



CARICOM FISHERIES UNIT BELIZE

Strategic Review for Upgrading the Organizational and Institutional Arrangements and Capabilities of the Fisheries Department in Guyana

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Funded by the Commission of the European Union
Under Lomé IV - Project No. 7: ACP: RPR: 385

CARICOM Fisheries Unit
Belize City, Belize
July 26th, 2001

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EXECUTIVE SUMMARY

The Fisheries Sector of the Republic of Guyana makes a significant contribution to the socio-economic development of the country in terms of Investment, employment, export trade, the earning of foreign exchange and the Gross Domestic Product.

However, the industry appears to be under some threat as a result of over fishing, inadequate scientific information and data on the resources, absence of appropriate legislation and regulations, illegal and unregulated fishing, inadequate monitoring and surveillance of the fisheries. In addition, there appears to be an expressed need for more interaction among the stakeholders and a Fisheries Department which may lack adequate organization and structure, human, financial, physical and other resources to manage the industry towards sustainability in accordance with the Code of Conduct for Responsible Fisheries.

Guyana has sought over the past years to achieve rational development of its fisheries through collaboration and cooperation with international and donor agencies, which have provided technical and financial assistance advice and support. In addition, the country has participated in regional fisheries organization and initiatives in its quest to achieve its fisheries management objectives through the conduct of research, resource assessment and the preparation of Draft Fisheries Management Plans.

The general health of the fishing industry as indicated by the status of the fisheries resources, the type and level of collaboration and cooperation among stakeholders and the role of Governmental and non Governmental agencies pointed to the need for an administrative structure and machinery with a national perspective to guide the Fisheries Sector towards sustainability.

Consequent upon this realization, a Team of Consultants was contracted by the *CARICOM Fisheries Unit (CFU)* and financed by the *Integrated Caribbean Regional Agriculture and Fisheries Programme (ICRAFDP)* to undertake a Strategic Review and upgrading of the organization, structure and capability of the Fisheries Department of the Ministry of Fisheries, Crops and Livestock to allow Guyana to discharge its National, Regional and International responsibilities regarding sustainable fisheries development.

ICRADP, which is funded by the European Union (E.U.) and implemented by the CFU comprises a Fisheries Component which aims at strengthening fisheries planning and management capacity of National Fisheries Departments in CARICOM countries and to enhance the effective participation and support of fishers' communities in the planning and management process of the fishing industries for the sustainable use of the coastal and marine resources.

The consultants undertook a field visit to Guyana and consulted with officials of the Ministry of Fisheries, Crops and Livestock, the Fisheries Department and other Governmental and non Governmental agencies and fishers and stakeholders in the conduct of the exercise.

The recommendations of the Consultants are summarized below and focus among other things on an action plan to build and strengthen the capacity of the Fisheries Department of Guyana towards the establishment of an organization, with an adequate institutional capability to effectively and efficiently move the Fisheries Sector towards sustainability. Recommendations also include the establishment of linkages among the various interest groups and stakeholders to assist and support the Fisheries Department in effecting its mandate.

SUMMARY OF RECOMMENDATIONS

INTERNATIONAL ISSUES

(i) Code of Conduct for Responsible Fisheries

The Fisheries Department, taking a leading role, should develop an appropriate programme to promote awareness, and disseminate information on the importance and relevance of the Code of Conduct for Responsible Fisheries to the sustained Management and Utilization of the fisheries resources of Guyana. This may be achieved through seminars, workshops and meetings with the relevant interest groups and stakeholders.

The necessary resources (human, financial and physical) and the authority to promote and implement this programme should be provided to the Department. Consideration should also be given to the establishment of a Task Force, led by the Fisheries Department, and including key agencies and stakeholders to plan, implement and manage this activity.

(ii) The United Nations Agreement on the Conservation and Management of Straddling Fish Stocks and Migratory Fish Stocks

The Fisheries Department should publicize the requirements and needs of this Agreement to stakeholders and evaluate its relevance to the fisheries of Guyana towards putting into place the appropriate measures to support its implementation.

It is further recommended that the Fisheries Department be provided with the appropriate resources to facilitate its implementation.

(iii) Agreement to Promote Compliance with International Conservation Measures by Fishing Vessels on the High Seas

This Agreement should be promoted toward seeking to implement the provisions which would contribute to the overarching requirements of the Code of Conduct for Responsible Fisheries. It is further recommended that the fisheries be the lead agency and that there be close collaboration and co-operation with the Office of the Harbour Master (Registry of Shipping), the Guyana Coast Guard, the Attorney General's Office and Stakeholders.

(iv) International Commission for the Conservation of Atlantic Tunas

Guyana should seek and support regional representation through CARICOM – CFU Caribbean Regional Fisheries Mechanism. In relation to the information and data requirements of ICCAT, the Fisheries Department should immediately identify these and put the necessary machinery in place to do so. Consideration should be given to seeking the assistance from CARICOM - CFU and /or ICCAT on the information and data requirements. The necessary resources should be allocated to the Fisheries Department to undertake this exercise.

(v) Convention on Biological Diversity

The Government of Guyana should seek to ensure that the relevant provisions of this convention are given due consideration, as the sustained development of the marine and fresh water fisheries resources proceeds.

REGIONAL ISSUES

(i) The Western Central Atlantic Fisheries Commission

The Government of Guyana should maintain membership of WECAFC and continue to participate in its fisheries activities in the sub region in such areas as research, meetings, seminars and workshops.

(ii) The Caribbean Regional Fisheries Mechanism

The Government of Guyana should support, participate and provide the necessary support at the national and regional level to facilitate the proper functioning and operation of the CRFM.

(iii) Fishing Agreements

Guyana should seek to conclude Fishing Agreements and Cooperation in the Fisheries Sector with the neighbouring states of Brazil, French Guiana, Suriname,

Trinidad and Tobago and Venezuela.

The Fisheries Department should be provided with the necessary resources and support systems in terms of in-house personnel to collect the relevant information and data to inform the negotiating process, personnel trained in negotiating skills and the establishment of formal guidelines for the collaboration with relevant agencies comprising the national negotiating team.

THE NATIONAL ENVIRONMENT

(i) Fisheries Related Agencies

Among Fisheries Related Agencies, there should be closer consultation, continued and improved collaboration and the sharing of resources as a means of strengthening the system. In addition, where necessary, there should be established Task Forces, Committees and Work Groups to facilitate this process.

(ii) The Fisheries Advisory Committee

All efforts should be made to strengthen the role and function and operation of the Fisheries Advisory Committee as early as possible, with the proviso of the need for public consultation and appropriate legislation. In addition, an operational Fisheries Management Plan should be the focus and continued consideration of the FAC.

(iii) Government and Non-government Organizations

The Government of Guyana should continue to support these projects/organizations and maximize the benefits which could be derived therefrom.

(iv) International Centre for Rain Forest Conservation and Development

Efforts should be made to move forward this idea of collaborating with the Fisheries Department and the EPA to develop a database on Inland Fisheries and implementing fisheries management plans and for the Fisheries Department to dedicate personnel to work and function in this area.

(v) Legislation

The Government should proceed through the Legislature to enact and promulgate the relevant legislation and regulations.

(vi) Draft Fisheries Management Plan

The Fisheries Department, as a matter of urgency, should make all information

available to and consult with all stakeholders towards obtaining their inputs to the Fisheries Management Plan. In addition, the Fisheries Management Plan should be utilized as one of the bases for capacity building and institutional strengthening of the Fisheries Department.

(vii) Status of the Fisheries Resources of Guyana

(a) Stock Assessment and Management Issues - General

- The Government of Guyana, the Ministry of Fisheries, Crops and Livestock and the Fisheries Department, should take cognizance of the current status of the fishing industry and the fisheries resources toward effecting the recommendations of the WECAFC ad hoc Working Group Meeting of Fisheries Managers and Ministers, which was held in Trinidad & Tobago during the period 27-29 March, 2001 as they may relate to the Guyana situation.
- The directions of the Draft Fisheries Plans for Guyana should be considered in tandem. More particularly, the authorities should seek with some urgency, to establish and institute with the collaboration of stakeholders and the relevant government and non Government agencies, measures such as closed seasons and other limitations and restriction of fishing effort supported by appropriate legislation and enforcement procedures.
- In terms of data collection, collation and analysis and stock assessment, Guyana, through the Fisheries Department, should continue to participate in the ad hoc Working Group, but it must be provided with the appropriately trained and qualified staff to ensure effective participation.

(b) Stock Assessment and Management Issues - Specific

- Legislation and regulations be put in place to limit the number of licensed Chinese seines already operating in the industry.
- Reduce the support for new entry of Chinese seines and limit the number of seines per vessel.
- Restrict trawling to specific areas both to reduce conflict with other artisanal fishers and damage to nursery habitats and reduce juvenile mortality especially of commercial species.
- Control fishing effort through the regulation of mesh sizes and other appropriate adjustments to fishing gear.
- Implement as a matter of urgency, a detailed investigation on the nylon gill net fishery toward introducing the necessary regulations and control. As a precautionary method, the number of licenses should be limited during the

investigation phase,

- Adjust fishing effort to reduce by-catch in the penaeid shrimp and sea bob fisheries.

(viii) Fisheries Monitoring and Surveillance

- Establish a permanent standing Fisheries Surveillance and Enforcement Coordinating Committee; FSECC to oversee and support monitoring and surveillance in the Fisheries Sector as referred to in the Plan for Managing the Marine Resources of Guyana;
- Provide adequate and appropriate resources, including training of personnel, to allow the Guyana Coast Guard and the FSECC to function effectively;
- Facilitate the provision and exchange of information among all stakeholders to facilitate the effective operation of the Coast Guard and the FSECC; and
- Where possible and practicable, collaborate with neighboring states on matters such as exchange of personnel, joint patrols and etc...

(ix) Training for the Fisheries Sector

- The Government and the Ministry of Fisheries, Crops and Livestock, on the appointment of the Chief Fisheries Officer and the Principal Fisheries Officer and/or the reorganization of the Fisheries, seek to provide additional upgraded training for all levels of staff through national resources, donor agencies and other means to execute the agreed training programmes.
- A specific survey or manpower study be conducted on the training requirements and needs of the artisanal and commercial marine fisheries and aquaculture to allow for the planning and implementation of short, medium and long-term education and training programmes.
- In the immediate future, the Guyana Coast Guard which has been identified as a training agency, investigates the possibility of organizing and conducting training in its sphere of capabilities such as Maritime and Personal Safety, Seamanship, Navigation, Ship Husbandry and others to be identified.
- Other institutions such as the University of Guyana, REPAHA, the New Amsterdam Technical Institute, the National Technical Institute and others should be evaluated on their capability to organize and conduct training to the Fisheries Sector.
- Contact should be made with the Caribbean Fisheries Training and Development

Institute towards establishing an alliance in the area of Fisheries and Maritime Training. This arrangement may be brokered through the Caribbean Regional Fisheries Mechanism.

(x) Aquaculture

- The Fresh Water Aquaculture Demonstration and Training Centre should be marketed as a regional institution and to this end, CARICOM, WECAFC, CFU (and subsequent the CRFM) as regional bodies in which Guyana participates, should be encouraged to be part of this promotion.
- A Task Force with the appropriate terms of reference should be established to oversee the implementation of the establishment of the Center through its various phases.
- This Task Force may comprise the following representation:
 - ❑ *The Chief Fisheries Officer*
 - ❑ *The Officer-in-charge of the Centre*
 - ❑ *The University of Guyana*
 - ❑ *The Environmental Protection Agency*
 - ❑ *Attorney General's Office*
 - ❑ *Selected Non-governmental Organization*
- The Chief Fisheries Officer, as the Official accountable for Aquaculture, should ensure through collaboration with the Ministry of Fisheries, Crops and Livestock and the Task Force, that the necessary human, financial, physical and other resources and support facilities are provided on a timely basis as the center becomes fully operational.
- The Fisheries Department, through the Ministry of Ministry of Fisheries Crops and Livestock and/or the Task Force, should promote a public awareness and information programme to target all stakeholders and interested parties both at the national and regional levels.
- A well-trained and vibrant Aquaculture Extension Unit within the Fisheries Department should be established to service the industry.

(xi) Access of Guyana as a Third Party to Export Fish and Fishery Products to the European Union.

The initiative underway to seek entry into the European Union should be pursued and the Competent Authority, the Ministry of Health, should assume a more positive and pro-active role in the exercise.

THE FISHERIES DEPARTMENT OF THE MINISTRY OF FISHERIES, CROPS AND LIVESTOCK

(i) Management of Change Process Customer Focused Approach

Consistent with the customer-focused approach of the Guyana Public Service it is therefore recommended that an empowered guiding coalition or Work Improvement Team be established to lead the change effort within the Fisheries Department. The Permanent Secretary and Chief Fisheries Officer must be members of the team to give administrative and technical direction.

(ii) Recruitment

- The Government of Guyana and the Ministry of Fisheries, Crops and Livestock, as a matter of urgency, should recruit suitably qualified and trained personnel to fill the vacant positions of *Chief Fisheries Officer* and *Principal Fisheries Officer*. In addition, the position of *Senior Fisheries Officer* should also be filled.
- Special attention is also drawn to the filling of those vacancies for Technical and Support staff in the different Units of the Fisheries Department and more particularly, the staffing of the Technology Development Sub-Unit.

(iii) Performance Appraisal

The Performance Appraisal System should be re-introduced within the Fisheries Department and Supervisors trained in the use of the system.

(iv) Training and Development

- A training needs assessment study should be conducted within the Fisheries Department to provide the background to foster staff development as the Department seeks to build capacity and strengthen the institution through improving the qualifications and work attitude of professional, technical and support staff in the medium and long term.
- All staff should benefit from staff development initiatives such as on-the-job-training, staff exchanges and attachments to other Fisheries Departments and organizations.

(v) Succession Planning

It is of vital importance that succession planning be introduced to the

Fisheries Department to identify “heirs apparent” to substantive positions, and to minimize disruptions to the Work Programme when staff retire, resign or proceed on study leave.

(vi) Resource Allocation to the Fisheries Department

Every effort should be made by the Ministry of Fisheries, Crops and Livestock through the Ministry of Finance, to ensure that the Fisheries Department is adequately funded in order to acquire the resources necessary both for general administration and for the conduct of its variety of functions and duties as it services the Fisheries Sector and facilitates the sustainability of the Sector.

(vii) Proposed Structural Adjustment of the Fisheries Department.

In addition to the following and all the existing vacancies in the Fisheries Department, it is further recommended that it be strengthened in the following ways:

The addition of four (4) Fisheries Officers in the areas of:

- a. *Legal & Inspectorate sub-programme*
- b. *Region #2*
- c. *Region #6*
- d. *Aquaculture Extension*

The elevation of the Aquaculture Unit to the status of a sub-programme under the guidance of the Senior Fisheries Officer, who is to be appointed.

1.0 INTRODUCTION

1.1 COUNTRY PROFILE

The Republic of Guyana is located on the North Eastern Coast of South America and is bordered on the west by the Republic of Venezuela; on the south by Brazil and on the east by Suriname.

The country, which has an estimated area of 215,000 sq km (land area of 197,000 sq km and inland waters and rivers of 18,000 sq km) is bordered on the north-east by the Atlantic Ocean.

There is a coastline of approximately 432 km and continental shelf area of 48,665 sq km, included in an *Exclusive Economic Zone (EEZ)* of an estimated total area of 138,240 sq km. There is a claim of a Territorial Sea of 12 nautical miles and an EEZ extending to 200 nautical miles or the Continental margin.

The population is currently estimated at 730,000 with a total labour force of 268,000 - of which industry and commerce employ 44.5%; Agriculture/ Fisheries 33.8% and Services 21.9%. *The unemployment rate is estimated at 12%.*

Major industries are Bauxite Mining, Rice Milling, Timber, Fishing (shrimp), Textiles and Gold mining, while in agriculture, Sugar and Rice are the more important crops, with a significant development potential in the areas of Fishing and Forestry.

The Gross Domestic Product (GDP) is estimated at US\$1.5 billion, with agriculture contributing 25.5% and industrial production 11%. Exports, which amount to \$480 million, indicate that the major contributors are sugar, bauxite/alumina, rice, shrimp and molasses.

1.2 THE FISHERIES SECTOR

The Fisheries Sector of Guyana was described recently in the Fisheries Background Report (1994) and the National Development Strategy (2000). However, in order to consider the range of competence and the level of capacity building required to manage the sector and for completeness of this study, a brief review of the sector is being presented.

The declaration of a 200nm EEZ by Guyana encompassing the marine space referred to above was done in 1991. Most of the fishing is being conducted on the continental shelf for demersal resources primarily. The pelagic resources are lightly exploited at this time.

Since most of the stocks are considered to be cross boundary species, the

management initiatives to attain sustainability should be considered jointly by Suriname, French Guiana, Brazil, Venezuela and Trinidad and Tobago, neighbouring states of Guyana which, in some measure share these resources. Notwithstanding this, however, Guyana has the responsibility to manage fisheries within its EEZ and under its jurisdiction.

The Fisheries Department of the Ministry of Fisheries, Crops and Livestock has categorized the fishery as listed below:

The Marine Environment

The following categories have been identified in the Marine Environment:

(a) The Industrial Fishery is characterized by shrimp trawlers, fish processing plants, wharves and other support facilities. This fishery concentrates on the exploitation of shrimp - fin fish caught in this operation is classified as by-catch. At present, there are one hundred and twenty-seven (127) trawlers (about 21m in overall length) operating in the fishery – of these fifty-one (51) are foreign-owned. These trawlers are licensed to catch prawns (*Peneaus brasiliensis*, *P. notialis*, *P. schmitti* and *P subtilis*) or seabob (*Xipholpenacus kroyeri*). The prawns resource has been yielding reduced landings, while seabob has been producing increased landings.

Some immediate effects of the increase in seabob production have been observed as follows:

- (a) Demands to increase participation i.e application for additional licences for seabob trawlers; and*
- (b) Increased investments as noted by the expansion and renovation of seabob processing plants.*

There has also been increased utilization of by-catch where fin fish species are increasingly processed and placed on both the local and export markets. In addition, shrimp processing plants have all included a fish processing component in their operations.

Major issues for the industrial fishery are:

- *The need to acquire more information on the shrimp resources.*
- *The introduction of management measures to ensure sustainability of seabob*
- *Catches and resuscitation of prawns.*
- *Restriction and control of illegal over-the-side sales at sea.*
- *Monitoring and surveillance of illegal and unregulated fishing by foreign vessels.*
- *Restriction of the dumping of bycatch at sea*

(b) A Semi-Industrial Fishery with a fleet of forty-one (41) vessels, 15-20 meters in lengths, of which twenty-one (21) are Guyanese flagged and twenty (20) are Venezuelan flagged, targets the deep slopes for grouper and red snapper.

The Guyanese vessels utilize fish traps, while the Venezuelan vessels use lines. The available data show that there is scope for expansion in this fishing, despite grave concerns about the small mesh size used on the traps.

Major issues of this fishery are:

- *The need to acquire more information on the resource.*
- *To facilitate increased authorized exploitation by licencing and agreement.*
- *The need to reduce illegal fishing by foreign vessels.*
- *The introduction of mesh size regulations for fish traps.*

(c) An Artisanal Fishery comprising 1300 vessels of varying lengths between 6-18 metres in length, mostly without decks (cabins); propelled by paddles, sails, outboard or inboard engines; utilizing various passive gear (nets and hooks) and having landing sites all along the coast. Several cottage industry activities are associated with this fishery.

Principal gear, such as Chinese seine (fyke net) targets white belly shrimp (*Nematopalameon schmitti*) and seabob shrimp. Also pin seine (beach seine), cadell lines and handlines, drift seine and circle seine (modified gill net) capture fin fish. All the larger vessels and most of the smaller vessels have iceboxes. Those vessels which operate close to the shoreline, are of the flat-bottomed dory type with little draft which affords great maneuverability over shallow, muddy and sandy bottoms.

There are in excess of ninety (90) landing sites along the coast. Fish Port Complexes developed by the Government with assistance from CIDA, and/or the EU, exist at eight of these landing sites. Four of these complexes are leased to Fishermen Co-operative Societies.

There is, at present, eight (8) Fishermen Co-operative Societies, with a membership of over 70% of boat owners in the artisanal fishery. These Co-operatives are vital contact points between the Fisheries Administration and artisanal fishermen and are located at #66 Village, #43 Village, Rosignal, Lusignan, Georgetown, Parika, Lima and Morawhana.

The major issues for the artisanal fisheries are:

- *The weakness of the co-operative organization in some areas.*

- *The use of the fishing gears, such as the Chinese seine and fine seine, which kill large numbers of immature important commercial species, thus limiting stock recruitment which would lead to reduced catches and earnings.*
- *Conflict between industrial trawlers and artisanal fishers.*
- *Conflict among artisanal fishers e.g. cadell lines vs drift seine for space on fishing grounds that result in loss of gear.*
- *Arrangements for fishermen on the Corentyne coast to fish off the coast of Suriname and in the Corentyne Rivers.*

The Inland Environment

Fisheries in the Inland Environment is identified by two major activities:

(a) Commercial, Sport and Subsistence Fishery for food fish in inland waters such as rivers, creeks, lakes, reservoirs, canals and savannah areas. This is considered to be growing industry.

The fishery in the upper reaches of the river has always been described as being subsistence in nature. However, more recent reports e.g. from IWOKRAMA and the Fisheries Department identify and describe commercial operations in the North Rupununi and other areas.

Along the coast e.g. Rosignol and the North West Area (Region 1), there are commercial operations based mainly on the species *Hoplosternum littorale* (hassar). Sport fishing occurs in the MMA/ADA conservancies and several other conservancies and creeks.

Data is sparse on all these operations and efforts should be made to collect data and create a data base on information relating to area fished, species caught for commercial use and for sport, seasonality, amount caught, number of persons involved and the socio economics of the operations.

A general view is that the interior waters are rich in fish resources, but probably cannot support heavy exploitation because of limited ecological productivity see the Fisheries Background Report 1994.

This requires further investigations in the light of these reports of commercial activities being conducted. In addition, there is the distinct possibility of water pollution and habitat degradation in many areas where inland fisheries may be practiced due to mining and forestry activities and these do require investigations.

(b) The Ornamental Fish Fishery is a small but active trade being conducted by trappers (collectors) who catch a number of rare, indigenous and unique species in the upper reaches of the rivers and sell to exporters for the aquarium trade and industry overseas.

Information and data on these resources and related activities are basically non-existent, although the Fisheries Department monitors the number and kinds of species and the number of individuals per species exported monthly.

However, the importance of this fishery to biological diversity and environmental management should not be under-estimated and does require special attention from the Fisheries Department and allied agencies.

Aquaculture

Aquaculture is practiced along the coast in brackish water and in some fresh water areas. In particular, activities are being conducted in brackish water farms along the Corentyne Coast (Region #6) and in fresh water ponds.

The brackish water farms use sluices and dams (sea defense structures) to take in seawater containing juveniles and eggs and set up extensive polyculture operations.

These farms, where extensive aquaculture is practiced, are numerous, low in productivity, but provide satisfactory economic benefits to the farmer. However, they have been receiving negative comments from sea defense authorities because of damage to very important sea defense structures.

Fresh water farms focus on the culture of the tilapia species primarily; however, exploration into the culture of hassar and the fresh water prawns has been moderately successful since very little feeding is done.

The issues for aquaculture are:

- *Facilitation of rapid transfer of technology*
- *Identification of suitable land*
- *Consolidation on proven species for economical production*
- *Creation of atmosphere for investment and loans*
- *Availability of appropriate education and awareness programmes*

1.3 THE IMPORTANCE OF FISHERIES TO THE ECONOMY OF GUYANA

The Fisheries Background Report 1994 was the first study which sought to put in focus the importance of fisheries to the national economy of Guyana.

The report identified five (5) key areas:

- a. *Fish has been a major source of animal protein to the people of Guyana as evidenced by the high per capita annual consumption of 45 kg in 1991 increasing to 59.8 kg in 1998.*
- b. *Fisheries contribute significantly to the GDP; 6.2% in 1997; 6.4% in 1998; 6.15% in 1999 and 5.18% in 2000. It is the view that the true contribution is much higher since some aspects of fisheries are captured under industries. At present there are on-going large investments in modernizing, expanding and rebuilding of several processing plants and improving and expanding the fishing fleet. Several aquaculture ventures are at present being considered.*
- c. *Export earnings from fisheries grew from US\$20,5M in 1994 to \$41.8 in 1997.*
- d. *The fisheries sector employs over 10,000 persons in processing and harvesting, while a similar force of vendors, boat builders etc. are employed in fisheries related activities.*
- e. *The sector is a net contributor to Government's revenue. The ratio of the sector's revenues to Government's expenditure on it is more than 80 to 1 (National Development Strategy, 2000).*

1.4 THE INTEGRATED CARRIBEAN REGIONAL AGRICULTURE AND FISHERIES DEVELOPMENT PROGRAMME

The Integrated Caribbean Regional Agriculture and Fisheries Programme (ICRAFDP) comprises a Financing Agreement between the Commission of the European Union and States of CARIFORUM to be implemented by the CARICOM Fisheries Unit (CFU) to achieve the following objectives:

- a) *To strengthen fisheries planning and management capacity of National Fisheries Departments in CARIFORUM countries. These Departments are responsible for formulating fisheries policies, elaborating plans and implementing programmes.*

However, the success of these ventures is dependent on availability, timeliness and adequacy of appropriate resources in addition to information on the status of the fisheries resources and the structure and performance of

the sector.

- b) To enhance the effective participation and support of fishers' communities in the planning, management and execution processes in the fishing industry towards attaining sustainable management and utilization on coastal, marine and fresh water fisheries resources. This approach recognizes that appropriate and implementable fisheries policies and programmes must involve the active participation of stakeholders and consequently should start from the "bottom" through seeking their participation at the initial stages.*

ICRAFDP was therefore conceived and designed to assist individual National Fisheries Departments since available information, data and experience have indicated certain shortcomings and deficiencies which adversely affect the performance and effectiveness of these organizations as they seek to attain sustainable management of the resources.

Among these deficiencies are:

- a) The absence of defined documented policies to inform strategic plans, work plans and associated organizational and staffing structures to allow for the efficient and effective delivery of services.*
- b) The consequential inability of current organizations and structures and terms of reference to respond to the needs, requirements and imperatives of the Code of Conduct of Responsible Fisheries.*
- c) The apparently low priority of fisheries in the general economy resulting in inadequate and inappropriate allocation of necessary resources to support the delivery of services.*
- d) The absence of appropriate legislation and regulatory mechanisms and the difficulties of implementing whatever exists.*
- e) The limited involvement and participation of key stakeholders in policy formulation and implementation of programmes.*
- f) The absence of consistently reliable and timely information and data as a result of limitations on Research, Data Collection and Analysis, Resources Assessment, Socio-economic indicators and other elements to inform the management process.*
- (g) The need to support and maintain functional linkages and collaboration at the regional level in the critically important areas of sustained fisheries management.*
- (h) The inability to attain membership and participation in discussions on fisheries matters at International fora.*

- (i) *The lack of enough public awareness and information on the ongoing status of the fisheries resources.*
- (j) *The apparently limited and informal linkages at the national level among the Government and non-Government Agencies which impact on various aspects of the fisheries.*

This current study seeks to examine the Fisheries Department and the Fisheries Sector of Guyana in light of the above stated observations and the Three Years ICRAFDP Work Programme for Guyana which seeks to build capacity and institution strengthening of the Fisheries Department and related agencies.

2.0 About this Study

Annex I outlines the Terms of Reference and other elements associated with the Strategic Review and Upgrading of the Organizational Structure of the Fisheries Department of the Ministry of Fisheries, Crops and Livestock of Guyana, bearing in mind the ICRAFDP Three Years Work Programme currently being implemented by the CFU.

In addition, it also includes the issues, considerations and concerns, which have been, noted in *Sections 1.2 and 1.3* above and the critical role of Fisheries in the general economy and the socio-economic development of Guyana in consideration of International, Regional and National issues.

The report was completed through field studies, direct interaction and interviews with stakeholders as listed in Annex II and the review of documents, which are listed in Annex III.

The analyses and recommendations on the Fisheries Department of Guyana contained herein, relate to its re-organization, capacity building and institutional strengthening to allow for response to the needs and requirements of the Fisheries Sector in terms of sustainable management and utilization. These analyses and recommendations have been considered under the following very broad headings:

- International/External Issues
- Regional Issues
- The National Environment
- The Fisheries Department

3.0 International Issues

The Republic of Guyana is a signatory to the United Nations Convention on the Law of the Sea (UNCLOS) 1982 and consequently as all other signatories, is committed to the requirements and guidelines which have been established through the Code of Conduct for Responsible Fisheries, although the Code is considered to be voluntary.

3.1 *THE CODE OF CONDUCT FOR RESPONSIBLE FISHERIES*

In relation to the code of Conduct for Responsible Fisheries it is noted that the “ ***the Code is global in scope and is directed towards members and non members of the Food and Agriculture Organization of the United Nations (FAO), fishing entities, sub-regional, regional and global organizations whether Governmental or non Governmental and all persons concerned with the conservation of fishery resources and management and development of fisheries such as fishers, those engaged in processing and marketing of fish and fishery products and other users of the aquatic environment in relation to fisheries.***”

The above quote serves to outline the expected involvement of the Republic of Guyana and the stakeholders. The objectives of the Code are noted as follows:

- a) *Establish principles, in accordance with the relevant rules of international law for responsible fishing and fisheries activities taking into account all their relevant biological, technological, economic, social, environmental and commercial aspects.*
- b) *Establish principles and criteria for the elaboration and implementation of national policies for responsible conservation of the fisheries resources and fisheries management and development.*
- c) *Serve as an instrument of reference to help states to establish and improve the legal and institutional framework required for the exercise of responsible fisheries and the formulation and implementation of appropriate measures.*
- d) *Provide guidelines which may be used where appropriate in the formulation and implementation of international agreements and other legal instruments both binding and voluntary.*
- e) *Facilitate and promote technical, financial another cooperation in conservation of fisheries resources and fisheries management and development;*
- f) *Promote the contribution of fisheries to food security and food quality, giving priority to the nutritional needs of local commodities.*

- g) Promote the protection of living aquatic resources and their environments and coastal areas.*
- h) Promote the trade of fish and fishery products in conformity with relevant international rules and avoid the use of measures that constitute hidden barriers to such trade.*
- i) Promote research on fisheries, as well as on associated and relevant environmental factors.*
- j) Provide standards of conduct for all persons involved in the fisheries sector.*

The full commitment of the Republic of Guyana through the Fisheries Department in relation to the Code of Conduct for Responsible Fisheries is detailed in its objectives. However, it would appear that, given the rather wide and all encompassing requirements and responsibilities of the various stakeholders and the current status of sustained management which have been observed, there is an absolute, if not urgent need to fully involve all Government and non Governmental agencies and stakeholders in a process of awareness, information sharing and training on the requirements of the Code in relation to the sustainability of the entire fisheries resources of the state.

It is therefore recommended, that, spearheaded by the Fisheries Department, a programme be developed for the dissemination of information to promote awareness, education and training in the importance and relevance of the Code in relation to the sustained management and utilization of the fisheries resources of Guyana. This may be achieved through seminars, workshops and meetings.

The Fisheries Department as the lead agency, should be provided with the necessary resources (Human, Financial and Physical) and the authority to promote and implement this programme.

Consideration should also be given to the establishment of a Task Force led by the Fisheries Department and including key agencies/stakeholders to plan, to implement and manage this activity which should be time bound to control the input of resources.

3.1.1 Instruments of Interest to Guyana Associated with the Code of Conduct for Responsible Fisheries

There are some specific instruments in terms of Agreements, Protocols and Guidelines which give support towards implementing and effecting the Code of Conduct for Responsible Fisheries.

These have been identified as being critical in the achievement of sustainable management and utilization of fisheries resources in the areas of shared and migratory fish stocks at the National, Regional and International levels. Among the most important are:

(a) The United Nations Agreement on the Conservation and Management of Straddling Fish Stocks and Migratory Fish Stocks.

This Agreement is commonly referred to as the ***UN Fish Stocks Agreement*** and was opened for signature in 1995. Its major objective is to ensure the long term conservation and sustainable use of straddling fish stocks and highly migratory fish stocks (through effecting of the relevant provisions of the Agreement). (*Annex IV outlines the essential articles of this Agreement*).

In relation to the commitment of Guyana to this Agreement there is need for co-operation and collaboration on a regional/sub-regional basis especially with neighbouring Maritime States, such as Brazil, French Guiana, Suriname, Trinidad and Tobago and Venezuela.

It is recommended that emphasis be placed by the Fisheries Department on publicizing the requirements and needs of the Agreement to the stakeholders and evaluate its relevance to the fisheries of Guyana towards putting in place the appropriate machinery to support its implementation.

It is further recommended that the Fisheries Department be provided with the appropriate resources to facilitate its implementation.

This recommendation should be referenced to the participation of Guyana in CFRAMP, WECAFC and the *ad hoc* Working Group on the Shrimp and Ground fish Fisheries of the Brazil- Guianas Shelf.

It is to be noted that being a non-signatory to the Agreement does not remove the obligation to comply. Annex IV outlines the essential Articles of the Agreement.

(b) Agreement to Promote Compliance with International Conservation Measures by Fishing Vessels on the High Seas.

This Agreement which was opened for signatory in 1993 and is commonly referred to as the ***FAO Compliance Agreement*** requires parties and non-parties with fishing vessels operating on the high seas to maintain a record of these vessels and continually monitor their operations. (*Annex V*).

The Government of Guyana, given the integral nature of this Agreement with the Code of Conduct for Responsible Fisheries and the UN Fish Stocks Agreement, is advised take note of its requirements.

It is therefore recommended that the Agreement be examined towards seeking to implement the provisions, which would contribute to complying with the overarching requirements of the Code of Conduct for Responsible Fisheries.

In so doing, it is further recommended that the Fisheries Department be the lead agency and that there be close collaboration and co-operation with the Office of the Harbour Master, the Guyana Coast Guard, Attorney General's Office and Stakeholders.

(c) The International Commission for the Conservation of Atlantic Tunas (ICCAT)

This International Commission for the Conservation of Atlantic Tunas (ICCAT), which was established in 1969, is an inter-Governmental organization responsible for the conservation of tuna and tuna-like fish stocks in the Atlantic Ocean.

This is accomplished through the allocation of annual quotas primarily to participating members of the body, in addition to applying limitation on the size of species to be landed, areas of operation of fishing vessels and fishing seasons. The body has a current membership of about twenty-nine (29) countries, mostly developed nations, with Barbados and Trinidad and Tobago being the only members from the Caribbean Community.

The current operating rules of ICCAT seem to make it extremely difficult especially for developing nations to expand their fishery through targeting those species which have been placed under the jurisdiction of the body.

It seems very important that benefits can only be derived and quotas made available only if countries attain membership, attend meetings with the appropriate representation and follow quite precisely the operating regulations pertaining to the collection and submission of required information and data on stocks on a timely basis.

These obligations have been recognized as being rather prohibitively expensive and onerous to developing countries, resulting in them not being able to access and exploit these stocks. Furthermore, this body pays very close attention to compliance with the UN Fish Stocks and Compliance Agreements. It has been given powers through its membership, to apply sanctions to both members and non-members who have been found not operating in accordance with its rules and regulations.

Guyana, like many other developing countries which may like to develop their pelagic fishery, finds itself at a disadvantage since it is unable to attain membership, participate in the various annual meetings and provide the required information and data as a result of what is considered to be exorbitant costs.

However, there is need for the country to examine the situation regarding the present operations of ICCAT towards arriving at a cost effective means of gaining access to those available tuna and tuna-like stocks as it seeks to expand its fishery while recognizing the existence of ICCAT.

It is recommended that Guyana seeks and supports regional representation to ICCAT through the CARICOM and sponsored through the Caribbean Regional Fisheries Mechanism given that this body would soon replace CFRAMP.

In relation to the information and data requirements of ICCAT, the Fisheries Department should immediately identify these and put the necessary machinery in place to do so. It may also consider seeking the necessary assistance form CFRAMP and other external agencies to support its efforts where necessary. The Department must also be allocated the required resources to facilitate this activity.

(d) Convention on Biological Diversity

The Convention on Biological Diversity (1992) is an instrument, which should engage the attention of Guyana as it proceeds to seek sustainable development of its marine and fresh water fisheries resources.

As noted in the principle which established states do have the sovereign right to exploit their own resources pursuant to their own environmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction. (Annex VI).

The objectives of the Convention to be pursued in accordance with its relevant provisions are the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of utilization of genetic resources, including by appropriate access to genetic resources and by appropriate transfer of relevant technologies, taking into account all rights over those resources and to technologies, and by appropriate funding.

It is recommended that the Government of Guyana seek to ensure that the relevant provisions of this Convention are given due consideration, as the sustained development of the Marine and Fresh Water Fisheries resources proceeds.

4.0 REGIONAL ISSUES

Notwithstanding the importance of international issues in relation to the fisheries of Guyana, there are some regional and sub-regional issues and initiatives which are closer to home and which impact more directly on the sustainability of the Fisheries Sector.

It is recognized, however, that these regional issues are also guided by the International scenarios.

4.1 *THE WESTERN CENTRAL ATLANTIC FISHERY COMMISSION (WECAFC)*

The Western Central Atlantic Fishery Commission (WECAFC) was established in 1993 by a resolution of the FAO Council under Article VI-1 of the FAO Constitution as a regional body for countries which border the Western Central Atlantic Ocean.

The major objectives of the body to the participating states are to:

- *Facilitate the coordination of research;*
- *Encourage education and training;*
- *Assist Member Governments in establishing national policies; and*
- *Promote the rational management of resources of interest to neighbouring states.*

The Ninth session of WECAFC, which was held in St. Lucia in 1999 agreed, among other things, to restructure the organization to assume a more advisory role with national support from individual member states. Guyana has received some benefits as indeed as other member states, in accordance with the objectives of WECAFC throughout its existence.

The most recent is the outcome of the ad hoc Working Group on the Shrimp and Groudfish Fisheries of the Brazil-Guianas Shelf in collaboration with CFRAMP and other international organizations and donor agencies.

Given the historic positive contribution of WECAFC to the region and sub-region, it is ***recommended that Guyana maintains membership in WECAFC and continues to participate in activities in the fisheries of the sub-region such as research, meetings, seminars and workshops.***

4.2 *THE CARIBBEAN REGIONAL FISHERIES MECHANISM (CRFM)*

The Caribbean Regional Fisheries Mechanism (CRFM) is being developed as a permanent successor to CFRAMP.

Its major objective is strengthening regional cooperation in fisheries in the CARICOM region. It is being proposed as an institution with the capability to respond to the needs and requirements of its members, to develop and manage the living resources of the region in a responsible and sustainable manner.

This, it is expected, would improve the quality of life of the thousands of persons who depend upon the fishery resources for their well being and livelihood. The CRFM would also serve as a mechanism to facilitate the implementation of the Code of Conduct for Responsible Fisheries and its various Agreements and Guidelines on a regional basis, and assisting individual member states on the mechanisms to implement them, where necessary and applicable.

It is to be noted also that the establishment of the CRFM is influenced by Article IX: *Agricultural Policy of Protocol V amending the Treaty of Chaguaramas establishing the Caribbean Community*, as a means of promoting sustainable use of the fisheries and aquaculture resources of the region.

Guyana participated as a foundation member state of CFRAMP and is also participating in the process to establish the successor organization, the CRFM.

It is also supportive of the agreed priority areas which are listed below since they would impact positively on the management of the fisheries and Aquaculture resources. These areas are:

- *Assessment and management of shared stocks;*
- *Assessment and management of fisheries resources at the national level;*
- *Regional and national capacity building and institutional strengthening;*
- *Regional representation at international fora; and*
- *Regional and national socio-economic and planning.*

The CRFM, which is expected to be implemented on October 1st, 2001 possesses the framework and approach to provide and facilitate institutional support to individual States and the Region in the quest for sustainable management of the fisheries resources, while at the same time promoting regional initiatives.

It is being recommended that Guyana continues to support and participate in the CRFM and provide the necessary support at the national level to facilitate

its proper functioning and operation.

4.3 FISHING AGREEMENTS

The physical location of Guyana indicates that it shares its fisheries resources with its neighbouring States of Brazil, French Guiana, Suriname, Trinidad and Tobago and Venezuela. The value of these resources is fully recognized in terms of their contribution to the socio-economic development of each state in general and the social well being of fishers and stakeholders in particular.

It has been recognized and supported by UNCLOS, the Code of Conduct for Responsible Fisheries and experiences at the international and regional levels that Fishing Agreements (Bilateral and Multilateral) and co-operation in the Fisheries Sector may be the preferred approach of neighbouring states. Guyana, therefore is a prime example for the fostering of the preferred approach.

Fishing Agreements and Cooperation in Fisheries, in principle, may serve in the following areas:

- *Reduce illegal and unregulated fishing.*
- *Control catch rates through regulation of fishing methods, quotas, fishing zones and fishing seasons.*
- *Assist in the promotion of positive conservation and management practices.*
- *Assist in the provision of information and data on the resources to allow for analysis and elaborating of policies, strategies and plans towards the improvement and enhancement of management practices.*
- *Establish and promote co-operation and collaboration among fisheries and related technicians, monitoring and surveillance agencies and stakeholders.*
- *Promote co-operation and understanding at higher governmental level.*

It has been noted that Guyana has been pursuing this approach with neighbouring states, but in the case of Suriname and Venezuela, the process has been hampered by unresolved boundary disputes, while in the case of Trinidad and Tobago, discussions are on going.

In the particular case of Suriname, notwithstanding the perceived existing border disputes, the Surinamese Government licenses Guyanese artisanal fishermen to fish in Surinamese waters. Guyana also licenses Venezuelan fishing vessels to operate in grouper/ snapper fishery.

It is therefore recommended that Guyana seeks to conclude fishing agreements and co-operation in the fisheries sector with the neighbouring states of, Suriname, Trinidad and Tobago and Venezuela, given the benefits which may be derived from these arrangements.

In addition, the Fisheries Department should be provided with the necessary

resources and support systems in terms of in-house personnel, to collect the relevant information and data to inform the negotiating process. In-house personnel should be trained in negotiation skills and techniques and the development of formal guidelines for collaboration with the other relevant negotiating agencies of the Government.

5.0 THE NATIONAL ENVIRONMENT

In considering the Fisheries Department and the Fisheries Sector of Guyana in the context of the National Environment, note is taken of the Mission for the Fisheries which states that *“the Government of Guyana is committed to the conservation and sustainable use of the fisheries resources for the benefit of the people of Guyana”* and also the associated objective which is *“to manage, regulate and promote the sustainable development of the nation’s fisheries resources for the benefit of the participants in the sector and the national economy.”*

The Mission and the Objective relating to the Fisheries Department and the Fisheries Sector seem to be underpinned by the wider vision for the Public Service for the period 1997 to 2007 which states that *“by the year 2007 the Guyana Public Service would be a customer-driven institution, implementing strategies and fostering effective alliances with its constituencies to facilitate the government’s provision of quality service and support for the economic stability and sustained development of the country through the 21st century.”*

This Study therefore considered the following national issues that are to be taken in tandem with those international and regional issues which have been noted above.

5.1 FISHERIES RELATED AGENCIES AND INSTITUTIONS

It is considered necessary to identify and describe the roles, functions and responsibilities of those agencies and institutions which at the national level in any way impact on the Fisheries Sector either directly or indirectly and so influence the structure and operations of the Fisheries Department.

The Fisheries Department, however, in its day to day operations, does not experience what may be considered problems in collaborating and co-operating with these agencies and institutions, even though there may be incidences of overlapping jurisdictions.

However, it is recommended that there be closer consultation, continued and improved collaboration and the sharing of resources as means of strengthening the system.

5.1.2 The Fisheries Advisory Committee (FAC)

The Fisheries Advisory Committee (FAC) was established to advise the Minister responsible for Fisheries on various matters and issues relating to the Fisheries Sector.

It is under the chairmanship of the Permanent Secretary in the Ministry responsible

for Fisheries and its membership is comprised of representatives of the Fisheries Department, the Commercial and Artisanal Marine Fisheries sub-sectors, Aquaculture and the Guyana Coast Guard. There are also sub-committees within the FAC to deal with specific issues and to which other agencies may be invited to participate. Experience has shown that the implementation of decisions of the FAC has been slow.

The Study Team is convinced that an effectively functioning FAC would be a positive asset not only to the Fisheries Sector but also add to operational efficiency of the Fisheries Department.

It is recommended that all efforts be made to establish the FAC as early as possible with the recognized proviso of the need for public consultation and appropriate legislation. In addition an operational Fisheries Management Plan should be a focus and continued consideration of the FAC, in conjunction with other related issues.

5.1.3 The Environmental Protection Agency (EPA)

The *Environmental Protection Agency (EPA)* has a number of responsibilities that impact on fisheries, including marine environment, protection and management, sustainable use and conservation of marine living resources, and sustainable development of coastal areas. The Fisheries Department is represented on EPA Committees which deal with the above issues.

The EPA is also responsible for the wildlife trade, which includes the exportation of ornamental fish. There is overlapping responsibility with the Fisheries Department, since both agencies issue export licences to ornamental fish exporters and the process of data collection on export of these species is not being effectively done.

The EPA also gives permission for projects likely to have an impact on the environment. Aquaculture projects and the establishment and operations of fish processing plants require such permission.

It is recommended that the Fisheries Department maintains a close and cooperative working relationship with the EPA.

5.1.4 The Guyana Coast Guard

The *Guyana Coast Guard* is responsible for enforcing the fisheries regulations. There is a close working relationship that should be maintained between the Fisheries Department and the Guyana Coast Guard.

5.1.5 The Harbour Master's Office

The *Harbour Masters Office* which is now the Register of Ships, inspects and issues sea worthiness Certificates for the vessels, enforces safety regulations and licencing of captains.

5.1.6 The Ministry of Health

The *Ministry of Health* has units, which deal with Fisheries issues:

- a. The *Veterinary Public Health Unit* has delegated responsibility for the inspection and certification of seafood processing plants, issuance of export Health Certificate and inspection at point-of-sale for conformity to label requirements and wholesomeness.
- b. The *Food and Drug Department* administers and enforces the Food and Drug Act, 1971 and supporting regulations to ensure the safety, wholeness and nutritional value of goods.
- c. *Environmental Health Unit*. Environmental Health Officers inspect for Good Manufacturing Practice (GMP) compliance and licence seafood processing plants in the ten administrative regions of Guyana. There is also a HACCP Committee comprising thirteen representatives from the regulatory agencies and the fishery sector, that facilitates and encourages HACCP compliance in the industry.

5.1.7 The Mayor and Town Council

The *Mayor and Town Council* in its By-laws have provisions for the inspection of seafood processing plants which are located within its boundaries, the licencing of cold storage facilities with those plants, and cold storage facilities at point of sale.

5.1.8 The Guyana National Bureau of Standards (GNBS)

The *Guyana National Bureau of Standards* has mandatory responsibility to write standards for commodities, processes and services that affect the health of human, plant, animal and the environment.

5.1.9 The Ministry of Finance

The *Ministry of Finance* may grant duty free entrance for fishing equipment and materials and equipment required by the industry, while the Customs Section of the *Guyana Revenue Authority* considers the importation and exportation of seafoods and, until recently the registration of coastal vessels.

5.1.10 The University of the Guyana

The *University of Guyana* has not been doing much work in fisheries but as

expected there is scope for conceptualization, planning and executing research in collaboration with the Fisheries Department or by itself.

5.1.11 The Statistical Bureau

The *Statistical Bureau* is the repository for all national statistics relating to production and performance of all economic sectors, inclusive of fisheries. The Fisheries Department needs to work closer with the Statistical Bureau to establish more accurate data on the trade and movement of fish and fish products, their contribution to the GDP and the per capita consumption of fish.

5.1.12 The Trawler Operators and Seafood Processors (TOSPA)

The *Trawler Operators and Seafood Processors* is a new organization formed to protect the economic and financial interests of its members and the seafood industry in general. Its membership include the eight largest of the seafood processors and a number of small trawling companies.

In relation to the various agencies and institutions which interact with the Fisheries Sector and the Fisheries Department, ***it is recommended that the Fisheries Department, the Ministry of Fisheries, Crops and Livestock and the Government seek to put the necessary machinery in place, where necessary to maintain and strengthen the collaborating relationships among these fisheries related agencies and institutions.***

In addition, Task Forces, Committees and Work Groups should be established, as they become necessary, to resolve and/or elaborate fisheries issues and enhance co-operation.

6.0 GOVERNMENT AND NON-GOVERNMENTAL ORGANIZATIONS

The Government of Guyana has received technical assistance and aid over the past decades for the development and management of its fishery sector from several external governments and government organizations, such as the Governments of Japan and Canada, the Commonwealth Secretariat and the European Union. These initiatives were for infrastructure development, studies and training. FAO also provided assistance.

Although in general, aid to the fisheries sector has reduced, CIDA and the EU continue to support fisheries through ongoing regional projects and, in the case of CIDA, one proposed national project, all aimed at capacity building.

It is recommended that the Government of Guyana support these projects and maximize the benefits that could be derived from its participation.

Non-governmental agencies, such as the WWF, Conservation International and a local Turtle Association, have been interested in the conservation of marine turtles, while the International Centre for Rain Forest Conservation and Development (IWOKRAMA) has been developing a relationship with the Fisheries Department to consider and address fisheries issues within its area of operation.

IWOKRAMA hopes to establish a working relationship with the EPA and the Fisheries Department that would result in developing a data base and implementing a sustainable management regime for the fisheries (particularly arapaima) within its jurisdiction initially and for most of the hinterland area eventually.

It is recommended that efforts be made to move this idea forward and that the Fisheries Department dedicates personnel to work in this area. This would involve collaborating with the Fisheries Department and the EPA in the development of a database on the Inland Fisheries and implementing Fisheries Management Plans.

7.0 PRESENT AND PROPOSED LEGISLATION

The existing Fisheries Legislation of Guyana neither reflect nor is able to deal with the current approaches to and requirements of fisheries management and development in accordance with the Code of Conduct for Responsible Fisheries and the International, Regional and National needs.

The Fisheries Act (1957) and Fisheries Regulations (1959) provide for the registration and licensing of fishing vessels. While the Maritime Boundaries Act of 1977 set the stage for the establishment of Fishing Zones and the EEZ, there is neither enough emphasis on conservation and sustainable management of fisheries resources and control of fishing activities in the EEZ nor a regime for the licensing of foreign and local vessels.

The Government obtained the assistance of the FAO to review and revise the Fisheries Legislation and to make it more applicable to present and future practices.

This has resulted in the production of the following:

- *A Draft Fisheries Act*
- *Fisheries Regulations for the Act*
- *A Draft Aquaculture Act*

The Draft Fisheries Act and its Regulations proposed a number of new provisions including:

- *Authorizing the Minister to promote the development and management of fisheries to ensure the optimum utilization of fisheries resources.*
- *Mandating the Chief Fisheries Officer to prepare and keep under review a plan for the management and development of fisheries (Fisheries Management Plan – (FMP)) with consultations with fishermen and others affected by the FMP.*
- *Creation of a Fisheries Advisory Committee.*
- *Possibility of regional and sub-regional cooperation in fisheries matters.*
- *Procedures for licensing fish processing establishment.*
- *Procedures for dispute settlement in fisheries and for foreign and local licencing*
- *Regulation making power.*

The responsibilities of international instruments such as the UN Fish Stocks Agreement, were considered in this Draft Fisheries Act.

The Draft Aquaculture Act makes provisions for the management and the support the development of Aquaculture.

A Technical Working Group comprising representatives from all the fisheries regulatory agencies subsequently produced a Draft Fish and Fishery Product Quality Control Regulation. The production of this legislation was influenced by the demands of the European Union, but is a necessary legislation to make certain that systems are in place to ensure the production of safe and wholesome seafood

products for local use and consumption.

It is of vital importance to the sustainable development of the seafood industry that all the draft regulations are reviewed and eventually passed into law by parliament and ***it is recommended that the Government proceed through the Legislature to enact and promulgate these legislation and regulations.***

The successful implementation of the Draft Fisheries Legislation when it becomes law would dictate the need for human and institutional capacity building in the Fisheries Department and several associated and related agencies and, ***it is further recommended that the relevant authorities give serious consideration to this matter.***

8.0 DRAFT FISHERIES MANAGEMENT PLAN

A Draft Fisheries Management Plan for the Marine Fisheries of Guyana was prepared by Phillips *et al* in 1992 Guyana.

CFRAMP, though a consultancy, reviewed this Fisheries Management Plan in the document *Plan for Managing the Marine Fisheries of Guyana* which, in addition, proposed a Fisheries Management Planning Process. The Fisheries Management and Development Plan (1994) discussed the management of both marine and inland resources.

The objectives in all these documents are mainly sustainable exploitation, increased earnings to participants, increased production where possible, the need for scientific research to justify plans, involvement of stakeholders, protection of local fishermen, in particular the small scale fisherman, etc. Each management unit (either by gear or by species or species group) was considered and strategies to achieve the objectives were outlined. The process for the final approval/implementation of the FMP requires consultation with stakeholders and review by the FAC.

There has been no formal presentation of the entire FMP to stakeholders, but participants in the industry have been told and are aware of the strategies in the FMP.

The Fisheries Department has been using the FMP as a guide for the industrial fishing operations e.g. limiting the number of trawlers, while other aspects such as the closed season for trawling are being considered by the TOSPA.

The Fisheries Department needs to produce a comprehensive FMP, which it would circulate and discuss with stakeholders, and ensure that it is reviewed by the FAC before the Minister further considers it in relation to policy issues. It is important that the above is done urgently.

It is recommended that the Fisheries Department in the process of producing an acceptable Fisheries Management Plan, as a matter of urgency, make all information available to and consult with all stakeholders on the Draft towards obtaining their inputs and recommendations for the Final Plan In addition, the FMP should be utilized as one of the bases for assessing and building capacity within the Fisheries Department.

9.0 STATUS OF THE FISHERIES RESOURCES OF GUYANA

The issue of over fishing of the resources, both current and potential, emerged as a common fundamental concern of all stakeholders. The major concern, however, seems to focus on the shrimp (prawns and sea bob) which is the main stay of the industry, and the associate ground fish species.

This issue must be examined against the background of investigations and research which have been conducted by the ad hoc Working group on the Shrimp and Groundfish Fisheries of the Brazil-Guianas Shelf, of which Guyana is a permanent participating member.

The Meeting of Fisheries Managers and Ministers of the WECAFC ad hoc Working Group on the Shrimp and Ground fish Fisheries of the Brazil-Guianas Shelf which was held on Port of Spain, Trinidad and Tobago during the period 27-29th March, 2001 had the following objectives:

- *Review the results of the stock assessment and bio-economic analysis obtained by the WECAFC ad hoc Working Group over the past five years.*
- *Inform decision makers on the status of the shrimp and ground fish resources on the Brazil-Guianas Shelf.*
- *Consider management measures to address the sustainable utilization of the fishery resources in the Brazil-Guainas Shelf.*
- Identify appropriate strategy or strategies for the implementation of effective co-operation in fisheries research and management on the Brazil-Guianas Shelf.

The outcomes relating to these objectives would place Guyana in an advantageous position to be informed on issue relating to the status of its fishery resources in terms of capacity, exploitation rates and conservation and management issues and measures.

In relation to the Shrimp Fishery of Guyana the outcome of the investigations of the ad hoc Working Group indicated the following:

STOCK ASSESSMENT

- (i) Stock assessment results suggest that the observed decrease in landings is due to a steady decline of the three main species of shrimp exploited by the Guyanese fleets. (*Penaeus subtilis*, brown shrimp; *Penaeus notialis* pink shrimp; and *Penaeus brsailiensis*, pink spotted shrimp. *Penaeus schmitti*, white shrimp, was not a part of this study.

- (ii) The status of exploitation of stocks indicate that *P. Subtilis* and *P. notialis* are fully utilized at the present time while similar assessment on *P. brasiliensis* indicate very high values of fishing mortality rates, especially during the 1990s which may indicate that the species is presently being over exploited;
- (iii) The stock assessment analysis showed that the decrease in shrimp abundance is in part due to an excess of exploitation that may be affecting the stock production.

MANAGEMENT ISSUES

- (i) Most of the local penaeid shrimp vessels have been focusing on sea bob/finfish activities during the seasons when the penaeid shrimp resources are more scarce. Since there are no restrictions on the access to different shrimp stocks, trawlers operate unrestricted in shallow waters of the shelf and over ecologically sensitive habitats where shrimp species inhabit at earlier life stages.
- (ii) The decrease in abundance is more conspicuous in the case of pink spotted shrimp (*P. brasiliensis*) than the brown shrimp (*P. subtilis*).
- (iii) The fishery management goal has been to exploit the shrimp stocks at their maximum sustainable yield because shrimp exports generate important hard currency revenues for the country and the industry is an important source of employment in Guyana. At the present time, there are therefore no regulatory mechanism and measures to protect juvenile shrimp and the habitat. One hundred vessels currently exploit the penaeid shrimp fishery.

In addition to the investigations and recommendations of the ad hoc Working Group, the Draft Fisheries Management Plan for Guyana has called for a review of the fishing effort and the institution of management measures in this industry.

It is recommend that the Fisheries Department takes cognisance of the status of this industry towards effecting the recommendations of the WECAFC ad hoc Working Group Meeting of Fisheries Managers and Ministers, as they may relate specifically to the Guyana situation and also the directions set out in its Draft Fisheries Management Plans.

More particularly it should seek with some urgency to establish and institute, with the collaboration of stakeholders and relevant government and non government agencies, measures such as closed seasons, limitation and restriction of fishing effort through vessels and fishing gear, supported by appropriate legislation and enforcement procedures.

In terms of stock assessment, Guyana through the Fisheries Department, should continue to participate in the ad hoc Working Group but it must be

provided with the appropriately trained and qualified staff to ensure effective participation.

In relation to the Groundfish industry, the Draft Report of the ad hoc Working Group Meeting noted that, in Guyana, this fishery is the major target of the artisanal fishery which accounts for 90 % of the production. At the same time it engages over 1300 artisanal vessels and directly employs about 4000 fishers.

STOCK ASSESSMENT

Stock assessment results relating to the groundfish fishery indicate the following:

Trawls and Chinese seine fishers harvest bangamary (*Macrodon ancylodon*) at an age below the age of 50% maturity and this could lead to relatively large decrease in spawner biomass per recruit with only a small increase in fishing effort. The gill net fishers harvest bangamary above the age of 50% maturity.

In the trawl and chinese seine fishery, recruitment over fishing seems to be occurring.

MANAGEMENT ISSUES

Management issues arising out of the stock assessment of the resources indicate the following:

- (i) Harvesting of juvenile groundfish by Chinese seine.*
- (ii) Direct conflict between fishers operating different gear types.*
- (iii) Declining catches of commercial size in the various fisheries of bangamary.*
- (iv) Increase catches of sea bob and also juvenile bangamary in Chinese seines.*

Given the Report of the ad hoc Working Group Meeting of Fisheries Managers and Ministers and the Draft Fisheries Plan for Guyana the *following recommendations are being made for the consideration of the Fisheries Department in relation to the artisanal fishery:*

- i. Legislation, regulations and machinery be put in place to limit the number of licensed Chinese seines operating in the industry; reduce the support for new entry and limit the number of seines per vessel.***
- ii. Restrict trawling to specified areas both to reduce conflict with other artisanal fishers and damage to the nursery habitat, and reduce juvenile mortality.***

- iii. Control fishing effort through the regulation of mesh size and other appropriate gear adjustments.***
- iv. Implement, as a matter of urgency, a detailed investigation of the nylon gill net fishery toward introducing the necessary regulations and control. As a precautionary method, the number of licences issued should be limited during the investigation phase.***
- v. Adjust fishing effort to reduce by-catch in the penaeid and sea bob fishery.***

10.0 FISHERIES MONITORING AND SURVEILLANCE

The monitoring and surveillance of fishing activities within the waters under the jurisdiction of Guyana and, in particular, in designated fishery zones and restricted areas is most critical to the promotion and attainment of the sustainable management and utilization of the fisheries resources.

An efficient and effective monitoring and surveillance system would contribute in area in the following ways:

- i. Prevent and reduce illegal and unregulated fishing activities.*
- ii. Enforce the legislation, regulations and control systems within fishery zones, the territorial sea and the EEZ.*
- iii. Contribute to the reduction of over fishing and user conflict.*
- iv. Enforce the requirements of Bilateral and Multilateral Fishing Agreements.*
- v. Reduce and restrict non- fishing activities in areas under the jurisdiction of the monitoring and surveillance authorities.*

The Coast Guard Section of the Guyana Defense Force is charged with primary responsibility for coastal and marine surveillance, including fishing operations with the support of the Marine Police which operates in the harbours.

It would appear, however, that effectiveness in performing this critical task may be somewhat compromised as a result of inadequate resources. In addition, the wide expanse of the maritime zones of Guyana and the unresolved maritime boundary delimitation agreements with neighbouring states also add to the difficulties and operational problems of the Coast Guard.

The continued effectiveness of the monitoring and surveillance and performance of the Coast Guard may be enhanced through on-going collaboration and linkages, among the Marine Police, the Fisheries Department, the Office of the Harbour Master, Stakeholders and other agencies, such as the Custom and Excise Department.

In this collaboration among the agencies, the Fisheries Department should provide to the Coast Guard on a continuing basis, an update on its data base of fishers, fishing vessels, licensing arrangements, fishery zones and associated regulation and restrictions, and conservation and management measures.

The Office of the Harbour Master (Register of Ships) should collaborate with both the Coast Guard and the Fisheries Department on relevant information and data on its registration of vessels and matters relating to maritime safety for fishermen.

Stakeholders would be able to provide valuable information to support monitoring and surveillance activities since fishers are always out at sea in their daily operations and are accessible to more recent information.

In order to facilitating the provision and maintenance of efficient and effective monitoring and surveillance system for the fishing industry, *the following is recommended:*

- i. Establishment of a Fisheries Surveillance and Enforcement Coordinating Committee (FSECC) to oversee and support the monitoring and surveillance of the Fisheries Sector referred to in the Plan for Managing the Marine Resources of Guyana.***

It is further recommend that:

- ii. Adequate and appropriate resources be provided to allow the Guyana Coast Guard and the FSECC to function effectively.***
- iii. The provision and exchange of information be promoted to facilitate the operations of the Coast Guard and the FSECC.***
- iv. Appropriate training of relevant personnel be done to facilitate where possible and practicable, collaboration with neighbouring states on matters relating to fisheries monitoring and surveillance.***

11.0 TRAINING FOR THE FISHERIES SECTOR

The need for additional and continuous education and training for the Fisheries Sector emerged as a most critical requirement in contacts and interaction with stakeholders.

This need has been identified for Professionals, Paraprofessionals, Technicians and Administrators of the Fisheries Department, through to fishers and stakeholders who function both in the commercial and artisanal fisheries sub-sectors. The National Fisheries Management and Development Plan for Guyana also recognized the importance of training to facilitate the development of the Fisheries Sector.

Investigations have identified, as listed below, some of the areas of training which should be considered as priority in support of the Sector:

- *Professionals, para-professionals, technicians and administrators of the Fisheries Department*
- *Maritime and Personal safety*
- *Seamanship*
- *Navigation*
- *Fishing Technology and Fishing Methods*
- *Maintenance and Repairs of Marine Engines*
- *Fish Handling, Preservation, Quality Control and Quality Assurance;*
- *Fisheries Extension*
- *Management and Operation of Fishing Cooperatives*
- *Fishing Vessel Management and Maintenance*

It is to be recognized that education and training for the Fisheries Sector is somewhat specialized in terms of the identification of qualified instructors and training equipment.

In addition, it can be quite costly and, as such, careful planning is necessary in the initiation, establishment and implementation of training programmes and courses. It is advisable to rationalize the fisheries education and training requirements, along the existing capabilities, in terms of institutions and trained educators and instructors.

It is recommended that:

- ***The Government of Guyana, on the appointment of the Chief Fisheries Officer and the Principal Fisheries Officer and/or the re-organization of the Fisheries Department, should to identify the specific training needs for in-house staff and seek through national resources and donor agencies or other means to execute the agreed training requirements.***
- ***A specific survey or a manpower study be conducted on the training***

requirements of the commercial and artisanal fisheries sub-sectors to satisfy the short, medium and long term.

- ***In the immediate future, the Coast Guard, which has been identified as a training agency, investigates the probability of organizing and conducting training in its sphere of capabilities in areas such Maritime and Personal Safety, Seamanship and others to be identified.***
- ***Other institutions, such as the University of Guyana, REPAHA, the New Amsterdam Technical Institute, the National Technical Institute and others should be evaluated on their capability to organize and deliver training within their terms of reference to the Fisheries Sector.***
- ***Contact be made with the Caribbean Fisheries Training and Development Institute (CFTDI) of Trinidad and Tobago towards establishing an alliance in the area of Maritime and Fisheries Education and Training.***

12.0 AQUACULTURE

The Government of Guyana is currently implementing a major Fresh Water Aquaculture Project and Programme consequent upon recommendations in 1999 by the Food and Agriculture Organization of the United Nations (FAO).

This was a follow-up to the Draft Action Plan for Aquaculture Development, which was prepared with the support of CIDA in 1994. This current project - **The Fresh Water Aquaculture Demonstration Farm and Training Centre** located in Mon Repos is in progress with Phase I substantially completed.

The rationale for the establishment of this Project is grounded on the following:

- i. Aquaculture has a history of been practiced in Guyana for over sixty (60) years and although it may not have been very organized and was approached in a non-scientific manner, it did make a contribution to the well being of those who were involved. In addition, its potential has been recognized as the marine fisheries have increasingly been impacted upon by various factors.*
- ii. The availability of large expanses of land and extensive supply of inland water and rivers given the geography and topography of Guyana.*
- iii. The recognized threat of a decrease in fish supply from the marine resources as a result of possible over fishing of shrimp and the increasingly uncontrolled fishing effort on the fin fish fishery which may lead to a further decline in sea foods supply.*
- iv. The critical importance of fish and seafoods to economy of Guyana, both at the domestic and foreign levels, and the need to sustain these supplies.*

The FAO Report in considering the Action Plan for Aquaculture development in Guyana identified what it refers to as expectations and constraints in the implementation and realization of the project. Among the expectations are:

- i. Reduce the high level of dependence on marine catches which has probably reached maximum sustainable yield by providing an alternative source of fish supply through aquaculture.*
- ii. Contribute to greater diversity in terms of diet and export products by encouraging the practice of aquaculture involving various species.*
- iii. Encourage optimum use of resources in an environmentally sound manner.*
- iv. Equip the country with the necessary human resources to continue the process that would be initiated to achieve the national objectives.*

Some of the identified constraints include:

- i. Lack of an aquaculture facility to stimulate and promote aquaculture*
- ii. Absence of skilled man power to support fish farming*
- iii. Inadequate extension service*
- iv. Lack of fish seed*

Overcoming the constraints identified above is critical to the realization of project expectations and eventual success. The necessary capacity building and institutional strengthening should receive primary focus.

The implementation of the Project is timely not only for Guyana, but also for all those other regional States which may be experiencing a similar decline in marine capture fisheries and do possess some potential for aquaculture as a means of boosting supplies.

The Centre can, therefore, with the proper promotion become a regional institution for education and training in fish farming and, appropriate research, and a Regional, if not an International Center for the farming of tropical fresh water species in this sub-region.

Guyana as a participant in all the fisheries initiatives in the region, may seek to liaise with regional bodies such as CARICOM, CFU, CRFM and WECAFC in this approach to regionalizing the Centre.

It is recommended that the Ministry of Fisheries, Crops and Livestock Department consider this approach a priority as the Project is developed through its phases.

It is expected that the successful implementation of such a project would of necessity require the collaboration and co-operation of various different agencies at the national level, notwithstanding the valuable technical and scientific inputs of consultants who would be providing services on an on-going basis.

The following are further recommended:

- i. The establishment of a Task Force with the appropriate terms of reference to oversee the establishment of the Centre through its development and implementation phases and to implement the policies of the Government. This Task Force may comprise the following:***
 - The Chief Fisheries Officer***
 - The Officer responsible for Aquaculture in the Fisheries Department***

- ***The University of Guyana***
 - ***Environmental Management Agency***
 - ***Attorney General's Office***
 - ***Stakeholder***
- ii. The Chief Fisheries Officer, as the person accountable for Aquaculture, should ensure through collaboration with the Ministry of Fisheries, Crops and Livestock and the Task Force that the necessary human, physical, financial and other resources and support facilities are provided on a timely basis to coincide with the development and implementation of the Project.***
- iii. The Fisheries Department through the Ministry of Fisheries, Crops and Livestock and/or the Task Force promotes and implements a public information and awareness programme to target all stakeholders and interested parties both at the national and regional levels.***
- iv. The establishment of a well-trained and vibrant Aquaculture Extension Unit to service the industry.***

13.0 ACCESS OF GUYANA AS A THIRD PARTY TO EXPORT FISH AND FISHERY PRODUCTS TO THE EUROPEAN UNION

The Government of Guyana is actively pursuing initiatives to gain access as a Third Party to export Fish and Fishery Products to the European Union.

In so doing, certain positive activities that have been undertaken to date include rationalization of the roles of the various national agencies which are involved in fish quality and assurance for local consumption and export; the preparation of the relevant regulations on fish and fishery products to facilitate this entry, for submission to the European Union for assessment and evaluation; and the direct involvement of the private sector providing financial support for a consultant to facilitate the process.

In addition, reference is to be made to the *Totken Consultancy* which has volunteered to assist the Ministry of Fisheries, Crops and Livestock in the identification of tasks which must be undertaken in order to meet the requirements for Guyana's export of fish and fishery products to the EU. The duration of the Project emanating from this consultancy extends from November, 2000 to November, 2001 and is being pursued by the Projects Officer assigned to execute the Work Programme. Activities are on-going in accordance with the schedule.

A significant achievement to date is the designation of the Veterinary Public Health Division of the Ministry of Health as the Competent Authority for the institution and implementation of the Fish and Fishery Product Regulations. This would mean that the Competent Authority/Ministry of Health is the agency to communicate with the European Union, through the Ministry of Foreign Affairs, in the submission of information relating to admission to that market.

It is recommended that the initiatives under way to seek entry into the European Market be pursued.

14.0 THE FISHERIES DEPARTMENT

14.1 INTRODUCTION

The Organogram for the department is set out in Annex VII. The department is organized into four (4) sub-programmes, namely:

- *Programme Administration*
- *Legal and Inspectorate*
- *Research and Development*
- *Extension*

The *Research and Development* sub-programme is further divided into four major areas (Units) which are:

- *Statistics*
- *Technology Development*
- *Resource Assessment*
- *Aquaculture*

while the *Extension* sub-programme has extension units in Region 2 and Region 6.

Staff, based on approved positions, have been allocated to functions in each of the sub-programmes and their respective units. However, because of the number of vacancies, there has been doubling-up of duties; the result being that the actual structure and its functions differ from the approved organizational structure and job/position descriptions.

14.2 PROGRAMME ADMINISTRATION

The **Programme Administration** has the **responsibility to provide leadership and the relevant services necessary for the development and maintenance of fisheries activities**. The two most senior officers in the Department and all the clerical and support staff are in this sub-programme. This sub-programme should provide leadership for technical programmes and develop plans, organise for training and very importantly be in constant and direct contact with the Permanent Secretary and Minister on policy and other issues.

However, there is neither a Chief Fisheries Officer nor a Principal Fisheries Officer in

place, and not enough clerical staff. The result has been a lack of technical leadership, abdication of technical responsibilities to the “policy directorate”, or a gap in policy implementation and poor support services to the other sub-programmes.

14.3 THE LEGAL AND INSPECTORATE SUB-PROGRAMME

The Legal and Inspectorate sub-programme is responsible to ensure the observance of all legal and administrative requirements by all entities in the Fishing sector and to recommend changes to existing regulations, which govern the industry. As such this sub-programme oversees all issues relating to licensing and enforcement and relates closely with other enforcement agencies for e.g. the Guyana Coast Guard, the departments of the Ministry of Health, etc. This unit maintains a register of fishing vessels, records of fish and fish products exported, and landings of bycatch. This unit also investigates disputes on the fishing grounds and monitors retail fish prices.

The approved staff positions for this sub-programme are one FAI, FFA, four FI and a Ted Inspector. A Fisheries Officer (not yet formally appointed) heads the unit and a Data Input Clerk assists in maintaining records.

The staff is adequate if the vacancies for Fisheries Field Assistant (one) and Fisheries Inspectors (three) are filled.

14.4 RESEARCH AND DEVELOPMENT

Research and Development is comprised of four (4) units. They are:

- *The Statistics Unit*
- *The Technology Development Unit*
- *Resource Assessment Unit*
- *Aquaculture Unit*

The first three Units are to be supervised by a Senior Fisheries Officer, while Aquaculture is to have its own Senior Fisheries Officer. Both positions are vacant.

14.4.1 STATISTICAL UNIT

The Statistics Unit has the responsibility to collect and analyze data and to conduct surveys to provide scientific and social information for policy determination, planning and resource assessment.

The approved staff of this Unit are two (2) Fisheries Officers (1 vacant), one (1) Fisheries Field Assistant (vacant), Data Input Clerk (contracted) and two Data Collectors. The Department operates on the principle that every member of staff, irrespective of his/her specific responsibility must assist in field data collection.

However, issues such as lack of drivers, problems with vehicle, non or late payment of subsistence, late arrival at field location, etc. hamper the smooth functioning of the system. The staff requires training to better understand the need for the collection of basic information and accurate information and to conduct analyses of information.

Through the CFRAMP, this Unit's programme was well developed under a Fisheries Officer who has since resigned. It is of vital importance that these activities be sustained. Storage of data is an area that requires examination. Reports of missing data acts have been disturbing.

14.4.2 The Technology Development Unit

Technology Development Unit has the responsibility to identify developing or to introduce new and appropriate technologies for harvesting and post harvesting activities in the fishing industry.

This Unit has no staff since all the positions are now vacant. At present, the industry is reacting more or less independently without support of the Unit to new technology because of market pressures (HACCP, EU trading conditions etc.) and conservation considerations (e.g. introduction of turtle excluder devices).

There is still need for this Unit to assist the industry.

14.4.3 The Resource Assessment Unit

Resource Assessment Unit has the responsibility to conduct resource assessment and surveys to obtain resource management information for updating and revising the fisheries management plans.

It works closely with the Statistics Unit. Its approved staff is one (1) Fisheries Officer (on study leave), one (1) Fisheries Assistant and several Fisheries Field Assistants (2 vacant). Its programme of work, guided and assisted by CFRAMP, is more or less now dormant because of the absence of the CFRAMP trained Fisheries Officer now pursuing a Masters degree course. There was no continuity and the existing raw data is not being analyzed.

Other planned activities e.g. trawl fishery observers' programme, thematic mapping, etc are at a standstill. The importance of this unit begs for more staff, training of staff and funding.

14.4.4 The Aquaculture Unit

Aquaculture Unit has the responsibility to ensure that aquaculture is

developed in a sustainable and controlled manner optimizing economic and environmental benefits.

The present approved staff for this activity is one (1) Fisheries Officer, one (1) Fisheries Assistant, one (1) Fisheries Field Assistant and four (4) FSA. Although, Extension staff in two Regions assists this Unit, the level of staffing is insufficient for the Unit to achieve its goal.

An on-going development is the establishment of a Fresh Water Aquaculture Demonstration Farm and Training Centre. This facility would require specialized staff in addition to the Fisheries Officer.

14.5 THE EXTENSION SUB-PROGRAMME

The Extension Sub-programme has the responsibility to provide training and technical assistance, to disseminate information and educate industry on events that impact on the fisheries.

The Head of this Unit, Senior Fisheries Officer (Ag.) is located in Georgetown, while in Region 2 there is an office with two (2) Fisheries Assistants and an office in Region 3 with a Fisheries Officer (not yet formally appointed) and a Fisheries Assistant. The offices in the Regions assist all four sub-programme activities.

Contacts have all expressed concerns about information flow from the department. The industry wants more information, more seminars, and more training sessions.

This sub-programme needs to bolster and train its staff to deliver.

15.0 FINANCIAL RESOURCE ACQUISITION AND DISBURSEMENT

Government funds the Fisheries Department in the approved annual budget of the Ministry of Fisheries, Crops and Livestock through the Ministry of Finance funds are made available and usually accessible through the submission, to the Ministry of Finance. (*Annex VIII*).

The day-to-day role of the Fisheries Department in Finance and Accounting is very minimal. An Accounts Clerk performs these functions at the basic clerical level.

Generally, fisheries research and development activities involve a complex set of operations, requiring adequate funding and precise scheduling of a large variety of inputs for activities often dispersed over extensive and remote geographical areas. Thus, financial disbursement procedures must be flexible to allow the Department to implement projects and programmes in a timely manner.

To ensure flexibility/timeliness in disbursements, it is recommended that ICRAFDP funds be disbursed from the CARICOM Fisheries Unit through direct payments to suppliers of goods and services as far as possible.

16.0 STRATEGIC HUMAN RESOURCE MANAGEMENT

The strategic Human Resource Management approach is basic and is involved in strategic planning and decision making and co-ordinates all human resource functions for all employees.

It views the Human Resource function as an *integral part* of all corporate functions. It is against this background that processes for effective Human Resource Management within the Fisheries Department were reviewed. This review took place within the context of the following:

- *External environmental influences (Outer Context)*
- *Internal environmental influences (Inner Context)*
- *Human Resource Management Sub-systems (Programmes)*
 - *Human Resource Management Activities*
 - *People*
 - *Effectiveness Criteria*

The diagnostic model utilized for this purpose in detailed is *Annex IX: A Diagnostic Model for Human Resource Management*.

The components of Human Resource Management are - *Training and Development, Organization Development, Career Development, Organizational/job Design, Human Resource Planning, Performance Evaluation, Selection and Staffing, Compensation/benefits, Employee Assistance, Labour Relations and Human Resource Research and Information System*.

The overall recommendations outlined herein for Human Resource Management take into account the role of the Government and its thrust to ensure the efficacy and effectiveness of the Public Service.

The components recommended below for critical action in terms of capacity building are:

- *Leadership (dealt separately under Organization Development – Section 18.0).*
- *Recruitment*
- *Performance Evaluation*
- *Training and Development*
- *Career Planning and Development (inclusive of Succession Planning)*

16.1 RECRUITMENT

From a total systems view point and within the framework of dynamic change in the external fisheries environment, recruitment of staff must be viewed as a deliberate intervention to positively lead the change process currently underway in the Guyana Public Service and by extension within the Fisheries Department.

The Fisheries Department's Directorate has identified recruitment to the following vacant positions with some degree of urgency and immediacy:

- *Chief Fisheries Officer*
- *Principal Fisheries Officer*

These posts are the two most senior in the Fisheries Department (see *Job Descriptions annexed in the Ministry's vacancy announcement at Annex X*).

Annex XI outlines a summary of the Fisheries Department staff biodata.

There is no doubt that the Fisheries Department is presently undergoing change in order to meet its International, Regional and National obligations, to conform to International and Regional requirements relating to over fishing, fisheries research, monitoring and surveillance, legislation, etc.

The Directorate (Minister and Permanent Secretary) is the driving force behind the change effort; however, there is now an urgent need for strong leadership and support for this at the Fisheries Department level.

If this is not addressed, the change effort is in danger of withering away over time. Thus, whilst the Chief Fisheries Officer and Principal Fisheries Officer are required to exercise technical leadership within the Fisheries Department, it is important that both officers, especially the Chief Fisheries Officer, have some prior experience of management of a change process and appreciate the pitfalls that must be avoided if this process must succeed.

It is therefore recommended that the Chief Fisheries Officer and Principal Fisheries Officer be part of the empowered guiding coalition or Work Improvement Team to lead the change effort, communicating the new vision, and encouraging the Fisheries Department and Ministry officials to work together for the common good. Further, the Job Vacancy Announcement or Job Description of the Chief Fisheries Officer should reflect the task of "managing a change process".

The process of effecting change – *technical change* in the delivery systems, fish quality, etc. and *people change*, communicating the vision and reinforcing change,

influencing staff's attitudes, beliefs etc. - needs full-time attention and can only be effectively delivered at the Departmental level, through a highly capable and *empowered* Chief Fisheries Officer.

16.2 PERFORMANCE APPRAISAL

The Fisheries Department has a performance appraisal process in place, which is typical of the traditional governmental agencies/organizations – staff is appraised annually, based on a formal, standardized instrument of appraisal, and performance bonuses/promotions are awarded. It is comprehensive and allows for potential linkages to Training and Development (Section 16.2.2) Promotion/Career Planning and Development (Section 16.0); and Strategic Planning (Sections 17.1 and 17.2).

However, during the visit and interviews, it was revealed that staff appraisals do not take place at this time. Indeed, staff appraisals have not been effected over the past two years. The Government's Quality Awareness Programme mentions the development of minimum work standards for every functional area within a Ministry. This implies measurability of performance – quantitatively and qualitatively.

The performance appraisal method used by the Guyana Public Service is *Management by Objectives*, which consists of the following steps:

- *setting organizational objectives*
- *setting individual objectives, and appraisal according to results.*

The objectives set should be specific, measurable, challenging, and accepted by both parties i.e. Management and Staff. These objectives play an important role in the feedback process and the final evaluation and ensure that the vision of a Public Service, whose deliverables are of consistently high quality, is attained.

Specifically, employees should be given periodic feedback on their progress toward stated goals and objectives; changes in objectives can be made during periodic reviews or feedback sessions. Although some feedback can be achieved through continual verbal interaction between supervisors and staff, a formal approach to staff appraisal reduces “noise” in the communication process.

Against the above, the following is recommended:

- ***The performance appraisal process be immediately re-introduced.***
- ***Supervisors be trained (in-house) in the use of the performance appraisal instrument and the performance appraisal process.***
- ***The Unit Heads and other senior staff should prepare quarterly Work plans. These are important monitoring tools for performance and therefore can serve as the basis for the annual performance review exercise, which will***

become more meaningful. A brief comment on staff achievement, etc., in the Quarterly Reports shall reduce biases/subjectivity by Supervisors in the annual appraisal exercise.

It would be difficult, if not impossible, to make recommendations on Job Evaluations and Compensation Surveys (which are important precursors to dynamic performance and reward systems) since these are constrained by the rules and regulations of the Civil Service. Nonetheless, a general observation made in respect of compensation within the Fisheries Department is that the level of compensation is competitive, especially at the lower levels of staff pay grades.

Thus, there seems to be no major concerns in respect of attraction and retention of trained staff from the standpoint of compensation.

16.2.1 Human Resource Development

The development of the competencies, skills and attitudes among all levels of staff is a critical element of capacity building. It is therefore expected that significant levels of resources and effort shall be geared towards a Human Resource Development Programme to ensure the sustainability of the thrust to further develop the Fisheries Sector of Guyana.

Consequently, a systems approach to Human Resource Development is *recommended* within the framework of a systems view of organizations in which there is full recognition that analysis of existing systems are undertaken and the strengths built-on, and when one changes one part of the sub-system of an organization, it affects the other parts.

The components for Human Resource Development at the Guyana Fisheries Department examined were:

- *Performance Appraisal Sub-system; (dealt with as a separate item above).*
- *Training and Development sub-system.*
- *Career Development/Succession Planning sub-system.*
- *Periodic Job Evaluation and Compensation Regimes that seek to develop job and position description for all staff and reward staff consistent with performance.*
- *A manpower planning system that is strategically linked to the Planning, Implementation and Evaluation process.*
- *A Human Resource Development Approach that contains a Training Needs Survey to determine training and development needs of staff consistent with the*

strategic/medium term direction of the Department, to meet job requirements now and in the future.

In consequence of the foregoing, the following observations and recommendations are made:

A Training and Development Programme for the Fisheries Department is ideally informed by a Training Needs Assessment.

This assessment is necessary to determine the nature and type of Training and Non-Training Intervention techniques to fill any gaps in terms of where staff members are currently and where the Ministry/Department of Fisheries would like them to be in the interest of improving organizational effectiveness.

The interventions are intended to help staff adjust to the revitalized Department, to improve their competencies, attitudes, behavior and effectiveness at work and provide motivation for high level performance to the Department's priority goals.

This investigative approach should focus on the following main areas:

- 1. The formal training and attributes of the individual.*
- 2. The effect of a revitalized Fisheries Department, the new opportunities and changed environment on the staff member.*
- 3. The nature of current training interventions.*
- 4. The nature of the existing Communication Process.*
- 5. The nature of the training and administrative assistance from which staff will benefit.*

A Training Needs Assessment is therefore recommended. The Scope of Work should be defined as follows:

- To undertake a Training Need Assessment of Managerial/Technical and Support staff in order to identify skills gaps.*
- In consultation with the Ministry of Fisheries, Crops and Livestock, and Management of the Fisheries Department, to identify career development paths to determine the entry level in the various disciplines.*
- To develop a structured programme of training to fill the identified skill gaps in consultation with Ministry and Department Managers.*
- To recommend testing mechanisms to determine suitability for training.*

- *To design an internal development system to facilitate identification, training and placement requirements. (this is to ensure the sustainability of this intervention)*

Annex XI sets forth the academic qualifications and experience of staff. It is critical that the skills level of staff needs to be upgraded.

The following is therefore recommended for action in the short to medium term:

16.2.3 Heads of Units (Sub-programmes)

The major sub-programmes are Research and Development, Legal and Inspectorate, and Extension Service. These units, consistent with *Annex VIII* Organogram of the Fisheries Department, are directly supervised as follows:

Head of Units (Sub-programmes) Units	Names of (Sub-programmes/Units)
1. Chief Fisheries Officer	<ul style="list-style-type: none"> • Programme Administration
2. Fisheries Officer	<ul style="list-style-type: none"> • Legal & Inspectorate sub-programme
3. Fisheries Officer	<ul style="list-style-type: none"> • Extension Service sub-programme
4. Fisheries Officer	<ul style="list-style-type: none"> • Aquaculture & Inland Fisheries
5. Fisheries Officer	<ul style="list-style-type: none"> • Statistics
6. Fisheries Officer	<ul style="list-style-type: none"> • Resource Assessment
7. Master Fisherman	<ul style="list-style-type: none"> • Technology Development

The Aquaculture and Inland Fisheries Unit is currently under the supervision of Mr Tejnarine Geer, Fisheries Officer, who has a first degree in Agriculture from the University of Guyana and has completed short courses in fish farming.

The job incumbent demonstrates a high level of motivation, qualities of a self-starter and is knowledgeable in Aquaculture, having acquired hands-on training and experience through the FAO TCP: Design and Construction of a Freshwater Aquaculture Demonstration Farm and Training Centre.

It is recommended that Mr Geer be encouraged to further develop his skills through short courses in aquaculture, attachments or visits/exchanges at Regional/Extra-Regional Aquaculture Facilities, and TCDC arrangements.

The Units: Statistics, Resource Assessment and Technology Development are headed by Ms Dawn Maison, Fisheries Officer, who has a first degree in Agriculture, University of Guyana, and has been with the Fisheries Department since January 1995.

It is recommended that the present job incumbent, who is well qualified and has a keen understanding of her functions, should be developed further through short courses, attachments, and exchanges. In addition, funding be sought and applied to the urgent acquisition of equipment (testing, sampling, identification of species) for the Research & Development sub-programme.

It has been noted that, at present, there is no staff in the Technology Development section and therefore technology development work is not presently being undertaken.

It is further recommended that given the importance of technology development, staff be recruited to the Unit.

In the absence of a Chief Fisheries Officer, and a Principal Fisheries Officer (the latter has not been in place since 1992) Mr Shawn Wiggins, Fisheries Officer/Ag. Senior Fisheries Officer has been, with assistance from the Ministry, attempting to perform the dual roles of Principal Fisheries Officer, and Chief Fisheries Officer.

Mr Wiggins has a first degree in Agriculture, University of Guyana. **It is recommended that consequent to the recruitment of a Chief Fisheries Officer and a Principal Fisheries Officer, Mr. Wiggins should be appointed to the position of Senior Fisheries Officer.**

It is desirable that all Heads of Units/Sub-programmes be qualified with at least a B.Sc. degree in the relevant discipline plus five (5) years experience, or a Masters degree in the relevant discipline, plus three years experience. A programme of training should therefore be undertaken to bring present job incumbents who are not at this level, to the desired minimum level outlined above. A manpower plan should be developed that ensures an phased approach to training that does not negatively impact the programme of work to be undertaken in the medium to long-term.

Mr Brian Dey, Fisheries Officer, is currently in charge of the day-to-day operations of the **Legal and Inspectorate Unit** and presently supervises three (3) persons. However, his status and tenure in the Department is somewhat unclear.

There are, at present, two (2) unfilled vacancies in this Unit. Mr Dey was formally employed by CFRAMP, at the Fisheries Department. He has spent a total of five years to date with the Fisheries Department and has a first degree in Agriculture from the University of Guyana. There are five (5) TEDs Inspectors in the Unit who operate from four (4) main trawler fish ports.

Against the above, the following is recommended:

(a) Mr Brian Dey, given his training and experience and the critical role of the Legal and Inspectorate Unit to the Department and the Fisheries Sector, should be appointed to the appropriate position within the Department. In addition, he should be encouraged to further develop his skills through short courses, attachments and exchanges. A similar recommendation is being made in relation to Mr. Winston Thom.

In addition, in relation to the various sub-units of the Fisheries Department, the following is being recommended and re-emphasized:

(b) That a collaboration/participatory management effort between the Extension Unit, and Legal and Inspectorate be pursued with fishing communities, fishers organizations, the fishing industry to build confidence in the Fisheries Department – “confidence building” through extension shall be the thrust – and to make them aware of the need for MCS, and enforcement.

(c) Likewise, this open and continual approach to dialogue shall enable the Fisheries Department to be more proactive and responsive to the needs of its customers.

16.2.3.3 Other Supervisors and Staff

Qualifications and experience among other supervisors and staff at this time are not considered to be adequate enough to provide existing and foreseen functions and services to the Fisheries Sector .

It is recommended that all staff should benefit from the staff development initiatives such as:

- *On-the-job Training.*
- *Staff exchanges/attachments with other relevant organizations through inter-agency linkages to foster a transfer of knowledge/technology.*
- *TCDC approach.*

Special attention must be paid to training in Stock Assessment, Aquaculture and Extension Services.

17.0 SUCCESSION PLANNING

In principle, there should be an 'heir apparent' to each substantive position in the hierarchical structure. It is a consideration that is implicit in Succession Planning.

At the same time, the Plan must identify whether or not there are actual candidates fit for the next higher positions; if not, whether the positions can be filled by internal lateral movement or, in the final resort, should the skill be recruited from outside the organization. Whichever the option, it is defined by a foreseeable deadline or within a projected time scale: that is when the skill or expertise would be needed – immediately; in the mid-term (two years); or in the long-term (up to five years).

Correspondingly, the Plan attempts to specify, after objective evaluation, potential candidates to match the eligibility criteria within the allotted time scale.

17.1 ENTRY LEVEL TO CAREER PATHS

The Career Paths, as well as gaps in the current job structure that will inhibit logical upward movement should be identified. If the structure therefore remains as is for the foreseeable future, it will mean that to fill higher (professional) positions, the relevant skills may have to be recruited.

These plans should be discussed by the Senior officials of the Ministry and Department to ensure that all possible candidates are considered, as well as to stimulate Managers into thinking about their succession problems and identifying areas where special action is called for.

17.2 ELEMENTS OF THE SUCCESSION PLAN

The elements recommended to be considered in a Succession Plan are:

- ***Identification of qualified candidates with the requisite level of education, the relevant specialty and essential prior training and experience.***
- ***Adequacy of number of candidates for development respectively for the next higher positions.***
- ***Specific and attainable target dates for staffing each position.***
- ***Specific training programmes and schedules for each candidate with estimated time required for development.***
- ***A reporting system to monitor the readiness of each candidate and to predict whether or not the position will be staffed on time.***

The model shown below as Table 1 below can represent the results of the completed exercise:

• **Table 1: Model for Succession Planning**

JOB TITLE & CODE	Executive Assistant	
<i>INCUMBENT</i>	<i>Mary Jane Smith</i>	
• Senior Administrative Secretary: 6-6-11-53	• Administrative Secretary: 5-511-42	• Personnel Assistant: 5-5-11-45
Incumbent likely to fill position		Qualification Code
1. <i>I Singh</i>		B
2. <i>S Seeram</i>		B
3. <i>G Todd</i>		C
4. <i>M Wright</i>		A
5. <i>H Ram</i>		C
6. <i>S Foot</i>		B
7. <i>M Gonsalves</i>		X
8. <i>A Doe</i>		A

Qualification Code:

- A. *Ready now*
- B. *Ready within 24 months*
- C. *Ready in more than 24 months*
- X. **Not likely to qualify**

18.0 ORGANIZATION DEVELOPMENT - THE CHANGE PROCESS

18.1 CUSTOMER FOCUSED APPROACH

The Guyana Public Service adopted a *Customer focused approach* in 1997/98. At the center of the thrust to revive the image and quality standards of the Public Service is the need for a new focus on the customer: What are his needs and what can be done to satisfy those needs? *Training was recognized as a key mechanism within this initiative.* The components of the Quality programme are summarized as:

1. A Quality Assurance Programme – increasing the Quality consciousness of Public Service workers.
2. Work Improvement Teams to provide the vehicle for improving performance levels in all functional areas and eventually provide the basis for a continuous improvement seeking service delivery system with the Public Service.
3. Developing minimum work standards for every functional area within a Ministry.
4. Documentation of all agency operational policies and procedures for consistent application.
5. Introductory Quality Assurance and Customer Relation Desks in pilot Ministries and later a network of Quality Assurance Officers/Managers in the Service.
6. Customer survey by all Ministries.
7. Introducing staff Well- Being Programmes in Ministries involving organizational development initiatives, which focus on improving interpersonal skills together with health enhancement initiatives.

18.1.1 Quality Assurance Programme

In the context of this study and with special reference to the Fisheries Sector the Quality Assurance Program is considered to be important. The objectives of the Programme are:

- The development of quality consciousness within the Public Service.
- Increased efficiency, time and money savings for the Public Service's operations.

- Increased employee job satisfaction and personal development.
- Improved Public Service Image leading to an ability to attract more qualified persons.
- Increased customer satisfaction.

Against this background of change in the Public Service the vision of the Fisheries Department/Ministry of Fisheries, Crops and Livestock, which has been stated in Section 5.0 of this Study, requires that the Fisheries Department in dealing with the Fisheries Sector and stakeholders assume the wider expectation of the Public Service.

The Fisheries Department of Guyana has a vision statement, which adequately captures the customer approach of the Guyana Public Service as a whole. This vision is expected to be attained through implementation of the Fisheries Management Plan, complemented by the EU funded ICRAFDP Three Years Work Programme for Guyana, all which elucidate a clear mission and goals for Fisheries development. Critical to the success of the Fisheries Department in attaining its vision, is the “buying in” or the facilitation of ownership of this vision by the key stakeholders, through a broad-based consultative approach.

This ownership building process must emphasize and effectively communicate the need for Community/Fishers Organizations which are sustainable.

18.1.2 LEADERSHIP

The outward visible view of any organization consists of all the procedures, policies, products, formal rules, and technology whereas the invisible part of the organizational iceberg consists of “psychological cement” which influences organizational behaviors and culture. *Psychological cement* are the norms, values, behaviors, attitudes, communication, patterns, leadership style and so on.

Organization development focuses on change in the bottom section of the iceberg - it is a planned process for change in an organization’s culture through the utilization of behavioral service technology, research and theory.

There are three ways employed to produce change – power coercive; rational/empirical; normative/empirical; normative/reeducation. A cursory examination of the change effort as enunciated by the Guyana Public Service leads one to the conclusion that a mix of the normative/reeducation approach which involves learning a new culture and is consistent with the organization development approach, and the rational/ empirical approach (this assumes that if knowledge about the new, desired state is spread widely then change can naturally occur since people will recognize the benefits) is being employed.

Further, when one examines the component of the Quality Programme of the Guyana Public Service summarized above (page 59) it manifests some of the characteristics of an Organization development intervention, such as:

- Emphasis on work team as key unit for learning organizational behavior (component no.2)
- Emphasis on collaborative work-team culture (components no. 5 and 7)
- Total systems thinking (components no.2 and 4)
- Use of change agent/catalyst (component no.5)

One of the most critical components of the intervention being executed by the Guyana Public Service is that of introducing Quality Managers - this implies leadership. Whilst management is concerted with planning and budgeting, organization and staffing controlling and problem- solving, and producing order, leadership focus on:

- i. Establishing direction
- ii. Aligning people (peopling)
- iii. Ministering and inspiring
- iv. Producing change

This leadership is extremely critical especially in a period of change in the **Guyana Public Service**, and is lacking as the level of the **Fisheries Department**.

Consistent with the customer-focused approach of the Guyana Public Service it is therefore recommended that an empowered guiding collation or Work Improvement Team be established to lead the change effort within the Fisheries Department. The Permanent Secretary and Chief Fisheries Officer must be members of the team to lend administrative and technical direction.

Since the change effort is focused on the customer and is customer driven, the Fisheries Department must change its culture to a performance to that of continuous improvement and excellence. This a challenging proposition and requires much leadership.

19.0 Organization Culture

The culture that exists within the Fisheries Department can be deemed the traditional management culture that pertains in Government bureaucracies throughout the Dutch speaking, Anglophone and Francophone Caribbean.

This culture was inherited from the Region's colonial masters and, as such, changing it to a result-oriented and market-driven one – a total quality culture at both technical and managerial levels – is a challenging proposition.

Nonetheless, an incremental (gradual) approach to achieving a customer focused total quality culture *is recommended* for the Department which would be consistent with the Government's stated goals to increase fishery production and consequential contribution to G.D.P./foreign exchange earnings.

The ideal state envisaged in respect of culture is for the Department to be an organization with the following characteristics:

- *Clear Mission and Goal (based on broad-based consultations);*
- *Results oriented and driven.*
- *Responsiveness to clients, customers and collaborating groups and agencies (market driven).*
- *Empowered staff at all levels.*
- *Flexible/Problem solving structure.*
- *Human Resource Management Systems that are proactive and employee – oriented.*
- *A total quality culture (technical and managerial).*
- *A sustainable organization.*

The interventions/recommendations contained within this Report in respect of leadership, Human Resource Development, additions to staff complement, maintenance and development of linkages with National, Regional and International agencies, enhancement of technical delivery systems are considered critical to achieving the defined mission, goals and objectives of the Fisheries Department.

These recommendations will also facilitate adaptation to changes in the operating environment.

20.0 STRUCTURE

20.1 NATIONAL LEVEL

The appropriateness of the organizational structure of the Fisheries Department was assessed not only in relation to fisheries research and development priorities and objectives, but also in relation to key planning, management, and linkage functions which must be adequately performed by a national fisheries research and development system and its constituent organizations.

Three of the most important functions are Strategic Planning, Human Resource Management and Financial Resource Acquisition and Disbursement.

20.2 STRATEGIC PLANNING

Strategic planning of National Fisheries Research and Development involves effective centralized control over the determination of research and development priorities and objectives, the delineation of research and development programmes and specific institutional arrangements, and broad allocation of financial and/or human resources to both institutions and programmes. Without such control, a National Fisheries Research and Development System cannot develop and mature.

The degree to which the organizational structure of fisheries research and development in Guyana is appropriate for strategic planning purposes depends on the pattern of governmental responsibility and, in particular; the extent to which this responsibility is concentrated in a single organization, and the effectiveness of mechanisms which have been developed to coordinate the activities separate by constituted fisheries research and development organizations.

In practice, the patterns of governmental responsibility for fisheries and fisheries-related matters in Guyana was observed to be determined by one main type of organizational fragmentation: inter-ministerial, where important areas of fisheries-related matters come under the responsibility of more than one Ministry.

As mentioned previously, a review and rationalization of fisheries-related bodies to enhance synergies to sustainable fisheries research and development *is recommended.*

20.3 PROPOSED STRUCTURAL ADJUSTMENT OF THE FISHERIES DEPARTMENT

The Fisheries Department of Guyana which has an organization structure that

encompasses a clear definition of roles, duties and responsibilities of staff and line of communication is constrained in the delivery process due to the number of vacancies, some of which are long outstanding. It has also been noted that as a result of these vacancies, the roles and functions of the incumbents may not necessarily be consistent with the requirements of the strict organizational structure since staff has to be re-deployed and perform a multiplicity of duties.

The current structure of the Fisheries Department as observed earlier in this Study, was established on an era prior to the recent initiatives towards sustainable fisheries management and utilization as mandated by UNCLOS and the Code of Conduct for responsible Fisheries and supported by National Governments and Regional and International bodies. It is also recognized, that timely change or reorganization of an institution such as the Fisheries Department within the Government structure may be handicapped by elements such as funding, administration procedures, legal, political and other considerations.

However, in the existing circumstance, the Fisheries Department appears not to be capable of fully influencing the sustainable management of the fisheries as required. This will inevitably result in the deterioration and destruction of a major sector which in the case of Guyana is making a more than valuable contribution to the socio-economic development of the country and the well-being of its citizens and stakeholders.

It is considered necessary, given the apparently unrestricted pace at which the fisheries resources are being over utilized, towards unsustainability and the limited capability of the Fisheries Department and related agencies and organizations to influence management and controls as noted earlier in this Study, that some attention be given to the strengthening of the Department in the short to medium term.

In addition to the filling of all the existing vacancies in the Fisheries Department as recommended earlier, it is further recommended that it be strengthened in the following ways:

(i) The addition of four (4) Fisheries Officers in the areas of:

- (a) Legal and Inspectorate Sub- Programme***
- (b) Region # 2***
- (c) Region #6***
- (d) Aquaculture Extension***

(ii) The elevation of the Aquaculture Unit to the status of a sub-programme under the guidance of a Senior Fisheries Officer who is to be appointed. It has also been noted that there has been some scale back of the Aquaculture Project at Mon Repos and it is being recommended that

adequate and appropriate staff to support the scale back should be rationalized and recruited.

In relation to the support staff to the additional staff at (i) above, it is believed that the numbers would be adequate through the filling of all the positions and also by retraining and re-deployment. It may be necessary to recruit; however, this should be considered after an evaluation of the situation.

20.4 GENERAL CONCLUSION

The potential for the Fisheries Sector and Resources of Guyana to provide a greater and continuing contribution to the socio- economic development of the country and the well- being of its nationals has been recognized and alluded to throughout the Study and Report. It has been noted and recommended, however, that this may only be realized when a holistic approach is adopted to seek the participation of all interest groups and stakeholders at the national level. In addition, serious cognisance must be given to those bilateral, regional and international initiatives which have been designed to effect the sustained management and utilization of fisheries resources. In all these efforts at sustainability, the leadership roles of the Government; the Ministry of Fisheries, Crops and Livestock and the Fisheries Department are pivotal in forging functional linkages with government and non- governmental organization and stakeholders in seeking success.

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ANNEX I

TERMS OF REFERENCE

1. Background

The following Financing Agreement between the Commission of the European Union and Member States of CARIFORUM, the Technical and Administrative Provisions for the implementation of the Integrated Caribbean Regional Agriculture and Fisheries Development Programme – Fisheries Component (ICRAFD) was set up.

The CARICOM Fisheries Unit CFU) as implementing Agency in Belize, commenced implementation of ICRAFD which has, as its overall objective, the following:

- a. *To strengthen fisheries planning and management capacity of National Fisheries Departments in CARIFORUM countries. These Departments are responsible for formulating fishery policies, elaborating plans and implementing programme. To do this well, they require reliable and timely information on the structure and performance of the sector and the status of the resources.*
- b. *To enhance the effective participation and support of fishers' communities in the planning and management process of the fishing industries for the sustainable use of the coastal and marine resources. Good fisheries policies and programmes must start from the bottom, hence the importance of understanding their perspectives.*

A three year Work Programme to be funded under the ICRAFD Project, was developed to address some of the critical issues affecting the fisheries sectors in CARIFORUM Member States by focusing on:

- *Development of clear and adequate planning and policies framework.*
- *Improving the Fisheries database, Information Management Systems.*
- *Strengthen Human and Institutional capacities for Resource Management and Conservation.*
- *Empowerment of resource users, so that they can assume greater responsibility for sustainable use and management of the fisheries,*
- *Improving public awareness of the benefits and importance of the fisheries sector and the need for sustainable resource management.*

The agreed upon programme of work also provides for technical assistance to be

rendered to Fisheries Departments, to strengthen the planning and policy framework and improve the system of governance.

Against the background, the ICRAFD project will, *inter alia*, support a review and preparation of recommendations for the strengthening of the organizational structure and operational arrangements of the Fisheries Department of Guyana.

2. Purpose

The purpose of this assignment is:

- i. To assist in defining a suitable organization and institutional structure for the Fisheries Department, to enable to discharge its National and International responsibilities regarding sustainable development and management of the Fisheries and Aquaculture sector in an effective and efficient manner.*
- ii. To undertake an external strategic management assessment of the Fisheries Department during which the key variables that offer opportunities for achieving the overall goal of ensuring sustainable socio-economic benefits from the Fisheries sector and threats that should be avoided, are identified and validated.*
- iii. The external assessment shall focus on identifying and evaluating the trends, events and developments locally, regionally and globally which could have significant implications for the functioning and success of the Fisheries Department. This will include examination of International Conventions and Agreements, such as UNCLOS and the UNFAO Code of Conduct for Responsible Fisheries, Regional Initiatives, such as the Caribbean Regional Fisheries Mechanism (CRFM) and WECAFC, National Fisheries Policy, Law and Developments, such as the new Fisheries Management Plan.*

To undertake an Internal Management Assessment of the Fisheries Department to identify its existing internal strengths and weaknesses in the functional areas that are considered necessary for the successful operation of the department, including Management and Administration (including Finance and Accounting), Fisheries Data and Information Systems, Fisheries Conservation and Management, Fisheries Development, Aquaculture and Fisheries Sector.

The review should examine and identify the relationships among the various Units and functional areas of the Department, including important aspects of the organizational culture which assist in strengthening the organizational structure. The key success factors and distinctive competencies of the Fisheries Department which have been acquired since its inception and which cannot be easily matched by other organizations, should be clearly identified.

The review should also examine and document the current mandate, functions and responsibilities of the Fisheries Department and the organizational structure

and human resources available to discharge these responsibilities, including interaction with local and overseas agencies involved in the fisheries sector.

3. Time Allotment

The assignment will be conducted over a period of thirty (30) person days between April and June 2001.

4. The Approach

The Consultant shall undertake a field visit to Guyana in order to obtain information from key actors within the Ministry of Fisheries, Crops and Livestock, the Fisheries Department and Fisheries Sector on:

- *Internal Management Structure and Systems of the Fisheries Department.*
- *Key actors and relationships, and structure of the External Environment.*
- *Technical Operational Systems of the Fisheries Department levels of efficacy and effectiveness in the delivery of outputs.*
- *Present Incumbents/staffing Arrangements, Job Structures and Descriptions, Performance Management System, Compensation Regime and Human Resource Development Activities.*

The Consultant shall review resource documentation including:

- *National Fisheries Sector Plan (current)*
- *ICRAFD Three Years Work Programme for other CARIFORUM Countries (April 2000 – March 2003).*
- *Fisheries Management Plan.*
- *Present and Proposed Fisheries Legislation.*
- *Documentation on Fisheries Policy, Planning and Management.*

5. Team

The Consultancy Team shall comprise the following mix of skill:

- *Strategic Planning and Organizational Development/Human Resource Management and Development.*
- *Fisheries Management.*
- *Fisheries Biology.*

6. Expected Outputs

A report with recommendations for a plan of action to build and strengthen the capacity of the Fisheries Department in Guyana, both directly and through

institutional linkages.

A recommended Organizational Structure for the Fisheries Department to create the organizational and institutional capability necessary to effectively and efficiently discharge the mandate, functions and responsibilities, in accordance with the Government Policy Directives, the evolving needs of the Fishing and Aquaculture Sector, Technological Advances, particularly in Information Systems and the new challenges and opportunities presented by the global fisheries regime.

ANNEX II

**ITINERARY
VISIT TO GUYANA**

MAY 07 - 11 2001

<i>DATE</i>	<i>VISIT</i>	<i>OFFICIALS</i>
2001, May 07	<ol style="list-style-type: none">1. Ministry of Fisheries, Crops & Livestock2. Department of Fisheries	<ol style="list-style-type: none">1. <i>Mr B Balkaran – Permanent Secretary.</i><ul style="list-style-type: none">• <i>Mr Shawn Wiggins – Senior Fisheries Officer.</i>2. <i>Mr Shawn Wiggins – Senior Fisheries Officer (Ag)</i>
2001, May 08	<ol style="list-style-type: none">1. Department of Fisheries2. Veterinary Public Health Unit3. Food & Drug Division4. Aquaculture Demonstration Farm and Training Centre, Mon Repos.	<ol style="list-style-type: none">1. <i>Ms Samantha Singh – Project Officer.</i>2. <i>Dr Colin James – Principal Veterinary Public Health Officer (Ag).</i>3. <i>Ms Merlyn Collins – Director (Ag).</i>4. <i>Mr Tejnarine Geer – Fisheries Officer.</i>
2001, May 09	<ol style="list-style-type: none">1. Pritipaul Singh Investment Inc.2. Georgetown Seafood & Trading Co. Ltd3. Parika Fishermen Co-operative4. Department of Fisheries	<ol style="list-style-type: none">1. <i>Mr Ronald Dean – Financial Director.</i>2. <i>Mr Lloyd Piggott – Managing Director.</i><ul style="list-style-type: none">• <i>Mr Mike Davis – General Manager.</i>3. <i>Mr C Mohabir, Manager.</i>4. <i>Mr Shawn Wiggins – Senior Fisheries Officer.</i>

2001, May 10	<ol style="list-style-type: none"> 1. Department of Fisheries 2. BEV Processors 3. Ministry of Fisheries, Crops and Livestock. 4. Harbour Master's Office. 	<ol style="list-style-type: none"> 1. <i>Mr Brian Dey – Fisheries Officer - Head of Legal & Inspectorate Unit.</i> <ul style="list-style-type: none"> • <i>Cmdr. J George – Guyana Coast Guard.</i> • <i>Ms Colleen Collymore – Accounts Clerk I.</i> • <i>Ms Dawn Maison – Fisheries Officer.</i> 2. <i>Mr John G Carpenter – Managing Director.</i> <ul style="list-style-type: none"> • <i>Mr Bruce Vierra – Manager</i> 3. <i>Mr Satyadeow Sawh – Minister.</i> <ul style="list-style-type: none"> • <i>Mr B Balkaran – Permanent Secretary.</i> 4. <i>Mr Taig Kallicharan – Superintendent.</i> <ul style="list-style-type: none"> • <i>Mr Volton Skeete – Chief Pilot.</i>
2001, May 11	Departure from Guyana	

ANNEX III

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9. **Ninth Session of the Western Central Atlantic Fisheries Commission and the Sixth Session for the Development and Management of fisheries of the Lesser Antilles.** *Castries St. Lucia, 27-30 September, 1999 .*
10. **The Caribbean Regional Fisheries Mechanism.** *CARICOM Fisheries Unit, Belize City, Belize. 19 March, 2001.*
11. **A Vision for the Public Service of Guyana.** *1997-2007.*
12. **Draft Report of Meetings of Fisheries Managers and Ministers of the WECAFC ad hoc Working Group on the Shrimp and Groundfish Fisheries of the Brazil-Guianas Shelf.** *Port of Spain, Trinidad and Tobago, 27-29 March, 2001.*

13. **Report on the Design and Construction of a Fresh Water Aquaculture Demonstration Farm and Training Center.** *T.C.P/Guy/8922A- Food and Agriculture of the United Nations, 1999.*
14. **Convention on Biological Diversity.** 1992.
15. **Registration of Guyana as a Third Party to Export Fish and Fishery Products to the European Union. Project Brief.** *Ministry of Fisheries, Crops and Livestock in collaboration with the Private Sector.*
16. **Draft Marine Fisheries Management Plan, 1992.** *Phillips, T.C.K. Aiken and R. Mohan.*
17. **Report on Training Needs Analysis. Volume 2 Consultant: Mr. E.B. John.** *Caribbean Agricultural Research and Development Institute*

ANNEX IV

UN FISH STOCKS AGREEMENT ANNEX 1: STANDARD REQUIREMENTS FOR THE COLLECTION AND SHARING OF DATA

Article 1 - General Principles

1. The timely collection compilation and analysis of data are fundamental to the effective conservation and management of straddling fish stocks and highly migratory fish stocks.

To this end, data from fisheries for these stocks on the high seas and those in areas under national jurisdiction are required and should be collected and compiled in such a way as to enable statistically meaningful analysis for the purposes of fishery effort statistics and other fishery-related information, such as vessel-related and other data for standardization fishing effort.

Data collected should also include information and non-target and associated or dependent species. All data should be verified to ensure accuracy. Confidentiality of non-aggregated data shall be maintained. The dissemination of such data shall be subject to the terms on which they have been provided.

2. Assistance, including training, as well as financial and technical assistance, shall be provided to developing States in order to build capacity in the field of conservation and management of living marine resources.

Assistance should focus on enhancing capacity to implement data collection and verification, observer programmes, data analysis and research projects supporting stock assessments. The fullest possible involvement of developing State scientists and managers in conservation and management of straddling fish stocks and highly migratory fish stocks should be promoted.

Article 2 - Principles of Data Collection, Compilation and Exchange

The following general principles should be considered in defining the parameters for collection, compilation and exchange of data from fishing operations for straddling fish stocks and highly migratory fish stocks.

- a) States should ensure that data are collected from vessels flying their flag on fishing activities according to the operational characteristics of each method (e.g. each individual tow for trawl, each set for long-line and purse-seine, each school fished for pole-and-line and each day fished for troll) and in sufficient detail to facilitate effective stock assessment.

- b) States should ensure that fishery data are verified through an appropriate system.
- c) States should compile fishery-related and other supporting scientific data and provide them in an agreed format and in a timely manner to the relevant sub-regional or regional fisheries management organization or arrangement where one exists. Otherwise, States should co-operate to exchange data, either directly or through such other co-operative mechanisms, as may be agreed among them.
- d) States should agree within the frame-work of sub-regional or regional fisheries management organizations or arrangements, or otherwise on the specification of data and the format in which they are to be provided, in accordance with this Annex and taking into account the nature of the stocks and the fisheries for those stocks in the region. Such organizations or arrangements should request non-members or non-participants to provide data concerning relevant fishing activities by vessels flying their flag.
- e) Such organizations or arrangements shall compile data and make them available in a timely manner and in an agreed format to all interested States under the terms and conditions established by the organization or arrangements.
- f) Scientists of the flag State and from the relevant sub-regional or regional fisheries management organization or arrangement should analyze the data separately or jointly, as appropriate.

Article 3 - Basic Fishery Data

- 1. States shall collect and make available to the relevant sub-regional or regional fisheries management organization or arrangement, the following types of data in sufficient detail to facilitate effective stock assessment in accordance with agreed procedures.
 - a. *Time series of catch and effort statistics by fishery and fleet.*
 - b. *Total catch in number, nominal, or both, by species (both target and non-target) as is appropriate to each fishery.*

(Nominal weight is defined by the Food and Agriculture Organization of the United Nations (FAO) as the live-weight equivalent of the landings).

- c. *Discard statistics, including estimates where necessary, reported as number or nominal weight by species, as is appropriate to each fishery.*
- d. *Effort statistics appropriate to each fishing method.*

- e. *Fishing location, data and time fished and other statistics on fishing operations as appropriate.*

Article 4 - Vessel Data and Information

- 1) States should collect the following types of vessel-related data for standardization fleet composition and vessel fishing power and for converting between different measures of effort in the analysis of each catch and effort data:
 - a. *Vessel identification, flag and port of registry.*
 - b. *Vessel type.*
 - c. *Vessel specifications (e.g. material of construction, data built, registered length, gross registered tonnage, power of main engines, hold capacity and catch storage methods).*
2. The Flag State will collect the following information:
 - a. *Navigation and position fixing aids.*
 - b. *Communication equipment and International radio call sign.*
 - c. *Crew size*

Article 5 - Reporting

A State shall ensure that vessels flying its flag send to its National Fisheries Administration and, where agreed, to the relevant sub-regional or regional Fisheries Management Organization or arrangement, logbook data on catch and effort, including data on fishing operations on the high seas, at sufficiently frequent intervals to meet national requirements and Regional and International obligations.

Such data shall be transmitted, where necessary, by radio, telex, facsimile or satellite transmission or by other means.

Article 6 - Data Verification

States, or, as appropriate, sub-regional or regional fisheries management organizations or arrangements should establish mechanisms for verifying fishery data, such as:

- a. *Position verification through vessel monitoring systems.*
- b. *Scientific observer programmes to monitor catch, effort, catch composition (target and non-target) and other details of fishing operations.*
- c. *Port sampling.*

Article 7 - Data Exchange

1. Data collected by flag States must be shared with other flag States and relevant coastal States, through appropriate sub-regional or regional Fisheries Management Organizations or arrangements.

Such organizations or arrangements shall compile data and make them available in a timely manner and in an agreed format to all interested States under the terms and conditions established by the organization or arrangement, while maintaining confidentiality of non-aggregated data, and should, to the extent feasible, develop database systems which provide efficient access to data.

2. At the global level, collection and dissemination of data should be effected through the Food and Agriculture Organization of the United Nations.
3. Where a sub-regional or regional Fisheries Management Organization or arrangement does not exist, that organization may also do the same at the sub-regional level by arrangement with the States concerned.

ANNEX V

FAO COMPLIANCE AGREEMENT - ARTICLE VI EXCHANGE OF INFORMATION.

1. Each party shall make readily available to the FAO, the following information with respect to each fishing vessel entered in the record required to be maintained under Article IV:

- a. *Name of fishing vessel; registration number; previous names (if known) and port of registry.*
- b. *Previous flag (If any).*
- c. *International Radio Call Sign (if any).*
- d. *Name and address of owner or owners.*
- e. *Where and when built.*
- f. *Type of vessel.*
- g. *Length.*

2. Each party shall, to the extent practicable, make available to the FAO, the following additional information with respect to each fishing vessel entered in the record required to be maintained under Article IV:

- a. *Name and address of Operator (Manager) or Operators (Managers) (if any).*
- b. *Type of fishing method or methods.*
- c. *Moulded depth.*
- d. *Beam.*
- e. *Gross register tonnage.*
- f. *Power of main engine or engines.*

ANNEX VI

CONVENTION ON BIOLOGICAL DIVERSITY (Selected Articles)

Article 1 - Objectives

The objectives of this Convention, to be pursued in accordance with all its relevant provisions, are the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources, including by appropriate access to genetic resources and by appropriate transfer of relevant technologies, taking into account all rights over those resources and to technologies, and by appropriate funding.

Article 3 - Principle

States have, in accordance with the Charter of the United Nations and the principles of International Law, the sovereign right to exploit their own resources pursuant to their own environmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other states or of areas beyond the limits of national jurisdiction.

Article 5 - Co-operation

Each Contracting Party shall, as far as possible and as appropriate co-operate with other Contracting Parties, directly or, where appropriate through competent international organizations, in respect of areas beyond national jurisdiction and on matters of mutual interest, for the conservation and sustainable use of biological diversity.

Article 6 - General Measures for Conservation and Sustainable Use

Each Contracting Party shall, in accordance with its particular conditions and capabilities:

- a. *Develop national strategies, plans or programmes for the conservation and sustainable use of biological diversity or adapt for this purpose existing strategies, plans or programmes which shall reflect, inter alia, the measures set out in this Convention relevant to the Contracting party concerned and,*
- b. Integrate, as far as possible and as appropriate, the conservation and suitable use of biological diversity into relevant sectoral or cross-sectoral plans, programmes and policies.

Article 7 - Identification and Monitoring

Each Contracting Party shall, as far as possible and as appropriate, in particular for the purpose of Articles 8 to 10.

- a. *Identify components of biological to the indicative list of categories set down in Annex I.*
- b. *Monitor, through sampling and other techniques, the components of biological diversity identified pursuant to subparagraph (a) above, paying particular attention to those requiring urgent conservation measures and those which offer greatest potential for sustainable use*
- c. *Identify process and categories of activities which have or likely to have significant adverse impacts on the conservation and sustainable use of biological diversity, and monitor their effects through sampling and other techniques.*
- d. *Maintain and organize, by any mechanism data, derived from identification and monitoring activities pursuant to subparagraphs (a),(b) and (c) above.*

Article 8 - In-situ Conservation

Each Contracting Party shall, as far as possible and as appropriate:

- a. *Establish a system of protected areas, where special measures need to be taken to conserve biological diversity.*
- b. *Develop, where necessary, guidelines for the selection, establishment and management of protected areas or areas where special measures need to be taken to conserve biological diversity;*
- c. *Regulate or manage biological resources important for the conservation of biological diversity whether within or outside the protected area , with a view to ensuring their conservation and sustainable use*
- d. *Promote the protection of Eco-systems, natural habitats and the maintenance of viable populations of species in natural surroundings;*
- e. *Promote environmentally sound and sustainable development in areas with a view to furthering protection of these areas.*
- f. *Rehabilitate and restore degraded Eco-system and promote the recovery of threatened species, inter alia, through the development and implementation of plans or other Management Strategies.*

- g. *Establish or maintain means to regulate, manage or control the risks associated with the use and release of living modified organisms resulting from biotechnology which are likely to have adverse environmental impacts that could affect the conservation and sustainable use of biological diversity, taking also into account the risks to human health.*
- h. *Prevent the introduction of, control or eradicate those alien species, which threaten Eco systems, habitat or species.*
- i. *Endeavour to provide the conditions needed for compatibility between present uses and the conservation of biological diversity and the sustainable use of its components.*
- j. *Subject to its National legislation, respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage an equitable sharing of the benefits arising from the utilization of such knowledge, innovations and practices.*
- k. *Develop or maintain necessary legislation and /or regulatory provisions for the protection of threatened species and populations.*
- l. *Where a significant adverse effect on biological diversity has been determined pursuant to Article 7, regulate or manage the relevant processes and categories of activities, and co-operate in providing financial and other support for in-situ conservation outlined in sub-paragraphs (a) to (l) above.*

Article 9 - Ex-situ Conservation

Each Contracting Party shall, as far as possible and as appropriate, and predominantly for the purpose of complementing in-situ measures:

- a. *Adopt measures for the in-situ conservation of components of biological diversity, preferably in the country of origin of such components.*
- b. *Establish and maintain facilities for ex-situ conservation of and research on plants, animals and micro-organisms, preferably in the country of origin of genetic resources.*
- c. *Adopt measures for the recovery and rehabilitation of threatened species and for their re-introduction into their natural habitats under appropriate conditions.*

- d. *Regulate and manage collection of biological resources from natural habitats for ex-situ conservation purposes so as not to threaten Eco- system and in-situ populations of species, except where special temporary ex-situ measures are required under sub paragraph (c) above and,*
- e. *Co-operate in providing financial and other support for ex-situ conservation outlined in sub paragraphs (a) to (d) above and in the establishment and maintenance of ex-situ conservation facilities in developing countries.*

Article 10 - Sustainable Use of Components of Biological Diversity

Each Contracting Party shall, as far as possible and as appropriate:

- a. *Integrate consideration of the conservation and sustainable use of biological resources into national decision-making.*
- b. *Adopt measures relating to the use of biological resources to avoid or minimize adverse impacts on biological diversity.*
- c. *Protect and encourage customary use of biological resources in accordance in accordance with traditional cultural practices that are compatible with conservation or sustainable use requirements.*
- d. *Support local populations to develop and implement remedial action in degraded areas where biological diversity has been reduced and,*
- e. *Encourage co-operation between its governmental authorities and its private sector in developing methods for sustainable use of biological resources.*

Article 12 - Research and Training

The Contracting Parties, taking into account the special needs of developing countries shall:

- a. *Establish and maintain programmes for Scientific and Technical education and training in measures for the identification, conservation and sustained use of biological diversity and its components, and provide support for such education and training for the specific needs of developing countries*
- b. *Promote and encourage research which contributes to the conservation and sustainable use of biological diversity, particularly in developing countries inter alia, in accordance with decisions of the Conference of parties taken in consequence of recommendations of the Subsidiary Body on Scientific Technical and Technological Advice and,*

- c. *In keeping with the provisions of Articles 16, 18, and 20, promote and cooperate in the use of scientific advances in biological diversity research in developing methods for conservation and sustainable use of biological resources.*

Article 13 - Public Education and Awareness

The Contracting Parties shall:

- a. *Promote and encourage understanding of the importance of, and the measures required for the conservation of biological diversity, as well as its propagation through media and the inclusion of these topics in educational programmes and,*
- b. *Co-operate as appropriate, with other States and international organizations in developing educational and public awareness programmes, with respect to conservation and sustainable use of biological diversity.*

Article 14 - Impact Assessment and Minimizing Adverse Impacts

Each contracting party, as far as possible, shall:

- a. *Introduce appropriate procedures requiring environmental impact assessment of its proposed projects that are likely to have significant adverse effects on biological diversity with a view to avoiding or minimizing such effects and, where appropriate, allow for public participation in such procedures.*
- b. *Introduce appropriate arrangements to ensure that the consequences of its programmes and policies that are likely to significantly adverse impacts on biological diversity are duly taken into account.*
- c. *Promote, on the basis of reciprocity, notification, exchange of information and consultation on activities under their jurisdiction or control which are likely to significantly affect adversely the biological diversity of other States or areas beyond the limits of national jurisdiction, by encouraging the conclusion of bilateral, regional or multilateral arrangements, as appropriate.*
- d. *In the case of imminent or grave danger or damage, originating under its jurisdiction or control, to biological diversity within the area under jurisdiction of other States or in areas beyond the limits of national jurisdiction, notify immediately the potentially affected States of such danger or damage, as well as initiate action to prevent or minimize such danger or damage.*
- e. *Promote national arrangements for emergency responses to activities or events, whether caused naturally or otherwise, which present a grave and imminent danger to biological diversity and encourage international co-operation to supplement such national efforts and, where appropriate and agreed by the States or regional integration organizations concerned, to establish joint plans;*

- f. *The Conference of parties shall examine, on the basis of studies to be carried out, the issue of liability and redress, including restoration and compensation, for damage to biological diversity, except where such liability is a purely internal matter.*

ANNEX VII – Organogram of the Fisheries Department

ANNEX VIII – sample of Annual Budget of the Fisheries Department of the Ministry of Fisheries, Crops and Livestock, Guyana

ANNEX XI – Diagnostic Model for Human Resource Management

ANNEX X

QUALIFICATIONS AND JOB DESCRIPTIONS OF CHIEF FISHERIES OFFICER AND PRINCIPAL FISHERIES OFFICER, FISHERIES DEPARTMENT, MINISTRY OF FISHERIES, CROPS AND LIVESTOCK, GUYANA

A: CHIEF FISHERIES OFFICER (CFO)

(i) Duties and Responsibilities

- *Reporting to the Permanent Secretary, Ministry of Fisheries, Crops and Livestock.*
- *Advising the Permanent Secretary and the Minister on all aspects of Fisheries.*
- *Preparing National Plans, Programmes and Projects for Fisheries Management and Development.*
- *Implementing and monitoring of Fisheries Management and Development Plans, Programmes and Projects in the Department and for the sub-sector.*
- *Planning and monitoring the implementation of Research, Extension and Training Programmes in Fisheries and Aquaculture for the Department and Fisheries.*
- *Regulating the exploitation of Guyana's fisheries resources by way of licenses for boats, etc.*
- *Promoting sustainable Fishery Management by providing extension services and infrastructure where necessary.*

(ii) Qualifications and Experience

A First Degree in Marine Science or Natural Science from a recognized University or equivalent qualification, plus a Post Graduate Degree in Marine or Inland Fisheries or Aquaculture plus at least seven (7) years relevant Post Graduate experience, including at least three (3) years in management and planning.

OR

A First Degree in Marine Science or Natural Science from a recognized University or equivalent qualification plus nine (9) years relevant Post Graduate experience in Marine or Inland Fisheries or Aquaculture, including at least three (3) years experience in Management and Planning.

B: PRINCIPAL FISHERIES OFFICER (PFO)

(i) Duties and Responsibilities

The Principal Fisheries Officer will report to the Chief Fisheries Officer and will be responsible for inter alia:

- *Advising the Chief Fisheries Officer (CFO) on the formulation and implementation of policy with respect to the improvement and expansion of Guyana's fishing industry.*
- *Assisting the CFO in planning and supervision of the implementation of Extension and Development Research Programmes in Marine and Inland Fishery including, Aquaculture.*
- *Advising on the revision and formulation on Fisheries Regulations.*

(ii) Qualifications and Experience

A Post Graduate Degree in Marine or Inland Fisheries from a recognized University or equivalent qualification, plus at least three (3) years experience in Fisheries.

OR

A First Degree in Marine or Inland Fisheries from a recognized University plus at least five (5) years experience in Fisheries.

OR

A First Degree in Agriculture or Natural Science or related discipline from a recognized University, plus a Post Graduate Diploma/Certificate in Fisheries, plus at least four (4) years experience in Fisheries.

OR

A First Degree in Agriculture or Natural Science or related discipline from a recognized University, plus at least six (6) years experience in Fisheries.

ANNEX XI**GUYANA FISHERIES DIVISION*****STAFFING AND QUALIFICATIONS PROFILE***

TITLE	NAME	QUALIFICATION
<i>A. PROGRAMME ADMINISTRATION</i>		
• Chief Fisheries Officer	VACANT	
• Accounts Clerk II	Colleen Collymore	Cert., ?PSU
• Cleaner	Joyce Cummings	Primary School
• Office Assistant	Earl Grandsoult	Secondary School
• Driver	Rawle Jones	Secondary School
• Typist Clerk I	Deborah Lewis	Pitman Intermediate (Typing)
• Driver	Julian Emanuel	Secondary
• Typist Clerk II	Gloria Richards	Pitman Advanced/GTI Sect.
• Driver	Gavin Garraway	Secondary School
• Legal and Inspectorate		
• Fisheries Assistant I (Ag. II)	Rau Adams	GSA dip (Agric.)
• Fisheries Inspector	Brentnol Gibbs	CXC/GCE
• Fisheries Inspector	Rawle Allen	CXC/GCE
• Fisheries Officer*	Brian Dey	UG First degree (Agric.)
• Fisheries Inspector	Leslyn Walcott	GSA Cert. (Agric.)
• TED Inspector	Emanuel Grahame Patrick Jaikaran Francis Spellen Narine Sukhai	
C. Statistics		
• Fisheries Officer	VACANT	
• Fisheries Officer	Dawn Maison	UG First degree (Agric.)
• * Not yet appointed (CFRAMP)		
• Data Input Clerk	Denise James	Pitman Ind./CXC, Computer courses
• Data Collectors	Michele Baptiste Jomo Glen	CXC/GCE
• C. Resource Assessment		
• Fisheries Assistant I	Ingrid Peters	BSc. Degree Management, GSA Dip. (Agric.)
• Fisheries Officer**	Dawn Shephard	US First degree
• Fisheries Assistant II	Rudolph Burnett	GSA dip. (Agric.), Dip Fisheries (Aquaculture)

ANNEX XII

GUYANA FISHERIES DIVISION

STAFFING AND QUALIFICATION'S PROFILE

• Fisheries Officer	<i>Tenarine Geer</i>	<i>UG First degree (Agric.), courses in Aquaculture</i>
• Fish Station Attendants	<i>Ronald Peters Gewyan</i>	<i>Secondary School Secondary School</i>
• Fisheries Field Assistant	<i>Rodrick Daniels</i>	<i>GSA Dip. (Agric.) Courses in Aquaculture</i>
D. Extension Services		
• Fisheries Assistant II	<i>Keith Myers Irvin McLennan</i>	<i>CXC/GCE Dipl. Fisheries</i>
• Fisheries Assistant I	<i>Nigel Mercurius</i>	<i>GSA Dipl. (Agric.)</i>
• Fisheries officer (Ag. Senior Fisheries Officer	<i>Shawn Wiggins</i>	<i>UG first Degree (Agric)</i>
• ** Pursuing Masters Degree in Canada		
• Fisheries Officer*	<i>Winston Thom</i>	<i>UG First degree (Agric.)</i>
• Fish Station Attendant	<i>Lorrain Gordon</i>	<i>Secondary School</i>
• * Not yet appointed (CFRAMP)		

ANNEX XIV

GUYANA FISHERIES DIVISION
STAFF DETAILS SUMMARY

DESCRIPTION	AUTHORISED		FILLED	
	2000	2001	2000	2001
• Administration	1	1	0	0
•				
• Senior Technical	8	8	5	5
•				
• Other Technical &	7	7	5	5
• Craft Skilled				
• Clerical & Office	7	7	5	5
• Support				
• Semi-Skilled	22	22	13	13
• Operatives &				
• Unskilled				
• Contracted			5	14
• Employees				
• Temporary			0	0
• Employees				
TOTAL	45	45	31	42

