CRFM NEWS

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THE CARIBBEAN COMMUNITY COMMON FISHERIES POLICY: Improving Fisheries, Food Security and Economic Development

by Milton Haughton, Executive Director, CRFM Secretariat

The challenges of sustainable development in the CARICOM region are numerous and diverse. Unemployment, underemployment, poverty, food and nutrition insecurity, poor housing and sub-standard living conditions, and inadequate access to basic services such as water, school, health care are just a few of the difficult problems we face. However, as a community of States, we must overcome these problems in order to create a more prosperous future for our people. Countries are searching for new ways to grow their economies and create new economic opportunities. The aquatic resources -- the fisheries and aquaculture -- present real opportunities for growth, wealth creation and food security through diversification, innovation, market access and cooperation.

Fish Processing in Barbados—Policy serves all industry needs

The marine living resources in the Caribbean Sea and Atlantic Ocean and the fish and shellfish in our rivers and lakes have been a source of sustenance and livelihood for many people throughout the region from ancient times. There is direct employment of fishers and indirect employment of thousands more in the manufacture, sale or servicing of fishing boats and equipment, as well as the processing, transport, storage, wholesale, retail and export marketing side of the seafood business. In addition, there are vast numbers of citizens employed in tourism and hospitality, serving our visitors who come to the Caribbean to enjoy the rich marine biodiversity by snorkeling and diving, or catching fish at sea, or simply to enjoy one of the numerous tropical seafood dishes at our local restaurants. There is also an ever increasing number of artisans engaged in making and selling a wide assortment of souvenirs and curios from marine organism such as corals and conch

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shells to our visitors.

Caribbean nationals and visitors alike enjoy eating fish and seafood. It's not only tasty; it's also very nutritious. The extensive health benefits of fish and seafood were recently confirmed in a report commissioned by the CRFM and undertaken by experts at the Caribbean Public Health Agency (CARPHA). According the report,

"[t]he benefits of fish and seafood include reduction i n cardiovascular diseases through the regulation of blood clotting and vessel constriction thus reducing the risk of heart disease and may prolong life after a heart attack. Fish

Fresh Jacks on Ice for Sale

and seafood consumption lowers blood triglycerides (fats); may improve heart function and reduce damage from heart disease; can lower blood pressure; and may improve symptoms of inflammatory diseases, arthritis and psoriasis. The omega-3 fatty acids may also reduce the incidence of depression and postpartum depression in pregnant women. Some fish and vision development and nerve growth in the retina. These benefits augur well for the drive to combat obesity and the related conditions of diabetes, hypertension, heart diseases and some forms of cancer (lifestyle diseases), which are reaching epidemic proportions in the region."

The relationship between our fisheries resources and contemporary Caribbean society goes even deeper than providing nutritious food and employment. Much of our culture, tradition and livelihoods in coastal communities depend on the fisheries and marine ecosystems. We therefore have an obligation to do all that we can to manage, conserve and protect the fish stocks and ecosystems from degradation so that they can make enhanced contribution to our social and economic development.

The Caribbean Community Common Fisheries Policy (the Policy) is a regional treaty designed to help our countries work together to ensure that the fisheries and other aquatic resources make optimum sustainable contribution to the region's development in a sustainable manner.

Improved employment and income from fisheries and aquaculture related jobs will not only improve the livelihood and welfare of fishers--they will also expand the overall regional economy. Through cooperation, fishers can increase fish processing in the region and expand into value -added products to keep more of the profits at home and create even more good jobs. Fishers can diversify their products by pursuing under or unexploited species of fish. The Policy also calls for more scientific and market research, and attention to develop better and easier access to export markets -- all to support fishers and coastal communities and economic development. Furthermore, through improved science, the Policy will expand the data and information used in decision-making and resource management, enabling States and fishers to better protect their interests and manage the resources. Improved governance systems, conservation and management measures, enforcement and cooperation in these matters will result in better protection of the fish stocks and ecosystems, and livelihoods threatened by losses in fishing opportunities caused by illegal, unreported or unregulated fishing or other threats.

The Policy, which was mandated by the CARICOM Heads of State, has been negotiated by officials of Member States with input from other stakeholders including representatives of fishers, and approved at virtually every level of government. All that remains to bring it into force as regional law is the signature of at least eight CARICOM heads of state. The Policy, which is expected to be signed at the upcoming 25th Inter-sessional Conference of the CARICOM Heads of Government in March 2014, will be a major milestone in regional cooperation and should not only improve conservation and resource management, but will also improve the contribution of fisheries and aquaculture to food security and social and economic development in the region.

THE PRECAUTIONARY APPROACH IN FISHERIES MANAGEMENT *by Milton Haughton, Executive Director, CRFM Secretariat*

Marine fish stocks and the ecosystems in which they occur are very complex and dynamic systems that can provide society with long-term social, economic and nutritional benefits if properly managed. The main objective of fisheries management is to achieve optimum sustainable benefits while avoiding decline in the fish stocks or damage to the marine ecosystem. Fisheries management requires the development and implementation of conservation and management measures based on knowledge of the fish stocks, marine ecosystems and socio-economic factors. Considerable scientific data and information is usually required for good management. This may include, *inter alia*, data on catch, fishing effort, stock abundance, distribution, migration, the proportion of mature individuals, the rate of mortality and reproduction, as well as information on the impact of fishing on dependent and associated species and other species belonging to the same ecosystem. Oceanographic, environmental and climate related data and information are now also required. In addition to this massive amount of scientific information there is also need for social and economic information about the fishery.

The problem is that the knowledge required for good fisheries management is both difficult and expensive to acquire. But even after obtaining the best data and information possible, there may still be high levels of uncertainty due to limitations in the models used for assessments and decision-making. This limited scientific knowledge and uncertainty about the marine resource systems suggest a need to be cautious both in carrying out fishing activities in order to avoid stock decline or damage to the marine ecosystem, and determining fisheries management measures, such as setting catch limits and permitted levels of fishing effort. This cautious approach, in situations where there is uncertainty and limited understanding of the impact of fishing on the target species, other species, or on the wider ecosystem processes, is the essence of the precautionary approach to fisheries.

The precautionary approach is a well established principle of environmental law that has been widely applied to protect human and environmental health for many years. Its incorporation in fisheries law is however more recent. The UN Fish Stocks Agreement (FSA) (1995) develops the precautionary approach as one of the general principles for the conservation and management of straddling and highly migratory fish stocks (Arts. 5(c)), and Section 6 and Annex II). The FAO Code of Conduct for Responsible Fisheries (1995) calls upon States and organizations to apply the precautionary approach using nearly identical language as the FSA (see Arts.6.5 and 7.5 of the Code).

When applied to domestic fisheries, it empowers States to take action to avoid activities that may cause serious harm to the fish stocks or ecosystems. It does this by providing a solid legal basis for the fisheries administrator to take action which could not otherwise be pursued due to inadequate evidence and legal authority and may therefore be susceptible to judicial review on the grounds of being *ultra vires*, or otherwise illegal, irrational or unreasonable.

Within the CARICOM region significant strides have been made in recent years in incorporating the precautionary approach in regional and domestic law and policy. At the regional level, for example, the Revised Treaty of Chaguaramas (2001), and the Agreement Establishing the CRFM (2002), both make specific reference to the precautionary approach. Recent fisheries legislation, and bills that are being developed in CARICOM States expressly incorporate the precautionary approach. See for example, section 3, Guyana fisheries Act 2002 and sections 5 and 6 of the 2006 Fisheries Act of Antigua and Barbuda. The Draft Fisheries Bills of Belize, Jamaica, and the Bahamas also provide for use of the precautionary approach to fisheries.

Balancing resource usage for societal benefits with long-term resource conservation needs

The precautionary approach is thus a very powerful and useful decision-making tool where there are inadequate data and scientific uncertainty in the fisheries. It is for these reasons that since the crisis in world fisheries became obvious in the 1980s, the precautionary approach has received widespread support as a practical tool to reconcile and balance development and use of fisheries resources on the one hand, with long-term sustainability and protection of biodiversity in the marine environment on the other hand. We should therefore expect to see increasing implementation and application of the precautionary approach to fisheries in the region in coming years.

QUEEN CONCH—Recognizing Management Progress *by Susan Singh-Renton, Deputy Executive Director, CRFM Secretariat*

Queen conch is one of the largest molluscs fished traditionally, as well as commercially throughout the Wider Caribbean. Internationally, queen conch meat is considered a delicacy, finding its way in many popular dishes, whether soup, starter, salad or entrée. Such popularity eventually comes with a big price tag, and for the queen conch, overfishing became a major concern leading to the species being listed in 1992 by the Convention on International Trade in Endangered Species (CITES) of Wild Fauna and Flora on its Appendix II. This was intended to regulate international trade in conch to support its sustainable use and survival as a species. Since then, several countries, with a heavy economic dependence on their nation Queen Conch fisheries, have strengthened scientific monitoring and management routines for these fisheries, and have documented their successes in achieving sustainable use of queen conch.

Trainers and CRFM Trainees at closure of Workshop Theory Sessions on the use of Conch Visual Surveys

Although an adult conch moves slowly along the sea bed, the larval stage is pelagic – being in the open water, larvae are believed to be transported about by the currents, giving rise to the need for at least some level of regional cooperation in management. To this end, over the years CARICOM (through CFRAMP and later through CRFM) and other organizations in the region have provided opportunities for both scientific and management exchanges since the CITES listing.

In its latest effort in 2012-13, the CRFM, with support from the EU-sponsored ACP FISH II Programme: (i) coordinated regional and country reviews of scientific approaches for managing queen conch, and used this to propose regional management options, and; (ii) trained divers from 10 CRFM countries to use the visual survey method and underwater camera technology to complete visual counts of queen conch in its natural habitat. At the same time, visual survey sampling plans were also developed for the participating 10 countries, and CRFM plans to seek funding to allow its countries to establish the practice of visual surveys where not yet routine, and to strengthen the scientific approaches where the practice already exists. The CRFM has also recently teamed up with FAO, OSPESCA and proposers of the follow-up to the CLME project (CLME+) in various commitments to promote regional cooperation in management involving all countries where queen conch can occur, including grappling with challenges, such as illegal fishing and law enforcement, that are not unique to queen conch.

In the real world of fisheries management, these are positive steps and measurable gains that demonstrate a coordinated regional direction. Yet, since 2012, a NGO in the USA has called for queen conch to be listed as an endangered species in accordance with the USA's Endangered Species Act. As the US government responds to the NGO call, Caribbean countries are once again having to devote limited time and resources to *talking the queen conch talk,* rather than reserving it all for *walking the queen conch walk*.

CRFM Diver measuring lip thickness of Queen Conch during practical visual survey in St. Vincent and the Grenadines

LOBSTER FISHERIES MANAGEMENT *by Elizabeth Mohammed, Programme Manager, Research and Resource Assessment, CRFM Secretariat*

The Caribbean Spiny Lobster, once considered food for the poor and bait for other fisheries has attained status as one of the most highly-prized luxury seafood and economically important fishery in the Caribbean region. The fishery is valued at over US$456 million per year. Within CARICOM, The Bahamas is the major lobster producer followed by Haiti, Belize, Jamaica and the Turks and Caicos Islands. Increasing demand however, particularly in the foreign market, has led to an unhealthy state of the stock in several cases. In an effort to maintain production and economic returns fishers have resorted to catching young lobsters in nearshore waters or venturing further offshore to catch adults which previously served as a refuge and "capital" for sustaining the inshore fisheries.

While fishers strive to continue to maintain their livelihoods managers are faced with the challenge of ensuring that the remaining stocks can continue to sustain viable fisheries in the future. The situation is complex. Young lobster spend about 10 months in a buoyant state being transported by the ocean currents before they settle in a particular location, grow to adulthood and become accessible to fisheries. This means that young which have hatched in the waters of one country could well end up as adults fished in another. While heavy fishing contributes to unhealthy stocks, the stocks are also affected by destruction or damage to the areas where they live, that is, pollution and climate-related changes in the surrounding environment. No longer then can management take the traditional approach focusing only on managing fishing, as now the environment, social, economic and human impacts must also be considered. This approach, commonly referred to as the 'Ecosystem Approach to Fisheries' or EAF for short, is now the internationally accepted best practice in fisheries management.

Currently within CARICOM the management of lobster fisheries is conducted at a national level by those countries for which the species is deemed commercially important. The most popular measures seek to protect young lobster and egg-bearing females from being caught and to reduce the fishing pressure on offshore stocks by limiting the sizes that may be landed, prohibiting the landing of egg-bearing individuals and landing of lobsters during peak periods of reproduction and banning the use of SCUBA . However, limits in the sizes that could be caught are often dictated by market demand rather than biological studies. The United States has exercised some control as the major importer by limiting the size of lobster entering its market. Although members of the OECS have harmonized closed seasons and size limits the lack of coordination among other countries continues to undermine management efforts. Differences in the times of year when the capture of lobster is banned have resulted in lobster caught illegally in one country being sold legally in another. The race for lobster has also not gone without its detrimental impacts on fishers who are prone to serious health risks due to unsafe diving practices.

Since 2004 the CRFM has contributed to improvement of the information-base for lobster fishery management through assessment of stocks at its annual scientific meeting. More recently, in 2011, a review of the status and management of the fishery was undertaken and currently a review of monitoring and evaluation methods for the stock is being completed with a view to arriving at a common, feasible methodology for implementation in the region. The CRFM is collaborating with the Food and Agriculture Organization, the Caribbean Fishery Management Council (a US-Caribbean entity), the Central American Fisheries and Aquaculture Organization (OSPESCA) and the second phase of Caribbean Large Marine Ecosystem Project to improve governance of lobster fisheries through a co-ordinated regional approach that is consistent with the EAF. This approach is intended to address critical management issues such as harmonization of management measures through legislative changes, combating illegal, unregulated and unreported fishing, strengthening monitoring, control and surveillance as well as improvements in methods for assessing stock status.

Spiny Lobster Catch of the day

AQUACULTURE—New Directions for CRFM States? *by Peter A. Murray, Programme Manager, Fisheries Management and Development, CRFM Secretariat*

Aquaculture continues to be the fastest-growing animal -food-producing sector and to outpace population growth, with the per capita supply from aquaculture increasing from 0.7 kg in 1970 to 7.8 kg in 2008, an average annual growth rate of 6.6 percent. Aquaculture accounted for 45.7 percent of the world's fish food production for human consumption in 2008, up from 42.6 percent in 2006. Globally, it is set to overtake capture fisheries as a source of food fish.

The majority of fishers and aquaculturists are in developing countries, mainly in Asia, which has experienced the largest increases in recent decades, reflecting the rapid expansion of aquaculture activities. In the Latin America and the Caribbean (LAC) region, Chile, Brazil and Ecuador have been the major players. The aquaculture contribution to total fish production in the region has risen from 0.1 to 9.6 % in 30 years. There is a wide variety in technology levels and the contribution of the sector to rural livelihoods is increasing.

The aquaculture sector is not well developed in the CARICOM region. Most CARICOM States have limited land and fresh water resources; in fact, this was the rationale for the decision by the OECS members of CARICOM, in the mid-1990s, that land-basedaquaculture would not be the focus of their fisheries development thrust, except as a subsistence activity for small farmers. However, some CARICOM States, like Suriname, Guyana and Belize, do have ample supplies of land and fresh water. At the same time, most States have large expanses of marine space, which offers the potential for development of marine-based aquaculture or "mariculture". Interestingly, in recent times, St. Kitts and Nevis has concluded that an aquaculture sector will create both livelihood and investment opportunities and will in its most developed version create many job opportunities for educated, specialised and skilled people including all management levels.

The CARICOM approach to aquaculture development will have to be multifaceted to address the range of available natural land and fresh water resources in the region, while incorporating the commercial elements. Because of the limited potential growth of wild catches in the Caribbean region, sustainable expansion and intensification of fish production through responsible aquaculture development should be a major objective for intensification of fish production through responsible aquaculture development should be a major objective for countries in the region. The CRFM has identified aquaculture as a priority since 2002. Also, aquaculture development policy formulation was identified as one of the areas to be addressed under the CRFM/JICA Master Plan Study (2009-2011).

Pendulum feeder at the raceways of SNAPPER tilapia farm on St. Kitts

Recognizing the need to put in place a mechanism to promote and provide support for the development of aquaculture in the region, the CRFM Secretariat, in 2012 established a Working Group to Promote Sustainable Aquaculture Development (WGA) at the national and regional levels, mainly for the purposes of: increasing food production and security; improving rural income and employment; diversifying farm production; and increasing foreign exchange earnings and savings as well as advising the Caribbean Fisheries Forum on policies, programmes and projects to promote the development of aquaculture. Towards these goals, the new WGA will have to take on board the major challenges identified for aquaculture development in the Caribbean, which include: availability of freshwater, technology transfer; feed access and availability; small-scale farmers – "new" technical assistance; governance and political willingness; and, application of the Ecosystem Approach to Aquaculture.

EASTERN CARIBBEAN FLYINGFISH—*En Route* to Regional Management *by Susan Singh-Renton, Deputy Executive Director, CRFM Secretariat*

Flyingfish is one of the most economically valuable small pelagic finfish caught in the Eastern Caribbean. The Barbados flyingfish fishery, which is by far the largest in the area, was recently estimated to have a gross value of 15 million US dollars. Flyingfish is also a key part of the tourist package in Barbados: an excellent example of fresh Island fish served in the national dish, and a popular artist's subject on many of the Island's souvenirs – for the Barbados economy, arguably, this small fish has a big heart. We also know a lot about the biology and ecology of

EASTERN CARIBBEAN FLYINGFISH—*En Route* to Regional Management (Cont'd)

flyingfish in this part of the world, thanks to extensive studies by UWI during the 1980s-1990s and by FAO during its Lesser Antilles Pelagic Ecosystem project in the recent past, showing this small fish to be widely dispersed, shared among the countries, and a key species within the food web. In view of its shared nature, UN's FAO formed a working group in the 1990s, which remained active up to 2008, producing a draft regional management plan and a regional assessment of flyingfish.

Certain management actions were proposed at that time, but the lack of a regional fisheries management organization meant that the management deal was a voluntary one. Luckily, in other parts of the region and the rest of the globe, combining management of shared resources with an ecosystem approach was receiving increasing attention especially in terms of the governance approaches needed. Within the Caribbean, from about 2009, such attention was the target of the Caribbean Large Marine Ecosystem (CLME) project under which the case of flyingfish was passed on to be led by the CRFM.

Since then, CRFM: (i) has included economic perspectives into the regional fishery assessment, (ii) identified stakeholders and evaluated their capacities to contribute to a cooperative governance and management process, (iii) identified the legal, policy and institutional reforms required to achieve the governance/ management goals, and (iv) drafted an updated regional management plan to include the additional economic and people-oriented information. These achievements were boosted by the formation of a CRFM Ministerial Sub-Committee on Flyingfish in 2011, which set the stage for active and meaningful cooperative management. At present, CRFM and FAO are working together to finalize the latest regional management plan for flyingfish and to propose management actions based on the best available scientific information about the fish and the fishery. Stakeholder consultations are ongoing within the countries to facilitate this—if successful, this small fish facilitate this – if successful, this small fish with the big heart may finally get the love it deserves.

CRFM AND REBYC-II LAC PROJECT WORK TO IMPROVE MANAGEMENT OF TRAWL FISHERIES AND BY-CATCH *by Susan Singh-Renton, Deputy Executive Director, CRFM Secretariat*

In January 2014, CRFM participated in a workshop in Suriname that brought together fisheries experts from six major trawl fishing countries from the Caribbean and Latin America, and experts the Global Environment Facility (GEF) and the Food and Agriculture Organization of the United Nations (FAO). The aim was to discuss plans for REBYC-II LAC, a project on sustainable management of bycatch in Latin America and Caribbean trawl fisheries, which is being proposed for sponsorship by the GEF to the tune of 5.8 million US dollars, with at least 3 times as much co-financing by the beneficiary and participating countries and agencies.

REBYC-II LAC arose from the recommendations of an earlier related project, REBYC-I LAC, which was also funded by the GEF and carried out by the FAO during 2002 -2008. While REBYC-I LAC focused more on understanding the impacts of trawl gear on the environment, and also improving fishing technologies to reduce the associated by-catch and adverse habitat impacts, REBYC-II LAC hopes to focus more on the management aspects - that is to say, understanding the nature and usage of by-catch and working towards sustainable by-catch management, and the security of the dependent livelihoods.

Key steps in the management process are therefore the primary focus of REBYC-II LAC. In particular, the project is expected to develop options to address gaps in policy, legislation, and management planning instruments for supporting sustainable management of the region's trawl fisheries, while also considering use of participatory approaches and the FAO's International Guidelines on

Photo shows Workshop coordinator, Henk Bhagwandin (extreme right) from Suriname Fisheries Department, together with Susan Singh-Renton (second from right) and Trinidad and Tobago's national consultant for the project, David Ramjohn (second from left) listen carefully as an industry representative, W. Tjitrotaroeno, speaks about procedures for offloading, processing and storing pink-spotted shrimp (Farfantepenaeus brasiliensis) by his company. A trawler (background) offloads its catch of frozen pink-spotted shrimp, bound for the processing plant just a few metres away.

CRFM AND REBYC-II LAC PROJECT WORK TO IMPROVE MANAGEMENT OF TRAWL FISHERIES AND BY-CATCH (Cont'd)

By-catch Management and Reduction of Discards. In addition, work will continue on strengthening the technical information base to support management decisions, and analysing livelihood impacts and how to deal with these. The project is also designed to have a clear monitoring and evaluation plan that can satisfy both donor and beneficiary needs, and facilitate sharing of best practices. CRFM member countries Suriname and Trinidad and Tobago will participate in REBYC-II LAC, which is expected to run for five years. The project comes at a time when the region is striving for a coordinated multi-level ocean governance arrangement on a Caribbean-wide scale, and so it would be important for REBYC-II LAC activities to complement this ongoing initiative that began with the Caribbean Large Marine Ecosystem project. In helping the project to achieve its goals, the CRFM, in collaboration with 2 other regional fisheries bodies (WECAFC and OSPESCA), has agreed to provide its usual regional coordination support, and to help establish a regional decision support system that can connect, and make fullest use of, the proposed improved national trawl fisheries monitoring systems for better overall regional ocean governance. CRFM will also be involved in technical studies to investigate possible solutions to region-wide problems of piracy/ illegal fishing and livelihood security in respect of these fisheries.

WHY THE FAO TENURE GUIDELINES ARE IMPORTANT *by Milton Haughton, Executive Director, CRFM Secretariat*

In May 2012 the Committee on World Food Security (CFS) adopted the *Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security (*The Tenure Guidelines*)*. This article briefly introduces the Guidelines and why they are important for fisheries. The concept of tenure addresses the systems by which society defines and regulates how people, communities and others gain access to land, fisheries and forests. It is the systems by which countries and communities determine and regulate who can use which resources, for how long, under what conditions and how conflicts and disputes about these matters are settled. The tenure systems may be based on written policies and laws, or on unwritten customs and practices.

Fisherfolk discussed Guidelines at CRFM Meeting

The eradication of hunger and poverty, achieving decent quality of life, and sustainable use of the resources, depend to a great extent, on how people and communities gain access to, and exercise control over, the natural resources such as land, fisheries and forests on which they rely. Fishers and their communities, particularly in poor rural areas, need to have safe, reliable and equitable access to and control over the natural resources on which they depend for their food security and livelihoods.

The Tenure Guidelines are a non-binding instrument for the governance of tenure of land, fisheries and forests. The main objective of the Guidelines is provide decision-makers with guidance to improve the governance of tenure of land, fisheries and forests with the overarching goal of achieving food security for all and to support the progressive realization of the right to adequate food in the context of national food security.

The Guidelines lay down principles for the recognition, respect, protection and promotion of legitimate tenure rights; the provision of access to justice to deal with infringements of legitimate tenure rights; and the management of disputes.

They also include principles on human dignity, non-discrimination, equity and justice, gender equality, holistic and sustainable approaches, consultation and participation, rule of law, transparency, accountability, and continuous improvement. These principles are meant to provide guidance on the legal recognition and allocation of tenure rights and duties; transfer and other changes to tenure rights and duties; administration of tenure; responses to climate change and emergencies; and promotion, implementation, monitoring and evaluation of the Guidelines.

The Guidelines are to be applied by integrating the principles and standards in existing programmes and processes, and also by informing national policy dialogues and establishing strategies and priorities.

Improving tenure governance requires participation and contributions from all stakeholders including government

WHY THE FAO TENURE GUIDELINES ARE IMPORTANT (Cont'd)

agencies, civil society organizations, private sector organizations and academia. Each country and actor can use the Guidelines in line with their own priorities.

Vernon Street Fish Market, Belize —Protection of fishers tenure

The Guidelines can help fishers and fishing communities to have secure tenure rights over the fishery resources, land and forestry resources on which they depend for their livelihoods. In the fisheries sector, it is unfortunately common to narrowly define overfishing as the problem and sustainable yield as the objective. For responsible tenure in a small-scale fisheries context, sustainable development objectives need also to take into account social and economic needs of fishers and fishing communities including the promotion of equitable distribution of benefits and ensuring food and nutrition security.

The Tenure Guidelines and the Voluntary Guidelines on Securing Sustainable Small-Scale Fisheries which are being developed by FAO are designed to be supportive of each other and their implementation should be done together to fully realize their objectives.

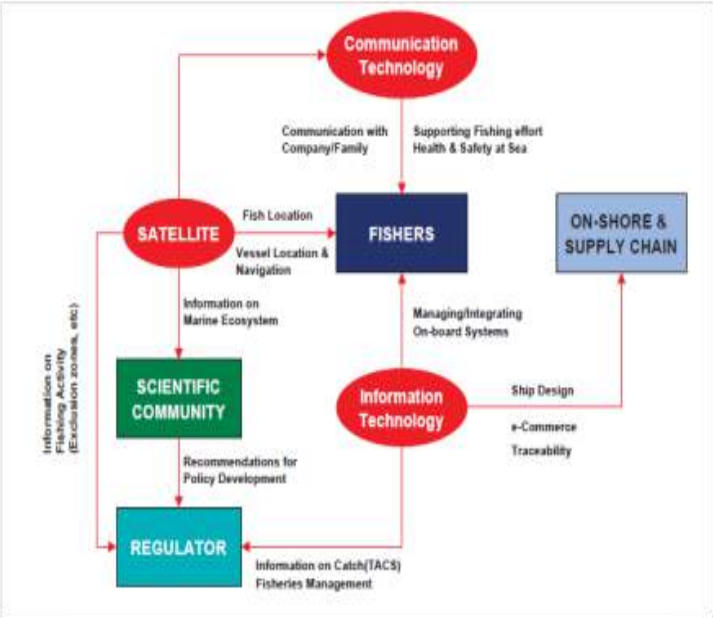
The success and usefulness of these voluntary instruments depends to a great extent on the political will to invest fishing communities with tenure rights, to inform them about these rights, and to support and enable them to effectively benefit from these rights.

Fisheries Departments, NGOs and civil society organizations can play an important role in disseminating information on the Guidelines, advocating for their use, and contributing to the capacity development of fishing communities to enable them to fully benefit from these instruments and so improve their living standards and quality of life as well as the long-term sustainability of the fisheries resources and associated ecosystems.

ICTs AND FISHERIES—A Promising Courtship *by Peter A. Murray, Programme Manager, Fisheries Management and Development, CRFM Secretariat*

Information and communications technologies (ICTs) refer to technologies that facilitate communication and the processing of information by electronic means and include everything from radio and television to telephones (fixed and mobile), computers and the Internet. ICTs are a fundamental development tool to support information-sharing, collaboration and dialogue leading to increased participation and ownership. They have been touted as a powerful means of reducing people's overall vulnerability, of fostering equity and social inclusion and in mobilising communities to take charge of their own development – yet to take shape in the fisheries sector. With these aims in mind though, new ICTs are being promoted at every turn across the sector- from resource assessment, monitoring, control and surveillance for effective enforcement of fisheries laws, capture or culture to processing and commercialization.

Globally, ICT is used in a wide range of applications in the fishing world. Boat crews can cut deals on mobile phones for the day's catch while still at sea. Boat captains know their locations using GPS technology. Sonar helps



Some ICT applications in the fishing world

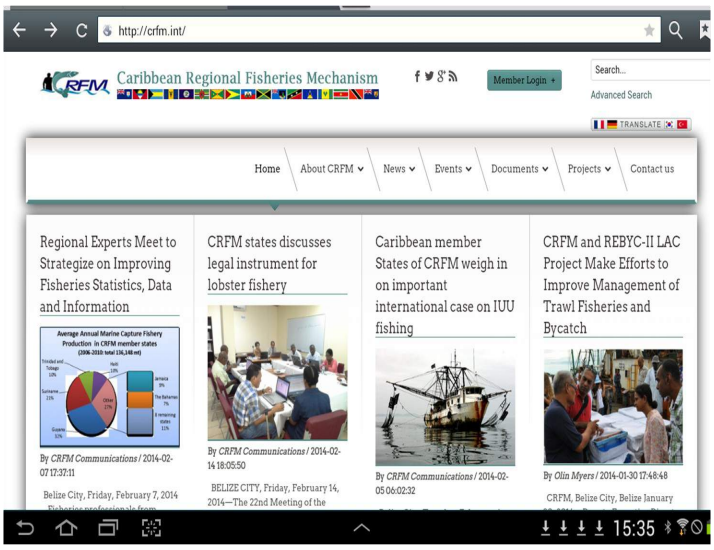
ICTs AND FISHERIES—A PROMISING COURTSHIP *by Peter A. Murray, Programme Manager, Fisheries Management and Development, CRFM Secretariat*

find the big schools of fish, leading to more productive catches. Weather conditions are more accurately predicted and this information shared among boats, and large-scale resource assessments monitor scarcities and gluts. Mobile phones are also used for emergencies, radio programming with fishing communities and Web-based information and networking resources. A wide range of technologies can be adapted and introduced in all but the most remote communities and once appropriated, can have positive impacts on the lives of users.

As Caribbean countries seek to improve their food security, ICTs and in particular mobile applications provide the fisheries sector with cost-effective tools to overcome major constraints related to governance, value-chain development, resource conservation and safety at sea. For these countries, food and livelihood security issues and the lack of extension support for fishers and fish farmers can be addressed through information networks. The internet has the potential to contribute to fisheries development by enabling fisheries communities to receive information and assistance from other development organisations: offer opportunities for two-way communication and for opening up communication channels for these communities and development organisations. It can facilitate dialogue among communities and with government planners, development agencies, researchers, and technical experts: encourage community participation in decision-making; coordinating local, regional and national development efforts for increased effectiveness; and help agricultural researchers, technicians, farmers and others in sharing information. Internet can also give a vast global information resource.

The Internet has proven valuable for the development of Fisheries in developing countries. New opportunities have been emerging from combining mobile and newer networking technologies. mFisheries is a mobile application (app) developed at the University of the West Indies (UWI) by the Caribbean ICT Research Programme (CIRP). The app was designed to improve processes at every level of the value chain of the small fisheries sector. Navigation, weather information and first aid functions benefit the fisherfolk; market price and location information are provided for the consumer; historical data and trends facilitate policy decisions. This project was successfully implemented in Trinidad and Tobago and also addressed affordability and capacity building needs. The Caribbean Network of Fisherfolk Organisation (CNFO) is benefitting from strategic partnerships with the CIRP and Microsoft (Trinidad and Tobago) to broaden use of the mFisheries app and other productivity technology by all its members. The CNFO also collaborates with other agencies such as the energy sector and negotiates for affordable rates with the telecommunications service providers. For communication purposes, the CNFO has established a Yahoo Group and a website.

In support of fisheries management and development within the CARIFORUM region, the CRFM has improved its use of ICT tools. The CRFM website (http://www.crfm.int) has been re-designed to make it both more attractive and more interactive. The home page provides news as well as information on upcoming events and topics of interest. Visitors to the CRFM website can contact individual members of CRFM staff as compared to one general contact point, and easily link to Facebook (https://www.facebook.com/CarFisheries), Twitter (https://twitter.com/CaribFisheries) and YouTube (http://www.youtube.com/user/TheCRFM) pages.



CRFM's new Website, http://www.crfm.int

To facilitate interaction, discussion and information sharing by interest group, the CRFM has introduced the use of DGroups (https://dgroups.org/cta/crfm) targeting a wide range of interests. These Dgroups are seen as providing a basis for the implementation of, and providing support to, topic-oriented working groups, such as Working Group on Aquaculture, and Conch and Lobster Working Group.

E-Consultations are also useful mechanisms in support of fisheries governance and to allow the full range of stakeholders to be in a better position to make active and informed contributions on issues and policy positions relevant to the implementation of regional fisheries policies.

ICTs AND FISHERIES—A PROMISING COURTSHIP (Cont'd)

The CRFM recently completed such a consultation to capture additional views and share information among fisherfolk and stakeholders on the mainstreaming of regional fisheries policies into small- Scale fisheries governance arrangements in the Caribbean to inform advocacy work. The e-Consultation process was a mixture of questionnaire, website comments, and e-mail.

A number of other ICT services have also been suggested as having potential to provide support to the fisheries sector. These include, but are not limited to: Cyber extension, Agricultural Technology Information Centres (ATIC), Call Centres, Helplines, Aqua service Centres, Rural Knowledge Centres.

In addition (and in general), e-governance is necessary in today's world to make governance more efficient and more effective by improving governmental process (e-administration), connecting citizens (e-citizens & e-services) and building external interactions (e-society). E-citizens, e-services and e-society are relatively new inclusions within the e-governance as they rely on the new Information and Communication technologies (ICT).

TOWARDS THE ECOSYSTEM APPROACH TO FISHERIES (EAF) MANAGEMENT *by Susan Singh-Renton, Deputy Executive Director, CRFM Secretariat*

An ecosystem can be thought of simply as an independent unit of space in which the living populations are in natural balance with each other, and also with their physical environment. Ecosystems can be of different sizes, e.g. a small pond, an entire ocean or the whole earth. In recent times, maintaining the overall balance in nature has been highlighted as the best way to manage our natural resources, especially the living, renewable resources like fish. This, of course, means taking care of the surrounding environment as well. On reflection, this seems just pure common sense. So, not surprisingly, conventional fisheries management tactics, applying actions directed at specific species populations and fisheries only, without considering the impacts on and by other species populations, fisheries and economic sectors, have not met with much success and have become harder to defend.

In the ecosystem approach, we are all connected, whether at the level of stakeholder, institution or nation. The Caribbean Large Marine Ecosystem (CLME) project, as the name implies, ran from 2009 to 2013 and brought together several agencies and institutions in the Wider Caribbean to develop and test the options for achieving a more balanced ecosystem approach, with much emphasis on fisheries systems. Some of our readers may recall that the CRFM was involved in doing 2 case studies for the CLME project: one for the large pelagic fishes (tunas, billfishes, sharks), and one for Eastern Caribbean flyingfish. These studies looked at data needs, as well as governance and management needs for the ecosystem approach, and the findings have informed the development of regional management plans and proposed governance and management approaches for major pelagic fishery resources. In the case of Eastern Caribbean Flyingfish, CRFM's Ministerial Council took its commitment a stage further and established a special Sub-Committee on Flyingfish which is an important first step for reaching an agreed regional position on flyingfish management needs.

CLME's successor, CLME+, is expected to start up activities later this year and will provide an opportunity to complete the change process required for EAF management and also to send the ecosystem approach message to other economic sectors impacting and being impacted by activities in the marine space. In particular, for each individual stakeholder, agency, and institution residing and doing business that impacts or is impacted by the Caribbean marine space, the ecosystem approach will require changes in management and governance patterns, practices, and behaviours – but will be fairer to all present and future generations of all living organisms. For this, each of us is called to play our role for effecting and mainstreaming the required reforms – and the best way we can do this is through organized representation, mutual understanding and cooperation, all anchored by inclusivity – of those representing the natural resources, those representing the users and those representing the physical environment.

Traditional Fishers at work with nature

PAYING ATTENTION TO FISHERIES MANAGEMENT CAPACITY IN CRFM STATES *by Susan Singh-Renton, Deputy Executive Director, CRFM Secretariat*

As a regional fisheries body that works closely with its membership in all areas of fisheries management and conservation, from what is placed on paper to what is put into practice, the CRFM has always worked on creating opportunities for strengthening capacity at all levels particularly within the national fisheries management frameworks within CRFM Member States.

To this end, over the years, CRFM has established partnerships with several world-renowned training institutions for the specific purpose of provision of training opportunities in a range of areas such as fisheries policy and law, ocean governance, processing and marketing, statistics and research. Through a partnership arrangement with the Canadian Operational Centre of the International Ocean Institute (IOI) that has been going since 2005, CRFM has co-sponsored the participation of 33 fisheries officers and fishers in IOI's two-month training programme on Ocean Governance, which is held usually during May-July of each year. Likewise, through partnership agreements with the United Nations University (UNU) in Iceland since 2008, 13 of the region's fisheries professionals have been able to attend 6-month training programmes annually in Iceland, with such training covering a variety of fisheries management disciplines, including fisheries policy and planning, quality management, fishing technology, stock assessment and more. UNU's Fisheries Technical Programme has also worked with the CRFM to create and deliver CRFM-customized short courses in leadership, statistics and stock assessment, and Project Cycle Management. In 2012, CRFM also formalized a partnership with the Australian National Centre for Ocean Resources and Security (ANCORS) housed within the University of Wollongong just south of Sydney, Australia, and with particular strength in oceans and transnational security – this partnership has so far allowed 16 directors/ chiefs of national and regional fisheries authorities to participate in a 1 month training programme in Fisheries Law and Management Training Workshop.

Derrick Theophille, an experienced fisheries officer from Dominica, was among the CRFM beneficiaries of the 2013 IOI training activities, and Derrick has chosen to share his experiences with our readers in a separate article of this newsletter issue.

Randel Thompson, who was the first CRFM fisheries officer to benefit from the CRFM-UF FSG formal training course that commenced in 2013 noted that '*It was a rewarding experience that contributed to my professional development as a marine manager as well as my personal*

Mr. Randel Thompson, Fisheries Division, St. Kitts and Nevis, at University of Florida

Ms. Lucine Edwards, Fisheries Division, St. Vincent and the Grenadines, at UNU-FTP, Iceland.

Ms. Anginette Murray, Fisheries Division, Jamaica, at University of Florida.

PAYING ATTENTION TO FISHERIES MANAGEMENT CAPACITY IN CRFM STATES (Cont'd)

development'. Randel also said that his '*training program was developed around the incorporation of geographic information systems (GIS) into fisheries management, specifically focusing on fish aggregating devices (FADs), and that use of GIS was a key future objective for the Department of Marine Resources, St. Kitts and Nevis*'.

As of January 2014, the fisheries officers who are currently on training programmes are: Ms. Lucine Edwards, of the Fisheries Division of St. Vincent and the Grenadines, and Anginette Murray, of the Fisheries Department in Jamaica. Lucine is completing a 6-month fellowship with the United Nations University Fisheries Training Program (UNU-FTP) in Iceland, with a specialization in Fisheries Policy and Planning. Lucine says that '*at the UNU-FTP I have gained a greater appreciation for project planning and analysis which are directly useful to my job functioning*'. On the other side of the Atlantic, Anginette is pursuing training at the University of Florida in the application of geospatial technologies to aid in the establishment of marine protected areas in the Caribbean. Training opportunities will continue under CRFM partnerships in 2014.

IINTERNATIONAL OCEAN INSTITUTE (IOI)CANADA COURSE ON OCEAN GOVERNANCE, POLICY, LAW AND MANAGEMENT - A FIRST HAND VIEW POINT *by Derrick Theophille, Fisheries Liaison Officer, Fisheries Division, Commonwealth of Dominica*

The greatest aspect of the Ocean Governance program was the focus on a holistic approach to problem solving. This, to me, is what management is - problem solving. Systems function in-spite of management, and not necessarily because of it. Fish will navigate the waters on their way to spawning or feeding grounds. Fishers will follow the fish in hopes of gaining a meal, and with some luck, they can catch enough fish that can be converted to currency. These things happen naturally. Fish are driven biologically; fishers, mostly financially. Management is unnatural; nature does not have an overseer. That is the role man gave himself when he understood his impact on the natural world and how that impact would affect not just his bottom line, but his very survival. Management is a tool for responding to problems, be it reactionary or proactive.

Over the course of two months and ten modules, various lecturers touched on the problems common to the marine space, the coasts, seas and oceans, and how man has sought to manage those problems. We learned about the tragedy of the commons, the role the great conquering nations of pre- and renaissance era Europe had in establishing the first delimitations within the marine space, and the modern tools used today to aid understanding of the seas and its varied uses. There were lectures on marine energy, marine security, transportation, communication and navigation. Ocean sciences formed the basis for follow-up talks on governance, and aquaculture was also addressed as it presents alternative to traditional marine fisheries.

The sheer scope of topics covered was at times overwhelming and admittedly, most participants only had experience in a small subset of these topics. However, at the end not a single topic was seen as unnecessary. In fact, I left many lectures saying to myself, "I could use this!", and I have. My position as a Fisheries Manager requires that I have a large bag of tools at my disposal at any given time. Never was this clearer than when I completed the Ocean Governance course. My fellow participants each had varying roles in management, and each saw the marine space from different vantage points. Certain resources were given a level of importance or priority based on our post, nationality, cultural and education backgrounds. These perceptions were shaken up by the IOI experiences.

Ocean governance is based on science and the accompanying regulations. Options could be cross-cutting, spanning multiple sectors. The problems faced in fisheries,

Participants of the 2013 Ocean Governance class along with colleagues from IOI, Dalhousie University and affiliates.

for example, could be linked to activities in marine transportation and so forth.

I am now more aware of my role within the governance framework for the sea and ocean surrounding Dominica. I understand the necessity to include other sectors within the management process – even if I am only concerned about the fisheries management aspects. Likewise, fisheries stakeholders should have a say in the affairs of other

INTERNATIONAL OCEAN INSTITUTE (IOI)CANADA COURSE ON OCEAN GOVERNANCE, POLICY, LAW AND MANAGEMENT - A FIRST HAND VIEW POINT (Cont'd)

marine sectors.

Back in Dominica, I have partnered with fellow Fisheries Division colleagues to create a holistic training program that includes aspects of modules from the IOI course. The "Marine and Environmental Training" program, as it is called, is aimed at College level students locally and allows for training, teaching and sharing ocean knowledge and the understanding of a multi-sectoral approach to governance. There are also plans to incorporate IOI course aspects into the already established and mandatory course for new fishers, the "Basic Fisherman Training Course" (BFTC).

I do hope that the course will continue for many more years to come and that both the CRFM and IOI Canada can keep on supporting the attendance of Caribbean representatives. I look forward to continue utilizing the knowledge and experiences I've gained to improve the governance of the marine space under my charge not only for fishers, but for the development of my island nation.

MEETINGS IN 2014

NO.	DATE	EVENT	LOCATION
1	20 – 21 Jan	SPS Project Country Consultation	Port of Spain, Trinidad and Tobago
2	21 - 24 Jan	FAO By-Catch Project Inception Meeting	Paramaribo, Suriname
3	23 – 24 Jan	SPS Project Country Consultation	Bridgetown, Barbados
4	27 – 28 Jan	SPS Project Country Consultation	Kingston, Jamaica
5	29 – 30 Jan	FAO Re-orientation Strategic Planning Workshop	Guadeloupe
6	30 – 31 Jan	SPS Project Country Consultation	Belmopan City, Belize
7	3 – 7 Feb	Resumed Session of the Technical Consultation on International Guide-lines on Securing Sustainable Small-Scale Fisheries	Rome
8	10 – 12 Feb	CRFM/UNU-FTP Workshop to Develop a Draft Strategy to Improve Fisheries Data Collection and Management	Kingstown, St. Vincent and the Grenadines
9	13 - 14 Feb	22nd Meeting of the Executive Committee of the Caribbean Fisheries Forum	Kingstown, St. Vincent and the Grenadines
10	17 – 18 Feb	SPS Project Country Consultation	Georgetown, Guyana
11	18 - 20 Feb	CLME+ ProDoc Core Development Team Meeting	Miami, Florida
12	20 – 21 Feb	SPS Project Country Consultation	Paramaribo, Suriname
13	24 – 25 Feb	Inter-Sessional Meeting of the Conference of Heads of Government is scheduled for 24th-25th February, 2014, in St. Vincent and the Grenadines	St. Vincent and the Grena-dines
14	24 – 25 Feb	SPS Project Country Consultation	Dominican Republic
15	27 – 28 Feb	SPS Project Country Consultation	Port au Prince, Haiti
16	24 – 28 Mar	FAO Port States Agreement Workshop	Port of Spain, Trinidad and Tobago

MEETINGS IN 2014 (Cont'd)

17	26—28 Mar	WECAFC 15th Session	Port of Spain, Trinidad and Tobago
18	TBD	FAO/CRFM/OSPESCA/NOAA Lobster Workshop	TBD
19	7—8 Apr	Informal Consultation of States Parties to the United Nations Fish Stocks Agreement	UNHQ, New York
20	23—25 Apr	12th Meeting of the Caribbean Fisheries Forum	Roseau, Dominica
21	21 May – 18 Jul	Training Programme on Ocean Governance: Policy, Law and Management, Dalhousie University	Halifax, Canada
22	23 May	8th Meeting of the CRFM Ministerial Council	Roseau, Dominica
23	26 – 30 May	Caribbean Studies Association Meeting	Merida, Mexico
24	27 - 30 May	United Nations Open-ended Informal Consultative Process on Ocean and the Law of the Sea - 15th Meeting	UNHQ, New York
25	10 – 16 Jun	Tenth CRFM Annual Scientific Meeting	Kingstown, St. Vincent and the Grenadines
26	9 - 13 Jun	Meeting of States Parties to the 1982 United Nations Convention on the LAw of the Sea - 24th Meeting	UNHQ, New York
27	9 – 13 Jun	COFI – Committee on Fisheries 31st Session	Italy, Rome
28	1- 4 Jul	REBYII-LAC Project Logframe Workshop	Costa Rica
29	1Sept -3 Oct	CRFM/ANCORS Fisheries Law and Management training	Univ. of Wollongong, Australia
30	1 – 4 Sept	UN Third International Conference on Small Island Developing States	Apia, Samoa
31	Sept 2014 - Mar 2015	UNU – Fisheries Training Programme (6 month course)	Iceland
32	21 – 25 Sept	World Small-Scale Fisheries Congress	Merida, Mexico
33	22 – 26 Sept	ICCAT SCRS Species Group Meetings	Madrid, Spain
34	29 Sept - 3 Oct	First round - Informal Consultations on Omnibus Resolution on Oceans and the Law of the Sea	UNHQ, New York
35	3 – 7 Nov	67th Annual GCFI Meeting	Bridgetown, Barbados
36	10 – 17 Nov	19th Special Meeting of the ICCAT Commission	TBD
37	11 - 18 Nov	Informal Consultation on Sustainable Fisheries	UNHQ, New York
38	19 - 25 Nov	First round - Informal Consultations on Omnibus Resolution on Ocean and the Law of the Sea	UNHQ, New York

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The CRFM is an inter-governmental organisation whose mission is to "Promote and facilitate the responsible utilisation of the region's fisheries and other aquatic resources for the economic and social benefits of the current and future population of the region". The CRFM consists of three bodies – the Ministerial Council, the Caribbean Fisheries Forum and the CRFM Secretariat.

CRFM members are Anguilla, Antigua and Barbuda, The Bahamas, Barbados, Belize, Dominica, Grenada, Guyana, Haiti, Jamaica, Montserrat, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, Trinidad and Tobago and the Turks and Caicos Islands.

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