

## ABSTRACT

Community-level sea use management in the Grenada beach seine net fishery : current practices and management recommendations.

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This study has identified and characterized a community-level, self-regulating Territorial Use Rights in Fisheries (TURF) system within the Grenada beach seine fishery. The TURF system serves as a useful example of an alternative management system and involves 41 large beach seines and 289 fishers, operating at 97 shallow water fishing sites (*hauls*) along the coasts of the islands of Grenada and Grenadines. Although all *hauls* are open to all seine nets, nets are observed to cluster in 9 fairly discrete zones along the coast and tend not to move far from the fishers' places of residence.

The beach seine fishery targets a multi-species stock of mainly juvenile coastal pelagics. Two species of Carangidae (big-eye scad, called jacks, *Selar crumenophthalmus*; and red-tail scad called round robins, *Decapturus tabl*) account for 90% of catches. The remaining catch comprises juvenile oceanic pelagics (6%) and other small sized coastal pelagics (4%) Although species vary in abundance seasonally, a fairly constant overall abundance of seine fish maintains a year-round fishery with relatively constant fishing effort.

Ten traditional rules are identified within the TURF system and these effectively allocate fishing opportunity to beach seine nets through the recognition of temporary exclusive ownership at *hauls*.

An average beach seine unit costs EC\$22,067. The annual depreciation and maintenance cost per net is estimated as EC\$4,473 and annual catch and gross revenue per net is estimated at 8455 kg and EC\$29,227 respectively, giving an annual gross profit per net of EC\$24,754 from the point of view of the net as a *firm*. This represents an estimated gross revenue of EC\$1.2 million per year for the total fishery. The net owner can expect annual profits of 28.9% of gross revenue (EC\$8,437); captain 12.9% (EC\$3,765); and fisher 8.9% (EC\$2,510). Although cash incomes to fishers appear small there are also daily "inkind" incomes of fish which are considered valuable.

A number of conflicts are presently threatening the TURF system. These include *intra-fishery conflicts* between beach seine fishers and relate to non-compliance with TURF rules; *inter-fishery conflicts* between seine fishers and other fishers generated by competition for seaspace (by anchoring boats, motorized fishing boats landing catches ashore) and competition for the target fish (by motorized trolling boats and ringnets operating adjacent to the *haul*); and *extra-fishery conflicts*, between beach seine fishers and mainly tourist related activities which are now being viewed as having greater economic importance. Beach seine TURF fishers view these conflict situations as devaluing their traditional *property rights*.

Solicited and elicited suggestions for solutions from both seine fishers and their competitors for sea use, point out that some form of localized management based on government initiative, is urgently needed. Seine fishers felt strongly that legalization of the TURF rules would serve to legitimize and enhance their *property rights*. Both seine fishers and their competitors for sea use felt that a rationalization of entitlements, expectations and obligations within the context of a co-management approach was needed. These ideas are supported by an increasing number of formal studies which address the alleviation of multi-user coastal zone competition and conflict.