr>
<td>Obtain information on lobster traps and pots suitable as alternatives</td>
<td>CCA supplied some supplemental information, but the Fisheries Division already had most information, and several fishermen were also quite knowledgeable about alternative gear.</td>
</tr>
<tr>
<td>Document lobster fishing in Sauteurs, area conditions and marketing</td>
<td>A report done by a fishermen officer was supplemented by the CCA in association with the fishermen and fisheries officers. Fieldwork on catches from lobster fishing with trawl nets was not possible.</td>
</tr>
<tr>
<td>Determine the applicable lobster fishery plan and laws to communicate</td>
<td>The Grenada draft lobster national fishery management plan was reviewed with the fishermen and fisheries officers. Technical comments and recommendations from CCA were prepared.</td>
</tr>
<tr>
<td>Distribute copies of lobster management plans and fisheries regulations</td>
<td>The draft lobster management plan was not ready for implementation, but a summary of the lobster regulations was distributed. All of the lobster fishermen are aware of the regulations and their content.</td>
</tr>
<tr>
<td>Provide information on responsible fishing practices (Code of Conduct)</td>
<td>Information on the Code of Conduct for Responsible Fisheries was distributed. Fishermen appreciated the content, but perhaps found it abstract compared to their specific situation. Promotion of the Code must continue.</td>
</tr>
<tr>
<td>Hold workshops on alternative lobster fishing gear and trials</td>
<td>Fisheries officers and fishermen agreed at their first meeting to try single panel nets (used in Martinique for lobster pots), and lobster pots used in other countries.</td>
</tr>
<tr>
<td>Co-management agreement for gear testing, evaluation and adoption</td>
<td>A 20-point agreement was reached at the inception workshop on viewpoints, areas of responsibility and action. Permission to use restricted fishing gear in trials by fishermen was given by fisheries authorities.</td>
</tr>
<tr>
<td>Obtain alternative gear and conduct test fishing with active sharing of results</td>
<td>Delays and difficulties occurred in acquiring the single panel nets from Martinique. One unsupervised trial was attempted before the close of the 2001-2002 season. The Fisheries Division sent an officer and two fishermen for training in lobster net construction after project end.</td>
</tr>
<tr>
<td>Hold workshops and meetings to analyse and evaluate alternative gear</td>
<td>Meetings were held to consider options following the net trial and it was agreed that the gear would be tried again under supervision with different technical specifications. It was also agreed that the net pots should be tried next.</td>
</tr>
<tr>
<td>Hold workshops and meetings to decide on adoption of alternative gear</td>
<td>Some fishermen rejected use of the single panel net due to the single unsupervised trial. The government decided to discontinue net trials. All attention has turned to the introduction of stackable lobster net pots.</td>
</tr>
<tr>
<td>Determine possible alternative livelihood options for trawl net fishermen</td>
<td>To research alternative livelihoods while not addressing the fishing gear problem would increase tension between fishers and government. Fishers are not interested in alternative livelihoods, but only in alternative fishing.</td>
</tr>
<tr>
<td>Assist, as necessary, in reactivating a Sauteurs fishermen's organisation</td>
<td>Discussions were held with Cooperatives Department, a one-day national workshop on leadership was held, and another on conflict management and negotiation for the fishers and other fishing interests in Sauteurs.</td>
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</table>
The workshops for leadership training and capacity building in negotiation and conflict management assisted to prepare the fisheries participants and government for co-management. Recommendations were made for livelihoods options research, completing the lobster fishery management plan, and ensuring that the plan with any new regulations become well known by fishers and all other stakeholders, including the consulting public.

DISCUSSION

National and regional assessments of lobster stocks, conducted under the auspices of FAO, have shown them to be overexploited or fully exploited in most areas of the Caribbean (Arce and de Leon 2000, Cochrane and Chakarallah 2000, FAO/WECAF 2001a, FAO/WECAF 2001b). No assessments are detailed enough to show the population structure and dynamics of those exploited by the Grenada fishery, but both fishers and fisheries officers report that catches from around Sauters and Isle de Ronde reflect healthy populations. This needs to be quantified and verified but, if correct, it puts Grenada in an enviable position that should not be jeopardised by irresponsible fishing. It is in the interest of all of the stakeholders, for biological, social and economic reasons, to properly manage the lobster fishery, ensuring that it remains sustainable. This requires a precautionary approach.

It is unfortunate that the practices and consequences of trammel net fishing were not systematically and quantitatively documented over the years. The Code of Conduct for Responsible Fisheries argues against use of unselective and destructive gear. Trammel nets have been banned or severely restricted in many places around the world because of damage to fishery resources and habitat. Legally, it would have been problematic for the Fisheries Division to observe and document an illegal fishery without taking action to enforce the law. The co-operation of fishers would have been unlikely if the consequence was punitive. However, circumstantial evidence of environmental damage is overwhelming from accounts of fishers and fisheries officers, and the obvious boat scarring.

Gobert (1992) argues that trammel net fishing in Martinique was not more harmful than alternative gear such as traps, but admits that his information on discards and environmental damage is incomplete. If it is thought that this type of fishing is irresponsible then, regardless or whether alternatives are found or not, it is the responsibility of the fisheries management authority to first and foremost conserve the fishery resource and essential habitat. This is consistent with the precautionary approach enshrined in most environmental agreements since UNCED in 1992. The Fisheries Division would clearly be able to acquire the best available scientific information. The current lobster legislation, if enforced and complied with, is mostly adequate for this purpose. Fishers need to be better informed about the Code in order to appreciate the principles of management.

The success of the project was mixed. Significant progress was achieved in all areas except the critical one of introducing alternative fishing gear for lobsters during the 2001-2002 season. The window of opportunity was too brief. With recent training in construction of lobster pots it is hoped that this
alternative gear will be successfully introduced in the 2002-2003 lobster season. Experience from around the world suggests that commercial fishers are far better fishing gear innovators than fisheries officers, even if the latter are trained in fishing gear technology. Innovation to introduce alternative gear into the lobster fishery is unlikely to occur while use of trawl nets remains an option. Although labor-intensive, catching efficiency (with much wastage) is likely to perpetuate use of trawl nets. Less skilled fishers, and those whose primary emphasis is on short-term profit, will find the gear especially appealing. There are sufficient skilled fishers to develop alternative fisheries or gear if motivated and exposed to gear construction and use. Mixed fisheries and lobster fisheries using other gear existed in the past. The decision of government in August 2002 to enforce the net ban is a critical step in facilitating introduction of alternative gear.

Regarding the legal-institutional framework, the fisheries management authority and fisheries legislation are at risk of losing credibility if the net ban regulations are not enforced. Fisheries regulations, like all legislation, are ideally the shared norms of society or stakeholders, formally set out. It is essential to ensure compliance with, and enforcement of, legislation. Regulations that are not enforced, or enforced only occasionally, create an uncertain legal environment that does not favor co-management.

The fisheries regulations apply nationally, not only in the project locations. It is important that the Grenada fisheries management plan for lobster be completed and implemented as soon as possible. Adequate information exists for this to be done (Mahon and Rosenberg 1988, Mahon 1990, Phillip 1996, Phillip 2002). The FMP should be objectives-driven (Mahon 1997) and provide a policy framework suitable for introducing co-management (McCormy and Mahon 1998). Completion of the management plan should continue to be participatory, and fishing industry organizations need to be promoted and assisted to build their capacity for management (Berkes et al. 2001). An essential ingredient is to promote and facilitate the revival of the St. Patrick’s Fishermen’s Cooperative, or an alternative body of the fishers’ choosing, that can play a meaningful role in co-management.

Despite genuine interest in co-management, fisheries management in Grenada and most other Caribbean countries remains of the conventional ‘command-and-control’ type that has proven ineffective and inefficient globally. Grenada is ahead of several other places, but there needs to be demonstration of co-management in practice. The capacity building and collaborative workshops conducted during the project may assist this process, but much more has to be accomplished.

The search for responsible alternative gear should be a collaborative effort, despite the negative reactions from some fishers now that trawl nets have been actively prohibited. The Fisheries Division must be given the capacity and direction to play its role, and the fishers persuaded to do likewise. At present the Fisheries Division is not adequately equipped or funded to independently undertake the extensive experimental fishing required to support the introduction of new gear. The Division is capable of demonstrating the gear, but not fishing it continuously under commercial conditions to generate

...
time series data for performance evaluation.

Since the new gear may require regulation, close collaboration will facilitate the fishers and authorities reaching agreement on these management measures. The Fisheries Division needs the capacity to comprehensively assist the fishers in finding suitable alternative gear, especially avoiding situations in which the fishers spend time and effort in their own research and development to be told that the results are not acceptable due to contravention of existing or proposed management measures. Close collaboration between area extension officers, the gear technologist and fishers is essential, perhaps through a small working group that meets regularly. This will help to institutionalize co-management.

The project advised on the need to emphasize community development in the area, including conducting a study on alternative and complementary livelihoods. Most of the Sauteurs and Isle de Ronde fishers are full-time, switching fisheries seasonally. Only a few have regular occupational alternatives. They show little inclination to abandon fishing as a lifestyle career. There is evidence of drug-related activity in the area, and the younger fishers are more likely to be exposed to transport drugs or illegal goods to supplement income from fishing. As a fisheries management strategy it would be useful to provide them with legal income-generation opportunities outside of fishing. The issue of alternative or complementary livelihoods can be addressed once the process of establishing alternative gear is underway and there is a closer, more objective-oriented relationship between the main stakeholders based on the national lobster fisheries management plan.

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LITERATURE CITED


Mahon, R. 1997. Does fisheries science serve the needs of managers of small stocks in developing countries? *Canadian Journal of Fisheries and Aquatic Science* 54:2207-2213


