The CFRAMP Project: A Decade of Contribution to Sustainable Development and Management of Fisheries in the Caribbean

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ABSTRACT

In 1991 twelve Caribbean countries launched the CFRAMP Project, with financial and technical support from CIDA and ICOD of Canada. The overall goal of CFRAMP was to promote management of the fisheries resources to permit sustainable use of these resources by the people of the region. The specific purpose of the program 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 at the CARICOM level after CFRAMP ends. The CFRAMP Project has come to an end

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development and management of Caribbean fisheries.

KEY WORDS: Fisheries management, CFRAMP, Caribbean fisheries

El Proyecto CFRAMP: Una década de Contribución al Desarrollo Sostenible y Manejo de las Pesquerías en el Caribe

En 1991, doce países del Caribe se embarcaron en el Proyecto CFRAMP, con apoyo técnico y financiero de CIDA y ICOD de Canada. La meta principal de CFRAMP fue el promover el manejo de las recursos pesqueros para permitir el uso sostenible de esos recursos por parte de la gente de la región. El propósito específico del programa fue mejorar la capacidad institucional y la disponibilidad de información pesquera para la planificación del manejo pesquero y la formulación de políticas. Las actividades principales del programa CFRAMP fueron: entrenamiento del personal pesquero en las áreas relacionadas con evaluación y manejo de las pesquerías; establecimiento de sistemas de manejo de datos e información pesquera; estudios de evaluación de los recursos; preparacion de planes de manejo pesquero; establecimiento de mecanismos nacionales asesores y de toma de decisiones;

capacitación de la comunidad y fortalecimiento de grupos y organizaciones de pescadores para incrementar su capacidad en los arreglos de co-manejo en colaboracion con los gobiernos; y el establecimiento de un cuerpo permanente rector de las pesquerías regionales el cual continuará proveyendo apoyo técnico y político y coordinación para el desarrollo y manejo sostenible y manejo de las pesquerías a nivel del CARICOM después de finalizado el proyecto CFRAMP. El proyecto CFRAMP finaliza después de diez años de operación y sobre \$20 millones de gastos en apoyo al sector. Este documento provee una breve revisión de la mayor contribución del Programa al desarrollo sostenible y al manejo de las pesquerías caribeñas.

PALABRAS CLAVES: Manejo Pesquero, CFRAMP, Pesquerías del Caribe

INTRODUCTION

With the advent of the Third United Nations Convention on the Law of the Seas (UNCLOS III) in 1982, and the practice of coastal states to extend their maritime jurisdiction to include 200 miles exclusive economic zones (EEZ), Coastal Sates in the Caribbean acquired sovereignty and jurisdictional rights over extensive living marine resources within their maritime waters. States not only gained legal rights to these living resources, but they also assumed legal obligations and responsibilities with respect to conservation, protection and optimum sustainable utilization of these living marine resource.

In 1982, shortly after the signing of UNCLOS III in Montego Bay, Jamaica, CARICOM convened the Second Technical Regional Meeting of CARICOM Fisheries Officers in Kingston, Jamaica to discuss the situation of fisheries among the Member countries of CARICOM. The meeting recognized the severe constraints faced by the countries which rendered them unable to exercise their rights, discharge their obligations, and take full advantage of the new opportunities arising from UNCLOS III, owing to their small developing economies, limited capacity, lack of technology, and limited information regarding the fishery resources. Against this background, the countries identified the need for a regional project to:

- i) Provide an up-to-date scientific assessment of the fish stocks within their EEZs.
- Strengthen the capability of the national fisheries administrations for fisheries development and management, and
- iii) Create a regional fisheries organization to facilitate closer cooperation and coordinate support to the countries (CARICOM 1982).

Following this Meeting, in the mid 1980s, the CARICOM Countries requested assistance of the Government of Canada to enable them to address the deficiencies identified. And after extensive studies and discussions among the Canadian International Development Agency (CIDA), the International Centre for Ocean Development (ICOD) and the CARICOM Countries, the CARICOM Fisheries Resource Assessment and Management Programme (CFRAMP) was conceptualized

and developed as a cooperative effort involving Canadian and Caribbean fisheries experts.

In 1991, after more than six years of discussions and negotiations, CARICOM and the Government of Canada, represented by ICOD, signed a Memorandum of Understanding (MOU) officially launching CFRAMP as a development project to promote sustainable use and conservation of the fishery resources of the region (CFRAMP 1991). The goal of the project as documented by the MOU was,

"to promote the management and conservation of fishery resources of CARICOM countries to permit their exploitation on the basis of sustainable yield." The purpose was, "to enhance the basic information and institutional capacity necessary to manage and develop fishery resources in the CARICOM region."

And the expected outputs were:

- Strengthened capabilities to manage fisheries resources on a sustainable basis
- ii) Trained personnel at both national and regional levels
- iii) Improved and expanded fisheries management information
- iv) Regional fisheries management mechanism installed at the CARICOM level.

The project was envisaged initially to last for eight (8) years from 1991-1998, and financed by a budget of Canadian \$20.8 million, with \$17.6 million contributed by the Government of Canada and the remaining \$3.2 million by the CARICOM Countries. However, owing to delays experienced at the commencement of the project, the Government of Canada (CIDA) agreed to an extension of just over 2 years, to March 31, 2001.

The beneficiary countries were Antigua and Barbuda, Barbados, Belize, Dominica, Grenada, Guyana, Jamaica, Montserrat, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, and Trinidad and Tobago.

Organizational Structure

CFRAMP's administrative structure (CFRAMP, 1995) involved the Government of Canada (CIDA), which was supported by a Canadian private sector company as Canadian Executing Agency on the one hand, and CARICOM Secretariat and CARICOM Member States (represented by their Ministries of Agriculture and Fisheries Departments) on the other hand. The Standing Committee of Ministers of Agriculture (SCMA) of CARICOM, which has now been replaced by the Council for Trade and Economic Development (COTED), had overall responsibility for CFRAMP, on the CARICOM side. The SCMA was supported by a Programme Review Committee (PRC) comprising Permanent Secretaries responsible for fisheries of each member state, plus representatives from CIDA and the CARICOM Secretariat. The PRC met at least once each year to provide policy guidance and approve the annual work plans. The PRC was supported by a

Technical Committee made up of independent fisheries experts.

The project activities were planned, implemented and coordinated by the CARICOM Fisheries Unit (CFU), an arm of the CARICOM Secretariat, which was established for the purpose of implementing the project. The CFU was headquartered in Belize City and conducted its work through the Belize Office and two other Resource Assessment Units located in St. Vincent and the Grenadines and Trinidad and Tobago.

The CFRAMP project activities were designed and organized on the basis of the Logical Framework Matrix with work breakdown structure (WBS), which for the technical program consisted of the following:

WBS 300	Fisheries Management Data Systems	
WBS	310	Catch and Effort Data System
WBS	320	Licensing and Registration System
WBS 400	Fis	heries Resource Assessment
WBS	410	Reef and Pelagic Fishes Assessment
WBS	420	Shrimp and Groundfish Assessment
WBS	430	Lobster and Conch Assessment
WBS 500 Fisheries Resource Management		
WBS	510	National Fisheries Management
WBS	520	Regional Fisheries Management
WBS	530	Community Involvement and Education
WBS	540	Long-term Training

The technical activities of CRFAMP commenced with a series of baseline studies, sub-project initiation missions and participatory planning workshops (sub-project specification workshops), during which reviews of the situation existing in the countries at the time were conducted and the interventions to be made by CFRAMP were discussed and developed through a consultative process involving CRFAMP staff, the participating countries, external experts and representatives of regional and international organizations connected to the fisheries sector. The strengthening of collaboration and cooperation with other regional and international organizations involved in fisheries in the Caribbean was recognized as indispensable in achieving the objectives of CFRAMP. In this connection careful attention was given to building and maintaining good working relationships with organizations such as FAO, the Caribbean Fisheries Management Council, the University of the West Indies, ICLARM, and ICCAT among others.

RESULTS

Fisheries Management Data Systems

The Catch and Effort and Licensing and Registration Subprojects were implemented in parallel throughout the Project. The activities to be carried out under these two subprojects were determined through a Subproject Initiation Mission (Fanning 1992) to the twelve countries in 1991, and further developed

during the Subproject Specification Workshop (Manwaring and Fanning, 1993) in June 1992. The main objectives of WBS 310 (Catch and Effort Data Collection System) were to establish national systems to collect, manage, and report on quantities of catch by species and the effort made to obtain this catch. The main objectives of WBS 320 (Licensing and Registration System) were to establish national systems to monitor and manage the fisheries by tracking change in numbers of fishermen, fishing boats, and fishing gear.

Frame surveys were conducted in the countries. These surveys were necessary as a basis for establishing computerized registration and licensing systems that could provide up-to-date listings of landing sites, fishermen, vessels and gear types as well as socio-economic information on the fishers. This information was also needed to obtain estimates of total effort used in estimating total landings from the sample data in the data collection systems.

All twelve participating countries now have basic data collection systems in place. However, the extent to which the sampling systems and the data have been collected varies considerably among countries. The systems include field sampling plans, computer hardware, and specialized software to support the management and analysis of data collected, and trained staff to manage the systems and analyze and interpret the data. CFRAMP provided funding to the countries to employed data collection/management staff for between two to five years in each country, with the understanding that at the end of the funding the countries would take responsibility for the new staff. The countries were also provided with customized version of the Trip Interview Program (TIP), which is used to store, manage and report on their fisheries catch, effort and biological data, and a computerized Licensing and Registration System (LRS) program which was developed by CFRAMP. TIP is owned by the National Marine Fisheries Service of the United States, however, CFRAMP made extensive modifications to the original program to create a program that met the needs of the CARICOM countries. Fisheries staff with responsibility for data management and analysis have been trained in basic data analysis and statistical procedures. In addition, three regional personnel have been trained to provide maintenance support for the databases in the countries. National fisheries statistical reports and atlases are being produced by the countries (CFRAMP 1996, 1997, 2001).

A new fisheries database software program that combines both TIP and LRS into a windows based program called CARIFIS has been developed to replace the existing programs and will be distributed to the countries at the end of 2003.

In order to improve access to information worldwide as well as to improve communication among the countries CRFAMP assisted the countries to connect to the Worldwide Web. CFRAMP also assisted countries to create their own wed sites and established a web site, www.caricom-fisheries.com to serve the countries.

Resource Assessment

The purpose of the WBS 400 Resource Assessment Subprojects was to provide information regarding the status of commercially important species such as reef

fishes, large and coastal pelagics, flyingfish, spiny lobster, queen conch, shrimp and groundfish to improve their management and sustainable utilization. This was the largest and one of the most important components of the CFRAMP project, since the provision of scientific information on the state of the exploited stocks is an indispensable requirement for management and sustainable development.

The assessment subprojects commenced with subproject initiation missions to the countries, and the preparation of draft research plans, followed by subproject specification workshops during which the regional research plans were refined and elaborated, and national implementation plans prepared. Research plans were prepared for reef and pelagic fishes (CFRAMP 1993, CFRAMP,1994), shrimp and groundfish (S&G RAU 1995, 1996, 1997) and lobster and conch (Luckhurst and Marshalleck 1995, CFRAMP 1997a). The research plans involved collection of biological data, the conduct of specialized studies and reviews and analysis of the data collected to provide information on the state of the stocks. Close cooperation was maintained with organizations such as FAO, CFMC, and ICCAT during both planning and implementation of the project activities.

A biological data collection (BDC) system network was established in the countries to provide data on the size, age, and state of maturity of selected commercially important species. National fisheries departments were provided with supplementary staff to assist with data collection where necessary, material and field equipment for sampling, training in biological data collection, and training in stock assessment in collaboration with FAO (CFRAMP 1994, Luckhurst and Marshalleck 1995, S&G RAU 1996, Riise 1996). The data collected were used as input to stock assessments, along with the data generated by the catch and effort data collection system. Regional assessments workshops were held for reef and pelagic fishes in 2000 and 2002 (CFRAMP 2001a); for the spiny lobster (*Panulirus argus*) in 1997 and 1998 in collaboration with FAO (FAO 2001); for queen conch (*Strombus gigas*) in March 1999, in collaboration with the Caribbean Fisheries Management Council (Anon. 1999) and for shrimp and groundfish in 1997 and 1998, in collaboration with FAO (FAO, 1999).

The International Commission for the Conservation of Atlantic Tunas (ICCAT) has responsibility for management of large pelagic fishes in the Atlantic Ocean. For this reason CFRAMP attended ICCAT meetings and activities each year of the Program to ensure integration of the work of CFRAMP with ICCAT's (Mahon and Murray 1992, Singh-Renton and Mahon 1993). This provided the CARICOM countries with an essential link to ICCAT, and enabled CFRAMP to acquire and interpret data and information on large pelagics, contribute data and other information to the ICCAT process, and also participate in joint activities with ICCAT (Mahon et al. 1994, Singh-Renton and Mahon 1996).

In a similar manner, a significant part of the assessment work related to shrimp, groundfish and spiny lobster was conducted in collaboration with FAO/WECAFC, whereas the work on *Strombus gigas* was coordinated with the CFMC, and ensured integration of the CFRAMP activities with initiatives of other states in the Wider Caribbean that share the resource in question.

Basic data and information systems have been established at the national level. Both quality and quantity of statistical and biological data on commercially exploited species have been improved. In addition, several specialized resource assessment studies and reviews have been conducted including but not limited to the following:

- i) Habitat mapping and estimation of potential fish yield in the leeward islands, on the basis of available habitat;
- Underwater surveys of queen conch densities on the fishing grounds in Belize, Jamaica and Antigua and Barbuda;
- iii) Study of fish export from a marine reserve in St. Lucia;
- iv) Economic study of the industrial conch fishery in Jamaica;
- Biomass survey of Alice Shoal (an offshore bank which is jointly managed by the Governments of Jamaica and Columbia;
- vi) Study of trading boat activities in the Grenadines Islands;
- vii) The role of drifting objects in pelagic fisheries in the Southeastern Caribbean:
- viii) Study of reproductive seasonality of lobsters in St. Lucia;
- ix) Analysis and interpretation of catch and effort data for offshore pelagic fisheries in and adjacent to the EEZ of several CARICOM States, based on over 30 years of data obtained from the ICCAT database in Spain;
- x) Pilot project to monitor larval settlement of spiny lobsters in the region;
- xi) In collaboration with FAO and the countries along the northeastern coast of South America, conducted assessment of several species of shrimp and groundfish

National Fisheries Management Planning

The expected outputs strengthened fisheries management plans in place for each country as well as procedures and protocols are established for stakeholder input the fisheries management decision making. This subproject was initiated with a mission to the countries in 1991(Faulkner et al. 1992), followed by a Subproject specification workshop in Jamaica in December 1992 (Haughton 1992). CFRAMP provided technical assistance to the countries in preparing plans for National Fisheries Advisory Committees (FAC) and National Fisheries Management Plans (FMP) for their major fisheries. The fisheries management plans define the national goals and objectives for each fishery, identifying the status and problems for resolution, the best means of achieving the objectives, and procedures for monitoring and adjusting the fisheries management measures implemented. By the end of 1997 all the participating countries had FMPs. These were based on the available information regarding the status of the fisheries and need to be reviewed and updated periodically as more and better information regarding the fisheries is generated from the resource assessment and information systems subprojects.

Underlying the management approaches is the fact that the resource is limited and can support, in a sustainable manner, only a limited number of fishers and fishing boats. These management measures are therefore designed to regulate and control fishing mortality.

Fisheries Advisory/Decision Making Mechanisms are legally required in most CFRAMP member countries including Belize, Barbados, and all OECS States with the exception of Montserrat. In some countries the Fisheries legislation set out the terms of reference, mandate, authority, structure, and composition of the FAC, but is generally silent on the mode of operation of the FAC. Plans for FACs were prepared for each country.

CFRAMP organized a series of national consultations on the fisheries sector to:

- i) improve awareness of the status, plans and potential of the fisheries sector in the country;
- ii) clarify the role of CFRAMP, and national fisheries administrations; and
- iii) generate greater clarity, commitment and coordination among the organizations and groups working in fisheries in the country to enhance achievement of the developmental and conservation objectives.

These consultations brought together stakeholders from different background to share their views on fisheries management and are believed to have contributed to the creation of a more positive environment for fisheries management across the region (CFRAMP 1997, 1998, 2001).

Training and Human Resource Development

Human resource development is one of the cornerstones of the CARICOM countries' long-term strategy for sustainable development. At this time the region does not have the critical mass of fisheries scientists, managers, and technicians that is needed for sustainable fisheries development.

The training project started with a needs assessment survey in 1992 (O'Rielly and Clarke 1993). This was followed by a regional workshop of Chief Fisheries Officers during which regional and national training plans were elaborated. Between 1992 and 2001, twenty one (21) long-term scholarships were awarded to fisheries personnel from the region to undertake studies leading to Ph.D. M.Sc., B.Sc degrees and diplomas in fisheries related disciplines including fisheries and marine resources development and management, resource assessment, statistics, economics, computer sciences and aquaculture. In addition training material were prepared and more than 30 short regional and sub-regional training courses were convened, targeting different categories of fisheries department staff and fishers from the participating countries, covering subjects such as data collection, fisheries statistics, fish stock assessment, fisheries management, extension methodology, communication techniques, fishing boat inspection and registration, basic computing and general management for fisheries personnel. Most persons who have received CFRAMP scholarship support have returned to their countries and have taken up leadership positions in their national fisheries administrations. Scholarship recipients use their expertise not only in their country of origin but share their skills with other CARICOM countries in need through technical cooperation network facilitated by CRFAMP. Of the 21 long-term scholarship recipients only three persons have either moved away from fisheries or have not returned after completing their training (CFRAMP 1996, 1997, 1998, 2001).

Establishment of the CRFM

The creation of a Regional Fisheries Management/Advisory Mechanism (RFM) was identified as one of the three purposes of CFRAMP. The CRFAMP MOU defines the rationale for a regional fisheries body in the following terms:

"The Regional Mechanism Sub-Project shall address the need for sustainable fishery management at the regional level. The management of shared resources, the sharing of experience and expertise, and interaction with non-Community neighbours shall all be important considerations for most Community Member States, which will be addressed in this Sub-Project....This Sub-Project shall assist the region in specifying, and establishing an appropriate infrastructural mechanism for the provision of these services and assist on-going regional management." (CFRAMP, 1991)

The initiative to define and establish the RFM commenced in 1996 with the preparation of a concept paper (Mahon et al. 1996). This was followed by several others studies and numerous regional workshops and working group meetings to develop and agree on the detailed arrangements for the mechanism, including preparation of the legal agreement, contribution formula, and strategic plan (Rainford and Mitchell 1998, CFRAMP 2000, 2001)

The Legal Agreement for the Caribbean Regional Fisheries Mechanism (CRFM) was signed by the CARICOM Heads of Government in February 2002 and the body was officially inaugurated in March 2003 replacing the CARICOM Fisheries Unit, which was established to deliver the CFRAMP project (CRFM, 2002). According to Article 4 of the Agreement establishing the CRFM, the objectives of the mechanism are:

- i) The efficient management and sustainable development of marine and other aquatic resources within the jurisdictions of Member States;
- ii) 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;
- iii) 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.

The CRFM is now fully operational and has taken over the projects and responsibilities previously held by the CARICOM Fisheries Unit.

Community Involvement and Education

The Community Involvement and Education sub-project emerged from the recognition that, for the sustainable management of the fisheries resources of the region to succeed, the active support and involvement of the resource users would be critical. This would entail the mobilization of, and provision of, technical support

for the organization of fishers and other stakeholders; the strengthening of their organizations, and the building of their capacities to effectively participate in national resource management decision making and in community-based co-management regimes. The Subproject began with a baseline survey of fishing communities in participating countries, which was followed by a six-week strategy formulation mission and preparation of a strategic plan (Espeut 1994, Brown 1995).

Initial efforts in this sub-project were directed at upgrading the national fisheries extension capability through:

- i) Staff training,
- ii) Provision of field equipment, and logistical support for public awareness and education campaign,
- iii) Supporting and developing approaches to co-management through pilot projects,
- Stimulating community awareness in fisheries issues by informing fishers and their communities of the benefits of involvement and of the pros and cons of fisheries management, and
- v) Training of fishers and the leaders of fishers organizations in the region. The focus of activities then shifted towards working more directly with fishers, to strengthen and empower their organizations, improve knowledge of conservation and fisheries management among the resource users and strengthening their capacity to participate in co-management arrangements with governments. The subproject also conducted public awareness and education programs to build support for fisheries management at the community level (CFRAMP 1996, 1997, 1998, 2001).

CONCLUSION

CFRAMP was the first major fisheries project of its type, focused as it was on sustainable development and management of the region's fisheries. A mid-term review had this to say,

"CFRAMP stands as an outstanding example of a project not only carefully thought through, but planned with the full involvement of all the participating partners" (Gardner et al. 1996)

While it is it still early to determine the full impact of the project, it is clear that major strides have been made by the countries as a result of it. The capability of national fisheries departments and staff have improved substantially; data and information regarding the abundance, distribution and status of commercially important fish stocks have also improved significantly; FMPs and FACs 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 countries and other organizations and third countries. 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."

In concluding, through the generous contribution of the Government of Canada, CRFAMP brought us together to a new level of cooperation and networking, allowed us to better understand the fisheries situation in the region, and highlighted how much more we need to do to ensure sustainable utilization and conservation of these important resources. CFRAMP has laid a solid foundation for sustainable fisheries in the Caribbean region.

LITERATURE CITED

- Anon. (1999). Report of the Queen Conch Stock Assessment and Management Workshop. Belize City, Belize. 15-22 March 1999. Caribbean Fishery Management Council and CARICOM Fisheries Resource Assessment and Management Program. http://www.strombusgigas.com/belizeConch_buff WGreportFinal.pdf
- Brown, D. 1995. Report of the Strategy Planning Mission on Community Involvement and Education Subproject. CFU, Belize City, Belize.
- Caddy. J. 2001. Review of the CFRAMP Project. CARICOM Fisheries Unit, Belize City, Belize. 72 pp.
- CARICOM. 1982. Report of the Second Meeting of CARICOM Technical Fisheries Officers, Kingston, Jamaica. 1982. CARICOM Secretariat, Georgetown, Guyana.
- CFRAMP. 1991. Memorandum of Understanding between the Caribbean Community and the International Centre for Ocean development. CFRAMP, Belize City, Belize. 67 pp.
- CFRAMP. 1993. Report of the Subproject Initiation Mission Report for the Large Pelagic, Reef and Deep Slope Fishes Assessment Subproject. CARICOM Fishery Research Document Number 9.
- CFRAMP. 1994. Report of the Subproject Specification Workshop for Large Pelagic, Reef and Deep Slope Fishes Assessment. CARICOM Fishery Research Document Number 14. 160 pp.
- CFRAMP. 1995. CARICOM Fisheries Resource Assessment and Management Program (CFRAMP): Final Management Plan. 1995. CARICOM Fisheries Unit, Belize City, Belize
- CFRAMP. 1996. Annual Financial and Progress Report. CIDA Project Number 255/12186. Apr.1995-March 1996. Belize City, Belize. 31 pp
- CFRAMP. 1997. Annual Financial and Progress Report. CIDA Project Number 255/12186. Number 27. Apr.1996-March 1997. Belize City, Belize. 74 pp
- CFRAMP. 1997a. Lobster and Conch Subproject Specification and Training Workshop Proceedings, 9-12 October, 1996. Kingston, Jamaica. CARICOM Fishery Research Document Number 19, 290 pp.
- CFRAMP, 1998. Annual Financial and Progress Report. CIDA Project Number

- 255/12186. Number 31. Apr.1997-March 1998. Belize City, Belize. 69 pp.
- CFRAMP. 2000. Proposal for the Caribbean Regional Fisheries Mechanism. Report of the Working Group on the CRFM, May 2000. CARICOM Fisheries Unit, Belize City, Belize. 58 pp.
- CFRAMP, 2001. Annual Financial and Progress Report. CIDA Project Number 255/12186. Number 38. Jan.-Dec. 2000. Belize City, Belize. 64 pp.
- CFRAMP. 2001a. Report of the 2000 Caribbean Pelagic and Reef fishes Assessment and Management Workshop. CARICOM Fishery Report Number 9, 139 pp.
- CRFM. 2002. Agreement Establishing the Caribbean Regional Fisheries Mechanism (CRFM). February 2002. CARICOM Fisheries Unit, Belize City, Belize. 31 pp.
- Espeut, P. 1994. A Socio-Economic Baseline Survey of 30 Fishing Communities in Twelve CARICOM Countries. CFRAMP, Belize City, Belize. 303 pp.
- FAO. 1999. National reports presented and stock assessment reports prepared at the CFRAMP/FAO/DANIDA stock assessment workshop on the shrimp and groundfish fisheries on the Guiana-Brazil Shelf. Port-of-Spain, Trinidad and Tobago, 7-18, April 1997. FAO Fisheries Report. Number 600. Rome, Italy. 1999. 200p.
- FAO. 2001. Report on the FAO/DANIDA/CFRAMP/WECAFC Regional Workshop on the Assessment of the Caribbean Spiny Lobster (*Panulirus argus*), Belize City, Belize, 21 April 2 May 1997 and Merida, Mexico, 1-12 June 1998. FAO Fisheries Report Number 619.
- Fanning, P. 1992. Subproject Initiation Mission Report for Fisheries Data and Information Systems, Licensing and Registration System (WBS 1.1.2 and 1.1.4). CARICOM Fishery Research Document Number 3.
- Falkner, N. W., R. Mahon, and M. Haughton. 1992. Report of the Subproject initiation mission for the Fishery Management Plans Subproject. *CARICOM Fishery Research Document Number 4*. 21 pp.
- Gardner, M., H. Powles and M. Sturm. 1996. A review of the CARICOM Fisheries Resource Assessment and Management Program. 1996. 37 pp.
- Haughton, M.1992. Report of the Subproject Specification Workshop for National Fishery Management Plans, held in Kingston, Jamaica, December 14-17, 1992. CARICOM Fishery Research Document Number 15.
- Luckhurst, B. and S. Marshalleck. 1995. Subproject Initiation Mission Report and background Review for Spiny Lobster and Conch. CARICOM Fishery Research Document Number 16.
- Mahon, R. and P. Murray. 1992. Mission to explore the potential for CFRAMP participation in the activities of the International Commission for the Conservation of Atlantic Tunas (ICCAT). CARICOM Fishery Research Document Number 2. 13 pp.
- Mahon, R., J. Rennie, R. Ryan, and S. Singh-Renton. 1994. Billfish catch and effort data from Barbados, Grenada, St. Lucia, and St. Vincent and the Grenadines. ICCAT Coll. Vol. Sci. Pap. 41:431-441.
- Mahon, R., B. Scotland and M. Scipio. 1996. A Concept Paper for a Regional

- Fisheries Management Advisory mechanism. CFRAMP, Belize City, Belize. 87 pp.
- Manwaring, G. and Fanning, P. 1993. Report of the Subproject Specification Workshop for Data and Information and Licensing and Registration Systems. CARICOM Fishery Research Document Number 10.
- O'Rielly, A. and K. Clarke. 1993. Training Need Analysis Final Report. CFRAMP. Belize City, Belize. 116 pp.
- Riise, .C.J, [1996] CFRAMP/FAO/Danida Fish Stock Assessment Training Workshop, Trinidad and Tobago, Jan 15th Feb 9th, 1996. Denmark funds in trust F1: GCP/INT/575/DEN. REPT No:25
- Rainford, R. and C. Mitchell. 1998. A Regional Fisheries Mechanism For CARICOM, CARICOM Fisheries Resource assessment and Management Program (CFRAMP). Belize City, Belize.
- S&G RAU. 1995. Background Review and Subproject Initiation Mission Report for Shrimp and Groundfish Assessments (WBS 420). 64 pp.
- S&G RAU. 1996. Report of the Joint Meeting of the CFRAMP Shrimp and Groundfish Subproject Specification Workshop and Fourth WECAFC Ad Hoc Shrimp and Groundfish Working Group of the Guiana - Brazil Shelf. 45 pp.
- S&G RAU. 1997. National Reports and Selected Papers Presented at the Joint Meeting of the CFRAMP Shrimp and Groundfish Subproject Specification Workshop and Fourth WECAFC Ad Hoc Shrimp and Groundfish Working Group of the Guianas Brazil Shelf, Port of Spain, Trinidad & Tobago, 8 12 January 1996. CARICOM Fishery Research Document Number 22. 281 pp
- Singh-Renton, S. and R. Mahon. 1996. Catch, effort and CPUE trends for offshore pelagic fisheries in and adjacent to the exclusive economic zones (EEZS) of several CARICOM States. CARICOM Fishery Report Number 1. 72 pp.