

RESPONSIBLE FISHERIES IN THE CARIBBEAN: BALANCING REGIONAL, NATIONAL AND COMMUNITY-BASED MANAGEMENT

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ABSTRACT

Conventional management approaches have not been successful in protecting fisheries resources from decline either globally or in the Caribbean. Over the past 20 years co-management has emerged as a dominant paradigm when thinking about responsible fisheries in the Caribbean. At the same time there has been growing recognition of the need for closer collaboration and cooperation among the countries of the Region, arising from the fact that most of the fisheries of economic importance are shared by two or more countries, and also the realization that as small island developing states, regional economic integration is necessary for survival in this age of globalization. In this connection significant attention has been given to the establishment of systems to promote and facilitate closer regional cooperation and strengthening of regional approaches to fisheries management, including the creation of a regional fisheries body (CRFM) and a common fisheries policy among the CARICOM Countries. Within the region we are therefore witnessing the emergence of an approach to responsible fisheries, which strongly embraces elements of community based-management, national management (traditional central government controlled approaches) and regional management. This paper takes a critical look at the structure of Caribbean fisheries and these emerging strategies for responsible fisheries, which are based on the culture, tradition, social and economic characteristics of Caribbean societies and the ecology of the fisheries resource systems, and seek to establish a balance between these three approaches.

Keywords: Responsible fisheries, Caribbean fisheries, fisheries management

INTRODUCTION AND BACKGROUND

The Caribbean is a region of diversity. At the political level there are 26 independent countries and 19 dependent territories. Figure 1 shows the countries and their hypothetical exclusive economic zones (EEZ). The EEZs are hypothetical because some countries have not yet concluded boundary delimitation treaties with their neighbors agreeing upon and specifying the exact positions of their maritime boundaries. Sixteen (16) of the independent countries and eighteen (18) of the nineteen (19) dependent territories are Small Island Developing States (SIDS). The countries range from among the largest and richest (USA), to among the smallest (e.g. Barbados, St. Kitts and Nevis) and least developed (Haiti) in the world. There is significant disparity and diversity of national and regional governance and institutional arrangements, stemming primarily from the governance structures established by the countries that colonized the region (Mahon, 2001).

The total population of the island states is approximately 35 million people of which nearly 28 million reside in the two largest islands, Cuba and Hispaniola. The average population density in the Island States is 215/km², with densities greater than 300 person/km² in Barbados, Puerto Rico and Martinique (Vanzella-Khoury, 1998). This report deals mainly with the fisheries of the Caribbean Community (CARICOM) Members and Associate Members¹ and Caribbean ACP (CARIFORUM)² countries.

¹ CARICOM Members are the same countries as the Caribbean ACP countries at footnote 2 with the exception of the Dominican Republic and the inclusion of Montserrat. The Associate Members of CARICOM are Anguilla, British Virgin Islands, Cayman Islands, and the Turks and Caicos Islands.

² The Caribbean ACP States are Antigua and Barbuda, Barbados, Belize, Dominica, Dominican Republic, Grenada, Guyana, Haiti, Jamaica, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, The Bahamas, Trinidad and Tobago, and Suriname

The Caribbean Sea is a semi-enclosed sea with oceanographic features that are highly complex and variable both spatially and temporally. The dominant surface current system is the Caribbean Current, which enters the Caribbean basin between Dominica and Tobago and flows west to northwest, exiting through the Yucatan Channel into the Gulf of Mexico. It then passes through the Florida Straits where it forms the Gulf Stream flowing northward along the east coast of the USA (Stevenson, 1981). The oceanographic characteristics are influenced by freshwater runoff from several large river systems including the Amazon and Orinoco, two of the largest rivers in the world. There are also several east flowing counter currents, eddies, gyres, meanders and transients lenses of low salinity water from the major rivers, occurring on both sides of the main current system and along the coastal areas (Stevenson, 1981; Appeldoorn et. al., 1987).

The interface between the land and water is a complex and dynamic area, which comprises several highly productive and diverse tropical ecosystems and natural features such as tropical rain forests, mangrove swamps, wetlands, estuaries, seagrass beds and coral reefs, white sand beaches, upwelling systems, bays and harbours. These ecosystems, although fragile, they support several highly productive fish assemblages with high species diversity.

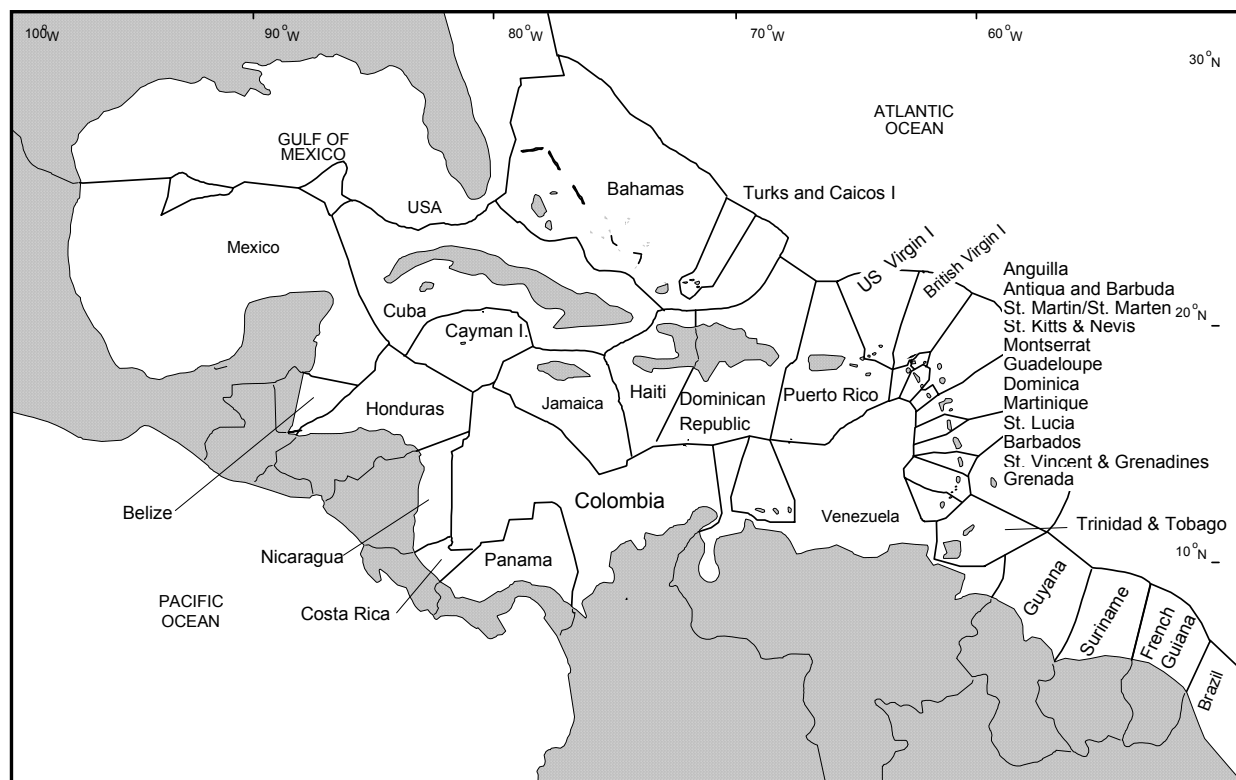


Figure 1: The Wider Caribbean region with hypothetical Exclusive Economic Zones (Mahon, 2001)

The maritime space of the Caribbean Island States is substantially larger than their land space. For example, the land area of Barbados is approximately 430 km² whereas the area of the EEZ is 167,384 km², and the land area of Jamaica is approximately 11,000 km², whereas the EEZ is approximately 300,000 km². The total land area of the Caribbean ACP States is 484,716 km² whereas the total area of the EEZ is 2,205,470 km² representing approximately 82 % of the area under the jurisdiction of the countries. Small Island Developing States generally have higher dependence on the resources of the seas and oceans around them, as a consequence of their limited land space and terrestrial resources. These

countries must therefore use, manage, and protect their coastal and marine resources in a responsible manner for development. Responsible fisheries mean fisheries that are conducted in a manner that produces optimum sustainable benefits to society while ensuring that they continue as functional, self-sustaining components of the ecosystem, without compromising the ecological integrity, biological diversity and productivity of the system.

The high diversity is not limited to geography, ecology and governance institutions, but is also reflected in the religion, cultural, linguistic (Spanish, English and to a lesser extent, French and Dutch), ethnic and political systems. The region is also well known for the inequality in the distribution of wealth. There are very few cooperative programs across the linguistic and cultural barriers in the Caribbean even in cases where the countries share common borders and are exploiting common resources such as Belize and Honduras, or Guyana and Venezuela, or Haiti and the Dominican Republic.

Caribbean countries have been investing heavily in developing tourism, coastal aquaculture, marine fishing, maritime transportation infrastructure, housing, and basic sanitation infrastructure in the coastal zone in order to generate economic growth and development, achieve prosperity and peace and eradicate poverty. These investments which all use the ecosystem resources in different ways, have not only brought about economic progress and prosperity, but have also resulted in profound changes in the coastal landscape, and put the fragile, natural resource systems under severe stress.

Today, coastal communities and ecosystems in the Caribbean are threatened by several factors including rising sea temperatures and sea level, pollution, the environmental effects of tourism and large-scale agriculture, infrastructure development and many other human activities. Concerns have also been increasing over the growing problem of over-fishing and the deteriorating status of fisheries resources and essential fish habitats. Protection, conservation and management of these coastal resource systems are important, not only for their preservation and long-term viability but also, more critically, because coastal communities are highly dependent upon these resources. This is of special importance in the insular Caribbean, where the vast majority of the population lives in the coastal zone. It is vital, therefore, that policies, and human and institutional capacities are established to regulate and control usage and ensure responsible and sustainable development and management of these coastal ecosystems and associated fisheries.

Many of the commercially important fish species in the Caribbean are shared stocks (Rainford and Mitchell, 1998; Mahon and Singh-Renton, 1999). The marine ecosystems supporting the fisheries are located on continental and island shelves for demersal species, and offshore for pelagic and other highly migratory species. Owing to the small size and close proximity of the countries, the prevalence of common shelf areas that span the EEZs of countries, and the physical oceanographic characteristics of the Caribbean, many stocks are shared either during their adult phases, or during their early life history stages in the case of demersal species such as lobsters and queen conch, when their pelagic larva are distributed by the current system over large areas.

FISHERIES MANAGEMENT

Fishing in the Caribbean, with few exceptions, are small-scale multi-species operations conducted with small open boats of up to 12 meters in length, using outboard motors. Small semi-industrial and industrial fisheries exist in Guyana, Suriname, Trinidad and Tobago and Belize for shrimp; The Bahamas and Jamaica for lobster and Queen Conch; and in Barbados and a few of the other eastern Caribbean Islands for pelagic species. A wide variety of fishing gears are used, including traps, longlines, handlines, gill nets, seine nets, trammel nets, and trawls. The fisheries are generally open access. The industrial shrimp

fisheries in Guyana and Suriname, and the industrial conch fisheries of Jamaica, which are managed by catch quota systems, are among the few exceptions.

Most of the traditional commercially important species and species groups are reported to be either fully developed or over-exploited. These include queen conch, spiny lobster, shrimp, shallow shelf reef-fishes (particularly members of the lutjanidae and serranidae families) and some of the large, highly migratory pelagic species which are managed by ICCAT. There are, however, some species that are under-utilized and are not making optimum contribution to the socio-economic development of the countries. These include some regionally distributed pelagic fishes such as wahoo, dolphinfish, and blackfin tuna; squids such as the diamondback squid; deep-slope snappers and groupers, and some small coastal pelagic species including members of the carangidae, clupeidae, and engraulidae families, among others.

Frequent illegal incursions and unregulated fishing by foreign vessels in the waters under the national jurisdiction of CARICOM States is a major problem. Illegal fishing by local fishers operating within the territorial seas and EEZs is also as a major problem. Local fishers frequently disregard regulations and rules regarding licensing and registration of fishers and fishing boats, gear limitations, closed seasons, closed areas, minimum size of fishes among other measures designed to protect and conserve the fishery resources (Haughton, 2003). Inadequate management is recognized as one of the main reasons for IUU fishing, over-fishing and degradation of essential habitats and ecosystems in the Caribbean.

If one uses a narrow definition of fisheries management that focuses on the essential component of controlling effective fishing effort to achieve specified objectives, then fisheries management is new in the Caribbean, despite the available literature that would suggest otherwise. Up to the end of the 1980s, government policies and programmes were aimed largely at promoting fisheries development by expanding fishing effort, and increasing employment and fish catch, rather than on fisheries management, conservation and protection of the resource system. That is not to say that measures were not implemented to protect the resources base. Indeed, most countries have implemented various rules and regulations to provide some level of protection for their fishery resources, as mentioned in the previous paragraph. But the emphasis and focus of policies, programmes and projects have always been on development to improve the social and economic conditions of the people of the region and eradicate poverty; because it was widely held that the fish stocks were capable of sustaining much higher levels of catch than were being realized by the low technology, small-scale fisheries sector. The current precarious state of the resource and the need for improved management systems are recent acknowledgements by both resource users and policy makers alike.

Most countries have national fisheries departments which have been vested with the responsibility for fisheries development and management. However, these departments tend to be weak and lack the capacity to fully execute their mandate, particularly the new responsibilities and challenges associated with resource conservation and management. They tend to be under-funded and under-staffed, and in some cases are still organized and staffed to promote fisheries development rather than management. Their limitation is reflected in the deficiencies in: applied research and availability of scientific information for planning and decision-making, the provision of extension services to the industry, under-development of statute laws and regulations governing fisheries, and inadequacies in the systems for surveillance and enforcement of existing laws and regulations.

The Caribbean region, like much of the developing world, is still far from achieving responsible and sustainable fisheries. Fisheries management systems in the CARICOM Countries, particularly the legal, regulatory and institutional framework tend to be weak and ineffective, and consequently need substantial upgrading to provide adequate protection for the fishery resources and marine ecosystems, and the livelihood of those who dependent on the fisheries. The current inadequacies will have serious environmental, economic, and social consequences, which will only get worse over time with continued

population growth, trade liberalization policies and increasing competition for access and usage of the resources, if adequate countermeasures are not put in place. Coordinated policies and actions are needed at the international, regional, national and community level drawing on the wisdom, knowledge and experiences of all stakeholders.

At the international level, there have been several positive developments in support of sustainable use of fisheries and other living marine resources. These include both legally binding conventions and agreements and non-binding instruments designed to provide states and other stakeholders with adequate framework for utilization, protection and conservation of fisheries and natural resources in a responsible manner. Among the significant developments are:

- The 1982 United Nations Law of the Sea Convention;
- The outcome of UNCED, in particular, Agenda 21, and the WSSD;
- The Biodiversity Convention;
- The Barbados (Small Island Developing States) Plan of action;
- The UN Agreement on the Management of Straddling and Highly Migratory Fish Stocks;
- The UN Compliance Agreement on High Seas Fishing;
- The FAO Code of Conduct for Responsible Fisheries and its associated International Plans of Action (IPOA).

These legally binding and voluntary instruments provide a comprehensive and increasingly coherent policy framework and tools for effective fisheries management globally. There is, however, a big gap between the international legal and policy framework and commitments on the one hand, and their implementation at the regional, national and community levels in the Caribbean on the other hand. First, these global legal instruments provide broad frameworks for action, and by their nature as global instruments, do not adequately take into consideration the regional specificities and special circumstances that prevail in small developing Caribbean States. Second, the international and regional legal regime and voluntary instruments provide a framework for states to act. International instruments usually do not have any legal force within English Speaking Caribbean States even after they have been signed, unless specific accompanying national legislations are promulgated to give effect to them (Carnegie and Anderson, 1998).

Furthermore, there is the need for human and institutional capacity at the regional, national and community level for their implementation. Budgetary constraints and insufficient human and institutional capacity present major obstacles to their adaptation and application in the Caribbean. These are further compounded by the lack of political will to undertake difficult but necessary policy and institutional reforms to address the emerging challenges. The important issue is that regardless of what may exist at the international level, the legal rights and obligations of those responsible for managing fisheries, and the specific management measures to be applied in any given situation must be prescribed by national legislations and regulations and implemented by regional, national or local organizations, with the authority and capacity to do so.

The capacity for effective fisheries management varies significantly between the different countries of the Caribbean region. There are significant institutional and human capacities in some countries for assessing, monitoring and managing fisheries, particularly in the larger continental countries, while in others fisheries are either managed in an elementary manner or unmanaged. According to FAO (2003) even among the most developed countries there are problems coping with the large number of species. From the region as a whole, there is little information on the status of the commercially important resources and even less on the hundreds of species of lesser importance to the region's fisheries. Strengthening management, including systems for monitoring, control and surveillance is therefore considered to be one of the major challenges that will need to be overcome to achieving responsible and sustainable fisheries. The root problem is that Caribbean developing states, as a consequence of their small geographical size and

small and fragile economies, have very limited financial, institutional and human resources to devote to fisheries management, bearing in mind the other more basic social and economic challenges they face, and the pressing need to reduce poverty and improve living standards of the people of the region.

The countries are, nevertheless, committed to sustainable development of their fisheries and aquaculture resources for the benefit of the people of the region, in accordance with international agreements and protocols promoting sustainable utilization and conservation of coastal and marine resources. Within the practical limitations posed by resource scarcity and capacity constraints the countries have taken positive steps to overcome the constraints and limitations.

In light of the information presented above, recognizing that the traditional approaches are not capable of solving the problems, and taking into consideration the geo-political, ecological and economic specificities of the region, CARICOM countries have decided to pursue a policy to achieve responsible fisheries, which strongly embraces elements of community based-management, national management (traditional central government controlled approaches) and enhanced regional management. At the regional level, this involves close regional cooperation and collaboration, and strengthening of regional approaches to fisheries management, including the establishment of a regional fisheries body (CRFM) and application of a common fisheries policy among the CARICOM Countries. At the national level the focus is on strengthening the national policy framework and human and institutional capacity for planning and resource management. At the community level, the focus is again on capacity building and promoting integrated, multi-stakeholder and inter-disciplinary community-based approaches, in which local stakeholders are encouraged to take greater responsibility for developing and implementing management options/governance mechanisms to reverse the negative ecosystem and quality of life trends that are associated with local activities. This three-pronged approach which seeks to address the problems in an integrated manner from different levels is believed to offer the best chance of success in the region.

Regional cooperation and regional management

For the small islands and small developing states of the Caribbean, given the information presented above, particularly the fact that most of the commercially important fish stocks are shared between two or more countries, there is no alternative for achieving responsible and sustainable fisheries but through close cooperation among the countries. By working together, Caribbean states can improve cost-effectiveness in planning and implementing fisheries programs by joint resource mobilization and greater sharing of their limited expertise and institutional resources. Closer cooperation will also improve the influence of Caribbean States at international fora, thereby ensuring that their needs, perspectives and concerns are neither overlooked nor marginalized by the larger, more powerful states, and shared resources can only be managed by cooperation among states (Haughton et. al., 2004).

Arising from UNCLOS, the Caribbean countries have recognized the need for regional cooperation to ensure sustainable development and management of their fisheries and have undertaken a number of projects in this direction. In 1991, with financial and technical support from the Government of Canada, CARICOM countries launched the ten year, (\$25 million) CARICOM Fisheries Resource Assessment and Management Programme (CFRAMP). The overall goal of CFRAMP was to promote sustainable use and conservation of the fisheries resources of CARICOM Member States. The specific purpose of the project was to enhance the institutional capacity and information available for fisheries management planning and policy formulation. The main activities of CFRAMP were: training of fisheries personnel in areas related to fisheries assessment and management; establishment of fisheries data and information management systems; resource assessment studies; preparation of fisheries management plans; establishment of national advisory/decision making mechanisms; community awareness building and the strengthening of fishers groups and organizations to increase their capacity to participate in co-management arrangements in partnership with the governments; and establishment of a permanent

regional fisheries body which will continue to provide policy and technical support and coordination for sustainable fisheries development and management after CFRAMP ended (CRFAMP, 1991).

CFRAMP was the first major fisheries project of its type, focused as it was on sustainable development and management of the region's fisheries. The capability of national fisheries departments and the human resources to spearhead sustainable fisheries have improved substantially; data and information regarding the abundance, distribution and status of commercially important fish stocks have also improved significantly; national fisheries management plans have been prepared; fishers have been mobilized, empowered, and are more involved in management planning in partnership with governments; a regional fisheries body has been established and is operational, there is much more networking and cooperation among the CARICOM countries and between the CARICOM countries and third countries (Haughton, in press). According to Caddy (2001) who conducted the final review of the project, "the overall conclusion is that CFRAMP has been an excellent program for the region, and a progressive and pervasively positive influence in all sectors of work of fisheries departments." CFRAMP has, therefore, laid a solid foundation for responsible and sustainable fisheries in the Caribbean region.

The commitment of CARICOM countries to promoting responsible fisheries is further demonstrated by the decision of the Heads of Government when they signed the Inter-governmental Agreement establishing the Caribbean Regional Fisheries Mechanism (CRFM) in 2002. The CRFM is an independent regional fisheries body established to manage and promote responsible and sustainable use of the fisheries resources within the Caribbean. The objectives of the CRFM as stated in the Agreement establishing the organization (CARICOM Fisheries Unit, 2002) are:

- the efficient management and sustainable development of marine and other aquatic resources within the jurisdictions of Member States;
- the promotion and establishment of co-operative arrangements among interested States for the efficient management of shared, straddling or highly migratory marine and other aquatic resources;
- the provision of technical advisory and consultative services to fisheries divisions of Member States in the development, management and conservation of their marine and other aquatic resources.

At the heart of the CRFM Agreement is a commitment to the responsible fisheries to improve conservation, protection and sustainable use of the fishery resources of the Caribbean through closer and deeper cooperation among Caribbean States in accordance with the principles laid down by the 1982 United Nations Convention on the Law of the Sea (UNCLOS) and the UN Code of Conduct for Responsible Fisheries (Haughton et. al., 2004). It is also a bold attempt to be more self-reliant and to take greater control over the aquatic resources on which so many of our people and communities depend for their livelihood and sustenance.

Membership in the CRFM is open to all CARICOM Member States and Associate Member States. Beyond this, the Ministerial Council, which is the highest policy making body of the CRFM, may admit any Caribbean country as an Associate Member of the Mechanism. The State or Territory wishing to become an Associate Member must conclude an association agreement with the CRFM.

As indicated above, the fisheries of major economic importance to CARICOM countries are shared across national boundaries, including non-CARICOM Caribbean countries. This had led to the question of whether the membership of the CRFM should be restricted to CARICOM countries alone, or should be Pan-Caribbean in scope. Due to the complexity of establishing a Pan-Caribbean CRFM, it was decided that a CARICOM body be established, while providing opportunity for the participation of other Caribbean countries through associate membership. The long-term vision, however, is that the CRFM should be open to all Caribbean States for full membership. Members of the CRFM have the right to

participate and vote in any organs of the mechanism whereas Associate Members have the right to vote only where decisions are being taken on management matters to which they are parties or concerning fisheries which they share with other Member States. In addition, any group or organization whose work can contribute to the work of the CRFM may participate in the CRFM as an observer (Haughton et. al., 2004).

It is important to note that in addition to the CRFM, there are other organizations involved in fisheries management in the Caribbean region. The other major fisheries body in the region is the FAO/Western Central Atlantic Fisheries Commission, which plays an important role in promoting sustainable fisheries development and management in the Wider Caribbean region by providing both technical assistance to member states and a forum for discussion and exchange of information regarding fisheries matters. There are also other international and regional organizations that provide support for various aspects of fisheries management. These including the University of the West Indies, the Organization of Eastern Caribbean States (OECS), United Nations Environment Program (UNEP) and IOCARIBE.

Common Fisheries Policy

The effort to establish a Common Fisheries Policy and Regime at the CARICOM level was initiated at the Fourteenth Inter-Sessional Meeting of the Conference of Heads of Government of CARICOM in February 2003, and reaffirmed by the same body in March 2004. The basic objective of the policy is to enhance the contribution fisheries make to food security, and social and economic development by providing a harmonized fisheries policy through the development of a comprehensive framework for responsible and sustainable exploitation and conservation of fisheries resources in the Region. The initiative to establish a common policy should be seen within the context of a broader commitment to closer regional cooperation for economic and social development, including the establishment of a CARICOM Single Market and Economy, which is already well underway.

In pursuance of the mandate to establish the common policy, a multi-disciplinary Working Group was established by the governments and has held three meetings to elaborate the arrangements for the common policy and regime. In an effort to facilitate the work, and taking into account the sense of urgency conveyed in the decision of the Conference of Heads of Government, a team of International Consultants was commissioned to provide a technical background document identifying the main issues, spelling out options for a common approach to the development and understanding on regional and international matters relating to fisheries, including their exploitation, management/governance, exploitation and surveillance.

The discussions to date have yielded a significant degree of consensus among Member States on some of the issues, but have revealed significant differences on others. The discussions have also highlighted several issues, many of a political policy and legal/jurisdictional nature which will need to be resolved before agreement can be reached on a common fisheries policy and regime (COTED, 2004). The matters being discussed include the following, among others:

1. Stipulated guidelines for exploitation and conservation of fisheries resources in the Region -
 - i) rules on the operation in the fishery zone;
 - ii) development of a licensing system;
 - iii) creation of a quota system that would guarantee sustainable harvesting;
 - iv) development of a system to determine the yearly allowable catch;
 - v) development of a system for the documentation of catches and landings;
 - vi) development of a system for ensuring compliance;
2. Outline of a system of technical standards and best practices in fisheries management in keeping with international standards for the export of fishery products;
3. Development of a clear and transparent policy for the granting of fishing access to third countries;

4. Development of security procedures and reporting systems for use by Coast Guard, Customs and Immigration and other relevant bodies.

COMMUNITY BASED MANAGEMENT

The interest in community-based management arises from a genuine concern to reverse the observed negative trends and deteriorating situation of coastal resources, and improve the conditions of life and state of fish stocks and coastal and marine ecosystems by improvement in management. The interest is also driven by the increasing literature, which herald the advantages and successes of community-based management approaches in other parts of the world.

As is the case with fisheries management generally, there is even less experience with community-based management or co-management or preferential use rights of coastal resources in the Caribbean (Brown and Pomeroy, 1999). Brown and Pomeroy (1999) argue further that recent colonial history and plantation economy did not support the establishment of either local organizations or the development of a sense of community or social cohesion which are important preconditions for community-based management. According to Espeut (1992), "Aside from church and political organizations, one will find very few community-based organization in Jamaica, Antigua and Barbuda...In the English-speaking Caribbean forces which work to disintegrate community organizations are stronger than the cohesive forces which would encourage them." The concept of ethnic and cultural diversity and heterogeneity which was introduced in the introductory section becomes relevant when considering community level social cohesion in the Caribbean.

Although we often consider the community to be a fairly homogenous group, in reality this is not so. The evidence shows groups and individuals within the communities with substantially different cosmic visions and cultural identities, and often divergent goals and aspirations and conflicting interest. There are often conflicts over use of gear, access to beach front, sea space, as well as conflicts between different types of fishers such as industrial and artisanal, and recreational and commercial fisheries. In addition to the intra-sectoral conflicts, there are also major conflicts between fishers and other sectors notably tourism but also with agriculture, petroleum and industrial sectors.

This low level of community cohesion and limited experience with collective action is given as one of the reasons for the presence of only few fisher organizations in the English-speaking Caribbean which organization themselves are relatively weak. There are only a few examples of successful organized fishers, the most notable case being the fishers of Belize, where the success of the industry has been credited in large part to the organizational strength and strong voice of the fisheries cooperative (Brown and Pomeroy, 1999). Fisher cooperatives also exist in other countries including Haiti, Guyana, St. Lucia and Jamaica, and are making useful contribution to community development but are generally weak, poorly managed with relatively small membership base, and therefore do not have much influence over policy-makers. Fishers' organizations are not yet ready to take on the responsibilities of co-management or community-based management (Chakallal et. al., 1998).

Several co-management and community-based management projects have been introduced in the Caribbean over the past 15 -20 years to investigate their usefulness and relevance and at the same time build capacity in these directions. These have been undertaken at different scales including, regional, national and local. The Community Involvement and Education Sub-Project of the Canadian funded CFRAMP project was one of the regional projects that sought to build awareness and local capacity for co-management and community-based management of fisheries between 1995 and 2002. Several training workshops and seminars were organized for fisheries department staff and fisherfolk organizations (Haughton, 2004).

In 1999, the CARICOM Fisheries Unit (now the CRFM) in collaboration with the International Ocean Institute based in Costa Rica, Laval University and IDRC of Canada, launched a regional Community-Based Coastal Resource Management Project in the Caribbean. The general objective of this project is to promote, through research, integrated multi-stakeholder and inter-disciplinary community-based coastal resources management in the Caribbean with a view to enhancing sustainable development. A total of 30 small grant projects were supported in different Caribbean countries under 2 phases since 1999. The results and lessons from the case-studies conducted during first phase were documented in a book entitled, "Balancing People and Resources: interdisciplinary research and management of coastal areas in the Caribbean" which was published in 2001 by IOI-CFU-LAVAL-IDRC (IOI-CFU-Laval-IDRC, 2001). The Second phase of the project is still underway and consists of 15 projects in 11 countries with research teams coming from university research centres and various NGOs. The emphasis in the 2nd phase is on better understanding the heterogeneity of the Caribbean communities by critically examining existing CBCRM approaches in which, in our view, not sufficient attention has been paid to the diversity of social institutions and groups involved at various scales in the management processes. The project will produce a second book in December 2004 documenting the findings and recommendations of the second phase.

While the results of the various initiatives have been encouraging and the level of interest in community-based management is high, both on the part of government authorities and communities, the low social cohesion, lack of tradition, limited experience and limited human and institutional capacity at the community level and in the wider society stand out as major constraints to successful establishment of community-based management on a broad-scale in the Caribbean in the near future. In addition, there is a noticeable imbalance in our theoretical understanding and knowledge of the social systems in coastal communities compared to our knowledge and understanding of the ecological and biological systems. Much of the previous scientific work on fisheries in the Caribbean has been done by natural scientists and dealt with the biological and ecological aspects of these resources.

It is clear that further research and capacity building is needed to improve the methodologies and models for the study and application of community-based management within the context of the Caribbean environment. Some of the basic assumptions and pre-conditions for successful application of community-based management approaches are often not present in the region. For these reasons, further work is needed to first build a foundation and create a culture for successful application of these approaches which should take into account the diversity and specificities of local communities. Capacity building is needed not only at the community level to build management capacity, but also at the research and analytical levels to improve knowledge and add depth to our current knowledge and understanding of the social, economic and anthropological dynamics of coastal communities in the Caribbean.

CONCLUSIONS

Caribbean countries will remain dependent upon the resources of the Caribbean Sea for food security and socio-economic development, including the eradication of poverty. Long-term sustainable benefits will only be possible if there is improved management based on improved knowledge and understanding of the fisheries resource systems, and improvements in the legal and institutional framework for governance and resource management. Building organizational and institutional capacity for fisheries management must be a major focus of future efforts to achieve responsible fisheries. Caribbean states have demonstrated a commitment to putting in place the policies and systems needed to ensure responsible and sustainable fisheries by tackling the problems in an integrated and comprehensive manner, balancing regional, national and community-based actions. They have established a Regional Fisheries Body (CRFM) to promote closer regional cooperation among the concerned countries. The national fisheries administrations and policies are also being strengthened to take on the new challenges and

responsibilities. And at the same time attention is being given to strengthening the framework for delegation of management responsibility to community-based organizations such as fishers' organizations, to play a greater role in promoting responsible fisheries and improving the quality of life and standard of living of coastal communities. Fishers' organizations and community based organizations are generally weak and in many cases are not yet ready to take full responsibility for resource management at this time. However, with further support and investments in capacity building and institutional strengthening it is believed that this situation will change and fishermen and communities will be able to play a more significant role in determining their future by exercising greater management responsible over coastal resources. It is recognized that the approaches to fisheries management, particularly community-based management, that have been developed and applied in other parts of the world will not be directly applicable in the Caribbean due to its unique characteristics. Further research is therefore needed to develop community-based methodologies and approaches that are consistent with the social structure, cultural traditions and aspirations of the people of the region.

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