

A Changing Status for Fisheries in Grenada

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The State of Grenada consists of the main island Grenada (110 mi²), Carriacou (13 mi²), Petit Martinique and a few small islets, making a total of about 133 mi². These lie southernmost on the eastern Caribbean submarine shelf. It is estimated that the island group has a 900 mi² shelf area that is traditionally fished. The traditional commercial shelf fishing areas are at depths of 9-70 m on the island side of the ocean/shelf drop off. With only a few exceptions are the islands insulated from the sea and fishing. Even recently, because of the traditional attitudes in the fishing industry and because of the manner in which persons involved in the occupation have always depended on help from the Government, the sector has been regarded by most persons as a marginal industry. In recent years this industry has received added concern and, even more importantly, a new type of emphasis from Government.

Grenada has had a long tradition of artisanal fishing. This industry has grown from a primitive art into a highly commercial venture. The new concerns shown to fisheries recognize that a significant percentage of the working population is involved, that fish account for a large part of local protein consumption and that the time is overdue for positive action in fisheries conservation and management.

For the most efficient management of our fisheries sector, the following practical divisions have been made of our fisheries effort: (1) The oceanic pelagic fisheries, (2) The beach seine inshore pelagic fisheries, (3) The demersal shelf fisheries and (4) The shell fish/divers fisheries. This division is not at all a theoretical one. It is based on the following realities of Grenada's fisheries: (1) Marked differences in persons involved in the fishing, (2) Differences in capital outlay for fishing venture, (3) Differences in attitudes and skills applied to fishing, (4) Difference in the times fish are targeted, (5) Differences in marketing needs and arrangements, (6) Differences in dependence on Government assistance and (7) Obviously, differences in the types of fish caught.

There has always been the temptation to look at small island fisheries, such as ours, as a simple and straightforward case of traditionalism. This is a highly simplistic view. In fact, small island fisheries have all the obvious and subtle problems as large metropolitan fisheries except that they have the added problem of the "diseconomy of small scale." With the positive and determined management strategy adopted recently, even subtle problems become much more obvious. There are four areas of emphasis that, in our view, can facilitate most of our objectives: (1) The development of an overall management infrastructure that sees the need for not only the economic

aspects, i.e., provisions of onshore facilities for fishermen's landings, but also a strategy for the management of the marine resource base. (2) The further development of the traditional artisanal fisheries sector with a significant thrust in the form of an ongoing Artisanal Fisheries Development Project (begun 1982). (3) An ongoing resource monitoring program. This aspect of fisheries management (biological) has received much real concern in recent years. (4) The development of a large-boat ocean going fishing fleet. This effort supplements the landings of the artisanal segment and seeks to ensure the supply of certain types of fish when catches are low from the artisanal fishermen.

Each segment of the artisanal fisheries will have common problems with others and a distinct contribution. Table 1 outlines the relative contributions of the various segments and gives some of the distinct problems involved. The size of the fishing fleet in terms of the number of boats and power determined by the 1983 census is:

Type	Size	Engine Type	Number
Powered	24' - 36'	In Board	46
Powered	16' - 20'	Out Board	236
Oar Boats	10' - 12'	-	40
Sail Boats	20' - 28'	-	115
Beach Seine Boats	26' - 28'	-	48
Grand total			485

This survey found 951 registered fishermen and estimated that there were an additional 550 unregistered fishermen.

Artisanal Fishing Patterns.--A classical notion is held that there are two distinct deep sea fishing seasons. The most notable is the ocean season. It is thought to last from October/November through to May/June of the following year. A widely held view is that the ocean season falls off because the oceanic migratory pelagics, which are the chief targets at this time, stop biting. At the ocean season fall-off, the fishermen switch their effort to bank fishing for demersals; mainly on the ocean drop-off areas of the shelf. This is true in the sense that many fishermen switch from ocean fishing to bottom fishing at midyear. However, the pattern of fishing activity is much more complex.

At the eastern, windward coast of Grenada, the most notable landing site is at Grenville. At Grenville, ocean fishing is by far the principal activity and throughout the year major landings of Scomberomourus spp., Coryphaena sp., scombroids and Carangids and other species are made. The only phenomenon that will hold back a fisherman in this period is the stormy weather of May to October. Some fishermen traditionally take a rest period at the end of the supposed ocean season (i.e., for men on the west coast). Some of these fishermen do not go out to sea except after a prolonged period of fine weather. Hence, this phenomenon of switch of fishing activity is partly due to a drop in fish biting, partly due to the onset of the storm season and,

of course, a general traditional abstinence from fishing at the end of June each year.

Beach Seine Fisheries.--An important characteristic of fishing activity in Grenada, nearly always overlooked, is the contribution of the inshore seine-net fisheries. The main species ring-netted in the coves and bays are Selar menopthalmus and Decapturus sp. Although these small carangids are the chief catch, often blackfin tunas, horse eye jack and rainbow runners are netted. Figure 1 shows the fluctuations in the landings. These 1981 landings figures do not show the characteristically large percentage of beach seine landings in the months of July and August. For this period, the peak productions for most years are markedly higher than the figure for 1981.

Marketing Distribution.--Beach seine fish are easily marketed. The reasons are simple. Fish of a weight of 5-20 fish/lb which fish have a minimum bone to meat ratio can be shared in a poor family. The affluent also relish these species. Vendors could be asked by customers to sell from 1 to 10 lb of fish. Also these small fish are easy to handle and inexpensive in price. The preference for these carangids has become so marked that the larger species, weighing 3/lb can fetch a price similar to that of choice fish. The beach-seine contribution in terms of landings is no less than 30% and in terms of actual national consumption is much higher (Table 2).

The Deep Sea Fisheries: Oceanic Pelagics.--Table 2 gives some idea of the contributions made by the oceanic pelagic fisheries. This percentage is increasing. Here lies the greatest potential for future fisheries development. This segment also offers the greatest challenge for fisheries management (i.e., provision of shore based facilities to cater to fishermen and their catch).

The bulk of the fish landed in Grenada are of the large types ranging from 10 lb upwards. These are A and B class fish. They often do not have as ready a market as the beach seine types and must be stored and marketed later. These species generate the classical problems in fisheries management for Grenada. Their problems are so visible that the more subtle problems regarding the overall fisheries are overlooked. In most cases the issues regarding the exploitation, storage and marketing of A and B class fish are thought to be the same for the beach seine and the shellfish fisheries.

The Shellfish Fisheries.--The fishermen who target these species are divers. The species sought are Panulirus argus, Strombus gigas and various turtles. These are in high demand and are high priced. They account for more than 2% of landings by weight. The marketing arrangement made by the divers is a classic example of how the landings can bypass normal marketing systems in artisanal fisheries. This bypass does not happen because of the absence of market facilities, but the ready export market and ready demand by hotels and restaurants locally.

Table 1. Artisanal fisheries sector 1983

Fishery	Estimated landings (%)	Market %		Persons engaged (%)	Marketing
		(Local)	(Export)		
Oceanic (Pelagic spp)	60	70	30	40	Problems in storage, sale, distribution of choice fish
Beach Seine (Carangids)	30	100	0	50	Good quick sales. Fair distribution (occasionally slow)
Demersal (Snappers/hinds)	8-10	60	40	10	Storage, sale and distribution of choice fish
Shell Fish (Lobster/conches)	2	20	80	2	Exported Occasional seasonal problems

Table 2. Ocean fishing-Boat landing survey (August 1981-August 1982 for Melville Street and Carenage, March 1982-August 1982 for Santeurs)

Site	Boat*			Landings (lb)	Fishing effort (days)	Catch/day (lb)	Type fishing
	P	L	H				
<u>Melville St.</u>							
Boat I	OB	23	40	10562	83	127.3	Demersal
Boat II	OB	18	40	7076	58	122.0	
<u>Carenage</u>							
Boat I	INB	29	24	5352	89	60.1	Ocean
Boat II	INB	29	24	4945	61	81.1	
Boat III	INB	29	24	4671	53	88.1	
Boat IV	INB	29	24	7631	101	75.6	
<u>Santeurs</u>							
Boat I	OB	18	6	3584	61	58.8	Mixed
Boat II	INB	23	10	3495	60	58.3	
Boat III	OB	16	10	946	54	17.5	

* P = outboard or inboard, L = length in feet, H = horsepower

Action Plans.--Currently, three aspects of our fisheries management program are critical for future development. The first, and most important, is the Artisanal Fisheries Development Project launched October 1982, the second, the reorganization of the National Fisheries Company and the third relates to the biological resource management. As can be seen, the emphasis is on increased exploitation of the resources available. The launching of an Artisanal Fisheries Development Project grew out of a serious concern by the Government. It was recognized that artisanal fisheries characterized Grenada fisheries and that with increased assistance the standard of living of the fishing community can be increased, with the outcome of increased catch by fishermen and increased fish supply to the population. As a result, a comprehensive artisanal fisheries project was conceived, formulated, appraised and implemented.

The Project set out the following tasks: (1) Upgrade (repair) existing market buildings, (2) Build new fishery centers, (3) Provide added chillroom and ice-making facilities at the fish markets and fisheries centers, (4) Establish a store with a wide range of fishing gear and equipment at the lowest possible prices, (5) Establish a fisherman, boat-builder loan scheme tailored specifically to the needs of the fisheries sector, (6) Provide fishermen's training through the services of a master fisherman, (7) Establish land support to fisheries cooperatives through the services of a cooperative marketing expert, (8) Provide on-hand training for district fisheries assistants and other support staff and (9) Establish a marketing mechanism to distribute fish to all parts of the island. This scheme ought to increase fish landings and also achieve a higher status for the art of fishing and, of course, the fisherman.

The second aspect of our current emphasis is the National Fisheries Company. This company was established in phases to include a fish processing plant, a marketing distribution section and then a fishing fleet. The fish processing arm is a seasonal venture, reflecting the realities of seasonality of artisanal fisheries. The marketing arm is always a viable venture, but at times experiencing some constraints. The ocean going fleet has experienced some reverses, but operates with some notable successes. The fleet arm of the company had a significant impact on the Grenada artisanal fishermen, in that it introduced them to new methods which they have since tried on their own. The fleet has the capacity of fishing in bad weather that deterred the artisanal fishermen. If applied consistently the fleet can serve well this intended role.

The strategy has been set for significant development in the artisanal segment of fisheries. There are several areas within this sector that would need added support. It is only with special programs that the project can meet the needs of the beach seine fishermen, because this project is geared to impact most on the ocean fisheries. No one project can meet all the needs within any sector.

The most serious concern in the fisheries sector, currently, is the marketing problem. The problem is a serious one. It is also one which is thought to be the bottleneck to further

expansion of the fisheries. When this problem is satisfactorily overcome one could expect currently minor problems to assume more importance. This is the nature of development in a fisheries such as Grenada's.

Resource Management.--The resource management aspect of fisheries in the past has involved a few pieces of legislation enacted to protect specific species which are thought to be endangered. The cost of such management always seems to outweigh conceived benefits. Any serious resource management scheme must start with a monitoring program. This we have launched lately. Our most serious effort is to monitor the nature of the beach seine landings and also to take measurements on the ocean fish landings. The Canadian mission has pledged support for this modest scheme. As part of the scheme, we have been looking critically at the boat landings and their composition. We feel that the fisherman himself is an integral component of any monitoring scheme. When the fisherman chooses to go to fish is also an important concern.

Another very important aspect of fisheries development is the information mechanisms that were implemented. At the present the statistical schemes are being refined to give satisfactory information. In time, the art of fisheries will achieve a status on par with any other. Satisfying this goal is our major concern.

SUMMARY

Although the total per year landings of Grenada's artisanal fisheries lies between 3 and 4 million lb, there is significant variability in fishing effort for the multispecies catch. One notable fisheries plus is that the entire catch is consumed by the population. Another notable feature of the fisheries in Grenada is the absence of a significant trap (pot) fishery. This is probably due to a constraint offered by the depth of the shelf. This has offered a balance in shelf exploitation. The realities of the patterns in the fishing effort, as shown by fishermen, have allowed a definition of the total fisheries into four segments. The first and most significant is the oceanic pelagic, the second, the beach seine, the third, the demersal and the fourth, the shellfish dive fisheries.

In the past, most analyses of the status or problems of island fisheries have fitted remedies into a model of primary, secondary and tertiary fisheries management treatments. This inevitably leads to a focus on the problems encountered by the oceanic pelagic and deep sea demersal fisheries. These two fisheries by nature fit, most closely, this treatment. The cost of such an approach is that it either ignores or is incapable of addressing, the problems of segments such as the beach seine fisheries. Appraisal of island fisheries problems must address these very subtle features of the gross problem.

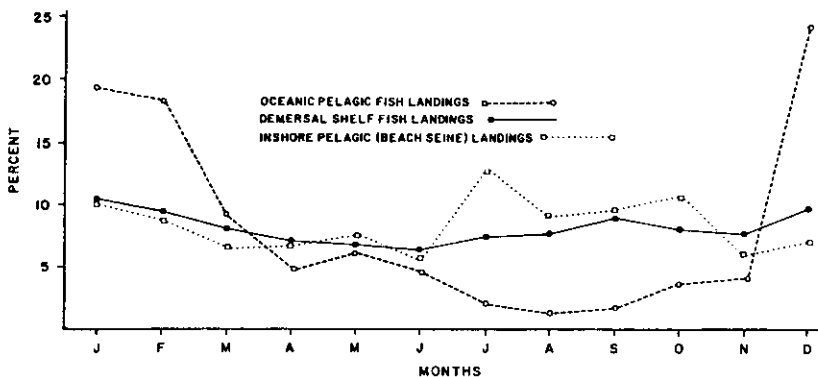


Figure 1. Relative monthly percentages of the landings of the three segments of the fisheries of Grenada for 1981. Values are expressed, for individual segments, as the percentages each month of 100% for the year.