



The Biannual Newsletter of the Caribbean Regional Fisheries Mechanism

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Some Thoughts On Hammering Out A CARICOM Common Fisheries Policy

Milton Haughton, CRFM Secretariat

The initiative to develop a common fisheries policy (CFP) for the region began in early 2003, with a mandate issued by the CARICOM Heads of Government to begin preparatory work on such a policy. A CFP holds potential for making major contribution to the quest for sustainable development and improvement in the standard of living of our people, particularly the poor and marginalized who live in the coastal areas and depend upon fishing for their livelihood. Realizing such a goal is, however, only possible if the CFP includes carefully developed measures to address three main areas. Firstly, it must increase the region's food security by providing consumers in the region with adequate supplies of safe and affordably priced fish and seafood. Secondly, it must enhance employment and improve incomes, personal development and security of fishers and their families, and transform the marginalized fishing communities into economically and culturally vibrant communities. Thirdly, it must protect and conserve the fish stocks and associated ecosystems from over-exploitation and degradation due to pollution and other human activities.

I shall consider some key aspects of the architecture of a common fisheries policy, but before I do so, I will make a few comments on the nature of the resource and why, given our social and economic aspirations, a common fisheries policy is good for the region. The first point is that we are indeed people of the sea. Our food security and health, our social and economic development, our culture and our destiny are inextricably linked to the sea and ocean surrounding us. Collectively, the land area of our countries represents only about 18 percent of the total area falling under our jurisdiction, the remaining 82 percent being sea and ocean with living and non-living resources within the water column, on the seabed and ocean

floor, and also under the seabed. Fishing by local fishers is largely confined to the coastal waters. While there is very little fishing by nationals in the outer reaches of the EEZs, or on the high seas beyond, in recent years, some CARICOM countries, notably Belize, St Vincent and the Grenadines and Trinidad and Tobago, have pursued policies which facilitate third countries' distant water fishing fleets, either through the provision of flags of convenience or facilities for transshipment and taking of supplies, to conduct deep sea fishing on the high seas in the region and beyond. Today there are hundreds of foreign fishing boats that rely on these policy arrangements to exploit fishing opportunities on the high seas. The big question is whether similar fishing and economic opportunities could also be encouraged and exploited by local fishers. The answer is yes of course, but an enabling policy framework is needed.

The second point is that fish stocks are living, dynamic resource systems whose population size and abundance fluctuate in response to human intervention and natural factors. Many fish species migrate or are dispersed by ocean currents during their life cycle, and are thus distributed across jurisdictional boundaries laid down by man, frequently moving through the waters of several different states. The point is that fish stocks are common resources. They are described as "shared stocks", or "common property resource", or, "common heritage of man". This interconnectedness was painfully demonstrated in the summer of 1999 during the massive fish kill that stretched from Guyana all the way up to Dominica. The primary cause of death was stress from bacterial infection (*Streptococcus iniae*), arising from a combination of slightly elevated sea temperatures and decreased salinity due to increased volume of fresh water discharge from the South

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American river systems arising from heavy rainfall in the Brazil/Guiana rainforest at the beginning of the rainy season. The only way to ensure that we use the resources in a rational manner, and obtain optimum sustainable benefits while protecting the stocks from decline, is through closer cooperation among all states sharing the common resource in all areas, including development, management, and trade. A common policy, which is binding on all the states, is a pragmatic way of achieving these goals, though it is not without its challenges.

The third issue is that CARICOM countries have committed themselves to a development path of ever closer cooperation and integration of their economies in social and economic matters. This includes the creation of a single market and economy (CMSE), which means that territories of Member States will comprise an internal area without barriers where the free movement of goods, people (labour), money and services, and freedom of establishment will be ensured. Business people and service providers, which presumably include persons connected to fishing, will be free to establish themselves and conduct businesses in any part of the internal market, i.e., any Member State forming part of the single market, on a non-discriminatory basis. The CSME also has a common trade policy which will govern internal and external trade, including fish imports and exports.

The binding commitment of our Governments to the CSME, which already includes significant aspects of fisheries, is by itself a compelling reason for the preparation of a comprehensive, coherent common policy that will ensure the integration of fisheries into the rest of the new economy in a purposive and rational manner. But in addi-

tion to the above, CARICOM countries have also committed themselves to other international and regional legal instruments such as UNCLOS and its associated instruments and the decisions of the World Summit on Sustainable Development in Johannesburg in 2002.

The Common Fisheries Policy, which is a strategic document, not an operational one, should set out the goals to be achieved, including the desired improvements in social and economic conditions, and the desired targets in respect of conservation and protection of the fish stocks and associated ecosystems. It should also set out the principles to be followed to ensure good governance, fairness, justice and equity in utilization of the resources. Further, the common rules and mechanisms to be applied to achieve the stated goals should also be articulated. The organizations, regional and national, charged with implementation of the policy would, through their work programmes and projects give effect to the policy, exercising such discretion as may be permitted by the policy and other applicable laws.

In short, the common fisheries policy should be the Region's main instrument for transforming the fisheries sector and bringing it into the main stream of social, economic and cultural development, to create new opportunities for growth and prosperity, to bring security and hope to the tens of thousands of people who depend upon the living aquatic resources for their livelihood. Although it will require changes in the traditional way we do things, including concessions, which are more than marginal on the part of individual Member States, the likely benefits to be derived from a common policy far outweigh the associated costs.

FISHERIES DEVELOPMENT & POLICY

Strategy for Designing and Implementing a Medium Term Action Plan for Institutional Strengthening of Fisher folk Organizations.

By David N. Brown, Ph. D, CRFM Secretariat.

The main output of the first meeting of the Pro Tem Working Group made up of representatives of five national fisher folk organizations, held in June 2005 in Guyana, was a Strategy and a Medium Term Action Plan for 2005-2010. This comprises a proposed regional network of national fisher folk organizations, linked by Information and Communication Technology (ICT) and a compendium of four (4) project profiles for implementation, to build the capacity of the region's fisher folk organizations and empower them for the co-management of the region's fisheries resources.

The strategy to achieve the institutional strengthening and networking of regional fisher folk organizations should be seen as a process which includes a foundation stage, an expansion stage, capability building stage and a review and stabilization stage. The operations of the proposed network should be considered as a system with mutually reinforcing parts. The system constituting the network would be defined in terms of structure, functions, and roles. In addition, measures to facilitate feedback and consultation, responsible leadership and accountability, equity and ad-

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vocacy would collectively constitute the operating philosophy of the network.

Capacity building will be the core strategy for institutional strengthening and networking in order to equip fishers and fisher groups with the skills and other means for their involvement in participatory management of the region's fisheries. Each of the projects profiled under the Medium Term Action Plan will have a strong capacity building component. This will take the form of formal training and awareness building programs; organizing of public fora; resource mobilization activities; and information sourcing and sharing, through the use of the most appropriate information technology. The Network will adopt a participatory approach to management and operations that will involve collaboration between the Fisheries Divisions/Departments, the Network Member Organizations, the CRFM Secretariat and the Caribbean Fisheries Forum of the CRFM.

The approach to establishing the regional network of fisher folk organizations would begin with the establishment of a critical mass of national organizations to form the nucleus of the proposed Network of Caribbean Fisher Folk Organizations. This will be done by focusing on increasing the number of existing national umbrella fisher folk organizations, strengthening them, and addressing the critical areas for improving the institutional capabilities of these organizations.

Eighteen (18) participating Member States comprise the Caribbean Regional Fisheries Mechanism (CRFM). These can be divided into three (3) groups, based on the existence or not, of national fisher folk organizations. The first group consists of 5 countries with officially recognized national umbrella organizations. The second group is made up of eight countries with active primary organizations but with no officially recognized national bodies. The third group consists of countries with no active and/or officially recognized primary organizations or about which there is insufficient legal and administrative information to facilitate outright categorization.

The strategy will be to facilitate the development of a critical mass of at least 50% + 1 of the eighteen (18) Member States or ten (10) national organizations to justify the creation of a functional regional network and provide it with some level of credibility. Therefore, at least five (5) Member States in Group 2 above will be targeted for capacity building and other interventions to develop national umbrella fisher folk organizations to ensure that the critical mass can be attained. At a later stage, Group 3 and the others left in Group 2 will be targeted to develop and/or strengthen the primary fisher folk organizations and encourage the formation of national umbrella fisher folk organizations which can then become part of the regional network.

In order to ensure sustainability of these interventions, at least one Fisheries Extension Officer in each country would be designated to coordinate and assist the organi-

zations in implementing activities at the national level.

In summary, Stages 1 & 2 of the building process would therefore concentrate on group formation and strengthening, Stage 3 would concentrate on further expansion of the network and capacity building through a series of training workshops in subject areas critical to the proper functioning of the network and promotion of participatory management, while Stage 4 would focus on reviewing the performance of the national umbrella fisher folk organizations and network, and developing re-organization programs.

The four projects, one for each of the stages identified above are as follows. The first, entitled, 'Formation and Strengthening of National Fisher folk Organizations', seeks to facilitate the formation and strengthening of national umbrella fisher folk organizations to create the necessary



Representatives of fisherfolk organizations at Workshop.

critical mass for forming the nucleus of the proposed Caribbean Network of National Fisher folk organizations. The second project, entitled 'Creation and Expansion of national membership of the Caribbean Network of National Fisher folk organizations' is aimed at creating and expanding the membership of the Network. The third project, entitled 'Strengthening of the Caribbean Network of National Fisher folk Organizations' is geared towards expanding the regional network, building its capacity for self reliance, and providing it with the capability to meaningfully participate in fisheries co-management and development at the national and regional levels; the latter, through active participation in the Forum of the CRFM. The fourth project, entitled Organizational Review and Network Stabilization will undertake a thorough evaluation of the implementation of the first three projects and make recommendations, if any, for future planning.

The overall goal is to establish a network of self-reliant and capable organizations, effective in advocacy and sufficiently empowered to assert themselves in the sustainable co-management of the region's fisheries resources.

Fisheries of the British Virgin Islands: A Summary

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The marine habitats of the British Virgin Islands (BVI) range from the extensive, shallow nearshore shoals with mangroves and sea grass beds, to the reefs and banks of the shelf as well as the offshore shelf edge and associated pelagic zone, and cover an area of over 274,813sq km. The most important fishing banks are the Barracuda Bank south east of Virgin Gorda, the Barracouta Bank northwest of Jost van Dyke and the Kingfish Banks, Turtle head and Whale Banks north of Jost Van Dyke. Fig 1 shows the geographic location of the islands and major banks comprising some elements of the marine space of the Territory.

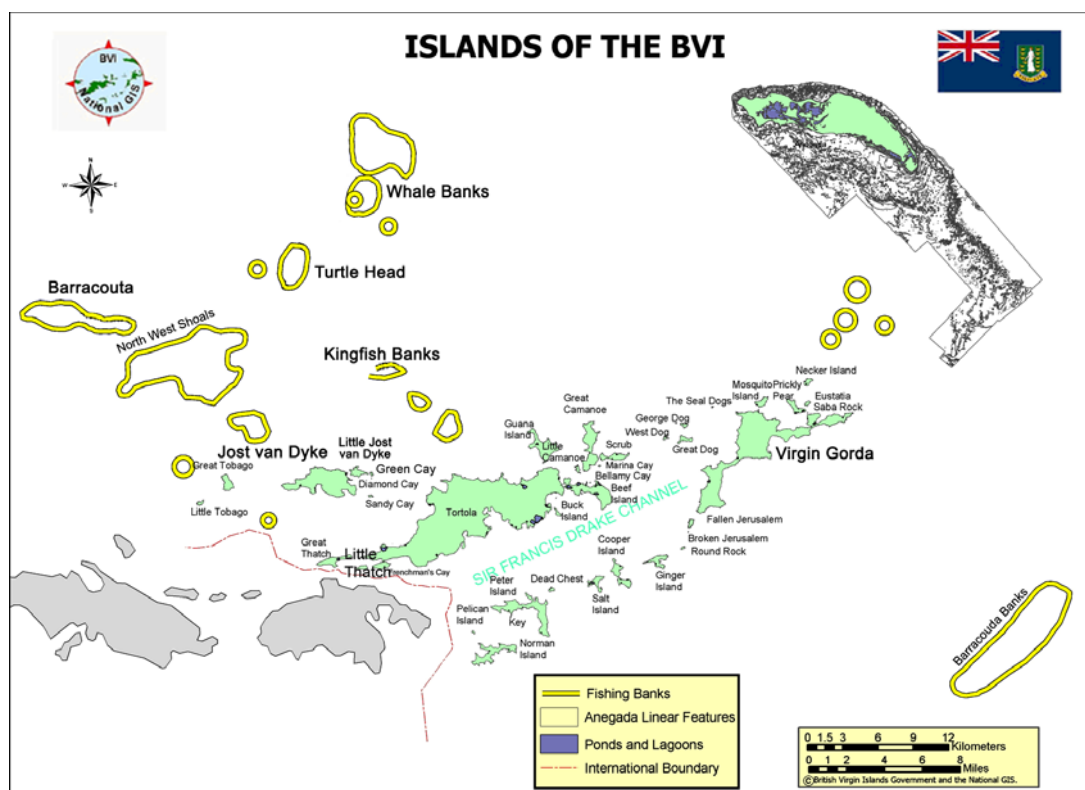
At the macro-economic level the estimated contribution of fishing to the Gross Domestic Product (GDP) is relatively low, averaging 2.10 for the years from 1981 to 1999 and ranging between 3.3 (1981) and 1.12 (1994). From 2000 to 2004 estimated GDP ranged between 0.70 and 0.61. The total estimated landings in 2004 was 1,342 metric tonnes. There is limited export of fish as the vibrant tourism sector provides a ready local market for the catch. The systematic data collection system being developed involves the legislated mandatory completion of logbooks.

The fisheries of the BVI have been broadly categorized into two main types namely the commercial

(artisanal) fisheries and the recreational fisheries. There is a third emerging fishery namely the offshore longline pelagic fishery. The artisanal commercial fisheries employ small boats from 11ft dinghys to 60 ft vessels of various types. About 68% of the vessels use outboard engines, 36% use inboards and one vessel uses an inboard/outboard engine. Pomeroy (1999) determined that there were about 300 commercial fishermen operating in the BVI waters. Fifty percent (50%) of the fishermen own fishing vessels. The age of the fishermen ranges between approximately 20 and 80 years. Approximately 35% of the fishers are full-time fishers.

Fishing gears used are fish traps (arrowhead, rectangular, S and Z shaped traps), handlines, pelagic and vertical longlines, and nets. Fishing methods include diving for lobsters (*Panulirus argus*) and conchs (*Strombus gigas*), 'picking' of whelks (*Cittarium pica*) and 'chum fishing' for coastal species such as yellowtail snapper (*Ocyurus chrysurus*). Most artisanal fishers tend to use a combination of fishing gears to target different species seasonally. The most common fishing gear is the fish trap accounting for about 40% of the total landings. Some fishers may use another gear type as the primary gear with traps either as a secondary or tertiary gear. Lobsters are the most valuable component of the trap catch.

Fig. 1



The fish catch comprises mainly reef and slope fish such as *Acanthurus coeruleus* (blue tang), *Acanthurus chirurgus* (doctor fish), Scaridae (parrotfish), Haemulidae (grunts), Balistidae (triggers) etc. It is a legal requirement that traps be set singly. They are normally set at depths of 80 to 120 to 150 ft and are cleared about twice per week.

The hook and line fishery contributes approximately 10% of the landings with about 70% of the catch comprised of snapper and groupers. Most of the hook and line fishing is conducted in the deep-water. The gill net and beach seine fishery contributes just over 35% to the total annual catch landed by artisanal fishermen. Bonito (*Sarda sarda*) and some species of carangids (mostly blue runner and crevalle jack) form the bulk of the net catches. Fish traps and handlines are normally used all year round. Horizontal longlines are generally used from October to May. Seine nets are used largely from November to March for jacks and from March to August for bonito, *Caranx crysos* (hardnose) and *Ocyurus chrysurus* (yellowtail). In terms of relative importance of species in the landings by volume, the yellow tail snapper and the queen triggerfish (*Balistes vetula*) are most important by volume. In terms of value however, the most important species are the spiny lobster (*Panilurus argus*), queen conch (*Strombus gigas*) and red hind (*Epinephelus guttatus*).

Recreational fisheries in the BVI comprise mainly foreign vessels which visit the BVI for pleasure and/or sport fishing. The sport fishery targets big game fish such as the marlins and sailfish focussing on the "North Drop" in the BVI waters. Fishing licenses are either valid for one year or one month. In 2003 over 700 pleasure fishing licenses were granted. Recreational fishers are limited to 30 lbs catch per trip. Sports fishing tournaments are generally tag and release. The offshore pelagic fishery is an emerging fishery targeting swordfish, tunas and other billfish, using pelagic lines. For the 2004 fishing season just over 8,000 kg of swordfish and 2,200 kg of tuna were landed.

The BVI Fisheries Act 1997 and Regulations 2003 provide the legal basis for fisheries management in the Terri-

tory. In summary, the Act provides for the development of and continual review of the fisheries management plan, institutionalisation of a consultative framework through the Fisheries Advisory Committee, licensing and registration, data collection, conservation measures such as protected areas, fishing priority areas, closed seasons for primary resources, moratoria on some species, minimum size limits and prohibited fishing methods. Eighty percent (80%) of fish landed is legally required to be sold to the BVI Fisheries Complex. There are also provisions for the management of aquaculture and processing establishments and the control of marine pollution. Fines and penalties are prescribed with regard to offences committed in contravention of many of the areas previously outlined.

The BVI became a member of the International Commission for the conservation of Atlantic Tunas in 2001. Relevant Multilateral Environmental Agreements ratified by the BVI include the Convention on Trade in Endangered Species (CITES), Convention on Biological Diversity and The Ramsar Convention.

Current research activities are focussing on the monitoring of spawning aggregations, the lobster fishery and soon the conch fishery. Limitations with regard to institutional capability restrict research activities to ad-hoc surveys. The National Integrated Development Strategy (1998) report identified the principal issues for fisheries management and development which directs the plans and programmes being implemented. These include: multisectoral use of the marine space with consequent loss of habitats; ciguatera/ fish poisoning, greater streamlining of fish marketing activities and price of fish; development of the offshore sector, enhanced surveillance framework, increased fisheries infrastructure, institutional strengthening, enhanced data and information management, the need to increase local participation in the recreational fishery and the need to encourage investment in the recreational fishery, in particular big game fishing. Future development of the fishing industry is envisaged to target the recreational sector, offshore pelagic fishing and deep slope demersal resources.

REGIONAL BRIEF

GUYANESE FISHING GROUP WINS COMMONWEALTH YOUTH GOLD AWARD

The Challenger Fishing Group of Aruka River in the North- West District, Guyana, has won the top prize in the Commonwealth Youth Gold Award 2005 for the Caribbean region. The Award was in recognition of its contribution to community development.

The fishing group was established by ten young Amerindians indigenous to the Aruka River region to create employment opportunities for their peers by promoting fishing as a source of livelihood. The group started with six paddle boats carrying two persons each before progressing towards the use of motorized boats, which en-

abled them to extend their fishing grounds from the mouth of the Aruka River to the Atlantic Ocean.

"Winning this Gold Award could not have been timelier, since we are in the final stages of building a new boat which will need an engine. This will help us to achieve our objective of providing the community markets with fresh and salted fish," said Uborn Allicock, Chairman of the Challenger Fishing Group. The achievements of the Challenger Fishing Group have now attracted the interest of the young people in the community to start up youth groups.

Source: CNIS Commonwealth News and Information Service.

Dominica Shares Fish Aggregating Device Technology (FAD) with Grenada

Harold Guiste, Fisheries Officer, Dominica



Constructing the FAD

Over ten years ago the Fisheries Division in Dominica introduced the Fish Aggregating Device (FAD) to local fishermen as a means of taking advantage of the large migratory pelagic resources found in its waters, to make better use of its EEZ, reduce searching time for fish at sea, enhance fish catches and to gain on fuel economy within the local fishing industry. This technology only really caught on in Dominica in the last six years and some fishermen have mastered the technique.

Dominican Master Fisherman Desmond Bertrand, is an expert on the construction and deployment of Fish Aggregating Devices (FADS). Mr. Bertrand recently returned from the island of Grenada where he introduced the technology to a group of Grenadian fishermen. The one week training and demonstration course involved teaching the Grenadian fishermen how to construct FADS and to deploy the gear in the ocean. This gear basically involves the placement of a fixed buoy in the ocean, in very deep water. The buoy attracts small fish which in turn attract larger fish, with the fisherman at the top of the food chain.

Grenada is well known in the OECS sub region for its well developed and established longline fishery on the west coast of that island. This fishing method is used for targeting large pelagic fishery resources which include species such as blue marlin and yellow fin tuna. Longline fishing gear basically consists of one main line with shorter drops lines suspended from it at various intervals. The line is paid out in the ocean and can span several miles. Loss of equipment is very common and the process is also very expensive to fishermen. One mile of longline

can cost up to \$4000.00 and it can also get lost as soon as it is deployed. This has given sufficient reason for some Grenadian fishers to opt for the use of FADS.

The introduction of the Fish Aggregating Device (FAD) in the eastern fishing community of Granville in Grenada was implemented in response to a request made to the Fisheries Division of Dominica by the Fisheries Division of Grenada. This initiative was coordinated and sponsored by a JICA Fisheries Expert who had been working with both islands over the past year. Dominica responded to the request to share this technology with Grenada by sending the very experienced Master Fisherman, Desmond Bertrand, who is one of the best FAD fishermen in Dominica, to do the technology transfer.

The fishing technology transfer project was commenced in February 2005, with a series of activities, workshops and training exercises with Fisheries Officers and fishermen of Grenada. Mr. Bertrand was technical instructor on the project, providing information, instruction, expertise and demonstration in the construction of FADS and their installation. Two sets of FADS were deployed off Granville in June 2005 and actual fishing off the FAD was done in July with instructions from Mr. Bertrand. This first trial using the new gear was extremely successful with one fisherman catching 13 yellow fin tunas on a single fishing trip. The project has been hailed a tremendous success resulting in fishermen of the east coast of Grenada now being able to target the same species targeted by their fisher folk counterparts on the west coast of that island.

Regional Workshop on the Collection and Use of Demographic Information on Coastal Fishing Communities in Community-Based Fisheries and Integrated Coastal Zone Management in the Caribbean

Trinidad and Tobago, 13-17 June 2005

Terrence Phillips, CRFM Secretariat

The Caribbean Regional Fisheries Mechanism (CRFM), in collaboration with the Food and Agricultural Organization of the UN (FAO) and the Fisheries Division of the Ministry of Agriculture, Land and Marine Resources (MALMR), Trinidad & Tobago, organized and convened a Regional Workshop on the Collection of Demographic Information on Coastal Fishing Communities and its use in Community Based Fisheries and Integrated Coastal Zone Management in the Caribbean.

The aim of the Workshop was to review the findings of the recently concluded country case studies on the status of coastal zone and fisheries resources management, the incorporation of socio-economic and demographic indicators in selected Caribbean countries (Belize, Dominica, Jamaica, St. Lucia, Barbados, Trinidad and Tobago and the Turks and Caicos Islands), and the comparative study on the use of demographic indicators in coastal area and fisheries management between the Caribbean and selected countries (Malaysia and the Philippines) in Southeast Asia. This would facilitate making recommendations for the strengthening of integrated coastal zone and community based fisheries management in the Caribbean and on the collection and use of demographic information on coastal fishing communities.

The Workshop was held in Trinidad and Tobago. There were thirty-five (35) participants representing Barbados, Belize, Commonwealth of Dominica, Grenada, Saint Christopher and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Suriname, Trinidad and Tobago, Turks and Caicos Islands, Malaysia, the Philippines, Caribbean Natural Resources Institute (CANARI), Caribbean Regional Fisheries Mechanism (CRFM), Food and Agriculture Organization of the United Nations (FAO), Intergovernmental Organization for Marketing Information and Technical Advisory Services for Fishery Products in the Asia and Pacific Region (INFOFISH), Institute of Marine Affairs of Trinidad and Tobago (IMA) and the University of the West Indies, Cave Hill and St. Augustine Campuses. Presentations were made and discussions held among other things, on various aspects of the incorporation of demographic and socioeconomic indicators in coastal and fisheries management planning, research and training, their impact on the socioeconomic well-being of coastal communities in the Caribbean, South-east Asia and to some extent, the

Pacific.

The Report of the Comparative Study Mission to Malaysia and the Philippines showed that, in an effort to improve on the standard of living of fishers and their communities, while at the same time improving fisheries conservation and management, these countries have, over the past three decades, refocused their efforts on the human factor. This was evidenced by the increased use of, and reliance on socio-economic and demographic data and information in the formulation of policies and development and implementation of programmes to address, in a direct manner, the social and economic needs of fishers and their communities. In this manner, fisheries management has shifted from the traditional narrow focus on fisheries biology, ecology and conservation, towards a wider developmental perspective based on the principles of integrated coastal resource management.

The results of the Study Mission have also indicated that there could be great value in using socio-economic and demographic data in planning, monitoring, assessing, evaluating and managing fisheries in the Caribbean. Although, such data and information were being utilized in some countries in the Caribbean as demonstrated by the Case Studies, it was being done to a greater degree in South-East Asia, where they continue to experience and realize positive results arising from the programmes that had been, and were being implemented. Fisheries development and management in the Caribbean was still largely dependent on the use of biological and ecological data and information for the achievement of sustainable fisheries.

Based on the presentations and discussions, participants were divided into two Working Groups, with each group required to address aspects of the following main topics:

- (i) Policy to facilitate and promote development of the fishing communities through fisherfolk and other community-based organizations, with the following objectives: Reduce poverty in fishing communities; promote economic activities/benefits through value added/diversification in terms of products and services offered to consumers; expand the social benefits accruing to the membership; overall improvement in standards of living/livelihoods; and review

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and develop new policy directions geared towards the achievement of the above stated policy objectives.

- (ii) Use of socio-economic, demographic and cultural indicators in Integrated Coastal Zone and Community Fisheries Management.

Among the recommendations made by both Working Groups were, the need to strengthen the commitment towards integrated coastal zone management in the region; to enact specific legislation to provide for the recognition of fisherfolk and community-based organizations (CBOs); to facilitate a new policy direction to promote economic

and social development of fishing communities and the CBOs within them; to restructure fisheries departments to include fisheries development units; to put in place mechanisms to promote consultation between government and other stakeholders; to meaningfully incorporate into the planning and development process, social, economic and demographic information; and to give feedback to fishers and other stakeholders on the results of socio-economic and demographic surveys undertaken, as this would provide a better understanding of changes taking place in the communities and of coastal zones, etc. and the impact of these on their livelihoods.

RESEARCH & TECHNOLOGY

Some Interesting and Pertinent Issues Addressed by the 2005 Annual ICCAT SCRS Meeting

By Dr. S. Singh-Renton, CRFM Secretariat

As in previous years, the CRFM Secretariat participated in the Annual ICCAT SCRS (Standing Committee on Research and Statistics) Meeting in 2005, and submitted a national report on behalf of Grenada, Dominica, St. Kitts and Nevis, and St. Lucia. Two CRFM countries, Guyana and Belize, submitted separate national reports to ICCAT in 2005. No new major species assessments were conducted by the SCRS in 2005, but several detailed assessments are planned for 2006.

ICCAT's Working Group on Billfishes held an inter-session meeting in May 2005 in Brazil, and observed certain discrepancies in the catch series reported by a number of CRFM countries (Barbados, Grenada, and Trinidad and Tobago). These data queries were sent by the Secretariat to the countries concerned. ICCAT's Working Group on Billfishes is hoping that these countries will review their historical data and advise ICCAT of any errors, as well as provide explanations of remaining discrepancies, before billfish assessments are updated in mid-2006. The queries raised by the Billfish Working Group point to a much more general problem of inadequate basic statistical coverage of, and reporting, on large pelagic fisheries in CRFM countries, despite recent regional initiatives to improve national fisheries data systems. That is to say, present levels of available data and information from CRFM Member States do not permit a clear understanding of the evolution of catches in relation to effective fishing effort in our large pelagic fisheries. In consequence, ICCAT has so far been unable to incorporate data on most CRFM tuna and billfish fisheries into its stock assessments.

It may be argued that tuna and billfish resources are less important to some CRFM countries than other resources such as shrimp and lobster that can earn the fish-

ing countries much needed foreign exchange. However, considerable quantities of yellowfin tuna, skipjack tuna, billfishes, blackfin tuna, Spanish and king mackerels, swordfish, wahoo, and shark species are harvested by several CRFM countries, many of which include the smaller CRFM island states, and in which these resources provide an essential source of local protein. The contribution to local food security by these fisheries and hence the importance of sustainability, should therefore not be overlooked.

ICCAT has also recently established two sets of support funds, essentially to help Contracting Parties that are Developing States to comply with their data obligations to ICCAT. In 2005, these support funds were used to facilitate the participation of several African scientists (from Senegal, Ghana, Cote D'Ivoire and Republic of Guinea) in the 2005 inter-session meeting of ICCAT's Billfish Working Group, as well as the 2005 SCRS Meeting. The SCRS agreed that some of the support funds could also be used to fund ongoing efforts to update the ICCAT Field Manual, and a current initiative to recover historical data, that is data from the very early days of the tuna fisheries that were often retained by the national scientists concerned. Such historical data are considered to hold much potential value for developing longer time series of data for stock status evaluation purposes.

Regarding statistical reporting, CRFM countries should note that given that many nations do not normally report Task II data to ICCAT corresponding to their Task I data (ICCAT Task II data give a finer resolution of the time and area scales than Task I data), the SCRS took a deci-

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sion to upgrade Task I data requirements to capture more detail about the fishing operations. From 2006, nations will therefore be asked to report Task I catches, by five-degree square, gears, and calendar quarters. The issues of distinguishing real zero catches from unreported data and the handling of missing data were also addressed, and the SCRS agreed that each of its Working Groups could determine the best approach for the species under its responsibility. The SCRS is also in the process of updating the ICCAT tagging database, and will be seeking the assistance of countries in the near future to help ensure that all the relevant data are entered into the tagging database.

As countries are aware, the SCRS has been considering environmental and bycatch issues for many years now. This year, the establishment of an Ecosystem Committee

was proposed to the SCRS, considering the increasing need for ICCAT to demonstrate practical application of ecosystem-based approaches to fisheries management. The SCRS concluded that a proposal for establishing such a Committee should be developed inter-sessionally, and the SCRS would then be better prepared and informed to examine the issue more fully in 2006. The establishment of an Ecosystem Committee would have implications for expanded statistical coverage of fisheries, in addition to the National Plans of Actions for bycatch monitoring in respect of turtles and seabirds, which ICCAT expects countries to be already engaged in implementation. The full report of the 2005 SCRS meeting is available for download from the ICCAT website (www.iccat.int).

Goliath Grouper Stock Assessment in Port Honduras Marine Reserve, Belize

By Dwight Neal, Marine Biologist, Belize

In September 2005 Belize began a stock assessment project on the Goliath Grouper (or Jewfish), scientific name *Epinephelus itajara*. The Jewfish grows slowly to very large sizes and has a high life expectancy. It takes about six to eight years to reach maturity and lives as long as 37 – 50 years. In Belize, weights of 500 lbs. or more have been reported, while in Florida fish weighing 600 lbs. have been caught (see photos). Goliath Grouper feeds largely on shrimps, crabs, fishes (including stingrays and parrot fishes) octopus and young sea turtles. Smaller goliath grouper are food for such fish as barracuda, king mackerel, sandbar shark, great hammerhead shark and moray eels, as well as other groupers. The large adults have very few natural predators except humans.

This project is being implemented as part of the Amenity Areas Demonstration Project that is part of the larger Caribbean Regional Environmental Program (CREP). The assessment is being done in and around the Port Honduras Marine Reserve, located in southern Belize. It is also part of a larger research and monitoring effort by the Toledo Institute of Development and Environment (TIDE), the co-management partner of the government at the Marine Reserve, to provide adaptive and effective management of the reserve. The goal is to ensure the long-term survival of the fishes in the Demonstration Area within the Reserve, by developing a baseline assessment, monitoring the trends of the fishery, and guiding the sustainable use of the marine resources in the area. Within the Demonstration Area, fishing is the main source of income generation, but more recently tourism, sport fishing and eco-tourism are becoming prominent. However illegal fishing is considered a major threat and possible negative impact from large shrimp farming operations to the north via Monkey River, to the sustenance of the fisheries, includ-



Goliath Grouper and man

ing the Jew fish.

The primary objectives of the assessment are to determine the population status of one commercial fish species (*Epinephelus itajara*) through a stock assessment in the Port Honduras Marine Reserve and to facilitate a

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sustainable harvest volume, based on the results of the stock assessment, to ensure the long-term sustainability of the species.

The Port Honduras Marine Reserve (PHMR) was declared in January 2000 under the Fisheries Act, Chapter 210 of the Laws of Belize, Revised Edition 2000. The reserve encompasses some 160 square miles of coastal marine systems and accompanying mangrove and coral-line cayes. It has a robust belt of mangroves on the coast that provides the critical link between terrestrial and marine environments. The area serves as a habitat for various endangered species including the West Indian Manatee, the American saltwater crocodile, the Morelet's crocodile, migratory birds and boa constrictors. In an effort to ensure community participation in the management of the Reserve, the Fisheries Department signed a co-management agreement with the Toledo Institute for Development and Environment (TIDE) for the reserve's management.

In Belize the CREP Amenity Areas Demonstration Project is being implemented jointly by the Ministry of Natural Resources and TIDE. It is being implemented in two protected areas, Port Honduras Marine Reserve (PHMR) and the adjacent terrestrial zone, the Paynes Creek National Park (PCNP). The PHMR and PCNP border each other in south Belize between Punta Gorda Town and Monkey River Village. The CREP project focuses on using good environmental management to protect areas that are rich in biodiversity as well as internationally significant wildlife habitats.

The project is also progressive in that it focuses on the human development element, ensuring that the local people are involved in the decision making process and have bought into the importance of the concept of resource protection. Its primary objective is to improve protection of resources in the Paynes Creek National Park



A Grouper in its natural habitat.

and Port Honduras Marine Reserve in a manner that would create sustainable livelihoods for local people. As a result, there are several components that are integral parts of the project. These include:

- **Capacity building** for both the communities and the implementing organization.
- **Sustainable and alternative livelihoods training** for the communities to reduce their dependence on the resources of the reserve.
- **Management Plan development and implementation** for the protected areas.
- **Partnership building** between the implementing agencies.
- **Environmental awareness** for the wider community.
- **Networking** between the various stakeholders.

The assessment has been planned for a duration of nine months and concludes in May 2006.

Status of Spawning Aggregation Research in the British Virgin Islands

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Introduction

The value to marine biodiversity, of identifying and protecting spawning aggregations (SPAG) sites and in particular multispecies SPAG sites is well documented (Heyman *et al* 2002). The systematic study of spawning aggregations in the British Virgin Islands commenced with the implementation of a project in 2002 which focused specifically on the identification and description of spawning aggregations of the red hind (*Epinephelus guttatus*) (Eristhee *et al* 2002 and Murray *et al* 2004). Reduction in the size and numbers of red hind in the commercial fish-

ery compelled the Ministry of Natural Resources and Labour in 1996 to implement a precautionary closed season for the fishery for red hind during the months of December, January and February (Eristhee *et al* 2002). In 1997 the 'VI Fisheries Act 1997' was passed which made provisions for the legal declaration of closed seasons with respect to any fish species for which conservation measures were required. In 2003, under the VI Fisheries Regulations, a closed season was specified for the red hind from January 1 to March 31, based both on anecdotal contributions of fishers as well as preliminary results of research.

With the assistance of fishermen, several traditional and possible SPAG sites were noted. In 2002 four (4)

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such sites were the focus of a study of the red hind. The study emphasized the red hind as this is the most important reef fish species, which accounted for 17% of the reef fish catch landed at the BVI Fishing Complex in 2002 (Eristhee *et al* 2003 and Murray *et al* 2004). Based on the results of the research conducted between 2002 and 2003 there has been continual monitoring of one of the major sites by underwater visual surveys and some limited sampling.

Summary of Previous Research

This summary is based principally on the report of Eristhee *et al* 2003. Using baited fish traps and handlines, four (4) potential spawning aggregation sites were sampled in 2002. Site description and examination of the aggregation were conducted through underwater visual surveys using video cameras. In 2003 underwater visual observations were continued in addition to sampling of landings of red hind by the commercial fishery as well as imported hind at the BVI Fishing Complex. In both years data collected included length and weight of individual fish, sex, gonad weight and description. Catch per unit effort and sex ratios were calculated for populations sampled in 2002 and gonosomatic indices were calculated for samples in 2002.

Site Description

The BVI exist on the same geological shelf as Puerto Rico and the US Virgin Islands, with the exception of St Croix. The total shelf area is approximately 3,026 square nautical miles (10,393km²) of which about 3130km² (30%) is under the jurisdiction of the BVI. A significant portion of the shelf is comprised of coral reef and rocks. There are several banks which rise above the general shelf floor but the most notable ones associated with fishing are the Barracuda Bank (Seamount) which is located 15 miles south east of Virgin Gorda, the Barracouta Bank north-west of Jost Van Dyke, the Kingfish Bank, Turtle Head and Whale Bank to the north of Jost Van Dyke. The shelf edge is generally considered to be at the 100-fathom (180m) isobath beyond which the ocean floor rapidly plunges to depths in excess of 1000m.

The sites examined were located on the Caribbean side of the islands as shown in Fig 1 (page 4). The most active site was at a depth of about 40-42m, comprising an

intricate arrangement of ledges and hollows, with numerous stony corals and sponges, thereby providing an abundance of crevices for avoiding and escaping predators.

Aggregation Description

The aggregation observed was comprised of red hind. The observations were made before and after the full moon. There were over 60 relatively large hind recorded at the site in a single dive. Samples taken showed that the aggregation was comprised of male and female hind in a 1: 2.9 sex ratio. Males were generally larger than females. Males ranged in size from 33.9cm to 52.8cm TL and females 25.2cm to 47.3cm TL. The gonosomatic index for females showed a peak within a week of the full moon.

Tagging

During the project implementing period there was minimal tagging of hind in the BVI waters. About 39 hind were tagged in 2003 using Floy brand spaghetti tags with nylon dart tips. To date there has been neither tag returns in the BVI, nor reports of fish tagged in the BVI and caught elsewhere in the region.

Recent Monitoring

Between 2004 and 2005 there has been continual monitoring of the sites identified, using underwater visual surveys and sampling with handlines. The data confirms the red hind aggregations previously identified at the site in 2002 and 2003. Observations and samples were taken in January, one day before the full moon. The 26 fish taken were primarily females. These were mature, active females (F3) and early post-spawn females which accounted for 65.4% of the total catch. Males comprised about 27% of the sample. The length range was 24-50cm TL. Gonad weight for females was up to 300g.

One of the major observations at the site when visual surveys were conducted in February 2005 was an aggregation of the white margate (*Haemulon album*) suggesting that the site may be supporting aggregations of more than one species and aggregations for each species may therefore be transient. This remains to be confirmed. Continual monitoring will focus on this and will determine whether the white margate aggregation is a spawning aggregation, as well as to record any aggregation of other species.



FISH HUMOUR

To whom do fish go to borrow money?
A loan shark

How does an octopus go to war?
Well-armed!!

Which fish can perform operations?
The Surgeon Fish

Special arrangements to assist the Dominican Republic to determine the status of local queen conch populations

By S. Singh-Renton, CRFM Sec. & J. Mateo and I. Majil,
Directorate of Fisheries, DR.

As far back as record-keeping goes, the Caribbean queen conch, *Strombus gigas*, has been a culinary delicacy. Not surprisingly, this has led to the development of a thriving international market for queen conch, together with the growth and development of commercial-scale queen conch fisheries in a number of countries within the wider Caribbean. In recent years, market and supply data have increasingly become a source of concern in the international community. And as fisheries officers within CRFM States are aware, such concerns have been receiving more direct attention and response from CITES in the past few years, with the entire queen conch fishing industry now facing the real possibility of a trade moratorium in the near future. In light of this, several countries with significant queen conch fisheries have been stepping up their efforts to regularize monitoring of this valuable resource and to incorporate the data so obtained into active, as well as defensible, management strategies such as establishment of catch quotas, and rationalization and improved control of minimum size limits. Jamaica began active monitoring and control of its queen conch fishery even before the latest CITES interventions, and both Jamaica and Belize have made exemplary progress in moving towards more active, scientific-based management controls for their queen conch fisheries.

The Dominican Republic (DR) also has a major queen conch fishery, with the local stock thought to be depleted. However, efforts to establish and implement a queen conch rebuilding plan in this country have been very limited so far, mostly due to lack of finances. Cognizant of the negative consequences of proposed CITES actions on local livelihoods in the DR, NOAA (USA) agreed to fund a national conch visual survey study, to be coordinated by the CRFM Secretariat in collaboration with the Fisheries



Taking care of the technical aspects of the Conch Survey

Directorate in the DR. The CRFM Secretariat, in turn, recognizing the experience of certain CRFM countries in conducting such studies, arranged for staff of the Belize Fisheries Department to work closely with the DR queen conch research team for planning, designing, and conducting field work. These arrangements have so far resulted in a conch survey training workshop being held in the DR, in July 2005, to agree on the sampling strategy for the study, and to train the research team in suitable underwater visual survey techniques for queen conch.

During late November-early December 2005, staff from the Belize Fisheries Department also supervised the implementation of the first of three surveys planned under the NOAA study arrangement, and are expected to provide technical guidance and advice to the DR research team during the remaining two surveys. If all goes according to plan, field work should be completed early in 2006, after which the data will be analysed to develop management advice that also addresses the ongoing CITES concerns about the status of queen conch in the DR.

CITES AND BELIZE: The Conch Situation

Fisheries Department, Belize

The Queen Conch (*Strombus gigas*) is one of the most important fisheries in Belize, second only to the Spiny Lobster (*Panulirus argus*) fishery in terms of commercial value. In 2003 exports of conch meat was 240mt. with a value of US \$2.06m. The fishing industry currently employs approximately 1,800 full-time fishers. The total number of Belizeans benefiting directly and/or indirectly from the fishing industry, however, has been estimated at 9,000 persons. Fishing for conch is done by skin diving only and

is carried out mostly in the reef lagoon areas and the three (3) offshore atolls. Fishing effort is confined within the 20m depth range. No deep-water fishing for conch is currently done in Belize.

In 1992 the Convention on International Trade of Endangered Species (CITES) placed the Queen Conch in Appendix 1 list of species as a result of concerns in regards to over-fishing of the stocks in some countries in the Caribbean region. In August 2003, CITES placed Be-

(Continued on next page)

CRFM News, December 2005

lize in the category (ii) list of countries. This meant that there is concern in regards to the viability in the exploitation of the species. In order to remove Belize from Category (ii) CITES made several recommendations. These recommendations (to be implemented in 12 months) included, the establishment of catch and effort quotas, a standardized minimum weight of unprocessed and processed conch meat, and the implementation of a fishery data collection system, as well as a monitoring program for the conch.

Belize's response to the CITES recommendations was to conduct an abundance survey to determine the current state of the conch population in Belizean waters. A report was submitted to CITES containing the findings of the 2003 abundance survey, as well as information on Belize's current conch fishery regulations and management strategies, including the benefits of no-take areas in the network of Marine Reserves administered by the fisheries department, and the protection of the deep water conch stocks through banning the use of SCUBA equipment for fishing.

Other specific and important conclusions drawn from the findings of the abundance survey and other assessment studies in Belize included the following:

- Densities of legal conch are significantly higher in no-take zones in the Marine Reserves.
- Comparisons of spatially paired samples taken inside and outside Marine Reserves indicate that, generally, densities within Marine Reserves are higher than outside Marine Reserves.
- Adults were, on average, larger in deep areas, indicating that adult populations arise primarily from direct larval settlement and not from migration from shallow areas.
- Marine Reserves contained a high proportion of very small adults.
- No-take zones in the Marine Reserves and deep areas contain a higher proportion of older (thick-lipped)



The Queen Conch: Strombus gigas

adults, indicating greater survival, increased reproduction lifespan and the faculty for the more extended generation of seed stocks.

- There is unequivocal evidence in Belize that Marine Reserves are benefiting the conch population and protect the most productive areas. These therefore potentially offer an added degree of benefit within the context of the overall management of the conch stock in Belize.
- No-take zones in the Marine Reserves have a clear impact on the conch population in terms of abundance and survival.

In conclusion, the report submitted to CITES makes several recommendations for follow-up actions that should be undertaken in future research work, aimed at gathering the necessary information that should be forwarded to CITES in a timely manner in order to upgrade Belize's position regarding the status of the Queen Conch in Belize.

Sociological Features of Two Fishing Communities in Antigua: Point-Villa and Grays-Green

*By Ian S. Horsford (Fisheries Officer)
Fisheries Division, Antigua and Barbuda*

Effective management of the fishery sector is based on an understanding of the complex nature of fishery systems. The term "*fishery system*" is defined here as a functional unit of variable size with complex interactions amongst social, economic, environmental, biological, legal and political elements. At a superficial level, fishery systems involve the: fishery resources and environment; fishers and their financial dependants; fishing communities and organisations; investors (banks, credit unions, etc.); consumers (wholesalers, retailers and the general public);

fishery managers and policy-makers.

Because of the complex nature of fishery systems, effective management requires a "*holistic*" approach involving tradeoffs between conservation, fish production, employment, and income distribution. Social and economic considerations are key components of a "*holistic*" approach, since the behaviour of fishers is influenced by social and economic factors, which impact on the level of fishing. The following provides a "snap shot" of the struc-

(Continued on overleaf)

ture of two traditional fishing communities, located on the northern and southern sides of St. John's Harbour (the main port of entrance to the capital of St. John's). Located on the western side of the island of Antigua, the development of both communities has always been tied to the sea; whether through the development of the harbour as a centre for the cruise-tourism sector or as a centre for other maritime activities including fishing.

Distribution of Fishers and Work Status

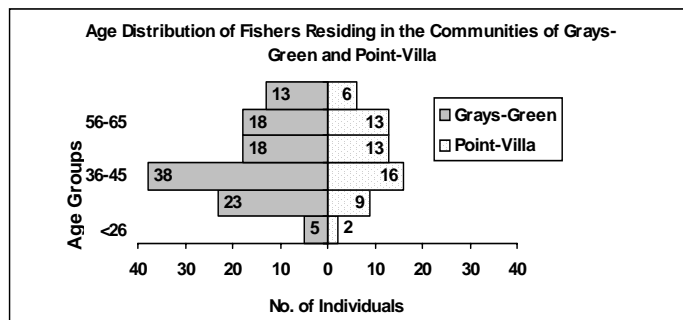
There are 116 fishers residing in the Grays-Green Community, most of whom operate from Market Wharf and Keeling Point (located on the southern side of St. John's Harbour). For Point-Villa, about 60 fishers reside in the area. They share the landing sites of Bryson Wharf, Point Wharf and Dredge Bay with fishers from adjacent communities (Gambles, Yorks Village, etc.).

In terms of work status, the percentage of full-time fishers in each community was similar. Grays-Green was 71.9% while Point-Villa was 70.9%. A similar pattern was obtained for the percentage of part-time fishers, where Grays-Green and Point-Villa was 24.6% and 20.0% respectively. Based on the level of part-time fishers, one might undervalue the economic importance of this mode of employment. However, analysis of the alternative sources of income indicates that fishing is a vital complement to other economic activities. For instance, when there is a "downturn" in the construction and tourism industry, individuals re-enter or increase their activity in the fishery sector. In both communities, employment in the construction industry was the primary alternative source of income for part-time fishers. Retirees and subsistent fishers, who venture out on the weekend, contributed to the remaining 3.5% of the fishers in Grays-Green and 9.1% of those in Point-Villa.

Age Distribution

One of the most important features of a population is its age distribution. The following graph referred to as a "population pyramid" summarises the age distribution of fishers residing in the communities of Grays-Green and Point-Villa. The importance of this demographic feature is that the overall shape of the "pyramid" reflects the potential for future growth of specific age groups of fishers, as well as the entire fishing community. In the case of both Grays-Green and Point-Villa, both fishing communities were mainly middle-aged (36 to 55 years old) with minimal young entrants into the sector. The average age of fishers, in Grays-Green and Point-Villa, was 45.6 and 48.0 years respectively. In both cases, fishers less than 36 years made up less than 25% of the population. This is possibly an indication that the sector is declining in

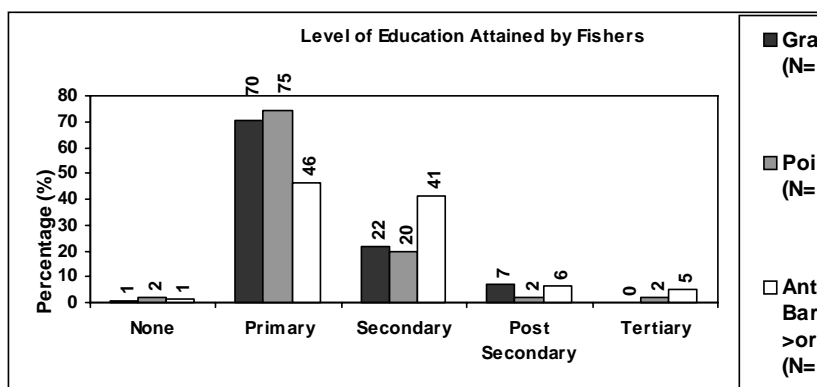
importance in these areas. Ideally, managers of "under-developed" sectors, such as our fisheries, would prefer sufficient entrants at the base of the "pyramid" to support future development of the sector. Conversely, managers of "over-developed" sectors would prefer this type of age distribution. For these reasons, the age distribution has significant implications for fisheries management and development



Educational Background

Since 1973, education has been free and compulsory for children 5 to 16 years old in Antigua & Barbuda. 52% of individuals of working age are educated beyond the primary school level (based on the 1991 Census). A significantly smaller percentage of fishers are educated beyond this national level. For Grays-Green, only 29% of the fishers are educated beyond primary school, while for Point-Villa the level was lower, 24%. Considering the average age of fishers (45.6 and 48.0 years), a contributing factor to the low level of educational attainment was access to secondary institutions. Prior to the mid-1960s, most secondary schools were privately owned, thus making it difficult for the children of the "common man" to further their education.

The implication of this low level of educational attainment is that the rate of adoption of modern fishing tech-



nology and improving understanding and adoption of modern resource management techniques would tend to be slower than would have been the case in more highly educated populations.

Some pertinent issues arising from the Nineteenth Regular Meeting Of ICCAT

By S. Singh-Renton, CRFM Secretariat

The Nineteenth Regular Meeting of the International Commission for Conservation of Atlantic Tunas (ICCAT) was held during 14-20 November 2005 in Seville, Spain. The CRFM Secretariat participated in this meeting as an observer on behalf of CARICOM.

Only two CARICOM/CRFM countries sent national delegations to this Meeting: Belize and Trinidad and Tobago. Belize became a Contracting Party to ICCAT on 19 July 2005, joining with Trinidad and Tobago and Barbados, which are the other two CARICOM States that became members of ICCAT in 1999 and 2000 respectively.

Readers who have followed the development of issues at ICCAT for at least the past 10-12 years, will be aware that Belize, because of its open registry, has for many years, been an easy target for 'flag of convenience' High Seas fishing operations. Unfortunately, these activities undermined the conservation and management effort by ICCAT, and eventually led to the imposition of three trade sanctions on Belize by ICCAT in the late 1990s. In more recent years, Belize has made considerable efforts to weed out the non-compliant vessels, to improve control of its registry, and to establish internationally acceptable statistical monitoring and reporting systems. By 2005, with a number of tuna fishing vessels still on its registry and wishing to resume operations within the ICCAT Convention Area (Atlantic Ocean and adjacent Seas), Belize urgently needed to gain approval from ICCAT to catch certain amounts of tuna species included in ICCAT's mandate. Becoming a Contracting Party to ICCAT in 2005 was an essential step in working towards this goal. Additionally, Belize also participated actively in the discussions on various issues raised at the 2005 Commission meeting, and these interventions were received with positive reactions by ICCAT. When Belize advised the Commission of its proposed catch limit harvests for 2006, these proposals received no objections from ICCAT.

At the 2005 meeting, there was no debate on the issue of renewal of Guyana's Co-operating Party status, probably because Guyana had not attempted to increase catches of tuna and tuna-like species in 2005, and so the Commission determined that Guyana's status, as a Co-operating Party, should be renewed for the period 2006.

Unfortunately, the news was not all good for CARICOM/CRFM States, as St. Vincent and the Grenadines was again under scrutiny for allegedly conducting Illegal, Unreported and Unregulated (IUU) fishing activities. In 2004, 4 fishing vessels from St. Vincent and the Grenadines were retained on ICCAT's IUU vessel list, even though some explanations were provided by the national delegate who attended the 2004 Commission Meeting. In 2005, a fifth vessel from St. Vincent and the Grenadines was added to ICCAT's IUU vessel list, based on evidence submitted by the USA and Brazil, and despite a vessel trip report faxed to ICCAT from St. Vincent and the Grenadines in respect of one of the two latest allegations. ICCAT therefore identified St. Vincent and the Grenadines pursuant to ICCAT's Resolution dealing with

the imposition of trade measures, and will be reviewing the large-scale tuna fishing activities by St. Vincent and the Grenadines vessels again in 2006.

This year's Commission Meeting also took a harder look at IUU fishing allegations in respect of a long-standing major Co-operating Party, for which the evidence implied that this Party had been in a state of non-compliance for several years. Perhaps, ICCAT felt obliged to demonstrate that it could make tough decisions when necessary, even with so-called friendly parties, and a range of remedial actions were requested of the non-compliant Party, for implementation in 2006.

ICCAT's new membership contribution scheme is now in force, and is expected to decrease markedly the annual contributions for most Developing States. However, some Developing States, such as Brazil, Venezuela, and Trinidad and Tobago, have ended up with a markedly increased annual contribution rate, as these countries have **both** (i) a GNP per capita level greater than US\$2,000, and (ii) an annual combined level of catch and canning product in excess of 5,000 t.

The Commission also reviewed the contributions to its support fund for assisting Developing States that are Contracting Parties to meet their reporting obligations to ICCAT. Several Developing States acknowledged the importance of this fund, and also identified other areas of fisheries management that could benefit from such financial assistance.

Of those resolutions and recommendations adopted by ICCAT in 2005, several are relevant to CARICOM/CRFM States. Firstly, a recommendation to repeal the present size limit of 3.2 kg for yellowfin tuna was formally adopted, primarily because the size limit was widely disrespected, was not based on biological information, and was shown to be ineffective as a stock protection measure. Other adopted recommendations of noteworthy relevance and importance to CARICOM/CRFM States were: a recommendation intended to increase the management and reporting responsibilities in fisheries harvesting North Atlantic shortfin mako shark (*Isurus oxyrinchus*), and in which there is a need to introduce measures to reduce mortality of this species; a recommendation intended to improve monitoring and control of transshipment operations, which have often been used to provide a mask for fish laundering activities; and a recommendation aimed at identifying data gaps and deficiencies at the country level, as well as monitoring each country's efforts to address the deficiencies identified. The following relevant issues also received support in the form of adopted resolutions: regularization of the process by which countries accept vessels transferring from another registry; promotion of research on the application of circle hooks in all fisheries, as well as other methods of ensuring post-release survival of by-catch species; and examination of the provisions of international fisheries instruments, so as to determine the extent to which current ICCAT measures satisfy these needs.

KNOW THE CRFM (From the Desk of the Editor)

1. Organs of the CRFM

The CRFM is composed of:

- (a) The Ministerial Council
- (b) The Caribbean Fisheries Forum (also called "The Forum")
- (c) The Technical Unit or the Secretariat

2. The Forum

Composition of the Forum

The Forum shall comprise:

- (a) one representative of each member of the Mechanism;
- (b) one representative of each Associate Member of the Mechanism;
- (c) representatives of the following groups, institutions and bodies approved by the Ministerial Council as Observers:
 - (i) Fisher folk Organizations and Private Fishing Companies within the Caribbean Region;
 - (ii) Regional bodies and institutions and regional organizations whose work in the area of fisheries contribute to the work of the Mechanism;
 - (iii) Non-Governmental Organizations whose work in the area of fisheries contribute to the work of the Mechanism.

3. Functions of the Forum

Subject to the Ministerial Council being responsible for determining the policy of the Mechanism, the Forum shall determine the technical and scientific work of the Mechanism. This shall, in particular include, but not limited to the following:

- (a) Promote the protection and rehabilitation of fisheries habitats and the environment generally;
- (b) Recommend for approval by the Ministerial Council, arrangements for sustainable fisheries management and development in Member States based upon the best available technical or scientific data and information;
- (c) Review the arrangements recommended by the Technical Unit for sustainable fisheries management and development in Member States;
- (d) Receive and examine the draft Work Plan and Budget of the Mechanism and submit recommendations thereon to the Ministerial Council.

4. The Forum shall convene in regular session once a year and in such special sessions as it considers necessary to perform its functions.

Culled mainly from Articles 3, 8 & 9 of the Agreement Establishing the Caribbean Regional Fisheries Mechanism



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