The Fisheries of the Organization of Eastern Caribbean States

P.A. MURRAY

Abstract

A brief review of the main features of the Caribbean fisheries is presented covering the States of Antigua/Barbuda, British Virgin Islands, Dominica, Grenada, Montserrat, St. Kitts/Nevis, St. Lucia, St. Vincent and the Grenadines.

Introduction

Prior to the 1982 United Nations Convention on the Law of the Sea (UNCLOS), eastern Caribbean States pursued their fisheries management and development objectives individually and in an almost *ad hoc* manner. The Organization of Eastern Caribbean States (OECS) was established by a treaty in June 1981 to promote cooperation among its member-states: Antigua and Barbuda; the British Virgin Islands; (the Commonwealth of) Dominica; Grenada; Montserrat; (the Federation of) St. Christopher (St. Kitts) and Nevis; St. Lucia; and St. Vincent and the Grenadines. The OECS was also expected to assist the member-states in the realization of their obligations and responsibilities to the international community, including scientific, technical and cultural cooperation. From 1977 to 1981, the average contribution, at constant prices, of fishing to the Gross Domestic Product (GDP) of the islands that were to form the OECS was EC$2.83 million (OECS 1994; US$1.00 = EC$2.70).

At present in the OECS, fisheries employ an average of about 2.8% of the workforce (Charles and Neverson 1990) with approximately 10,500 fishers in the subregion (Anon. 1994a). Fisheries contributed, at constant prices, an average of EC$3.78 million (or 1.27%) to the individual national GDP of seven of the eight member-states for 1989-1993 (OECS, unpubl. data). Within the OECS agricultural sector, fisheries, with an output of EC$55.9 M (US$20.6 M), has been ranked second only to the crop subsector in 1992, in terms of its contribution to agricultural output (Anon. 1994b).

Harvesting

There are approximately over 3,400 fishing vessels among OECS member-states; most utilize outboard engines with mean horsepower of 75.4 ± 21.5 (Anon., 1994a).

The traditional fishing gear on the island shelves of the eastern Caribbean are fish traps, commonly known as "fish pots", whose basic design originated in Africa (Mahon and Mahon 1990). There are three main types used in the eastern Caribbean: the arrowhead trap, with a single entrance; a rectangular (or) box trap with one or two entrances; and the Antillean Z-trap with two entrances. Most traps are made of galvanized ("chicken") wire on a frame of sticks or building steel; some may be woven with bamboo. Beach seine nets, gill nets, cast nets, hand lines, trolling, and more recently longlines are also utilized.

The Resources

In the OECS, pelagic fisheries are most important in the southeastern ("windward") islands of St. Lucia, St. Vincent and the Grenadines, and Grenada (Gomes et al. 1994). These islands, as well as Dominica, exploit, *inter alia*, flyingfish (*Hirundichthys affinis*), dolphinfish (*Coryphaena hippurus*), mackerels or "kingfishes" (Scombridae), wahoo (*Acanthocybium solandri*), and tunas. These fisheries are largely seasonal, primarily because of the migratory nature of the fish. The northeastern ("leeward") islands land primarily demersal fish species including groupers (Serranidae), snappers (Lutjanidae), surgeonfishes (Acanthuridae), triggerfishes (Balistidae), grunts (Haemulidae, Pomadasyidae), butterflyfishes (Chaetodontidae), goatfishes (Mullidae), and parrotfishes (Scaridae), as well as some from the deeper slopes and banks.

Reef, Slope, Bank, Lobster and Conch Resources

These species are primary contributors to the relative diversity of OECS member-states being, in the main, directed towards local consumption. Lobster and conch however, are often targeted for export. While available data on these species are limited, a recent review of the coral reef fisheries in the Caribbean (Neilson et al. 1994) suggests a range of potential yield of 1.7-2.3 $t \cdot km^{-2} \cdot year^{-1}$.

Pelagic Fishery Resources

Recent estimates of potential yield of several tuna and tuna-like species within the wider CARICOM region have been made (Singh-Renton and Neilson 1994) based on ICCAT Maximum Sustainable Yield estimates (Table 1).

Landings, Imports and Exports

Fig. 1 shows the average landings (and value of landings) from 1989 to 1993 for the British Virgin Islands, Grenada, St. Lucia, and St. Vincent and the Grenadines (Anon. 1994b). For the latter three states, pelagic fish species made up an average of 78.8% of landings in 1993.

Table 1. Potential share of large pelagic resources for some OECS member-states based on ICCAT MSY estimates prorated on the basis of size of marine area (after Singh-Renton and Neilson 1994).

Country	Possible share of species (t)						
	Yellowfin tuna	Skipjack tuna	Bigeye tuna	Blue marlin	White marlin	Sword-fish	Sailfish
Antigua and Barbuda	76	146	119	8	3	36	3
Dominica	10	20	16	1	0	5	0
Grenada	19	37	30	2	1	9	1
Montserrat	8	15	12	1	0	4	0
St. Kitts and Nevis	8	15	12	1	0	4	0
St. Lucia	11	21	17	1	0	5	0
St. Vincent and Grenadines	22	43	35	2	1	11	1

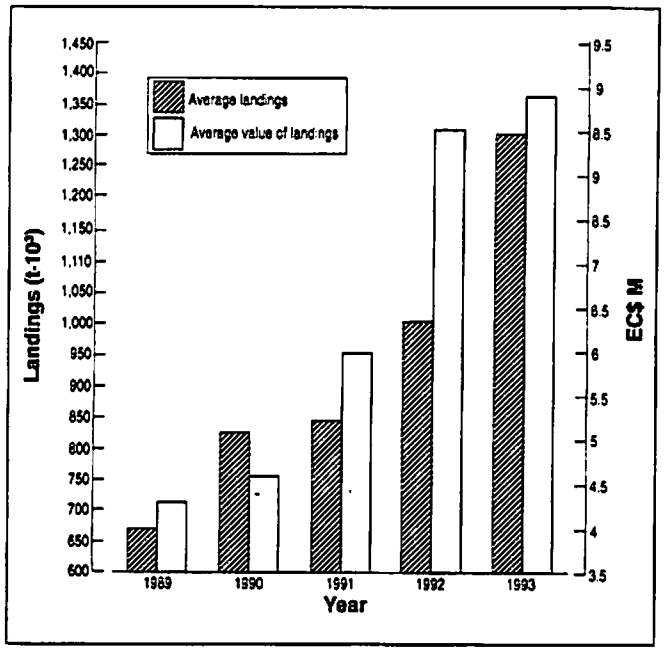

Fig. 1. Average landings, and average value of landings, for OECS member-states: 1989-1993.

Imports of fish and fish products averaged 902.5 tonnes and EC$6.2 M, respectively, in 1993 at approximately EC$6,900 per tonne (Anon. 1994b).

In 1993, exports of fish and fish products averaged 221 tonnes and EC$2.6 M, respectively, at approximately EC$12,700 per tonne (Anon. 1994b).

Stock Assessment Initiatives

Among the OECS member-states, a number of species are perceived as warranting specific assessment work, either because they can serve as indicators of the status of the multispecies stock, or because they are themselves of importance to the fisheries of individual OECS member-states. These include, among pelagic fishes: dolphinfish, wahoo, yellowfin tuna, king mackerel, skipjack tuna, ballyhoo, jacks, robins and blackfin tuna; among reef fishes: red hind, coney, blackbar soldierfish, doctorfish, yellowtail snapper, longspine squirrelfish, queen triggerfish, Nassau grouper; among bank and slope fishes: yellow grouper, queen snapper, silk snapper, red snapper, vermillion snapper; and among invertebrates: lobster, conch, and whelks.

While a number of preliminary studies have taken place within the subregion (Finlay and Rennie 1988; Goodwin et al. 1988; Mahon et al. 1990; Murray et al. 1992; Murray and Jennings-Clark 1994; Murray and Joseph, in press; Neilson et al., in press), these have not had the subregional "flavor" necessary to pursue a CFZs policy. Regional stock assessment activities, which maximize their perceived benefit, must now be developed among OECS member-states. At the wider Caribbean Community (CARICOM) level, a number of such activities has been planned, including studies on the migration patterns of small tuna and tuna-like species; migration patterns and stock structure of Atlantic billfishes and large tunas; marine habitat mapping; mapping of the areas affected by ciguatera; reef fish natural mortality and dispersal; and age and growth of fish.

Conclusion

The approach to fisheries management espoused by OECS member-states is geared, *inter alia*, toward: the development of the capacity of member-states to harvest the resources of the Common Fisheries Zone and fishery waters on a viable and sustainable basis; the coordination of the efforts of member-states in the exploration, exploitation and management of their Common Fisheries Zones and fishery waters based on the provisions of the United Nations Convention on the Law of the Sea; and, the development of the human resources of States Parties for the efficient management of their marine resources on a cooperative basis.

Acknowledgements

The author thanks Ms. Antoinette Clemetson, Project Biologist at the CARICOM Fisheries Resource Assessment and Management Programs Pelagic and Reef Fishes Resource Assessment Unit in St. Vincent and the Grenadines, for her valuable editorial and other comments on this contribution.

References

Anon. 1994a. OECS Fisheries Statistical Digest No. 2. OECS Fisheries Unit, Kingstown, St. Vincent and the Grenadines. 89 p.

Anon. 1994b. Review of economic performance of the OECS: lessons, experience and actions to be taken. OECS Economic Affairs Secretariat, St. John's, Antigua and Barbuda. EAC 93/22/03, 64 p.

Charles, D.O. and S. Neverson. 1990. Report of the Eastern Caribbean Seafood Marketing Strategy Project. OECS Fish. Rep. 4.

Finlay, J. and J. Rennie. 1988. Length frequency of selected species of