

Management of Tunas and Tuna-Like Species in CARICOM Countries: Recent Trends Urge a New Perspective and Approach

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ABSTRACT

Fisheries for large pelagic resources are important to Caribbean Community (CARICOM) countries. Many countries have been expanding these fisheries, and others have expressed the intention to do so. The management of tunas and tuna-like species in the Atlantic Ocean is the mandate of the International Commission for the Conservation of Atlantic Tunas (ICCAT). Several of these resources are fully or overexploited, with most of the catch being taken by large fishing nations of the Atlantic and distant water fleets.

There is an urgent need for CARICOM countries to ensure that they will get a fair long-term share of the sustainable yield of large pelagic resources in the Atlantic Ocean. ICCAT has recently re-examined the criteria and is attempting to improve the process for allocating these resources among countries that fish in the Atlantic. CARICOM countries, many of them small island developing States (SIDS), have reached a common position that differs in several important respects from the position of the larger industrialized fishing nations. The principles underlying these positions depend on interpretations of clauses in the relevant UN Agreements that pertain to the treatment of new participants in these fisheries, the provisions for developing states, and the capacity for responsible management, as well as other factors.

Also at issue is the management of stocks of small tuna and tuna-like species such as wahoo, *Scomberomorus* species and blackfin tuna, which are less widely distributed than the large tuna and billfish species. ICCAT monitors catch trends for most of these small tuna species, but their management is best handled by the appropriate regional or sub-regional arrangement. CARICOM countries are in the initial stages of exploring options for managing those pelagic species within their jurisdiction.

KEY WORDS: Tuna fisheries, ICCAT, CARICOM

INTRODUCTION

Most CARICOM countries are categorized as small island developing States (SIDS), and have a close association with and dependence upon the sea. In most states, especially within the Eastern Caribbean, large pelagic fishes have historically supported important small-scale and artisanal fisheries. Significant recreational and sport fisheries are an important component of tourism-based economies.

With extended jurisdiction, and as a part of ongoing economic development, many CARICOM countries have begun to expand their offshore fishing capacity for large pelagic fishes, or have expressed the intention of doing so. These species are distributed across several EEZs (shared stocks) and in most cases extend into the High Seas (straddling stocks). Several species occur throughout the Atlantic and are fished by fleets from many nations, including distant water fleets.

Over the period of record, 1950 to the present, there has been steady growth in the fishing effort and catches of these species from the stocks that are shared by CARICOM countries. The vast majority of the landings are taken by fishing fleets from the larger, developed countries. As a result of poor management, many of the major stocks are now either fully exploited or overexploited.

Adherence to the relevant articles of the United Nations Convention on the Law of the Sea (UNCLOS) (United Nations 1983) and related international agreements¹ require countries to fish responsibly, and so avoid excess fishing capacity and overexploitation of the stocks concerned (Ruckes 1996, Doulman 1997). To acquire their fair share of the sustainable yield while ensuring that they do not contravene the agreements, CARICOM countries need to put in place the management measures obligated by these agreements and to take part in negotiations with other fishing nations to determine how the resources can be allocated.

In this paper we provide a view of the current situation regarding large pelagic fisheries in CARICOM countries, as well as recent developments and trends in regional and international management approaches applied to Atlantic tuna and tuna-like fisheries, including issues concerning the application of catch allocation criteria. Given these recent developments, we outline an approach for fulfilling the needs of developing large pelagic fisheries in CARICOM countries, including obtaining a fair share of these resources and ensuring compliance with the pertinent international fisheries agreements.

¹ Such as the UN Agreement on Highly Migratory Stocks and Straddling Stocks (hereafter referred to as the UN Fish Stocks Agreement) (United Nations, 1995), the FAO Code of Conduct on Responsible Fishing (FAO, 1995), and the Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas (FAO, 1997).

CARICOM FISHERIES FOR LARGE PELAGICS

The species of large pelagic fishes caught by CARICOM countries are generally considered in two categories (SEFSC 1994): oceanic and coastal (see Mahon 1996 for a list of the species in these groupings). The oceanic species tend to be distributed offshore, and have wider geographical distributions. The coastal species tend to occur on or near continental/island shelves. While the oceanic species may hold the greatest potential for expansion of fisheries, it is the coastal species that provide most of the present yield, in particular dolphinfish (Mahon 1996, Mahon 1999).

Fisheries for large pelagic species have been integral components of small-scale fisheries in most CARICOM countries for as long as records have been kept (Mahon 1996). Despite limited access to resources and technology, Eastern Caribbean CARICOM countries have been gradually upgrading their small-scale fishing fleets for over two decades. This has included the adaptation of local vessels for longlining, and the addition of small purpose built longliners ranging from 10 to 20 metres in length (Mahon and Singh-Renton 1993, Mahon 1996). Other CARICOM countries have begun to consider the feasibility of expanding their fisheries for large pelagics (e.g. Mahon 1995). Although there has been slow but steady growth in fishing capacity in several CARICOM countries, few have expressed their development plans in quantitative terms.

MANAGEMENT OF ATLANTIC TUNA AND TUNA-LIKE SPECIES

Oceanic Species

Given the highly migratory habits and ocean-wide distributions of many of the large pelagic species, realistic assessment and management of the stocks concerned can be achieved effectively only through internationally coordinated efforts, as specified by the UN Fish Stocks Agreement (United Nations 1995). For about 30 species of tuna and tuna-like fishes occurring in the Atlantic Ocean and adjacent seas, including the Caribbean Sea, the required international coordination is effected through the activities of the International Commission for the Conservation of Atlantic Tunas (ICCAT).

ICCAT coordinates the collection of fisheries statistics among the harvesting countries and maintains a centralized database for use in stock assessments, which are updated periodically. ICCAT also coordinates relevant biological, ecological, and environmental research. Through consultations of its committees, sub-committees, and working groups, ICCAT proposes, adopts and coordinates the implementation of stock management measures, as required and appropriate.

Coastal Species

The stocks of coastal species are probably less widely distributed. These coastal species also come under the auspices of ICCAT, but have received little attention so

far, owing to the present emphasis on oceanic species and also to the lack of adequate data for quantitative assessments. For those coastal stocks shared primarily among the countries of the wider Caribbean, greater coordination of their assessment and management may be possible under certain regional arrangements.

The CARICOM Fisheries Resource Assessment and Management Program (CFRAMP), involving 12 Caribbean countries, commenced in 1991. CFRAMP conducted, as well as supported, several activities including institutional strengthening, human resource development, and research, all aimed at improving statistics, assessment and management of fisheries throughout the CARICOM region.

A focal activity of CFRAMP has been the establishment of the Caribbean Regional Fisheries Mechanism (CRFM), which will have legal status. The purpose of the CRFM is to sustain and build on CFRAMP. Membership of the CRFM will be open to CARICOM, as well as non-CARICOM countries in the region. In this way, the CRFM can provide a forum for promoting regional coordination and collaboration in the management of shared marine resources, both at the technical/scientific and political levels.

The Western Central Atlantic Commission (WECAFC), in existence since 1976, addresses fisheries development and management within Latin America and the Caribbean. In recent years, WECAFC has established *ad hoc* working groups that provide opportunities for collaboration on the assessment and management of certain shared resources, e.g. shrimp, groundfish, and flyingfish. This role may expand to other species.

CARICOM Participation In ICCAT

CARICOM has participated in selected ICCAT activities as an observer since 1991. During the 1990s, there have been significant changes in large pelagic fishing operations within the Atlantic Ocean that have led to marked increases in catches. In particular, the large-scale use of artificial floating objects by tropical purse seine vessels since 1991, as well as the introduction of bird radar, sonar, and satellite imagery, have increased fishing efficiency in the relevant tropical tuna fisheries. New fishing strategies have also developed. The extensive use of artificial floating objects has increased the numbers of young fish caught, with the largest impact felt by the bigeye tuna stock, and to a lesser extent, yellowfin tuna. Recent ICCAT stock assessments show clear evidence of over-exploitation of several major Atlantic tuna stocks.

Over-capitalization, as well as ineffective and inadequate ICCAT management measures, has been more important in causing the over-exploitation of important Atlantic tuna stocks such as bluefin tuna, and swordfish. For those stocks thought to be at levels below that of Maximum Sustainable Yield (MSY), annual total allowable catch limits (TACs) are applied. The Total Allowable Catch (TAC) is usually allocated among the interested ICCAT Contracting Parties. Within the Atlantic Ocean, TACs are already in place for bluefin tuna, swordfish (except

Mediterranean swordfish), northern albacore, and southern albacore. An overall general catch limitation recommendation is also currently in effect for bigeye tuna.

ICCAT is expected to apply TACs more often in the future to achieve better coordinated management, and to rely increasingly on species statistical document programs (e.g. ICCAT 2001a) to compare reported catches with trade statistics. In view of many of these developments at ICCAT, coupled with the need to defend their fisheries interests, two CARICOM Member States, Trinidad and Tobago and Barbados, recently became full members of ICCAT.

Allocating Shared Resources

Allocation of shared resources among users has been an issue for many decades. Even before UNCLOS, international commissions such as ICNAF (later NAFO) grappled with this problem. In light of UNCLOS, Gulland (1981) and Caddy (1982) outlined the process of negotiating allocations of fishery resources, including the variety of criteria that could be applied.

ICCAT practice has been to allocate catch quotas based solely on historical catches. Certain ICCAT member countries have sought to review current catch allocation criteria, in order to recognize the needs of developing fisheries, developing states, and the sovereign rights of coastal states. In 1998, ICCAT established an Ad Hoc Working Group on Allocation Criteria, to analyse and recommend catch allocation criteria. During 1999, three ICCAT members, the European Union (EU), the USA, and Brazil proposed sets of criteria, with other countries subsequently contributing additions and modifications. Together, CARICOM countries reviewed the catch allocation criteria proposed by the three ICCAT Members and a position paper that was submitted by Trinidad and Tobago to the ICCAT Working Group in May 2001 (ICCAT 2001b). The ICCAT Working Group concluded its discussions during a fourth meeting held in November 2001.

The identification of Parties, eligible to participate in catch allocation negotiations, should rely on simple qualifying criteria, which take into account access rights. For any particular sea area, therefore, coastal states rights should naturally be given at least equal status to those of high seas distant water fleets, as prescribed by the relevant international agreements (United Nations 1983).

In its recently completed review of qualifying criteria (ICCAT 2001c), ICCAT has agreed to include cooperating non-member countries of ICCAT, in addition to ICCAT member countries, as qualifying participants in its catch allocation negotiations. ICCAT has also included another qualifying criterion that deals with the ability to conduct responsible fishing and scientific research.

Catch Allocation Criteria

Gulland (1981) and Caddy (1982) presented criteria that could be used in quota allocations of shared resources, e.g., historical catches, occurrence of spawning and nursery areas, occurrence of migration routes that may make certain areas more suitable for fishing than others, and socio-economic criteria such as investment in the

fishery and the influence on employment. These and other more recent criteria can be broadly grouped as 'biological/conservation criteria', and 'socio-economic criteria'. With the increased awareness of the impact of fishing on fishery resources, and the development of the international agreements for conservation and management, a third category, 'responsibility criteria' has emerged.

ICCAT's recent review of catch allocation criteria (ICCAT 2001c) has grouped them into the following categories:

- i.) Status of the stocks and the fisheries concerned;
- ii.) Past/present fishing activity of qualifying participants;
- iii.) Status of the qualifying participants; and
- iv.) Contribution to compliance, data submission, and scientific research.

Category (i.) includes the biological and conservation criteria, categories (ii) and (iii) address social and economic concerns, and category (iv) covers responsibility criteria.

Biological/conservation Criteria

Several criteria can be considered in this category, including the status of the stock concerned, occurrence of critical habitats such as spawning and nursery areas, the distribution of stock biomass in a country's EEZ (Caddy 1982, 1987), and availability of suitable fishing areas. ICCAT intends to address biological and conservation issues using the following two criteria.

Status of the Stock and Existing Level of Fishing Effort — This criterion is taken from the UN Fish Stocks Agreement, and addresses access to the fishery by new participants. The same Agreement also provides for forms of cooperation with developing states, to facilitate their access to, and participation in high seas fisheries. Certain nations argue that additional access to the fishery cannot be allowed when stocks are overexploited or are being rebuilt. In these instances, accommodation of new entrants, particularly those of developing states, would have to be facilitated by a redistribution of existing TACs.

Distribution and Biological Characteristics of the Stock Including the Occurrence of the Stock in Areas under National Jurisdiction and on the High Seas — This criterion should include the consideration of critical habitats, as well as the availability of suitable fishing areas. Coastal and island states should be able to exercise their right to sustainably exploit resources within their claimed EEZs. The proportion of the biomass of a stock that occurs in the EEZ of a country can be the basis for a claim for an allocation. This can be a complex issue if migratory routes and time spent in an EEZ during migration are taken into consideration. Caddy (1982, 1987) has developed models for various types of sharing based on migration. A quantitative index could incorporate the size of the EEZ and the average known catch rate in it.

Socio-economic Criteria (Or Criteria Relating to Past/present Fishing Activity and the Status of Qualifying Participants)

These criteria attempt to reflect the value that a country places on the resource (Gulland 1981). Interestingly, the recent review by ICCAT splits socio-economic criteria into two categories: criteria relating to past/present fishing activity, and criteria relating to the status of qualifying participants. We now examine further those socio-economic criteria, which can help or hinder the interests of developing CARICOM large pelagic fisheries.

Historical Catches — This criterion has featured prominently in negotiations for allocations in several fora, notably NAFO and ICCAT. It has no rational basis (Gulland 1981). There is no reason why any country should accept an inequitable distribution of the benefits of a resource purely because it has been so in the past. Moreover, this criterion is clearly linked to other more pragmatic criteria such as 'existing level of fishing effort' and 'economic and/or social importance of fishery to habitual participants'.

Notwithstanding, the larger developed ICCAT nations are clinging to this criterion, and have placed it in a separate category to retain the emphasis on 'past' fishing activities. The other criterion, in the same category with 'historical catches', deals with 'present' fishing activity in a weak, qualitative manner by referring to a country's 'fishing interests, patterns and practices'.

Interests of Artisanal, Subsistence, and Small-scale Coastal Fisheries — The UN Fish Stocks Agreement and the FAO Code of Conduct for Responsible Fisheries both recognise the need to avoid adverse impacts on, and ensure access to fisheries by persons involved in artisanal, subsistence and small-scale fishing. In developing states such as CARICOM states, these fisheries usually involve significant portions of the populations and promote food security and food quality.

Owing to their complex and diverse nature, adequate statistical coverage of artisanal and small-scale coastal fisheries is often not possible. Thus, TAC levels should be set to accommodate possible under-reporting of catches by these fisheries. Given the coastal nature of these fisheries, much of the catch may be young fish. The harvest of young fish by large-scale fisheries should therefore be limited as much as possible, to accommodate for the special needs of artisanal, subsistence, and small-scale coastal fisheries.

Needs of Coastal Fishing Communities — Coastal communities may be defined as local communities in coastal areas, which have traditional or cultural practices that make them highly dependent on fishing and fish resources. Like the artisanal, subsistence, and small-scale coastal fisheries, coastal community fisheries are usually limited in their capacity and options for change. The FAO Code of Conduct and the UN Fish Stocks Agreement make clear provisions for the needs of these communities.

Needs of Coastal States — UNCLOS, clearly recognises the sovereign rights of coastal states for the purpose of exploring and exploiting all the natural resources found in their EEZs, and also notes that the right to fish on the High Seas is subject to, *inter alia*, the rights, duties and interests of coastal states. The UN Fish Stocks Agreement also addresses coastal states rights and needs, particularly the issues of co-operation and shared access.

Sovereign Rights of States Under UNCLOS and the UN Fish Stocks Agreement — This is a general right of all states to a share of highly migratory and High Seas resources wherever they may occur.

Needs of Developing States — Access to fish resources usually contributes significantly to poverty alleviation, basic food security and hence social and economic stability. In the case of SIDS and coastal developing states, access to fish resources is a natural and essential part of their culture and development. The UN Fish Stocks Agreement makes specific provisions for addressing the special needs of developing states, including the need to accommodate socio-economic expansion and economic diversification, and so ensure comparable initial development opportunities.

Economic and Social Importance of the Fishery to Habitual Participants — Like the ‘historical catches’ criterion, this criterion supports the historical fisheries. It is therefore a duplication of the ‘historical catches’ criterion, simply rephrased. Despite this, certain ICCAT nations have argued strongly for its retention in this second format. Since many stocks are already over-fished, a criterion that seeks to protect excessive capacity and overcapitalisation appears invalid. In view of this, its reiteration in the form of a second criterion is clearly illogical.

Contribution of the Fishery to National Food Security/ Needs, Consumption, Export Revenue, and Employment — This criterion, although accepted by ICCAT, appears to have elements already addressed by other criteria such as ‘economic and social importance of the fishery’, ‘historical catches’, and the food security and needs of developing states. Depending on the nature of the fishery, the same catch may be taken with different levels of employment. Arguments that favour the distribution of social benefits among a larger number of persons, particularly in countries with low per capita income, would be a component of the case of special needs for developing countries.

Responsibility Criteria

These criteria, addressing adherence to conservation measures and participation in the management process, are important in providing direct benefit to countries that fish responsibly. ICCAT intends to apply three responsibility criteria:

- i.) *Contribution to Conservation and Management, Accurate Statistics, and Research* — appropriately rewards countries which comply with agreed conservation and management measures and which contribute accurate statistics and research. In measuring the respective contribution and cooperation of states, it would be necessary to take into account differences in available management resources between developed and developing states.
- ii.) *Exercise of Responsibilities Concerning Vessels* — is clear in its reference to flag state responsibilities that are prescribed by the relevant international agreements.
- iii.) *Record of Compliance* — appears to capture the same ideas as criteria (i) and (ii), except that it is specific in addressing compliance with ICCAT conservation and management measures. Depending on its interpretation and application, however, this criterion may extend the emphasis in favour of historical fisheries, leaving new entrants to the fisheries comparatively empty-handed.

A NEW PERSPECTIVE AND APPROACH FOR CARICOM COUNTRIES

The UN Fish Stocks Agreement is clear regarding the mechanisms for cooperation for straddling and highly migratory fish stocks, and the responsibilities of countries sharing the resources. Countries are expected to participate in or become members of a relevant management organization, and should have the capacity to take part in the process.

ICCAT is the established forum for management of tuna and tuna-like species for the Atlantic Ocean and adjacent seas. Recent ICCAT assessments of several large tuna and billfish stocks show them to be either fully or overexploited, mainly as a result of prolonged overcapitalisation and ineffective management measures. New entrants to the fisheries are faced with stringent catch limits imposed by ICCAT to arrest stock declines or for stock rebuilding, allowing no room for additional access.

Many CARICOM countries rely on their living marine resources for food security, employment opportunities and economic development. CARICOM countries therefore need to ensure that their needs as developing states, and as SIDS, are properly recognised by ICCAT and other organisations responsible for the management of shared stocks that CARICOM countries exploit. On the other hand, if the responsibilities for management are not adequately addressed, arguments for countries' rights to allocations will be considerably weakened (Chakalall et al. 1998).

ICCAT does not have adequate data on small, coastal tunas and tuna-like species to facilitate quantitative assessment and management of the fisheries targeting these species. Consequently, it may be several years before ICCAT begins

to address these species in a manner that will meet the needs of CARICOM countries. Given that the small tunas and tuna-like species are less widely distributed, the relevant CARICOM fisheries could probably be monitored and managed more efficiently by an appropriate regional arrangement (Mahon 1996, FAO 1998).

To meet these challenges at the regional and international levels, CARICOM countries will need to:

- i.) fulfil their national responsibilities to comply with the relevant international fishing agreements,
- ii.) continue and expand coordinated CARICOM participation in ICCAT, and
- iii.) determine, establish, and activate an appropriate regional forum for management of the small, coastal tunas and tuna-like species of importance to them.

Countries should also seek assistance from the United Nations, particularly through the FAO programme of assistance for SIDS, to achieve these aims in a realistic time frame, as provided for by the UN Fish Stocks Agreement.

Address National Responsibilities

Countries will need to ensure that national fisheries information systems are properly maintained, and include the data required for quantifying criteria used for shared resource allocation negotiations. It is therefore important for countries to quantify their fisheries development plans, including projected growth in fleets and catches, as this will promote more focussed and successful negotiations for catch allocation.

Additionally, new or updated national legislation may be required to support the implementation of national monitoring, compliance and surveillance programs prescribed by the relevant international fisheries agreements and specifically demanded by ICCAT and other management bodies. Countries should also have fishery advisory mechanisms that can provide a national forum for coordinating action by, and support from, the governmental and non-governmental stakeholders.

Continue and Expand Coordinated CARICOM Participation in ICCAT

CFRAMP observer participation in ICCAT has enabled CARICOM countries to monitor closely the status and management of several major Atlantic tuna and billfish stocks from 1991 onwards. Recent developments at ICCAT have highlighted the importance and need for CARICOM countries to expand their participation in ICCAT, either individually as members, or through further development of regional representation. To date, two CARICOM countries have become full members of ICCAT. Regardless of membership in ICCAT, all CARICOM countries are obliged to report accurately on their tuna and tuna-like fisheries, and to comply with ICCAT management and conservation measures. In many if not all instances, countries are still in the process of establishing the measures to fulfil their responsibilities to ICCAT.

For countries that cannot afford membership in ICCAT but have large pelagic fisheries interests, coordinated regional representation at ICCAT will continue to play a vital role. The CRFM, which replaces CFRAMP, is best placed to serve this role, and this is discussed further in the following section.

Establish and Participate in Regional Arrangements or Organisations

CFRAMP activities in CARICOM countries, particularly the development of data information systems, have prepared these countries for more active contribution to, and participation in regional fisheries management activities. WECAFC recently established and assumed the leadership role for coordinating working groups on flyingfish, and shrimp and groundfish. The CRFM is expected to take over the coordination of the large pelagic working group (LPWG) started by CFRAMP. Additionally, the Caribbean Fishery Management Council (CFMC) has played a leading role in developing regional management of lobster and conch resources. The establishment in the near future of other WECAFC and CRFM fisheries management working groups are planned. In summary, the institutional model that is emerging for the management of transboundary living marine resources in the Caribbean region appears to be one of flexibility, networking and adaptation of existing institutions.

CRFM — As noted earlier, CARICOM countries recently approved the establishment of the CRFM. Following CFRAMP, the CRFM is expected to provide a regional forum for coordinating the further development of statistics, research and management of living marine resources within the Caribbean area.

In 2000, CFRAMP established a Large Pelagic Working Group (LPWG) to address the management of CARICOM's large pelagic resources, and to coordinate and develop unified strategies among its member countries for participation in ICCAT. The LPWG was active in developing the regionally supported Trinidad and Tobago position on catch allocation criteria (ICCAT, 2001b).

Adoption by the CRFM will broaden the current membership of the LPWG and its potential to contribute significantly to the management of all coastal large pelagic fish stocks within the wider Caribbean region. In achieving closer coordination at the regional level, the LPWG also has the potential to improve statistics and current knowledge of the distribution and abundance of tuna and tuna-like species within the central western Atlantic region as input to ICCAT.

WECAFC — WECAFC is currently conducting a project to acquire and synthesise information on large pelagic fisheries in CARICOM countries and their relation to other Caribbean countries. The project aims to highlight the importance and value of the fisheries, and to contribute to the technical basis for determining catch allocations by quantifying the distribution of stock biomass within CARICOM country EEZs. The project could also compile a database of indicators useful for

quantifying the catch quota needs of SIDS. Given the imminent establishment of the CRFM, the WECAFC project outputs could serve to guide and reinforce this agreed regional fisheries management arrangement during the early formative and developmental stages.

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