



CARICOM Fisheries Unit



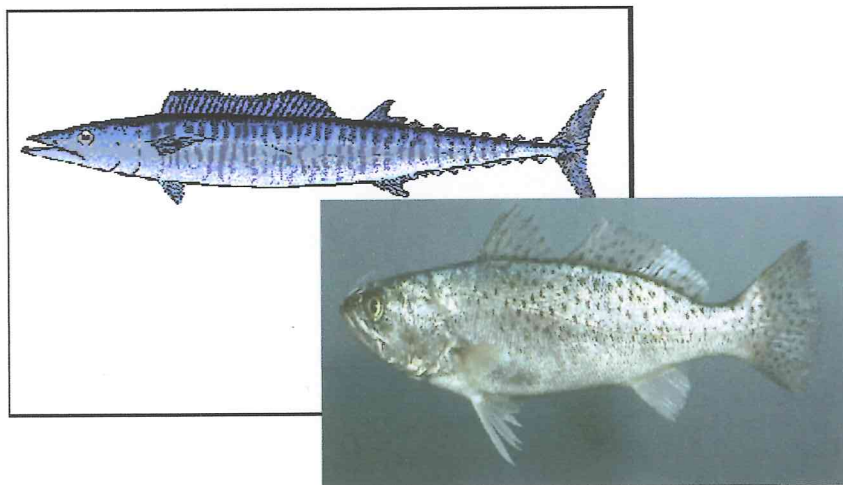
Suriname



European Union

Integrated Caribbean Regional Agriculture and Fisheries Development Programme - Fisheries Component

WORK PLAN FOR SURINAME (April 2000 – March 2002)



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APPENDIX I : BUDGET SUMMARY

LIST OF ACRONYMS

ACP	African, Caribbean and the Pacific States (associated to European Union)
DM	Data Manager
BDC	Biological Data Collection
CANARI	Caribbean Natural Resource Institute
CARISEC	CARICOM Secretariat
CFO	Chief Fisheries Officer
CFU	CARICOM Fisheries Unit
CFRAMP	CARICOM Fisheries Resource Assessment and Management Program
CFTDI	Caribbean Fisheries Training and Development Institute
CIDA	Canadian International Development Agency
CRFM	Caribbean Regional Fisheries Mechanism
DRAO	Deputy Regional Authorising Officer
DOF	Department of Fisheries
DSA	Daily Subsistence Allowance
ECU	European Currency Unit
EDF	European Development Fund
FAC	Fisheries Advisory Committee
FAO	Food and Agriculture Organization of the United Nations
FD	Fisheries Department
FISDC	Fisheries Institutional Strengthening and Development Component
FMP	Fisheries Management Plan
FRM	Fisheries Resource Management
GEF	Global Environmental Fund
HACCP	Hazard Analysis and Critical Control Point
IAC	International Agricultural Centre, Wageningen, The Netherlands
ICCAT	International Commission for the Conservation of Atlantic Tunas
ICLARM	International Centre for Living Aquatic Resource Management
ICRAFDP	Integrated Caribbean Regional Agriculture and Fisheries Development Programme (EDF - funded)
IMA	Institute of Marine Affairs
LRS	Licensing and Registration System
MCS	Monitoring, Control and Surveillance
MTI	Maritime Training Institute
NGO	Non-Governmental Organisation
NFW	National Fisheries Workshops
NMFS	National Marine Fisheries Service (U.S.A.)
NRMU	National Resource Management Unit
OVI	Objectively Verifiable Indicators
PPCU	Programme Promotion and Co-ordination Unit
PRC	Program Review Committee
R & T	Research and Training
RAU	Resource Assessment Unit
RDP	Rural Development Project
SCMA	Standing Committee of Ministers of Agriculture
SFO	Senior Fisheries Officer
SVG	St. Vincent and the Grenadines
TA	Technical Assistance
TAP	Technical and Administrative Provisions (annexed to Financing Agreement)
TC	Technical Committee
TCDC	Technical Co-operation between Developing Countries
TIP	Trip Interview Program (Data collection software package)
T & T	Trinidad and Tobago
UNDP	United Nations Development Programme
UWI	The University of the West Indies
WBS	Work Breakdown Structure
WECAFC	Western Central Atlantic Fisheries Commission of the FAO, United Nations
WP	Work Programme (Work Plan/Cost Estimate/Financial Plan)

EXECUTIVE SUMMARY

The approved five year Work Programme and Budget under the Integrated Caribbean Regional Agriculture and Fisheries Development Programme (ICRAFD) was developed jointly by the Department of Fisheries (Suriname) and the CARICOM Fisheries Unit head quartered in Belize and signed on July 21, 2000.

The Work Programme will be implemented in two years Work Plan cycles. During year three of the programme there will be an external evaluation of the programme. The first two years Work Plan and budget (April 2000-March 2002) will be implemented within the agreed areas of focus identified as sub-projects and will be monitored under an agreed CFU-DOF arrangement.

Based on the resources available under the CARIFORUM Project and the constraints faced by the Fisheries Division, it will not be possible to undertake activities in all areas needed to achieve sustainable development and conservation of the fisheries resources. This two year Work Plan will therefore seek to address some of the critical issues affecting the fisheries sector by focusing on:

- development of clear and adequate planning and policies framework;
- improving the fisheries database, information management systems and flow of information to stakeholders for planning and management decision making;
- strengthening 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 ; and
- improving public awareness of the benefits and importance of the fisheries sector and the need for sustainable resource management.

Therefore, with the intention of providing information for management and decision-making on a continuous basis, the Project will assist the Fisheries Division to strengthen its data collection systems to collect data on length, weight, maturity and hard parts for selected species of fish and shrimp in the respective fisheries. The resulting data, along with catch, effort, economic, social and environmental data, should permit qualitative and quantitative evaluation of the impact of the fishery on the population structure, including estimates of fishing mortality, current abundance and status of exploitation, trends in recruitment and projected future abundance, and allowable catch under given management regimes. Biomass dynamic models, length based assessment techniques/models as well as bio-economic models will be utilized in these assessments.

The project will provide technical and financial assistance to the Fisheries Department for the collection of catch, effort, biological, social and economic data for selected species and fisheries within the refined data collection system. Training will be provided to Fisheries Department staff in data collection, management and analysis. Selectivity studies for specific fishing gear such as the gillnet for large demersals, trawls and njawaries will be conducted. Technical support will be provided for the assessment of the red snapper fishery; the development of bio-economic models for the seabob and penaeid shrimp fisheries; development of an ecosystem model of the fisheries. Support will also be provided for Suriname's continued participation in the Ad Hoc Shrimp & Groundfish Group for the Guiana- Brazil Shelf. The project will also provide support for the preparation and dissemination of the data and information obtained through the preparation of regular technical reports and articles.

Technical assistance will be provided to the Fisheries Department to strengthen the planning and policy framework and improve the system of governance. Specifically the Project will:

- i) prepare, finalize and implement a comprehensive national fisheries policy;
- ii) finalize and implement a national fisheries management plan;
- iii) define and establish a mechanism for providing policy advice and enhancement of participatory approaches to decision-making regarding the fisheries sector; and
- iv) support a review and preparation of recommendations for strengthening of the organisational structure and operational arrangements of the Fisheries Department.

The project will also seek to strengthen mechanisms for improved technical co-operation in the areas of fisheries between Suriname and Guyana specifically, and among Suriname and other neighbouring countries in Latin America and the Caribbean in general. In addition, support will be provided to improve understanding of the types of conflicts in the fisheries sector and aid the establishment of mechanisms for, and management and resolution of these conflicts. The project will also provide support for:

- a study on the impact and the opportunities created by current global neo-liberal macro-economic policies on the fisheries of Suriname and Guyana;
- a study to develop recommendations for diversification and sustainable development of the under-utilised fin-fish resources; and
- a community based development study focused on exploratory and experimental fishing for coastal pelagic species using Fish Aggregating Devices (FADs).

The activities designed to strengthen Community Involvement & Education will directly tackle the major knowledge gaps and human relations problems facing the artisanal fisheries sector. These are the absence of a functional extension unit in the Fisheries Department, the absence of any fisher folk organization, the lack of awareness of conservation and management issues among resource users and the absence of effective mechanisms for enforcing management measures, and the weak links between the department and the resource users and other stakeholders.

The absence of active resource user organizations and the lack of operational linkages between resource users and the department will be addressed through a deliberate mobilizing and organizing program to be coordinated by a Fisheries Officer (Community Development Officer) who will be recruited, and supported by fisheries field officers who will benefit from training, to build their capacity for field work organizing and mobilizing and group organizing work. They will also provide technical support to the fisher folk organizations that will eventually emerge, and provide the Public Relations input that will cement relations between the department and the resource user groups.

The plan will promote greater awareness by planning and promoting a public awareness campaign that will utilize group, print and mass media, supplemented by a radio call-in program, in which all stakeholders will be active participants. This will be supported by a National Dialogue Group of representatives of all major stakeholders that will regularly meet to deliberate on burning issues related to the improvement of the industry and the sustenance of the resources. The matters discussed by this forum will feed into the public awareness campaign. A second Fisheries Officer (Communications/Public Relations) will be recruited to direct and coordinate these activities.

WBS 300: FISHERIES DATA MANAGEMENT SYSTEMS

Introduction

During the first cycle of the 5 years Fisheries Component of the Integrated Caribbean Regional Agricultural and Fisheries Development Programme the Fisheries Data Management Systems sub-project will focus on building the foundation of the Data Management Systems in Suriname.

The Fisheries Data Management Systems will consist of two components, (i) **Catch, Effort, Biological and Socio-economic Data Management System (WBS 310)** and (ii) **Licensing and Registration Data Management System (WBS 320)**. Within each system data collection, storage, analysis and reporting will be main activities, as much as possible these activities will be combined across the systems.

During the Planning Mission (see Five Year Work Plan for Suriname for more details) to Suriname (May 29 – June 06, 2000) data obtained from the Multi-disciplinary Survey instruments and during group discussions identified some of the weaknesses in Suriname's data collection and management systems, these include:-

1. Lack of consistency in the collection and recording of important data elements over time and space leading to incomplete time-series which are needed for application of some of the standard assessment models.
2. The need to obtain information on new fisheries (e.g. snapper fishery) and landing sites that have emerged over the past five years that are not covered in the current sampling plan.
3. Collection of biological data for additional commercially important species, as biological data is currently collected for only a few species of fin fish and shrimp.
4. To obtain a data management software for data storage and manipulation as Microsoft Excel, the current software being used, is not adequately addressing the data management and analysis needs of the department.
5. Training for data collectors is essential, as several data collectors indicated in their interviews that data collectors are inexperienced and lack training. This will be extremely important for the biological data collectors. The lack of enough data collectors was sighted as a human resources problem.
6. Lack of resources for the data collection program. Lack of transportation and fuel have being highlighted as a concern by the data collectors, as this affect their ability to adequately carry out their data collection duties.

In an effort to address these issues the following activities were developed:

Catch, Effort, Biological and Socio-economic Data Management System (WBS 310)

1. Review the Data Collection and Management Systems (WBS 311/321)
2. Enhance data collection plans covering the major fisheries (WBS 312)
3. Train fisheries divisions staff in data collection (WBS 313)
4. Develop/upgrade database software for data storage, basic analysis and reporting-TIP (WBS 314)
5. Train Fisheries Divisions Staff in using the database software for, data entry, analysis and reporting - TIP(WBS 315)
6. Provide resources for implementation (WBS 316/325)

Licensing and Registration Data Management System (WBS 320)

9. Enhance Licensing and Registration System (WBS 322)
10. Develop/upgrade Database software for data storage, basic analysis and reporting-LRS (WBS 323)
11. Train fisheries divisions staff in using the database software for, data entry, analysis and reporting
- LRS (WBS 324)

The review of the data collection and management systems will be completed during the early part of the first cycle and will provide recommendations that will guide and fine tune the other activities. The development or upgrade of the database software should be completed in the first two years of the project with the other activities being implemented gradually over the six-year period.

Objectives of the Work Plan

The aim of this section of the Work Plan is to improve the Data Collection and Management System and the Licensing and Registration System to provide fisheries data for assessment and management as well as an effective tool for monitoring and regulating the fishing effort.

PLANNED ACTIVITIES

WBS 311/321: Review the Data Collection and Management Systems

There are currently gaps in the data management systems as the different types of fisheries are not adequately covered and new landing sites that have emerged over the past five years are not being sampled. There seems to be a good coverage of the industrial fishery and limited coverage of the artisanal fishery.

The fisheries data collection program was initially focused on getting data from the penaeid fishery by way of catch and effort log books, plant records and biological (for selected fin fish) data from the coastal fisheries. The department is responsible for collecting data from more recently developing fisheries such as seabob, red and lane snapper. However, due to limited skilled human resource and lack of funds, the development of the data collection program has been fairly ad hoc, depending to some extent on the information needed at the time and the resources available. Bearing in mind the need to develop a fisheries data collection and management system that will provide adequate coverage of the various fisheries identified in the Draft Fisheries Management Plan, as well as a system that is statistically sound and capable of providing data on a continuous basis, the Project will undertake a review of the existing program which should lead to recommendations for its refinement and maintenance. The Project will also provide some of the resources for the implementation of the recommendations.

Purpose

The purpose of the review will be to:

- Review the onshore and offshore (Observer Program) data (catch, effort, biological, economic and social) collection and management system of Suriname and make recommendations for its improvement;
- Recommend the most suitable means of obtaining data on discards by the various gear types (e.g. njawaries, trawl nets) in the Industrial, Coastal and Brackishwater Fisheries;
- Determine if adequate data exists to determine growth and mortality parameters for the main commercial species, including those from large demersals and penaeid shrimp and advise on the appropriate studies to obtain such data for analysis;

- Review the type of economic and socio-economic data being collected and advise on the additional data to be collected in order to monitor the performance of the fleets in the respective fisheries as well as provide information for management;
- Make recommendations for refining and strengthening the integration of the catch, effort, biological, economic and social data collection programs.

In reviewing the data collection program special attention should be given to the collection of fishing effort data to ensure that the data collected adequately reflects fishing effort.

Approach

- A resource person, with experience in designing and implementing fisheries and related data collection systems, from CFU, or from within the country or a consultant, will undertake the assignment including preparation of the necessary reports with recommendations for implementation.
- The resource person will work in close collaboration with the Director of Fisheries, Data Manager, Fisheries Officers, Data Collectors/Observers to conduct the assignment and to facilitate technology transfer to these personnel.
- The resource person will visit Suriname where he/she will conduct a thorough review and analysis of the data collection program in keeping with the above stated objectives. This will include review and analysis of the data from the Marine Fishery Census 1995, the existing Licensing & Registration System, the existing catch, effort, biological and economic data collection programs, including the data collection forms and logbooks, the computerised databases and reports, including the Draft Fisheries Management Plan for Suriname. Visits to landing sites, wharves and processing plants to observe data collection activities and interaction between the fisheries personnel and the fishers will also be made.

Outputs

The outputs of this activity will be:

- Review and analysis of the data collection and management program for the industrial, coastal and brackishwater fisheries, including the data collection forms and logbooks, the field data collection programs, computerised databases and reports in Suriname, with recommendations for refinement.
- Suggestions for the most suitable means to obtain data on the discards at sea by the various gear types in the industrial, coastal and brackishwater fisheries.
- Indication as to whether adequate data exists to conduct selectivity studies for the gillnet fleet for large demersals, trawls and njawarie nets of different types, and/or provide advice on the appropriate studies to gather such data for analyses.
- Indication as to whether adequate data exists to determine growth and mortality parameters for the main commercial species, including those from the large demersals, small soft-bottomed demersal fish and penaeid shrimp, and/or provide advice on the appropriate studies to obtain such data for analyses.
- Review the types of economic data being collected and provide advice on the additional data to be collected in order to monitor the performance of the fleets in the respective fisheries as well as provide information for management.
- Suggestions for refining the data collection elements regarding fishing effort.

- An Implementation Plan, with schedule, to integrate the improved onshore and offshore catch and effort, biological and associated economic (and social) data collection programs into a comprehensive fisheries data collection system for the industrial, coastal and brackishwater.

WBS 312: Enhance data collection plans covering the major fisheries

This activity will involve enhancing the current sampling plan for the industrial, coastal and brackish water fisheries to capture data on the number of fleets and/or discrete unit of fishing activity, description of the fleet, changes in fishing areas, changes and development in gear and fishing strategy used, and changes in the species targeted. It will also include re-organizing and re-starting the observer program for collection of catch, effort, and biological data at sea, however, this particular task will not commence until the second cycle of the programme.

For each fleet or unit of fishing activity, the following data will be collected:

- monthly details on the total catch and or landings taken by the fleet;
- monthly details on the total effort exerted by the fleet, e.g. total days at sea, trawl hauls and total number of hooks etcetera;
- number of crew per trip;
- reliable estimates of catch and effort for a representative subset of the fleet if it is not possible to sample the whole fleet.

Landing data such as:

- monthly details on the species taken, expressed as a proportion of the total catch (or landings);
- the number of fish caught per time period by species or the mean mass of fish caught per time period by species;
- estimates of discards or fish not marketed (e.g. kept for home use), giving details of sizes where possible.

Collection of fishing activity and landing data elements will start in the first year of the programme and will be strengthen gradually throughout the project.

For the biological data collection program the following data elements for each species or stock will be collected:

- Length frequency
- Hard parts for ageing
- Maturity date

During the first two years of the programme biological data collection will focus on the collection of length frequency and maturity data, while data collection of hard parts for ageing will commenced in the third year.

To address the effects of environmental factors on stock parameters, data elements such as rainfall, temperature, salinity and current patterns will be recorded.

Ecosystem modeling will require data on:

- Diet composition for each species (Stomach Contents study)
- Estimates of primary production

It will not be possible to commenced data collection for Ecosystem modeling before the second cycle of the project.

The social and economic data that will be collected are:

- Cost of inputs e.g. capital expenditure-boats, gears, operational costs-fuel, labour etc.
- Price or value of catch
- Revenue
- Profit
- Subsidies
- Distribution of benefits

- Employment-fishermen, processing, marketing, support sector (e.g. boat building), provision of supplies
- Family size
- Education levels.

The collection of social and economic data elements will begin in the first year of the programme and will be strengthened gradually throughout the project.

Purpose

To provide an integrated data collection system which will collect catch, effort, biological, environmental, social and economic data. This data when processed will provide information and derived indices that will:

- provide information to update the fisheries management plan for Suriname;
- provide information on the fisheries for the major stakeholders for decision making.

Approach

- The sampling plan will be reviewed under WBS 311/321 and the results will be used to refine the enhance the collection of data.
- The staff of the Suriname Fisheries Department, with technical support provided by the CFU staff, will be responsible for preparation of the revised and enhanced sampling plan for the major fisheries to facilitate the collection of catch, effort, biological, environmental, social and economic data elements.
- Implementation of the modified sampling plan will be the responsibility of the Fisheries Department with technical assistance and funding provided by CFU staff, regional experts and consultants as needed.
- Provide additional human resource and equipment for data collection, management, analysis and reporting.

WBS 313: Train fisheries divisions staff in data collection

Following the modification of the current sampling plan all the existing staff involved in data collection and management as well as newly recruited staff will participate in workshops on data collection and management. At these workshop, the participants will be trained in data collection, data entry using TIP, and quality control and reporting. In the first year a basic training workshop will be conducted followed by a refreshers training workshop in the second year.

Purpose

The purpose of this activity will be to upgrade the skills of existing data collection and management staff as well as train the new recruits.

Approach

The training will be delivered by resource personnel from CFU or regional personnel under TCDC and the Fisheries Department (Suriname).

Outputs

Fisheries staff trained in areas of catch, effort and biological data collection, environmental, social and economic.

WBS 314: Database software for data storage, basic analysis and reporting

Microsoft Excel is currently being used for data (catch, effort, biological and economic) entry, storage, manipulation and analysis. The Fisheries Department staff expressed the need for a data management software as Microsoft Excel was not adequately addressing all their needs. The development/upgrade and testing of the software will be completed by the end of first cycle.

Purpose

The purpose of this activity will be to:

- Review the current database software with the view to transfer data to another software.
- Consider the suitability of TIP for data entry, storage, manipulation, basic analysis and reporting.
- Identify and train suitable Fisheries Department staff to manage/operate the system.

Approach

- A resource person with data management skills and experience in using Microsoft Excel from the CFU or from within the region or a consultant will undertake the assignment in collaboration with the Fisheries Department. This individual will have a working knowledge of TIP, experience in data storage, manipulation, basic statistical analysis and reporting.
- The resource person will visit Suriname where s/he will conduct a thorough review of the existing database software for collecting catch, effort, biological, social and economic data. This activity will be merged with WBS 320.4.

Output

- Review of the existing database software with recommendations for its refinement, further computerization and data transfer.
- An implementation plan, with schedule to implement the recommendations for the refinement of the software.
- The availability of database software for data storage, manipulation, basic analysis and reporting.
- Fisheries Division staff identified to operate the system.

WBS 316/325: Provide resources for implementation

The Data Management Systems will require at least two computer, with adequate resources, and software to support data entry, basic analysis and reporting. Field sampling material, scientific equipment and transportation (two motorcycles) will also be provided.

WBS 317/327: Preparation of Articles and Technical Reports

In the initial two years of the ICRAFD programme the Fisheries Department, assisted by the CFU team, will prepare articles and technical papers to facilitate communication with major stakeholders. These will include:

- Monthly summaries of catch, effort, fish prices, exports and earnings
- Annual statistical reports on the fisheries sector documenting the performance and trends in the fisheries
- Updating information for input in the National Fisheries Management Plans

WBS 320: LICENSING AND REGISTRATION SYSTEM

WBS 322: Enhance Licensing and Registration System

The current Licensing and Registration system in Suriname utilizes a card system as well as limited electronic storage of data. The system does not have the capacity to adequately meet the needs for the effective licensing, registration and monitoring of fishing vessels and fishers from the various fisheries. This activity will commence in the first year of the project.

Purpose

The purpose of this activity is to:

- Review the existing licensing and registration system to make it more effective as a tool in the monitoring and regulation of the industrial, coastal, brackish water and freshwater fisheries.
- Consider LRS for data entry, storage, manipulation, basic analysis and reporting.
- Identify suitable Fisheries Department Staff to manage/operate the system.

Approach

- Resource person with data management skills and experience in using Microsoft Excel from the CFU or from within the region or a consultant will undertake the assignment in collaboration with the Fisheries Department. The resource person will have working knowledge of LRS and TIP, experience in data storage, manipulation, basic statistical analysis and reporting.
- The resource person will visit Suriname where s/he will conduct a thorough review of the existing Licensing and Registration System. This will include review of the manual/card system as well as any electronic recording of data on fishing vessels. This activity will be merged with WBS 310.4.

Output

- Review of the existing licensing and registration system with recommendations for its refinement and further computerization.
- An implementation plan, with schedules to implement the recommendations for the refinement of the Licensing and Registration system.
- The availability of database software for data storage, manipulation, basic analysis and reporting.
- Fisheries Department staff identified to operate the system.

WBS 323: Database software for data storage, basic analysis and reporting

Microsoft Excel is currently being used for data (licensing and registration) entry, storage, manipulation and analysis. The Fisheries Department staff expressed the need for a data management software as Microsoft Excel was not adequately addressing their licensing and registration needs. The development/upgrade and testing of the software will be completed by the end of first cycle.

Purpose

This activity will involve:

- Review of the current database software.
- Consider LRS for data entry, storage, manipulation, basic analysis and reporting.
- Identify and train a suitable person to manage/operate the system.

Approach

- Resource persons working in close collaboration with the Data Manager, Fisheries Officers and other personnel responsible for Licensing and Registration, will review the database software.
- The Data Manager will introduce LRS to the Fisheries Department.
- The Fisheries Department will identify a suitable person to manage/operate the system.

Outputs

- Review of the existing database software with recommendations for its refinement and further computerization.
- An implementation plan, with schedule to implement the recommendations for the refinement of the software.
- The availability of database software for data storage, manipulation, basic analysis and reporting.
- Suitable Fisheries Department staff identified and trained to operate the system.

WBS 325: Provide resources for implementation

The Licensing and Registration System will require at least one computer, with adequate resources, and software to support data entry, basic analysis and reporting.

WBS 330/530: Multidisciplinary Survey

A comprehensive multidisciplinary survey was conducted to generate data on critical aspects of the fisheries of Suriname in order to garner information that would inform the final contents of a work program for the entire duration (5-6 years) of the fisheries component of the Integrated Caribbean Regional Agriculture and Fisheries Development (ICRAFD) programme. The analysis will also generate information that would lead to adjustments and modification of the activity areas covered in this preliminary 24-month work plan, and a further 3-4 years thereafter. Third, the findings of these surveys will provide a benchmark on which future progress, in various aspects of the Fisheries Data Management Systems sub-project, can be measured.

Each of the mini-surveys that constitute the Multidisciplinary Survey will be considered completed, when the analysis and the report are completed and published.

The following is a breakdown of the individual instruments administered during and after the Planning Mission to Suriname by a Team of four Technical Officers from the CFU, Belize.

WBS 331/530.1: Baseline Survey of the Fisheries Department of Suriname.

The instrument used in this survey made enquiries into the general nature and status of the national fisheries, the existing legal aspects for management of the fisheries, the status of fisheries management policy and planning, the structure, functions, needs and priorities of the Fisheries department and other institutions. It also enquired if Extension Services, Fisheries Research, Data Collection, Aquaculture, Ornamental and Sports Fisheries, and Post-Harvest Technology transfer, were significant programmes of the department, and if so, what were their statuses, and how could they be improved?

In Suriname, two of this comprehensive questionnaire were administered to the Director of Fisheries and a group of three senior fisheries officers. This activity ends with the analysis of the data and the publication of its findings.

WBS 330.2/530.2: Survey of Current Data Collection Issues.

This instrument was prepared for Suriname, Bahamas and the Dominican Republic where some form of data collection programmes do exist. Its objectives are:

- To identify the general issues and the nature of problems, conflict areas which exist, and the strengths and weaknesses of the Human resource area of the programme.
- To develop more effective strategies for improving the system through development of awareness and training programs for data collectors and the resource users, and to ensure the cooperation and support of the latter, under the Community Involvement & Public Education sub-project.

In Suriname, 10 (ten) of these instruments were administered to the Data Manager and nine of the Data Collectors. This activity will come to an end with the publication of the report on the findings.

WBS 330.4/531.1: Baseline Survey of Fishing Communities in Suriname

This is a major survey to enquire into and evaluate the social and economic status of the artisanal fisheries sector, the technical aspects of the fishing practices, their traditional management measures (if any) their attitudes, perceptions and behaviours towards fisheries management measures, and their views on elements to include in management plans, and their real and expected roles in the decision making process.

Arrangements were finalized during the Mission for 100 instruments to be administered in seven selected communities, within a fortnight of the end of the Mission, after four candidates were contracted as Interviewers, and had undergone intensive training. The four interviewers and a Supervisor were contracted to do the job.

This activity will be considered completed after the data had been analyzed, and a report prepared and published.

WBS 330.5/531.2: Key Informant Interviews

This is a supplement to the Community Survey, designed to target prominent fishers and residents of the fishing communities and those who control the decision-making machinery. The questions cover broad areas of fisheries policies, development, conservation and management and take a look at the future of the fishing industry. In Suriname 15 of these instruments were administered to traditional leaders, fisheries administrators, boat owners and captains, retired fishers and some prominent women in the communities.

This activity will be deemed completed after a final report has been published on it.

WBS 400: FISHERIES RESOURCE ASSESSMENT

Introduction

Developing sustainable fisheries in the region requires comprehensive, coordinated policy and plans based on a good understanding of the fishery resource, the marine environment which supports the resource and on the social and economic conditions of the people and organizations that depend on the resource. Information on these issues is therefore one of the cornerstones for sustainable fisheries development. Not only are scientific and technical knowledge valuable, traditional knowledge accumulated by resource users over generations is also equally valuable for resource management and conservation. Not only are the fisheries systems complex, the research and information needs are also complex and demanding. Information is needed on the oceanographic characteristics of the area; the ecological and biological aspects of the fisheries; and the socio-economic aspects of the fisheries.

Oceanographic studies to understand the physical, chemical and biological features of the region's fisheries and marine ecosystems require expensive research vessels, equipment and highly trained personnel, as well as long time series of data.

Biological and ecological studies on fish stocks also require significant investments in highly trained specialists, research equipment and laboratory facilities as well as the gathering, analysis and interpretation of long-time series of data, including the catch and effort and biological data, in a coherent and consistent manner.

Social and economic studies while less expensive and less demanding than the others also require significant investments in trained personnel, funds, material and infrastructure. Given the socio-economic characteristics of the fisheries resource this type of research is essential for conservation and sustainable development. Socio-economic information on the fisheries is very scarce as traditionally efforts have been directed at gathering biological, ecological and to a lesser extent oceanographic information.

In the Draft Fisheries Management Plan of Suriname, priority areas for investigation for each fishery/management unit have been identified. Based on the resources available for Suriname under the CARIFORUM Project and the constraints faced by the Fisheries Division, it would not be possible to undertake activities in all these areas. As such, with the intention of providing information for improved management, the Project is proposing to assist Suriname in a review of its historical data (catch, effort, biological, social and economic) from the industrial, coastal, and brackishwater fisheries and undertake analyses, that may be possible, in keeping with the information needs for management; the collection of biological, social and economic data for selected species and fisheries within the refined data collection system; conduct selectivity studies for specific fishing gear; provide technical support for the assessment of the red snapper fishery, at the national level; assist in the development of bio-economic models for the seabob and penaeid fisheries; and support Suriname's continued participation in the Ad Hoc Shrimp & Groundfish Group for the Guiana – Brazil Shelf.

Work on oceanographic factors requires significant investment in personnel and equipment. It is not proposed that the project invest much in this area, although it is recognized that environmental and oceanographic factors have a significant influence on the abundance and distribution of the fish stocks. Nevertheless useful data can be obtained from other agencies in Suriname and the Caribbean Region which are monitoring environmental factors, such as rainfall, temperature changes and current patterns. The project will encourage closer collaboration among the Fisheries Department and these agencies and institutions in Suriname and the Region involved in environmental research and monitoring in order to obtain some of the information needed.

PLANNED ACTIVITIES

WBS 421.2. Selectivity Studies

Conduct selectivity studies of the gillnet for large demersals, trawls and njawarie nets of different types. Gear selectivity needs to be taken into account when one wants to estimate the real size composition of the fish in the fishing area. It is an important tool in fisheries management for regulating the minimum mesh sizes for a fishing fleet targeting selected species. It is also related to the estimation of the total mortality Z , the analysis of trawl survey data vis a vis to commercial fisheries data and prediction of future yields (Sparre and Venema, 1982).

Purpose

- To undertake selectivity studies for the gillnet fleet for large demersals in order to determine optimum mesh sizes.
- To undertake selectivity studies for trawl and njawarie nets

Approach

CFU staff will collaborate with the Fisheries Division in the design and implementation of the appropriate field studies (e.g. for trawls using the covered codend method where the size of fish in the codend with those of the fish in the cover) to collect the data for analysis. These activities could be undertaken by University students who would submit the reports as part of their dissertation requirement, with supervision being provided by personnel from CFU/DOF/University.

Outputs

The output of this activity will be:

- Information for management of the gillnet, trawl and njawarie fleets.

WBS 421.3: Assessment of the Red Snapper Fishery (*Lutjanus purpureus*)

The red snapper fishery is a quite complex one in that the red snapper stock(s) may be one that is shared among the countries of the Guiana – Brazil Shelf and more than one type of gear (traps, hook and line) is being used to exploit it. Also, the major fishers of this resource are Venezuelan fishing vessels operating in the waters of the neighbouring countries by way of bilateral access agreements; lease arrangements with local companies; or by some other means. Despite the landing arrangements set out in the agreements as well as the requirements for the provision of catch, effort and biological data (length, weight, hard parts), in many instances these conditions are not being met. As such, the programme for data collection, assessment and management of this fishery would call for effective data collection (through onshore data collection (catch, effort and biological sampling and/or log books) and an offshore observer programme) at the national level as well as exchange of data/information at the bilateral and regional level.

Purpose

- To refine the catch, effort and biological (length, weight, hard parts) data collection programme for the red snapper fishery to undertake assessments to obtain information for management.
- To participate in the regional initiatives (Ad Hoc Shrimp and Groundfish Group for the Guiana-Brazil Shelf) to assess the red snapper resources that would result in improved information for management of the stocks at the national and regional levels.

Approach

This study could be done by a student from Suriname or any other CARIFORUM State as an advanced degree. The student would be supervised by the university with support and co-ordination provided by CFU staff. CFU staff and the Fisheries Department would collaborate in developing the detailed plan for the study and refining the data collection programme for the red snapper fishery. They would seek to ensure that adequate mechanisms (onshore and offshore) are in place to collect catch, effort and biological (length, weight, hard parts, maturity) data from the vessels licenced to operate in Suriname's waters as well as monitor those gear (e.g.) that are fishing snappers indirectly by way of the onshore data collection system and the observer programme.

CFU will support Suriname's participation in at least two of the stock assessment workshops of the Ad Hoc Group.

The output of this activity will be:

- Data being collected on an on-going basis for regular assessment of the red snapper fishery.
- Analysis of the data collected and preparation of management recommendations
- Information available for management of the fishery at the national and regional levels.

WBS 421.4: Bio-economic Modelling of the Fisheries

With the coming into being of the seabob trawl fishery in 1996, a number of issues have arisen, among these being:

- The effect of trawl fishery on the chinese seine fishery for the same resource both in terms of yield as well as income to the fishermen.
- The need to determine the appropriate effort (number of trawlers) to operate in this fishery in terms of sustainable catches and earnings.
- The effect of the seabob fishery on the penaeid shrimp fishery.

In order to effectively manage and conserve these resources (sea-bob, penaeid shrimp) as well as safeguard the incomes of those involved, as well as to avoid conflict, it would be necessary to determine the resource and gear interactions as well as the effects on the earnings of the various stakeholders so as to better manage these fisheries.

Purpose

- To use multi-fleet and multi-species bio-economic models to obtain information for the management of the seabob and penaeid shrimp fisheries.

Approach

The study could be undertaken by a student as part of an advanced degree program or alternatively by the CFU and the Fisheries Department staff, with technical assistance from a fisheries bio-economist. Assessment of the seabob and penaeid shrimp fisheries will be undertaken using bio-economic models. Some of the bio-economic models which can be utilized such as multi-fleet /single species models or multi-fleet /multi-species models are being tested by the AD Hoc Shrimp and Groundfish Group of which Suriname is a member. Also, the same models can be used to include the effects of the environment (e.g. rainfall, river outflow) on the fishery (ies). This could take the form of a workshop involving the DoF, the stakeholders (who may more readily part with economic data this way) and CFU .

It will be necessary to put in place or to build into the catch, effort and biological data collection program, a component for the collection of economic data from the Chinese seine, seabob trawlers and penaeid trawlers. Such data will include:

- Cost of inputs eg, capital expenditure – boats, gears, operational costs -fuel, labour, etc
- Price/value of catch

- Revenue
- Profit
- Subsidies.

Outputs

The output of this activity will be:

- Information available for management of the fishery at the national and regional levels.
- Fisheries staff trained in the use of bio-economic models.
- Bio-economic assessments conducted
- Management recommendations formulated

WBS 421.6: Participation in the Ad Hoc Working Group

Support will be provided for Suriname's continued participation in the Shrimp & Groundfish Resource Assessment Workshops of the Ad Hoc Group for the Guiana-Brazil Shelf. The Sub-project will support Suriname's continued participation in the CFRAMP/FAO Workshops for the Assessment of the Shrimp & Groundfish Resources of the Guiana – Brazil Shelf. The goal of these workshops (from 1997 to 1999) is:

To undertake and update the assessments of the most important shrimp and groundfish resources of the region, and to complete the evaluation of the biological impacts and social and economic features of the existing shrimp and groundfish fisheries in the sub-region, enabling consideration of the biological, social and economic performance of alternative management strategies for these fisheries.

WBS 421.7: Monitoring

The Biologist will be making visits to Suriname over the life of the program to monitor the progress of the activities associated with the data collection system and to provide assistance and advise during implementation of the project activities.

WBS 500 FISHERIES RESOURCE MANAGEMENT

Introduction

This component constitutes one of the main expected results of the project, viz. the strengthened national and regional institutional management capacities. It is the key to the rational utilisation of the resources, and is the product of the amalgamation of biological, social, economic, statistical and environmental knowledge. It should be clearly understood that a thorough multi-disciplinary knowledge is required for effective management, and that this field cannot be claimed by a single discipline. This is reflected in the project's strategy of establishing multidisciplinary survey teams to collect integrated information on the resource users, their numbers, attitudes, strategies, expectations, frustrations, perception of need for management and suggested solutions to problems. The activities have been organized and described under the following headings:

WBS 510	Strengthened National Fisheries Management
WBS 520.	Strengthened Regional Fisheries Management
WBS 530	Support Fishers and Community Involvement/Education
WBS 540	Long-term training
WBS 550	Monitoring, control and surveillance
WBS 560	Post-harvest Handling, Processing and Marketing.
WBS 570	Fisheries Development Planning

The Fisheries Resource Management approach of the project will be similar to the one adopted by CFRAMP, consisting of: strengthening of national fisheries management capability through training, technical assistance and support in the preparation of Basic Fisheries Policy Documents, Fishery Management Plans, establishment of mechanisms for planning and decision making, the establishment and strengthening of a Regional Fisheries Management mechanism, which is expected to continue to provide support for the regional fisheries initiatives.

PLANNED ACTIVITIES

WBS 510: Strengthened National Fisheries Management

Overview

At the macro-economic level, Suriname has been pursuing similar policies to other CARICOM countries over the past decade, focused on structural adjustments and economic stabilization. The objectives of these programs included: controlling inflation by monitoring the fiscal deficit and monetary supply, including the removal of subsidies; liberalizing the national economy; reforming the financial systems; reducing the state's administrative and technical structure and privatising state owned organizations to increase efficiency and reduce the public deficit. These policies are likely to continue in Suriname and to have significant impact on the fisheries. A significant part of the means of production in the industry is still owned by the government. The state is by far the dominant actor in shaping fisheries policy. There are very few community based NGOs and no functional fisher's organization actively involved in the fisheries sector at this time.

Macro-economic policies to reduce public expenditure, encourage privatisation and facilitate trade are likely to continue and to have a significant impact on the fisheries sector in Suriname. These policies may include further privatisation of services and assets and continued reforms within the public service, which could have a direct impact on the functions and staff of the national fishery department.

The national fisheries at this time is not able to adequately carry out their duties related to fisheries management and sustainable development due to limited capacity and operational resources. At the same time the demands on the fisheries department appears to be growing as the government accepts and pursues the principles of sustainable use of fishery resources, responsible fisheries, protection of the aquatic environment, and other measures endorsed by the international community in support of sustainable development. The Fisheries Department has very little resources to plan and execute its responsibilities. Over the past 10 years, most of the work related to resource assessment and resource management have been financed by donor organizations through short-term projects, with contributions from the Government.

Based on the available information it is reasonable to conclude that in Suriname, governments' interest and the dominant policy orientation with respect to fisheries is development to improve landings, foreign exchange earnings and employment opportunities in the countries. This dominant paradigm, which is shared by policy-makers and industry members alike, places emphasis on modernization of the fleet and processing plants, improving infrastructure, product development fiscal incentives and marketing arrangements rather than on responsible fisheries, sustainable use, resource management, conservation and stewardship of the resource. Now that the major fishery, the prawn fishery is either fully exploited or over-exploited the government of Suriname in collaboration with other regional governments need to review and adjust their policy for fisheries to ensure adequate framework for conservation, resource management and sustainable use of fishery resources. This need is recognized by the Fisheries Department in Suriname and substantial progress has been made in recent years in collecting data and information to improve understanding of the status of the exploited stocks. The Government Fisheries Department has also been developing a Fisheries Management Plan, which is focused on management and conservation of the fisheries.

At the same time there is a clear need for diversification of the fishing industry by developing under-utilised fin-fish resources, particularly the pelagic resources available within Suriname. This will require development of harvesting capacity, as well as processing and marketing aspects.

The specific goal of this activity is to strengthen the fisheries management planning capability of Suriname. Technical assistance will be provided to Suriname to i) prepare, finalize and implement a comprehensive national fisheries policy, ii) finalize and implement a national fisheries management plan and, iii) define and establish a mechanism for providing policy advice and making decisions regarding the fisheries sector. The Fisheries Department of Suriname with support from the Belgian Government has already made significant progress in developing a national fisheries management plan. This plan is now being discussed with stakeholders in Suriname. This project will therefore build on the work already done under the Belgian Project by providing support to the Government of Suriname to finalize the FMP, obtain public and official endorsement and facilitate implementation of the management measures recommended by the plan.

The overall result will be that fishery management policy is formulated and a fishery management plan is developed with stakeholder participation and insofar as possible within the time frame of the project, implemented. The first step is formulation of policy and development/ finalization of the plan. For the Fisheries Department to take action on the plan, it must be accepted and approved by the relevant national bodies, and the contents publicised, in order that the fishing industry can clearly understand what the Government intends to do. The policy and plan should at least be published in a form, which can be distributed and discussed by the stakeholders in industry.

The process of developing the fisheries policy and management plan should include input from all components of the fishery sector, including fishermen. A fishery management plan should also be dynamic, and should be reviewed at least annually. These processes are most effective when there is a formal procedure for acquiring inputs and for review. Therefore, some form of national fishery advisory/decision making body (such as a Fishery Advisory Committee) will be established and made operational. Official reports of the body will be one indication of the extent to which it is functional.

This activity will provide the framework for implementation of the other activities, and will be initiated at the beginning of the project.

WBS 511: National Fisheries Policy, FMP and Advisory/Decision Making Mechanism

The main input in this activity will be technical assistance and funding to the Fisheries Department to define and implement the planned activities. The technical assistance will be from CFU staff, local, regional or EU consultants or through TCDC collaboration with expertise from another CARIFORUM country. The fisheries management plan must be fishery specific, and will be based on the most complete description of the fisheries possible with existing information. Suriname has already compiled considerable information on their fisheries and have started the process of preparation of a FMP, with assistance from an FAO/UNDP Project and a Belgian bilateral support project.

Terms of reference will be developed for provision of technical assistance in preparing and implementing 1) National Fishery Policy, 2) Fisheries Management Plans based on the policies of the Governments and the available information regarding the fisheries and 3) options for national advisory/decision making mechanisms. Consultant/resource person will be recruited, logistical arrangements made for their work and the Fisheries Policies, Fisheries Management Plan and options for national advisory/decision making mechanism prepared.

The process will involve extensive consultations and dialogue with all stakeholders including government officials, the private sector and the resource users. A series of consultations will be organised at the national level and at community level to discuss the issues and obtain broad base input and support for the exercise. Most of these consultations will be organized under the Community Participation Subproject (WBS 530). The outputs will feed directly into the development of fisheries policies and refinement of the fishery management plan.

This activity will commence during year 2 of the project.

WBS 512.1: Strategic Review and Up-grading the Organizational Structure and Capability of the Fisheries Department

The purpose of the work is to assist in defining a suitable organizational and institutional structure for the Fisheries Department to enable Suriname to discharge its national and international responsibilities regarding sustainable development and management of the fisheries and aquaculture sector in an effective and efficient manner. The Fisheries Department has been vested with the responsibility and authority to promote sustainable development and management of Suriname's marine and freshwater fisheries resources for the benefit of the people and the social and economic development of Suriname. As such, the Department must be empowered, equipped, organized and staffed to undertake the complex tasks associated with these responsibilities.

The objective of the assignment is to provide the Government of Suriname with a plan for restructuring and enhancing the capacity of the Fisheries Department in Suriname.

An external strategic management assessment of the Fisheries Department will be undertaken 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 or validated. The external assessment should 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 CRFM and WECAFC, and national developments such as the new fisheries.

An internal management assessment of the Fisheries Department will also be conducted 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, monitoring and enforcement, trade and quality assurance, training, the

provision of extension and other support services to the aquaculture and fisheries sector. The review should examine and identify the relationship among the various units and functional areas of the Department, including important aspects of the organizational culture, which will assist in strengthening the organizational structures. 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

Based on the above review a revised organizational structure will be developed 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 new millennium.

Technical assistance and funding will be provided to undertake this review and assist with the implementation of the recommendations to upgrade and strengthen the Fisheries Department.

This activity will be one of the first major activity of the project and will therefore commence during year one. The output of this activity will assist with fine tuning and scheduling of the planned activities under most of the other subprojects.

WBS 512.2: Suriname/Guyana bi-national Fisheries Committee

The major fish stocks harvested by Suriname and Guyana are shared stocks. Fishermen and fishing boats from Guyana have traditionally operated in Suriname's waters. Although the exact numbers of fishers and boats operating across their maritime boundaries are not known, it represents a significant portion of the fishing industry in both countries. In addition many of the crew on the fishing boats and workers in the fish processing plants in Suriname are Guyanese nationals.

Sustainable development and management of the fisheries of these countries will be possible only if there is close cooperation between the policy makers, administrators and stakeholders in both countries. In 1998 the CARICOM Fisheries Unit supported a Guyana/Suriname bi-national workshop to promote greater exchange of information and closer co-operation between the two countries.

The purpose of this activity is to facilitate closer cooperation between Suriname and Guyana to improve sharing and exchange of information, harmonization of programs for data collection, research and management. This will build on the foundation laid by the initiative sponsored by the CFU in 1998. At the start the committee will include mainly technical and senior administrative personnel from the fisheries departments of Guyana and Suriname supported by representatives from fisher's organizations and the fishing industry. The Committee will discuss common problems and formulate recommendations for joint initiatives to improve cooperation and promote sustainable use and management of the fisheries resources. The CFU will support the work of the bi-national committee. During the life of this project the committee will review the progress of the joint activities planned and provide guidance to facilitate implementation and optimise the impact of the interventions in the countries. It is envisaged that the Committee will meet at least once per year. It is expected that at the end of the project the Governments of Suriname and Guyana will continue to support the committee.

The Committee will be established during the second year of the project. The first meeting will organize during the first half of year 2.

WBS 512.3: Mechanism for Conflict Resolution/Management

The fisheries sector in Suriname is made up of a number of distinct groups of stakeholders, including industrial and artisanal fishers, foreign and local fishers, Guyanese and Surinamese operators, etc. These different groups are often in conflict with each other. The project will assist by conducting a socio-economic study to identify and characterise the major types of conflicts in Suriname, including trans-boundary conflicts, which are having a negative impact on efforts to use and manage the fisheries

resources in a sustainable manner. The study will also evaluate the ways in which conflict can be managed or resolved. The work should consider both intra-sectoral conflicts and inter-sectoral conflicts e.g between fisheries and other users of the coastal zone. It should develop a better understanding of the impact of factors of change on the fisheries systems, and in particular how such changes can lead to conflict by affecting traditional operations and existing institutional arrangements. In addition, the study should examine the possibilities for predicting conflict, and how this facility might be used to manage conflict and its impacts. The study should identify and recommend policy measures and practical modalities for building positive formal and informal relationships among stakeholders as a means of reducing conflict and promoting co-operation and sustainable management of the fisheries resources.

This Study could be conducted by a student from the CARIFORUM Region pursuing an advanced degree in a fisheries related area and could be supervised by the university in collaboration with CFU Staff. The student would be supervised by a professor from the university with support and co-ordination provided by CFU staff. Recruitment of the student and identification of the training institution that would be responsible for the study will commence during year one. The student should be available and arrangements finalized with the university for the study to commence during year 2 of the project and will run for approximately 2 years.

At the end of the study the student will obtain a masters degree and the findings and recommendation of the study will be available to assist with development of the necessary policy framework and mechanisms for improved conflict resolution and management and hence the sustainable development of the fisheries.

WBS 512.4: Study of Impact of Neo-liberalism on the Fisheries Sector

The impact of global neo-liberal economic policies on sustainable fisheries development in the Suriname and Guyana would be examined. The study would examine the direct and indirect impacts on the sector, the threats and opportunities posed by globalization and the associated new economic policies, focusing on the policy regimes and programs needed to put the countries in a position to exploit the new opportunities that are available for fisheries to make enhanced contribution to the socio-economic development of the countries while continuing as stable, sustainable and productive resource systems. This study could be done by a student from Suriname or any other CARIFORUM State as an advance degree or undertaken by a Consultant. The student would be supervised by the university with support and co-ordination provided by CFU staff. Recruitment of the student and identification of the training institution that would be responsible for the study will commence during year one. The student should be available and arrangements finalized with the university for the study to commence during year 2 of the project and will run for approximately 2 years.

At the end of the study the student will obtain a masters degree in fisheries economics and the findings and recommendation of the study will be available to assist development of the necessary policy framework for improving the fisheries.

WBS 520: Strengthened Regional Fisheries Management

The CARIFORUM Countries have been working to define and establish a Caribbean Regional Fisheries Mechanism (CRFM) to facilitate management of shared stocks and promote cooperation among Caribbean States. Development of the CRFM is one of the main focus of the CFRAMP project at this time. The project will provide support for officials of the Government of Suriname to fully participate in this initiative to define and establish the Caribbean Regional Fisheries Mechanism. Funding will be provided to enable representatives of Suriname to attend the workshops and regional meetings on the CRFM. The CRFM will be established by the middle of 2001. The activity will therefore be completed within the first 2 year program cycle.

WBS 530: Community Involvement and Education

Introduction

The work plan for the next two years is based on preliminary data garnered during the recent planning mission to Suriname by a team of 4 officers from the CFU, Belize, 29th May – 5th June, 2000. The planning team gathered information through literature review of existing documents, discussion sessions with fisheries staff, meetings with policy makers and other informed stakeholders at the landing sites and communities. Some information was also collected from interaction with respondents of the interviews conducted with the multi-disciplinary survey instruments. The latter included: A Baseline Survey of seven (7) fishing communities in Suriname; A Baseline Survey of the Fisheries Department of Suriname; A Baseline Survey of the Fisheries Department of Suriname; Key Informant Interviews and Interviews on the status of the Data Collection programs of Suriname.

It was not possible to administer the instrument on the status of fishermen's organizations because none was functioning in the country. Further probing however, revealed the existence of some ad-hoc, temporary categories, that responded strongly to perceived injustices against the interests of the resource users. This indicated that there might be potential leadership material existing, and some possibilities of future development of more or less permanent organizations.

This preliminary work plan will be subjected to some modifications in the near future based on the findings of the multi-disciplinary survey.

The initial sources of information laid bare to the team some areas of serious lacuna which any Program developed for community involvement and public education cannot ignore, and must immediately address. These include the following: The virtual absence of any tradition in fisheries extension activities; the absence of any viable resource user organization; the lack of knowledge of fisheries laws and regulations among resource users; the lack of institutional arrangements for enforcing the minimal regulations that remain embedded in the legal documents; and, the weak links between the fisheries department and the resource users and other stakeholders.

From discussions held with the fisheries administration, and based on other preliminary findings, an agreement was reached that the development of any program in Community Involvement & Education must have as its top priority, a vigorous public awareness campaign, which should target not only the direct users of the resources, but also other stakeholders. These should include the policy makers (both the bureaucrats and political leaders), the fish processors, vendors, middlemen, fishing community leaders, women in the fishing industry, and students in schools within these communities.

This campaign must be supported with the use of the electronic media (particularly the radio), print Media and the use of instructional materials produced by the department to suit the particular needs and priorities of specific target groups and the kinds of fisheries and prevailing local conditions.

These activities would also hinge on building the capacities of the fisheries officers who would lead in the campaign, interacting constantly with the resource users, prodding the latter to consider organizing themselves into viable professional groups, and supporting the institutions which may emerge, while building the capacities of the resource user groups to participate effectively in the development and management of the fisheries resources.

Objective

The objectives of this preliminary work plan are as follows:

- To formulate and implement strategies for the building of public awareness of the critical issues and problems affecting the fisheries sector, and how to address them.
- To build the capacities of the fisheries officers for their role in sustainable resource utilization and management.

- To plan and implement strategies, targeting fishers and other stakeholders, which would create avenues for constant dialogue and communication between government officials and resource user groups.
- To build the foundation on which viable fishers'/stakeholders' organizations could emerge to participate effectively in the sustainable conservation and management of the fisheries resources of Suriname.

PLANNED ACTIVITIES

WBS 330/530: Multidisciplinary Survey

A comprehensive multidisciplinary survey was conducted to generate data on critical aspects of the fisheries of Suriname in order to garner information that would inform the final contents of a work program for the entire duration (5-6 years) of the fisheries component of the Integrated Caribbean Regional Agriculture and Fisheries Development (ICRAFD) programme. The analysis will also generate information that would lead to adjustments and modification of the activity areas covered in this preliminary 24-month work plan, and a further 3-4 years thereafter. Third, the findings of these surveys will provide a benchmark on which future progress, in various aspects of the Community Involvement & Public Education sub-project, can be measured.

Each of the mini-surveys that constitute the Multidisciplinary Survey will be considered completed, when the analysis and the report are completed and published.

The following is a list of the individual instruments administered during and after the Planning Mission to Suriname by a Team of four Technical Officers from the CFU, Belize.

Baseline Survey of the Fisheries Department of Suriname.

Survey of Current Data Collection Issues.

Baseline Survey of Fishing Communities in Suriname

Key Informant Interviews

WBS 532.0: National Fisheries Workshop

The five mini-surveys that made up the Multidisciplinary Survey were geared towards providing a benchmark upon which future progress in various aspects of the department's work can be measured. Second, they were to provide data that will inform the work planning process and allow for appropriate adjustments to be made to both the work plan for the first two years of this project, and the long term planning process. Third, it could also provide information which could be made available to the decision making authorities on the government side, and begin to bring the direct resource users and other stakeholders nearer to the decision making table.

Summarized versions of the findings of the analysis of the data generated by the survey(s) will form the basis for a 2-day National Fisheries Workshop to be jointly organized by the Fisheries Department of Suriname, and the CFU of Belize.

The outcome of this workshop will be recommendations to be submitted by the stakeholders to government for policy-making considerations. It will also build up the foundation of a comprehensive agenda to be deliberated upon by a National Dialogue Group that will be elected by the Workshop, to be the mouthpiece of the resource users and the other stakeholders, and will form the beginnings of a future National Advisory Committee. This workshop is therefore a crucial milestone in the drive to ensure that the voices of the fishers and their communities are heard in the policy making process.

WBS 535: National Dialogue Group

An 'extremely important outcome' of the *National Fisheries Workshop* will be the creation, through an election process by the stakeholders represented at the workshop, of a National Dialogue Group 'to continue the dialogue initiated during the workshops and discuss progress obtained in fisheries management.' (ICRAFD: Work Programme & Cost Estimate, April, 1998:27). *It will be a major boost if government gives recognition to this body as the mouthpiece of the Fishers and Stakeholders, for its work to become sustainable.*

MANDATE

- The initial agenda of this group will emerge from the issues on which dialogue was commenced at the National Workshop. Subsequently, it will deal with issues on:
- Existing fisheries policy and management.
- Future fisheries policy and management
- Resource users concerns and priorities

Make recommendations for:

- Changes to fisheries policy, legislation and technology.

Play a role in:

- Monitoring developments in the industry, and making recommendations thereon.
- Promoting more positive social and working relations between the industry and government.

THE group will begin meeting once a month. How it will be structured and how it will function, will initially be determined by the National Fisheries Workshop. Any subsequently changes will be self-promoted activities. A long-term objective is to ensure that this body becomes more and more representative of the constituent groups they are supposed to be representing.

WBS 533.1: Community Mobilizing and Organization Formation

To achieve the sustainable management of the resources, the resource users need to be involved in the decision making and management planning and execution processes. Participation tends to be ineffective outside of an organizational context. Organization is essential in mobilizing and coordinating the human and material resources of the community in pursuit of their common cause. The situation in Suriname, where there are no formal resource-user groups, makes the realization of this objective and up-hill task.

It is being proposed that the CFU provide resources for the employment of a full-time Community Organizing Officer for two years for the department; whose primary focus will be the mobilization of fishers for the purpose of motivating the latter and providing technical and moral support to them, to form their own professional organizations. This Officer must have a Diploma or Degree in Community Development, Communication, Sociology or Social Work, and must have substantial experience in grassroots mobilization and organizing.

Additionally, the Community Organizing Officer, will assist in organizing a two-day seminar-workshop in June 2001 for fisheries officers and data collectors in the following topics:

- Analyzing and Interpreting answers to relevant questions in the Community Baseline Survey and the Key Informant Interviews, and applying them to Community Organizing.
- Techniques of conducting Social Analysis, Stakeholder Analysis and Power Analysis, and their application to Community Organizing.
- The Community Integration Process (Building Trust and Rapport through the conduct of purposeful visits to beaches, landing sites and communities, and immersing one's self in the community).
- Techniques of Community Canvassing
- Contact Building and Spotting of Potential Leaders.

- Strategies for Planning and Organizing Grassroots Meetings
- Formation and Strengthening of a Core Group
- Formation of Fisher folk Organizations
- Organizing AGMs, Election of Office Bearers and Creation of Committees.
- Training in the a) Occupation of Offices b) Managing Finances and c) Accountability
- “ Keeping the Momentum”
- Exploring Extra- Income Generating Avenues.
- Strengthening Fisher folk Organizations
- The Community Empowerment Process

WBS 533.2.1: Public Awareness Campaign

This is the key activity of this work plan. Both the CFU Planning Mission team and the Fisheries Administration agreed on this, given the weaknesses in the socio-economic aspects of the industry; namely, the absence of fishermen’s organizations, the virtual lack of knowledge among stakeholders on matters relating to resource conservation and management and the void in operational linkages between the fisheries administration and the stakeholder populace. This intensive and extensive campaign is meant to inform the general public, particularly the resource users and the fishing communities, and keep them abreast of developments in the fishing industry.

It should be a departmental affair in which all levels of fisheries officers will participate Its success will therefore depend on the level of interest shown and the leadership role played by the Director and the senior hierarchy of the department.

The CFU will provide resources for the employment of a full time Communication Officer for two years to spearhead this campaign and other Public Relations Activities relating to the Stakeholders in the fishing communities and the industry as a whole. The incumbent should have a Diploma or Degree in Communication, Sociology, Social Work or any other related Social Science discipline, and should have had considerable experience in the communication and/or Public Relations fields, particularly in the rural setting.

The first task will be to identify the key issues and problems relating to the following subject areas:

- Government Fisheries Policies – both existing and up-coming
- Fisheries legislation and Regulations – both existing and up-coming
- Data Collection Rationale and Support
- Licensing and Registration Rationale and Support
- Highlights of Fisheries Management Plan
- Elements of Resource Conservation and Management
- Priorities and Needs of the Resource Users re: the National Dialogue Group

The second step is to develop communication messages from these issues.

The third step is to choose from a variety of media for disseminating the messages

The fourth step is to draw up a time table/programme for the campaign.

The fifth step is to collaborate with the Department in delivering the messages and publicizing the outcomes.

The media to be used will include the Radio, Video, Slide sets/Film Strips, Audio Cassettes, Flip Charts, Printed materials and Folk Media. At the community level, focused group discussions, demonstrations,

seminars, public announcements using traditional methods, workshops, excursions, community meetings etc. The choice of medium to use at any particular time will depend upon the nature of the expected audience and the kind of message to be delivered.

The target groups and institutions will include the fishing communities, boat owners, captains, crew, middlemen, vendors, processors, high school teachers and students in fishing communities and the policy-making establishment.

WBS 533.3: Equipment Procurement & Training in Desk Top Printing

In support of the department's Public Awareness and Training and Education programmes organized by all units of the department, it is strongly recommended that the department should develop its own Desk Top Printing capabilities, for which purpose the following basic equipment need to be procured:

- 1 Computer
- 1 HP 1600 Ink Jet Colour Printer
- 1 HP Scan Jet 4c Scanner
- 1 TV/VCR
- 1 Overhead Projector & Screen

A 5-hour per week/ 6 weeks intensive training programme will be conducted by a local graphic artist and/or a desk top printing expert, assisted by the Communication Officer, to train the staff in the design and production of posters, public notices, hand-outs, fact sheets, brochures, booklets, newsletters and cartoons. The department will thenceforth design and produce these items on its own to support its public awareness and training and education programmes and other information dissemination activities.

WBS 534.1: First Fisheries Field Officers Training Workshop

The task of providing technical support to the fishers groups and communities to develop their institutions and become involved in the planning and decision making process lies with the Fisheries officers who interact with the resource users on a daily basis. Their capacity to perform these tasks needs to be built and strengthened. For this purpose, all fisheries officers who, by the nature of their jobs need to interact constantly with fishers and other stakeholders at the landing sites and in the fishing communities, need to benefit from training programmes. These will be available to all Extension Officers, Data Collectors and other fisheries officers who interact on and off with the stakeholders, and selected High School Teachers in the fishing communities.

The first of these two-week training workshops will be held in the latter part of 2000-2001 and the second in the latter part of 2001-2002. Additionally, there would be a number of shorter-term seminars, lectures, workshops etc., when the need arises.

The first training workshop will include the following subject areas:

- Extension Principles and Methods
- Co-operative Principles and Methods
- Leadership Training
- Group Dynamics
- Public Relations & Social Interaction
- Community Organizing
- Communication Techniques
- The Rationale for Data Collection and Licensing & Registration
- Elements of Resource Conservation and Management
- Work Planning Techniques

WBS 536.0: Monitoring and Evaluation

The Sociologist will be making two (2) monitoring visits to Suriname of 4 days duration each during the 2001-2002 fiscal year to assess progress of activities being implemented and to advise on further improvement in implementation.

WBS 540: HRD and Training

Objectives and Outputs

The aim of this activity is to enhance institutional capability in Suriname for sustainable fisheries development and management. This will be accomplished by training of staff of the Fisheries Department and fisherfolk organizations in Suriname through long term scholarships, short courses and short term attachments.

The expected outputs are enhanced capability within the Fisheries Department for sustainable fisheries development and management through trained Fisheries Officers and Fisheries Assistants. Enhanced capability of fisherfolk organizations to manage their organizations and to promote sustainable fisheries development through co-management schemes with the government. The achievement of these outputs will be indicated by 20-30 persons trained and working in their organizations in Suriname.

PLANNED ACTIVITIES

Scholarships and Short-term Training

The development of the necessary skills for fishery assessment and management in Fisheries Divisions of participating countries is the cornerstone of a long-term approach to improved fisheries management. New concepts and methods for data analysis and resource assessment are continually being developed. The Fisheries Department staff will be best able to carry out the resource assessments and resource management activities if they are familiar with these concepts and competent in the newest methods. With the departure of the Belgian Fisheries Specialist from the Fisheries Department earlier this year there is a need within the Department for additional expertise in data collection, data management, resource assessment and resource management. Advanced degree training is therefore needed in data collection and management, resource assessment and resource management. At least two scholarship years of advanced level (Masters degree) training in fisheries will be provided to the fisheries staff in Suriname. Scholarships are tenable at universities in the CARIFORUM states or EU member countries. Candidates receiving scholarship support are expected to conduct research in priority areas that are of direct relevance to sustainable development and management of the fisheries in their countries. In addition support will be provided for existing staff of the Fisheries Department to upgrade their skills and or conduct research projects at the local university in Suriname in areas directly relevant to the sustainable development of the fisheries sector. Full or part sponsorship will be provided to successful candidates.

The sub-project will provide financial support for upgrading quality standards in the fisheries sector by sponsoring a 1 year training program (10-15 students). The aim of this program is to provide adequate numbers of skilled personnel to support the fish export drive of the Government of Suriname. Participants will include Fisheries Department staff, personnel from the fish processing plants and quality control trainees.

NAME	PROGRAM	INSTITUTION	ESTIMATE (US\$)
Fisheries Dept. staff	M.Sc degree in Fisheries Assessment and management	University in the CARIFORUM Region or EU (UWI, Hull, Wageningen)	\$20,000
Fisheries Dept. staff	Drs. Degree in Fisheries related discipline	University of Suriname and other regional university	10,000
Fisheries Dept. Staff	Short-term training courses or attachments	Regional or in EU countries, training courses	\$5,000
Fish. Dept. & fish processing plants	1 Year program in Fish Quality Control	NATIL (Nature Technical Institute), Suriname	\$30,000

WBS 560: POST-HARVEST HANDLING PROCESSING AND MARKETING

In order to optimise the returns from the fish captured significant improvement is needed in post-harvest handling, processing and marketing of fish in the CARIFORUM region. To better understand the problems and needs of CARIFORUM countries regarding post-harvest handling, processing and quality control these needs will be studied by a consultant and a report prepared. The report will define a strategy and a project proposal for enhancing regional institutional capability to meet these requirements. Possible areas for examination would be quality control, upgrading legislation, strengthening of inspectorate, marketing intelligence and value added processing. The Consultant's report will be discussed by the CARIFORUM Countries at a regional workshop. The Consultant will revise the report and project proposal in light of the discussion and conclusions of the workshop. The proposal will then be submitted to a donor for funding.

This is a regional initiative which will benefit all the CARIFORUM Countries. Suriname will participate in the study, including the development of the project proposal. Resources will be provided to support the

APPENDIX I
BUDGET SUMMARY

Integrated Caribbean Regional Agriculture and Fisheries Development Programme

Activity number:	Activity Title:	
	Summary of Suriname Work Plan Cost	
Scope of work		Year:
Implement planned activities for 2000-2002		April 2000- March 2002
Result/Output		
RESOURCE BREAKDOWN		
Description of Components		Total Estimate
WBS 300 Fisheries Data Management Systems		\$66,400
WBS 330 Multidisciplinary Survey		\$33,400
WBS 400 Fisheries Resource Assessment		\$34,750
WBS 500 Fisheries Resource Management		\$128,660
		</

Integrated Caribbean Regional Agriculture and Fisheries Development Programme

Activity number:	Activity Title:	
WBS 310	Catch, Effort, Biological and Soci-economic Data Management System-Summary Sheet	
Scope of work		Year:
Implement planned activities for 2000-2002		April 2000- March 2002
Result/Output		A National Catch, effort, Biological and Socio-economic Data Management System established and operational.
RESOURCE BREAKDOWN		
Description of Components		Total Estimate
311/321 Review the Data Collection and Management Systems		\$10,150
312 Enhance data collection plans covering the major fisheries		\$18,050
313 Train Fisheries Division staff in data collection		\$7,450
314/324 Database software for data storage, basic analysis and reporting		\$11,850
316/326 Provide resources for implementation		\$13,400
322 Enhance the Licensing and Registration System		\$5,500
TOTAL		\$66,400

Integrated Caribbean Regional Agriculture and Fisheries Development Programme

Activity number:	Activity Title:		
WBS 311/321	Review Data Collection and Management Systems		
Scope of work			Year:
Select and engage consultant. Consultant working in collaboration with the Data Manager will review the current Data Collection and Management System. Preparation of review report.			April 2000- March 2002
Result/Output	A report documenting the review of the current Data Collection and Management Systems and recommendations for improvement.		
RESOURCE BREAKDOWN			
Description of Components	# of Units	Cost/Unit	Total Estimate
Consultant			
Fees	15 days	330 /day	\$4,950
Airfare	1 trip	1,500 /trip	\$1,500
Living expenses	7 days	150 /day	\$1,050
Communication and publication expenses	-	-	\$200
Staff Travel			
Airfare	1 trip	1,500 /trip	\$1,500
Living expenses	5 days	150 /day	\$750
Internal Travel	-	-	\$200
		TOTAL	\$10,150

Integrated Caribbean Regional Agriculture and Fisheries Development Programme

Activity number:	Activity Title:		
WBS 312	Enhance data collection plans covering the major fisheries		
Scope of work			Year:
Develop or modify and implement sampling plan based on review.			April 2000- March 2002
Purchase sample.			
Provide resources for employment of two (2) data collectors.			
Provide resources for transportation costs.			
Result/Output	Expand and or improve the Data Collection System in Suriname.		
RESOURCE BREAKDOWN			
Description of Components	# of Units	Cost/Unit	Total Estimate
Develop or modify and implement sampling plan based on recommendations from review			
Field supplies & equipment	-	-	\$5,000
Field activities (in-country expenses-subsistence etc.)			
Purchase samples	2 years	500 /year	\$1,000
Staff Travel			
Airfare	1 trip	1,500 /trip	\$1,500
Living expenses	5 days	150 /day	\$750
Internal travel	2 years	100 /year	\$200
Data collectors-Two(2) (USD\$2,400/year)	2 x 2 years	2,400 /year	\$9,600.00
		TOTAL	\$18,050

Integrated Caribbean Regional Agriculture and Fisheries Development Programme

Activity number:	Activity Title:		
WBS 313	Train Fisheries Department staff in data collection		
Scope of work			Year:
Data Collection Training Workshop Production of training material Rental of Conference facility Refreshment/snacks Equipment Rental Staff, travel, living expenses			April 2000- March 2002
Result/Output	Fisheries staff trained in areas of catch, effort, biological, environmental, social and economic data collection.		
RESOURCE BREAKDOWN			
Description of Components	# of Units	Cost/Unit	Total Estimate
Production of Training Material	-	-	\$1,500.00
Rental of Conference facility	2 years	50 /year	\$100
Coffee break/Refreshments	2 years	300 /year	\$600
Technical Corporation among Developing Countries (TCDC)			
Fees	5 days	150 /day	\$750
Airfare	1 trips	1,500 /trip	\$1,500
Living expenses	5 days	150 /day	\$750
Staff Travel			
Airfare	1 trips	1,500 /trip	\$1,500
Living expenses	5 days	150 /day	\$750
		TOTAL	\$7,450

Integrated Caribbean Regional Agriculture and Fisheries Development Programme

Activity number:	Activity Title:		
WBS 314/324	Database software for data storage, basic analysis and reporting		
Scope of work			Year:
Develop/upgrade database software for both Data Management Systems			April 2000- March 2002
Install and configure database software			
Result/Output	Availability of database software for both systems.		
RESOURCE BREAKDOWN			
Description of Components	# of Units	Cost/Unit	Total Estimate
Consultant			
Fees (details on number of days required not available)	-	-	\$9,000
Airfare	1 trip	1,500 /trip	\$1,500
Living expenses	1 day	150 /day	\$150
Communication and publication expenses	-	-	\$200
Cost of User License			\$1,000
		TOTAL	\$11,850

Integrated Caribbean Regional Agriculture and Fisheries Development Programme

Activity number:	Activity Title:		
WBS 316/326	Provide Resources for Implementation		
Scope of work			Year:
Computer Systems			April 2000- March 2002
Scientific equipment			
Motorcycles			
Repair and maintenance of motorcycles			
Result/Output	The availability of (1) computing facility for data entry, storage, manipulation and reporting, (2) scientific equipment and (3) transportation for data collectors.		
RESOURCE BREAKDOWN			
Description of Components	# of Units	Cost/Unit	Total Estimate
Computers	2 units	2,000 /unit	\$4,000
Computer accessories	-	-	\$1,000
Scientific equipment			\$1,800
Calipers			
Scales			
Measuring board			
Clip boards			
Motor Bike			
Purchase two (2) motor bike	2 bikes	2,000 bike	\$4,000
Maintenance expenses	2 years	1,000 /year	\$2,000
Safety equipment (helmet and jacket)	2 unit	300 /unit	\$600
		TOTAL	\$13,400

Integrated Caribbean Regional Agriculture and Fisheries Development Programme

Activity number:	Activity Title:		
WBS 322	Enhance the Licensing and Registration System		
Scope of work			Year:
Implement recommendations from review			April 2000- March 2002
Result/Output	Implement recommendations for enhancing the current Licensing and Registration System based on the review.		
RESOURCE BREAKDOWN			
Description of Components	# of Units	Cost/Unit	Total Estimate
Implement recommendations for enhancing the current Licensing and Registration System based the review This activity will be guided by the review.	-	-	\$5,500
		TOTAL	\$5,500

Integrated Caribbean Regional Agriculture and Fisheries Development Programme

Activity number:	Activity Title:		
WBS 330.0	Multi-disciplinary Survey		
Scope of work			Year:
Planning Mission (Administer questionnaires) Analyse data & Prepare Reports Organise workshop for evaluating results Make policy recommendations			April 2000- March 2002
Result/Output	Obtain information that will guide the Work Programme and provide baseline data.		
RESOURCE BREAKDOWN			
Description of Components	# of Units	Cost/Unit	Total Estimate
Planning Mission			
Staff Travel			
Airfare	4 trips	1,500 /trip	\$6,000
Living expenses (4 persons for 7 days)	28 days	150 /day	\$4,200
Local Expense (Community Baseline Survey)			
Interviewers fees			\$4,200
Accommodation & Subsistence allowance etc. (5 persons)			\$6,000
In-country travel			\$1,000
Communication and publication			\$1,500
Data Entry-Suriname Questionnaires	-	-	\$200
Prepare and publish final report	-	-	\$200
National Fisheries Workshop			
Staff Travel			
Airfare	3 trips	1,500 /trip	\$4,500
Living expenses (3 persons for 5 days)	15 days	150 /day	\$2,250
Local Expense (Participants)			
Participants from outside Paramaribo (7 persons)			
Internal travel (return trip for 7 persons)	7 trips	50 /trip	\$350
Accommodation (7 persons for 2 days)	14 days	50 /day	\$700
Per diem (7 persons for 2 days)	14 days	25 /day	\$350
National Fisheries Workshop Activities			
Arrange for two (2) local resources persons	4 days	50 /day	\$200
Production of Educational Material	-	-	\$300
Rental of conference facility			\$200
Lunch (for 25 persons for 2 days)	50	15	\$750
Refreshment/Coffee Break (for 25 persons for 2 days)	50	10	\$500
		TOTAL	\$33,400

Integrated Caribbean Regional Agriculture and Fisheries Development Programme

<i>Activity number:</i>	<i>Activity Title:</i>	
WBS 400	Fisheries Resource Assessment -Summary Sheet	
<i>Scope of work</i>		<i>Year:</i>
Implement planned activities for 2000-2002		April 2000- March 2002
<i>Result/Output</i>		
RESOURCE BREAKDOWN		
Description of Components		Total Estimate
421.1	Review and analysis of historical data	\$0
421.2	Selectivity Studies	\$10,350
421.3	Assessment of the Red Snapper Fishery (<i>Lutjanus purpureus</i>)	\$6,350
421.4	Bio-economic modeling of the Shrimp Fisheries	\$10,000
421.6	Participation in the Ad Hoc Working Group	\$5,800
421.7	Monitoring	\$2,250
TOTAL		\$34,750

Integrated Caribbean Regional Agriculture and Fisheries Development Programme

Activity number:	Activity Title:		
WBS 421.1	Review and analysis of historical data.		
Scope of work			Year:
Review and analyse historical data			April 2000- March 2001
Result/Output Information available for decision making and management.			
RESOURCE BREAKDOWN			
Description of Components	# of Units	Cost/Unit	Total Estimate
Funded by the Gouvernement of Suriame.			\$0
		TOTAL	\$0

Integrated Caribbean Regional Agriculture and Fisheries Development Programme

Activity number:	Activity Title:		
WBS 421.2	Selectivity Studies		
Scope of work			Year:
Undertake selectivity studies for the gillnet fleet for large demersals in order to determine optimum mesh sizes.			April 2000- March 2001
Undertake selectivity studies for the trawl and njawarie.			
Result/Output			
RESOURCE BREAKDOWN			
Description of Components	# of Units	Cost/Unit	Total Estimate
Student Travel			
Airfare	3 trips	800 /trip	\$2,400
Living expenses	25 days	150 /day	\$3,750
Communication and publication expenses	-	-	\$200
Field Activities			
Supplies and equipment (netting material, etc.)	-	-	\$1,500
In-country expenses (subsistence & fuel)	20 trips	75 /trip	\$1,500
Data analysis and publication	-	-	\$1,000
		TOTAL	\$10,350

Integrated Caribbean Regional Agriculture and Fisheries Development Programme

Activity number:	Activity Title:		
WBS 421.3	Assessment of the Red Snapper Fishery (<i>Lutjanus purpureus</i>)		
Scope of work			Year:
<p>Refine, the catch, effort and biological data collection programme for the red snapper fishery to undertake assessments to obtain information for management</p> <p>Participate in the regional initiatives (Ad Hoc Shrimp & Groundfish Group for the Guiana-Brazil Shelf) to assess the red snapper resources that would result in improved information for management of the stocks at the national and regional levels.</p>			April 2000-March 2001
Result/Output			
RESOURCE BREAKDOWN			
Description of Components	# of Units	Cost/Unit	Total Estimate
Student Travel			
Airfare	1 trip	800 /trip	\$800
Living expenses	10 days	150 /day	\$1,500
Communication and publication expenses	-	-	\$200
Refine data collection programme	10 trips	75 /trip	\$750
Contribution to overall data collection programme			
Field Activities:			
Supplies and equipment			
In-country expenses (subsistence & fuel)			
Participate in CFRAMP/FAO Stock Assessment Workshop-Staff Travel			
Airfare	1 trip	800 /trip	\$800
Living expenses	14 days	150 /day	\$2,100
Communication and publication expenses	-	-	\$200
		TOTAL	\$6,350

Integrated Caribbean Regional Agriculture and Fisheries Development Programme

Activity number:	Activity Title:		
WBS 421.4	Bio-economic Modeling of the Shrimp Fisheries		
Scope of work			Year:
Use multi-fleet and multi-species bio-economic models to obtain information for the management of the seabob and penaeid shrimp fisheries.			April 2000- March 2002
Result/Output			
RESOURCE BREAKDOWN			
Description of Components	# of Units	Cost/Unit	Total Estimate
Consultant			
Fees	12 days	330 /day	\$3,960
Airfare	2 trips	1,500 /trip	\$3,000
Living expenses	10 days	150 /day	\$1,500
Communication and publication expenses	-	-	\$500
In-country Workshop	-	-	\$1,040
		TOTAL	\$10,000

Integrated Caribbean Regional Agriculture and Fisheries Development Programme

Activity number:	Activity Title:		
WBS 421.6	Participation in the Ad Hoc Working Group		
Scope of work			Year:
Participate CFU/FAO Stock Assessment Work shop			April 2000- March 2002
Result/Output			
RESOURCE BREAKDOWN			
Description of Components	# of Units	Cost/Unit	Total Estimate
Suriname Participants (2) Travel			
Airfare	2 trip	800 /trip	\$1,600
Living expenses	28 days	150 /day	\$4,200
		TOTAL	\$5,800

Integrated Caribbean Regional Agriculture and Fisheries Development Programme

Activity number:	Activity Title:		
WBS 421.7	Monitoring		
Scope of work			Year:
Monitoring of field activities by Biologist. Provide technical assistance and advise during implementation of project activities.			April 2000- March 2001
Result/Output			
RESOURCE BREAKDOWN			
Description of Components	# of Units	Cost/Unit	Total Estimate
Staff Travel			
Airfare	1 trip	1,500 /trip	\$1,500
Living expenses	5 days	150 /day	\$750

Integrated Caribbean Regional Agriculture and Fisheries Development Programme

Activity number:	Activity Title:		
WBS 530	Community Involvement and Education		
Scope of work		Year:	
Plan activities for 2002 - 2002 for Suriname		April 2000- March 2002	
Cost Activities for 2000-2002 for Suriname			
Result/Output			
RESOURCE BREAKDOWN			
Description of Components		Total Estimate	
330.1/532.0	National Fisheries Workshop (<i>funded under WBS 330</i>)	\$0	
533.1	Community Mobilizing and Organisation Formation	\$11,450	
533.2	Public Awareness Campaign 1	\$9,900	
533.3	Equipment Procurement and Desktop Training	\$5,100	
534	First Fisheries Field Officers (Extension) Workshop	\$9,840	
535	National Dialogue Group	\$5,770	
536	Monitoring	\$4,200	

Integrated Caribbean Regional Agriculture and Fisheries Development Programme

Activity number:	Activity Title:		
WBS 532.0/330.0	National Fisheries Workshop		
Scope of work			Year:
National Fisheries Workshop Collaborate planning with team members & Fisheries Department (Suriname) Identify & invite potential participants (stakeholders)-maximum 15 Develop agenda for workshop Arrange logistics for workshop Arrange for 2 local resource persons Conduct workshop Identify national policy initiatives Prepare and publish report Recommend national policy initiatives and initial National Dialogue Group Agenda			April 2000- March 2002
Result/Output	Foundation laid for developing policy recommendations for policy makers.		
RESOURCE BREAKDOWN			
Description of Components	# of Units	Cost/Unit	Total Estimate
Participants from outside Paramaribo (7 persons)			
Internal travel (return trip for 7 persons)			\$0
Accommodation (7 persons for 2 days)			\$0
Per diem (7 persons for 2 days)			\$0
Arrange for two (2) local resources persons			\$0
National Fisheries Workshop			
Production of Educational Material			\$0
Rental of conference facility			\$0
Lunch (for 25 persons for 2 days)			\$0
Refreshment/Coffee Break (for 25 persons for 2 days)			\$0
Staff Travel -National Fisheries Workshop			
Airfare			\$0
Living expenses			\$0
Prepare and publish final report			\$0
*Funded under WBS 330			
		TOTAL	\$0

Integrated Caribbean Regional Agriculture and Fisheries Development Programme

Activity number:	Activity Title:		
WBS 533.1	Community Mobilizing and Organization Formation		
Scope of work			Year:
Develop job description and terms of reference for position of Community Development Officer			April 2000- March 2002
Advertise position of Fisheries Officer (Community Development)			
Collaborate with Fisheries Department to arrange for interviews			
Form a joint panel and organize interview			
Appoint Officer			
Formulate detailed work plan with new officer			
Provide resources for implementation			
Result/Output	Foundation laid for strengthened fisher folk organisations for co-management.		
RESOURCE BREAKDOWN			
Description of Components	# of Units	Cost/Unit	Total Estimate
Staff Travel			
Airfare (including WBS 533.2)	1 trip	1,500 /trip	\$1,500
Living expenses (including WBS 533.2)	5 days	150 /day	\$750
Advertising and Recruitment Costs			\$300
Community Development Officer			
Salary	12 mths	300 /mth	\$3,600
Field Work Allowance	12 mths	50 /mth	\$600
Motor Bike			
Purchase one (1) motor bike	1 bike	2,000	\$2,000
Maintenance expenses	1 years	1,000 /year	\$1,000
Safety equipment (helmet and jacket)	1 unit	300 /unit	\$300
Mass Media Promotions	1 years	1,000 year	\$1,000
Production of Educational Material	-	-	\$400
		TOTAL	\$11,450

Integrated Caribbean Regional Agriculture and Fisheries Development Programme

Activity number:	Activity Title:		
WBS 533.2	Public Awareness Campaign One (1)		
Scope of work	Year:		
Develop job description and terms of reference for position of Communication Officer	April 2000- March 2002		
Advertise position of Fisheries Officer (Communication)			
Collaborate with Fisheries Department to arrange for interviews			
Form a joint panel and organize interview			
Appoint Officer			
Formulate detailed work plan with new officer			
Provide resources for implementation			
Result/Output	Foundation laid for strengthened fisher folk organisations for co-management.		
RESOURCE BREAKDOWN			
Description of Components	# of Units	Cost/Unit	Total Estimate
Staff Travel			
Airfare (no additional expense -joint with WBS 533.1)			-
Living expenses (no additional cost-joint with WBS 533.1)			-
Advertising and Recruitment Costs			
(no additional cost-joint with WBS 533.1)			-
Community Development Officer			
Salary	12 mths	300 /mth	\$3,600
Field Work Allowance	12 mths	50 /mth	\$600
Motor Bike			
Purchase one (1) motor bike	1 bike	2,000	\$2,000
Maintenance expenses	1 years	1,000 /year	\$1,000
Safety equipment (helmet and jacket)	1 unit	300 /unit	\$300
Mass Media Promotions	1 years	2,000 year	\$2,000
Production of Educational Material	1 years	400 /year	\$400
		TOTAL	\$9,900

Integrated Caribbean Regional Agriculture and Fisheries Development Programme

Activity number:	Activity Title:		
WBS 533.3	Equipment Procurement & Desktop Training		
Scope of work			Year:
Identify equipment to be procured			April 2000- March 2002
Request quotations and put in orders for procurement			
Engage resource person to conduct training			
Formulate letter of agreement with resource person			
Conduct training for fisheries officers			
Result/Output	Country to begin producing and designing own educational materials.		
RESOURCE BREAKDOWN			
Description of Components	# of Units	Cost/Unit	Total Estimate
Colour Scanner	1 unit	300 /unit	\$300
Colour Ink Jet Printer	1 unit	300 /unit	\$300
Computer (with graphics capability)	1 unit	2,000 /unit	\$2,000
TV/VCR	1 unit	700 /unit	\$700
Desk Top Training Fee (Local resource person)	-	-	\$1,000
Equipment maintenance	-	-	\$500
Stationery	-	-	\$300
		TOTAL	\$5,100

Integrated Caribbean Regional Agriculture and Fisheries Development Programme

Activity number:	Activity Title:		
WBS 534.0	First Fisheries Field Officers (Extension) Workshop)		
Scope of work			Year:
Fisheries Field Officers (extension) Workshop Develop Course Outline and Notes Arrange for notes to be translated into Dutch Make arrangements for workshop site, accommodation etc. Engage two (2) resource persons Invite participants (10-12) Conduct workshop (7 days)			April 2000- March 2002
Result/Output			
RESOURCE BREAKDOWN			
Description of Components	# of Units	Cost/Unit	Total Estimate
Participants from 6 districts outside Paramaribo (6 persons)			
Internal travel (return trip for 6 persons)	6 trips	40 /trip	\$240
Accommodation (6 persons for 7 days)	42 days	50 /day	\$2,100
Per diem (6 persons for 8 days)	48 days	25 /day	\$1,200
TCDC Support Staff (local-2 persons for 10 days)	20 days	50 /day	\$1,000
Fisheries Field Officers (extension) Workshop			
Translation Costs	-	-	\$500
Lunch (for 15 persons for 8 days)	120	15	\$1,800
Staff Travel			
Airfare	1 trip	1,500 /trip	\$1,500
Living expenses	10 days	150 /day	\$1,500
		TOTAL	\$9,840

Integrated Caribbean Regional Agriculture and Fisheries Development Programme

Activity number:	Activity Title:		
WBS 535	National Dialogue Group: 2-day inauguration meeting		
Scope of work	Year:		
Form nucleus of group at National Fisheries Workshop	April 2000- March 2002		
Organize one-day follow-up meeting with representatives			
Demonstrate procedural processes			
Elect Executive for one year			
Develop broad agenda for follow-up quarterly meetings			
Arrange for publication of outcomes of meetings			
Plan for other follow up activities			
Result/Output	Stakeholders effectively involved in decision making.		
RESOURCE BREAKDOWN			
Description of Components	# of Units	Cost/Unit	Total Estimate
Participants from 6 districts outside Paramaribo (6 persons)			
Internal travel (return trip for 6 persons)	6 trips	20 /trip	\$120
Accommodation (6 persons for 1 night)	6 persons	50 /night	\$300
Per diem (6 persons for 2 days)	12 days	25 /day	\$300
National Dialogue Group Meeting			
Lunch (for 15 persons for 2 days)	30 meals	15 /meal	\$450
Cost of four (4) quarterly meetings in 1 years	4 qurts.	1,000 /qurt.	\$4,000
Publication of Reports (4 quarters for 1 year)	4 qurts.	150 /qurt.	\$600
		TOTAL	\$5,770

Integrated Caribbean Regional Agriculture and Fisheries Development Programme

<i>Activity number:</i>	<i>Activity Title:</i>
WBS 536.0	Activities Monitoring & Evaluation

<i>Scope of work</i>	<i>Year:</i>
Communicate constantly with Fisheries Department on progress in implementation	April 2000- March 2002
Identify areas where direct assistance is needed	
Arrange for trip to relevant countries and provide assistance	
Conduct short seminars when needed	

<i>Result/Output</i>	
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Integrated Caribbean Regional Agriculture and Fisheries Development Programme

Activity number:	Activity Title:	
WBS 500	Fisheries Resource Management-Summary Sheet	
Scope of work		Year:
The strengthening of national and regional institutional management capacities. It is the key to the rational utilisation of the resources, and is the product of the articulation of biological, social, economic, statistical and environmental knowledge, and improved community involvement.		April 2000-March 2002
Result/Output		
RESOURCE BREAKDOWN		
Description of Components		Total Estimate
510	National Fisheries Management	\$31,500
520	Regional Fisheries Management	\$6,000
530	Community Involvement and Education	\$46,060
540	Training-long term and short term	\$41,500
550	Monitoring, control and surveillance	\$0
560	Post-harvest Processing and Marketing	\$3,600
570	Fisheries Development Planning	\$0
TOTAL		\$128,660

Integrated Caribbean Regional Agriculture and Fisheries Development Programme

<i>Activity number:</i>	<i>Activity Title:</i>		
WBS 510	Strengthened National Fisheries Management		
<i>Scope of work</i>			<i>Year:</i>
The goal of this activity is to strengthen the fisheries management and planning capabilities of the fisheries department-Suriname. Technical assistance will be provided to Suriname to: (i) Prepare, and implement a comprehensive national fisheries policy; (ii) Refine and implement a national fisheries management plan and (iii) Define and establish a National Fishery Advisory Committee (FAC)			April 2000- March 2002
<i>Result/Output</i>	Fisheries policy, FMP and FAC documented and established.		
RESOURCE BREAKDOWN			
Description of Components	# of Units	Cost/Unit	Total Estimate
511.1 Preparation of national Fish & Aqua. Policy			\$4,000
511.2 Preparation/finalization of FMP			\$3,000
511.3 Support implementation of FMP			\$0
511.4 Preparation of Plan for FAC			\$2,000
511.5 Establishment/Operation of FAC			\$0
512.1 Strategic review and upgrading Fisheries Department -Consultancy/TCDC			\$6,000
512.2 Bi-national Fish. Committee-Suriname/Guyana			\$3,000
512.3 Study of Mechanism for Conflict Resolution -student research cost			\$5,000
512.4 Study of neo-liberalism on the fisheries			\$6,000
513 CFU staff Monitoring and provision of technical assistance			\$2,500
		TOTAL	\$31,500

Integrated Caribbean Regional Agriculture and Fisheries Development Programme

Activity number:	Activity Title:		
WBS 520	Strengthened Regional Fisheries Management		
Scope of work			Year:
Support will be provided to enable Officials from Suriname to participate in the initiative to define and establish a Caribbean Regional Fisheries Mechanism to facilitate the management of shared fish stocks and closer cooperation among Caribbean countries in fisheries matters.			April 2000- March 2002
Result/Output	Regional fisheries management mechanism established and operational		
RESOURCE BREAKDOWN			
Description of Components	# of Units	Cost/Unit	Total Estimate
520.1 Participation in the development of the CRFM Airfare, perdiem for workshop			\$4,000
520.2 Regional Cooperation: Participation of fisheries staff in regional/ international fisheries management for a Airfare and perdiem			\$2,000
		TOTAL	\$6,000

Integrated Caribbean Regional Agriculture and Fisheries Development Programme

Activity number:	Activity Title:		
WBS 540	Long term and short term training and attachments.		
Scope of work			Year:
Provision of long-term scholarship and short-term training to staff of the Fisheries Department of Suriname. Long-term training for Masters level degree training at University in Suriname, CARIFORUM Region or a EU country. Training will be in awarded fisheries or related area. Short term scholarships will also be awarded to students from University in Suriname or the region who are working on research projects under this work plan.			April 2000- March 2002
Result/Output	Candidates trained in fisheries.		
RESOURCE BREAKDOWN			
Description of Components	# of Units	Cost/Unit	Total Estimate
540.1 Long term scholarships-M.Sc	1	15,000	\$15,000
540.2 Short-term post harvest and quality control training	15	1,500	\$22,500
Short-term training and attachments	2	2,000	\$4,000
		TOTAL	\$41,500

Integrated Caribbean Regional Agriculture and Fisheries Development Programme

Activity number:	Activity Title:		
WBS 560	Post-harvest, handling, processing and marketing		
Scope of work			Year:
A regional review will be conducted and a project proposal prepared to strengthen quality control, processing and marketing of fish and fishery products in the region. A regional workshop will be convened. Financial support will be provided to allow representative(s) of Suriname to attend the workshop and contribute to the preparation of the proposal which will be submitted for funding upon completion.			April 2000- March 2002
Result/Output	Regional fisheries management mechanism established and operational		
RESOURCE BREAKDOWN			
Description of Components	# of Units	Cost/Unit	Total Estimate
560.1 Participation in the Regional Workshop Airfare, perdiem for workshop			\$3,600
		TOTAL	\$3,600