



ISSN: 1995-1132

**CRFM Technical & Advisory Document Series  
Number 2012 / 15**

---

# **STRATEGIC ACTION PROGRAMME FOR THE EFFECTIVE GOVERNANCE AND MANAGEMENT OF LARGE PELAGIC FISHERIES IN THE CARIBBEAN LARGE MARINE ECOSYSTEM (CLME)**



---

**CRFM Secretariat  
Belize 2012**

# **CRFM Technical & Advisory Document - Number 2012 / 15**

## **Strategic Action Programme for the Effective Governance and Management of Large Pelagic Fisheries in the Caribbean Large Marine Ecosystem (CLME)**

Prepared by

Dr. Uwe Tietze

Consultant, 6345 Murray Court NW, Olympia, WA 98502. Email: [tietzeuwe@yahoo.com](mailto:tietzeuwe@yahoo.com)  
and

Dr. Susan Singh-Renton

Deputy Executive Director, CRFM Secretariat, Halifax Street, Kingstown, St. Vincent  
and the Grenadines. Email: [ssinghrenton@vincysurf.com](mailto:ssinghrenton@vincysurf.com)

CRFM Secretariat  
Belize 2012

CRFM TECHNICAL & ADVISORY DOCUMENT – Number 2012 / 15  
Strategic Action Programme for the Effective Governance and Management of  
Large Pelagic Fisheries in the Caribbean Large Marine Ecosystem (CLME)

@ CRFM 2012

All right reserved.

Reproduction, dissemination and use of material in this publication for educational or non-commercial purposes are authorized without prior written permission of the CRFM, provided the source is fully acknowledged. No part of this publication may be reproduced, disseminated or used for any commercial purposes or resold without the prior written permission of the CRFM.

Correct Citation:

Tietze, U., and Singh-Renton, S. 2012. Strategic Action Programme for the Effective Governance and Management of Large Pelagic Fisheries in the Caribbean Large Marine Ecosystem (CLME). *CRFM Technical & Advisory Document*, No. 2012 / 15. 40p.

ISSN: 1995-1132

ISBN: 978-976-8165-66-4

Published by the Caribbean Regional Fisheries Mechanism Secretariat  
Belize

## PREFACE

The Strategic Action Programme (SAP) described in this report has been completed as part of a contract awarded to the Caribbean Regional Fisheries Mechanism (CRFM) by the Caribbean Large Marine Ecosystem (CLME) Project “*Sustainable Management of the shared Living Marine Resources of the Caribbean Large Marine Ecosystem and Adjacent Regions*”. The aim of the CLME Project is to assist Caribbean countries to improve the management of their shared living marine resources through an ecosystem based approach. The CLME Project began on 1 May 2009 and will end on 30 April 2013.

The Project implementing agency is the United Nations Development Programme (UNDP) in partnership with the Intergovernmental Oceanographic Commission (IOC) of the United Nations Educational, Scientific, Educational and Cultural Organization (UNESCO). The executing agency is the United Nations Office for Project Services (UNOPS).

The goals of the CLME Project are being pursued through regional-level and fishery/ecosystem-specific projects and studies. The Project seeks to evaluate and strengthen the technical-scientific information and knowledge base and to use it to inform the formulation of a SAP that will embrace a shared and ecosystem-based management vision for the CLME, and to document agreed priority actions, i.e. policy, legal and investment reforms for advancing the proposed ecosystem approach.

The CRFM was responsible for executing two case studies for the CLME project that were aimed at strengthening the technical-scientific information and knowledge base and at examining options for promoting an ecosystem approach to fisheries governance for (i) the Eastern Caribbean flyingfish fishery and (ii) the large pelagic fishery. The case studies produced four reports on the review of existing policy, legal and institutional arrangements for the governance and management of each of the two fisheries and stakeholder analyses as well as three data collection improvement reports and scientific meeting reports that document findings of the technical-scientific components of the case studies.

Stakeholders were involved from the very beginning in the preparation, conduct and review of above studies as well as in the drafting of the terms of references through the establishment of special Steering Committees.

All reports, which summarize the results and findings of the studies, were reviewed and validated by stakeholders, including stakeholders from the fishery sector, during a validation workshop, held in May 2012, which is under publication as CRFM Technical and Advisory Document. It is hoped that the Strategic Action Programme for effective governance and management of large pelagic fisheries in the Eastern Caribbean presented in this report will be found useful by all stakeholders concerned and provide guidance on the path to a sustainable management of the shared Living Marine Resources of the Caribbean Large Marine Ecosystem.

## **ACKNOWLEDGEMENTS**

The important contributions of the various stakeholders, who contributed their advice and knowledge to the Strategic Action Programme presented in this report and to the validation workshop, held in May 2012, are gratefully acknowledged. These stakeholders include members of fishing communities, representatives of fishers' associations and cooperatives, fishing and fish processing industries, fisheries administrators, managers, researchers and representatives of other sectors.

Further thanks go to the staff of the CRFM Secretariat for their support and collaboration in the preparation of this document, Susan Singh-Renton, as well as to Milton Haughton, who provided the overall technical guidance to the preparation of this Strategic Action Programme. The document was prepared by Uwe Tietze and Susan Singh-Renton.

## **EXECUTIVE SUMMARY**

This report proposes a Strategic Action Programme (SAP) for achieving effective governance and management of large pelagic fisheries in the Caribbean Large Marine Ecosystem (CLME). A Transboundary Diagnostic Analysis (TDA) carried out by the CLME identified three priority transboundary problems that affect the CLME, i.e. unsustainable exploitation of fish and other living resources, the degradation and modification of natural habitat and pollution and contamination.

Case studies carried out by the CRFM strengthened the technical-scientific information and knowledge base, identified gaps and examined options for promoting precautionary and ecosystem approaches to effective governance for the large pelagic fisheries in the Wider Caribbean Region (WCR). Stakeholders were involved from the very beginning in the preparation, conduct and review of the studies. The governance reports, which summarize the results and findings of the studies and included consideration of information generated by supporting technical activities, were reviewed and validated by stakeholders, including stakeholders from the private fishery sector, during a validation workshop, held in May 2012.

The overall vision of the SAP for large pelagic fisheries in the WCR encompasses healthy marine ecosystems that are adequately valued and protected through robust, integrative and inclusive governance arrangements at local, national, sub-regional and regional levels that effectively enable adaptive management, which maximizes, in a sustainable manner, the provision of goods and services in support of enhanced livelihoods and human well-being.

The overarching Ecosystem Quality Objective (EcoQO) encompasses healthy pelagic ecosystems including the conservation, protection and / or restoration of the fish stocks and biodiversity of the pelagic ecosystem. The overarching Societal Benefit Objective (SBO) encompasses the provision of goods and services by the ecosystems so that it maximizes the systems contributions to societal wellbeing and development needs in the WCR including the preservation of aesthetic, traditional, health and scientific values of the ecosystem.

The SAP identifies broad interventions, strategies, targets, indicators, investments, timeframes, costs and responsibilities that are needed for improving governance and management of large pelagic fisheries in the WCR (table 5). Based on the findings of the case studies, these broad interventions are further subdivided into specific interventions and reforms to be implemented for effective governance and management of the large pelagic fisheries using precautionary and ecosystem-based approaches (chapter 9.2). For each of the specific interventions, priorities, time frames, costs as well as the parties / stakeholders deemed responsible for implementation of the particular intervention are identified (table 6).

## CONTENTS

LIST OF ACRONYMS AND ABBREVIATIONS.....	1
1. INTRODUCTION AND BACKGROUND.....	3
2. METHODOLOGY.....	4
2.1 BASIC CONCEPTS AND DEFINITIONS.....	4
2.2 METHODS EMPLOYED BY CASE STUDY.....	6
2.2.1 <i>Review of existing policy, legal and institutional arrangements for governance and management of large pelagic fisheries in the CLME</i> .....	6
2.2.2 <i>Stakeholder Identification and Analysis</i> .....	7
2.2.3 <i>SAP development</i> .....	7
3. INTEGRATION AND MAINSTREAMING.....	8
3.1 MAINSTREAMING.....	8
3.2 OTHER COOPERATION EXTENDED BY CRFM TO CLME PROJECT ACTIVITIES.....	8
4. VISION FOR THE FUTURE AND GUIDING OBJECTIVES.....	9
5. PHYSICAL AND POLITICAL GEOGRAPHY.....	10
5.1 THE CARIBBEAN LARGE MARINE ECOSYSTEM (CLME).....	10
6. FISHERY AND ECOSYSTEM CHARACTERISTICS.....	14
7. TRANSBOUNDARY FISHERIES GOVERNANCE ARRANGEMENTS.....	15
8. POLICY, LEGAL AND INSTITUTIONAL DEFICIENCIES AND RESTRICTIONS THAT MAY HINDER EFFECTIVE TRANSBOUDNARY GOVERNANCE OF THE LARGE PELAGIC FISHERIES.....	16
9. RECOMMENDED REFORMS, STRATEGIES AND ACTIONS TO BE TAKEN FOR EFFECTIVE GOVERNANCE AND MANAGEMENT OF THE LARGE PELAGIC FISHERIES USING AN ECO-SYSTEM APPROACH.....	18
9.1 TRANSBOUNDARY FISHERIES GOVERNANCE CONSIDERATIONS IN THE CLME SUB-REGION FOR ACHIEVING EAF MANAGEMENT.....	18
9.2 SPECIFIC INTERVENTIONS/ACTIVITIES AND REFORMS TO BE IMPLEMENTED FOR EFFECTIVE GOVERNANCE AND MANAGEMENT OF THE LARGE PELAGIC FISHERIES USING AND ECOSYSTEM-BASED APPROACH.....	23
9.3 IMPLEMENTATION ARRANGEMENTS.....	29
10. MONITORING AND EVALUATION.....	32
10.1 BROAD INTERVENTIONS AND ACTIVITIES FOR LARGE PELAGIC FISHERIES IDENTIFIED IN THE GENERAL SAP DOCUMENT.....	32
10.2 RESPONSIBLE PARTIES AND MECHANISMS.....	33
11. FINANCING MECHANISMS.....	34
12. CONCLUSIONS.....	34
13. REFERENCES.....	35
APPENDIX 1: SAP LINKAGES AND FRAMEWORK.....	37

## LIST OF ACRONYMS AND ABBREVIATIONS

CANARI	-	Caribbean Natural Resources Institute
CARICOM	-	Caribbean Community
CARIFIS	-	Caribbean Fisheries Information System
CCCFP	-	Common Fisheries Policy for CARICOM States
CCRF	-	Code of Conduct for Responsible Fisheries
CERMES	-	Centre for Resource Management and Environmental Studies
CFP	-	Common Fisheries Policy
CFNO	-	Caribbean Network of National Fisherfolk Organizations
CFRAMP	-	CARICOM Fisheries Resources Assessment and Management Programme
CLME	-	Caribbean Large Marine Ecosystem
CRFM	-	Caribbean Regional Fisheries Mechanism
CS	-	Continental Shelf
CZ	-	Contiguous Zone
EAF	-	Ecosystem Approach to Fisheries
EcoQO	-	Ecosystem Quality Objective
EEZ	-	Exclusive Economic Zone
EU	-	European Union
FAO	-	Food and Agriculture Organization of the United Nations
ICCAT	-	International Commission for Conservation of Atlantic Tuna
IMS	-	Information Management System
IMS-REMP	-	Information Management System - Regional Environmental Monitoring Programme
IOC	-	Intergovernmental Oceanographic Commission
IOCARIBE	-	Intergovernmental Oceanographic Commission Sub-Commission for the Caribbean and Adjacent Regions
LPWG	-	Large Pelagic Fish Resource Working Group
LRS	-	Licensing and Registration System
MBDA	-	Multi- or Bilateral Development Agency
MCS	-	Monitoring, Control and Surveillance
MDGs	-	Millennium Development Goals
NFO	-	National Fisherfolk Organization
NGA	-	National Government Authorities
NICs	-	National Inter-sectoral Committees
N.M.	-	Nautical Mile
NS	-	National Stakeholders
OECS	-	Organization of Eastern Caribbean States
OSPESCA	-	Organization for Fisheries and Aquaculture of the Central American Isthmus
REMP	-	Regional Environmental Monitoring Programme
RFMO	-	Regional Fisheries Management Organization
RFO	-	Regional Fisheries Organization
RS	-	Regional Stakeholders
RTI	-	Research/Training Institution
SAP	-	Strategic Action Programme
SBO	-	Societal Benefit Objective
TDA	-	Transboundary Diagnostic Analysis
TIP	-	Trip Interview Programme
TS	-	Territorial Sea
UNDP	-	United Nations Development Programme
UNESCO	-	United Nations Educational, Scientific, Educational and Cultural Organization

UNOPS - United Nations Office for Project Services  
UWI - University of the West Indies  
WCR - Wider Caribbean Region  
WECAFC - Western Central Atlantic Fishery Commission

## 1. INTRODUCTION AND BACKGROUND

The Strategic Action Programme on Governance of Large Pelagic Fisheries in the Caribbean Large Marine Ecosystem (CLME) described in this report draws on a case study, which was carried out by the CRFM for the Caribbean Large Marine Ecosystem (CLME) Project “*Sustainable Management of the shared Living Marine Resources of the Caribbean Large Marine Ecosystem and Adjacent Regions*”. The aim of the CLME Project is to assist Caribbean countries to improve the management of their shared living marine resources through an ecosystem based approach. The CLME Project began on 1 May 2009 and will end on 30 April 2013.

A Transboundary Diagnostic Analysis (TDA) carried out by the CLME identified three priority transboundary problems that affect the CLME, i.e. unsustainable exploitation of fish and other living resources, the degradation and modification of natural habitat and pollution and contamination. The TDA serves as the scientific basis for the development of an agreed programme of interventions for the CLME, otherwise known as Strategic Action Programme (SAP). The overall SAP, which is under preparation and to which the SAP for large pelagic fisheries contributes, will have a shared vision for the CLME and adjacent regions. Agreements will be made regarding the priority interventions, reforms and investments required.

The case study carried out by the CRFM aimed at strengthening the technical-scientific information and knowledge base and at examining options for promoting an ecosystem approach to fisheries governance for the large pelagic fisheries in the CLME. The case study produced two reports that examined the governance aspects, i.e. a review of existing policy, legal and institutional arrangements for the governance and management of the large pelagic fisheries and a stakeholder analysis. Stakeholders were involved from the very beginning in the preparation, conduct and review of the study as well as in the elaboration of the Case Study programme through the establishment of special Steering Committee for the Large Pelagic Fisheries Consultancy, which held its first meeting in February 2011 in Barbados (CRFM, 2011b).

The governance reports, which summarize the results and findings of the study, were reviewed and validated by stakeholders, including stakeholders from the fishery sector, during a validation workshop, held in May 2012, which has been published as CRFM Technical and Advisory Documents. The SAP dealing with the governance of the large pelagic fisheries resources synthesizes information from the various activities undertaken under the large pelagic fisheries case study and:

- attempts to incorporate the views of all stakeholders;
- focuses on the transboundary issues and concerns without minimizing the importance of national issues and priorities;
- identifies policy, legal and institutional deficiencies and restrictions that may hinder effective transboundary management and governance of the fishery and its supporting ecosystem;
- recommends reforms including the identification of a sub-regional decision making forum and other policy, legal and institutional reforms and investments needed at local, national and sub-regional/regional levels for effective governance and management of the large pelagic fisheries following an ecosystem approach to fisheries management.

The SAP presented in this document further suggests a phased approach to the implementation of proposed interventions, depending on the suggested priority of each intervention, which stakeholders might want to reassess, and on the timeframe envisaged for implementation. The proposed interventions furthermore address all stages of the EAF management cycle, i.e. generation of data and information, analysis of data and information and generation of management advice, decision-making, implementation,

review and evaluation as well as adjustment of management plans to the findings of reviews and evaluations.

Investment costs have been assessed for each proposed specific intervention in terms of high, medium and low. In order to obtain realistic quantitative estimates it is suggested to consult in a participatory manner with the stakeholders, which have been identified as implementers of the proposed intervention.

## **2. METHODOLOGY**

### **2.1 Basic concepts and definitions**

In the following, some basic concepts and definitions, which form an integral part of this SAP, are highlighted.

#### Governance<sup>1</sup>

In this SAP, as in other SAPs of the CLME Project, governance is defined as the mechanisms and processes of how an organization controls its actions. Governance describes the mechanisms an organization uses to ensure that its constituents follow its established processes and policies. It is the primary means of maintaining oversight and accountability in a loose organizational structure. A proper governance strategy includes systems to monitor and record what is going on, takes steps to ensure compliance with agreed policies, and provides for corrective action in cases where the rules have been ignored or misconstrued.

#### Strategic direction, objectives, priorities

Strategic direction is defined as a course of action that leads to the achievement of the goals of an organization's strategy. Strategic objectives are broadly defined objectives that an organization must achieve to make its strategy succeed.

Strategic priorities are ranked by their importance in achieving the strategic goals.

#### Fisheries Management

According to the FAO Technical Guidelines for Responsible Fisheries on fisheries management (FAO, 1997, p. 82), fisheries management is defined as “the integrated process of information gathering, analysis, planning, consultation, decision-making, allocation of resources and formulation and implementation, with enforcement as necessary, of regulations or rules which govern fisheries activities in order to ensure the continued productivity of the resources and accomplishment of other fisheries objectives.”

#### Ecosystem approach to fisheries management

The ecosystem approach to fisheries (EAF) recognizes the need for fisheries management to consider the impact of the ecosystem and other users of the ecosystem on fisheries as well as the broader impact of fisheries on the ecosystem as a whole (FAO, 2003). The EAF strives to balance various societal objectives by taking into account both existing knowledge as well as uncertainties about biotic, abiotic and human components of ecosystems. The EAF also strives to take into consideration the interactions

---

<sup>1</sup> A comprehensive overview of governance issues in the CLME is provided by Fanning et al. 2011, pp. 257 – 320.

between these components by applying an integrated approach to fisheries within a meaningful ecological context.

The FAO Technical Guidelines for Responsible Fisheries on fisheries management (FAO, 1997, p. 59) state further that the utilization of living aquatic resources and the management of this utilization should be seen as partnerships between the management authority and the interest groups. The objectives should reflect the reasonable desires of the interest groups, within the constraints imposed by the biological and ecological limitations of the resources and the overriding objectives of national planning.

### Precautionary approach to fisheries management<sup>2</sup>

The precautionary approach adopted recognizes that:

- all fishing activities have significant impacts;
- fisheries impacts are not negligible unless proved otherwise;
- the complex and changing fishery system will never be perfectly understood;
- scientific advice for management is therefore always affected by uncertainty;
- management decision processes and sector's compliance add their own uncertainties;
- impacts of fisheries on the system are therefore difficult to predict accurately; and
- consequences of management errors may be only slowly reversible.

As a consequence, and recognising that the conduct of fisheries requires that decisions are still made with incomplete knowledge, the approach requires *inter alia* that:

- a level of precaution commensurate to risk be applied at all times to all fisheries;
- it be applied systematically, i.e. in research, management and fishing operations;
- potentially irreversible changes be avoided (to maintain options for future generations);
- undesirable outcomes be anticipated and measures be taken to reduce their likelihood;
- corrective measures be applied immediately and be effective within an acceptable time;
- priority be given to conserving the productive capacity of the resource;
- precautionary limits be put on fishing capacity on highly uncertain resources;
- all fishing activities be subjected to prior authorisation and periodic review;
- the burden of proof be appropriately (realistically) placed;
- standards of proof commensurate with the potential risk to the resource be established; and
- the approach is formalized in a comprehensive legal and institutional framework.

### Poverty and vulnerability

As far as the overriding objectives of national planning are concerned, and this is particularly true for developing countries, the fight for eradication of poverty and hunger and the achievement of the Millennium Development Goals (MDGs) figure prominently among the objectives of national planning and should have a central place among management objectives of fisheries administrations. Poverty and vulnerability is a complex concept and process characterized by low incomes, poor health, low literacy levels, under-nutrition and inadequate housing and living conditions. Governments have committed themselves to eradicate poverty.

The Regional Policy and Planning Workshop on the FAO Code of Conduct for Responsible Fisheries (CCRF) in the Caribbean: Achieving Improved Fisheries Management and Utilization in the wider Caribbean Region, held at the University of the West Indies, Cave Hill Campus, Barbados, from 6-9 December 2011 (FAO, 2012) recommended that efforts be increased by fisheries authorities and other

---

<sup>2</sup> <http://www.fao.org/fishery/topic/13302/en>

stakeholders to mainstream fisheries into national poverty reduction and development plans, strategies and programmes.

A recently completed diagnostic study to determine poverty and vulnerability levels in CARICOM fishing communities (CRFM, 2012a) covered four of the countries included in the case study on large pelagic fisheries i.e. Barbados, Grenada, Saint Vincent and the Grenadines and Trinidad and Tobago.

In the case of Grenada and Saint Vincent and the Grenadines, more than 5 percent of the households in the fisheries / aquaculture sectors were classified as being poor; 6.61 and 5.41 percent, respectively (CRFM, 2012a, p. xvi). In both countries, these households were involved in capture fisheries. For Trinidad and Tobago, the percentage of fisheries households living in poverty was 1.32 percent. Poverty in fisheries households was not an issue in Barbados.

Compared to poverty, vulnerability was found to be a much more important issue in all four countries covered by the study. Grenada topped the list with 25.62 percent of fisheries households being vulnerable, followed by Trinidad and Tobago with 15.23 percent, Saint Vincent and the Grenadines with 10.81 percent and Barbados with 7.37 percent. The main components of poverty and vulnerability were lack of access to services, poor quality of dwellings, semi-illiteracy and low levels of education as well as low economic capacity and productivity. Large household and family sizes as well as high illiteracy and semi-illiteracy levels figured prominently among the demographic characteristics of poor and vulnerable households. Another characteristic, which poor and vulnerable fisheries households had in common, was that they depended more strongly on fisheries for their income as compared to other households.

## **2.2 Methods employed by case study**

The methods employed by the case study and for the development of the SAP are highlighted below. The case study builds heavily on the work carried out by the CRFM and bodies such as the CRFM Annual Scientific Meetings and the work of the CRFM Large Pelagic Fish Resource Working Group (LPWG).

### **2.2.1 Review of existing policy, legal and institutional arrangements for governance and management of large pelagic fisheries in the CLME**

Consultations were held with various government departments and regional / sub-regional organisations to obtain information on existing policies, laws, regulations and other fishery-related agreements and institutional arrangements for fisheries governance and management during a 12-day mission by two consultants to the sub-region.

The mission included the participation in the Regional Policy and Planning Workshop on the FAO Code of Conduct for Responsible Fisheries (CCRF) in the Caribbean: Achieving Improved Fisheries Management and Utilization in the wider Caribbean Region. The workshop was held at the University of the West Indies, Cave Hill Campus, Barbados, from 6 - 9 December 2011. It was co-organized by FAO, the Ministry of Agriculture, Food, Fisheries and Water Resource Management of Barbados, the Centre for Resource Management and Environmental Studies (CERMES) and the Western Central Atlantic Fishery Commission (WECAFC). Many of the topics discussed were relevant to the assignment of the consultants, and the workshop offered an opportunity to interview representatives from Barbados, Dominica and regional organisations and to consult with participants regarding the terms of reference of the assignment.

Following the participation in the regional workshop, the consultants visited Saint Lucia, Saint Vincent and the Grenadines, Grenada and Trinidad and Tobago. Prior to and following the mission, various publications and documents were reviewed. The reports, which summarize the results and findings of the

study, were reviewed and validated by stakeholders, including a large number of stakeholders from the fishery sector, during a validation workshop, held in Grenada in May 2012, which is under publication as CRFM Technical and Advisory Document.

### 2.2.2 Stakeholder Identification and Analysis

The Caribbean Natural Resources Institute (CANARI) was contracted to conduct a stakeholder analysis. Desk reviews of literature and information on stakeholders as well as participatory methods were employed in the identification and analysis of stakeholders. The desk study was used to identify primary, secondary and key stakeholders at the international, regional and national level. Stakeholders were classified as intergovernmental, government organizations, fisherfolk organizations, academic and research organizations, private sector and non-governmental organizations.

Based on the findings of the desk study, an empirical survey was conducted. Survey forms were e-mailed to regional and country level stakeholders with follow-up telephone calls. The survey was used as a guide to structure interviews with stakeholders, who could not attend focus group discussions and regional stakeholders based in countries that were not part of the case study. Altogether, 196 persons were contacted for the study as well as 138 organizations.

In addition to desk study and e-mail survey, in-country focus group discussions were organized. The Fisheries Divisions in four of the five countries studied, i.e. Barbados, Grenada, Martinique, St. Vincent and the Grenadines invited 10 organizations to participate in the focus group discussions. Facilitated sessions were conducted to identify primary and secondary stakeholders in the fishery of each country and the scope of involvement, i.e. international, regional or national. The capacity of stakeholders was assessed as well as their willingness and their level of influence in governance and management of the fishery. Challenges, constraints and opportunities for involvement in governance were also discussed (CRFM, 2012e).

The findings of the stakeholder identification and analysis were validated by stakeholders, including a large number of stakeholders from the private fishery sector, during a validation workshop, held in Grenada in May 2012, which is under publication as CRFM Technical and Advisory Document.

### 2.2.3 SAP development

The development of the SAP for large pelagic fisheries in the WCR in this report is done in five steps. It begins with the definition of an overall vision (step 1). This is followed by the identification of an overarching Ecosystem Quality Objective (EcoQO) and an overarching Societal Benefit Objective (SBO) (step 2). Based on vision and overarching objectives, the SAP then identifies broad interventions, strategies, targets, indicators, investments, timeframes, costs and responsibilities that are needed for achieving effective governance and management of large pelagic fisheries in the WCR (step 3). Based on the findings of the case studies, these broad interventions are further sub-divided into specific interventions and reforms to be implemented for effective governance and management of the large pelagic fisheries using an ecosystem-based approach (step 4). For each of the specific interventions, priority, time frame, cost as well as the party/stakeholder responsible for implementation are identified (step 5).

### **3. INTEGRATION AND MAINSTREAMING**

#### **3.1 Mainstreaming**

The work carried out through the case study as well as the SAP development is being continuously integrated and mainstreamed into policy making in the CLME. As further explained in chapter 7, The International Commission for Conservation of Atlantic Tunas (ICCAT) is the Regional Fisheries Management Organization (RFMO) responsible for management and conservation of tuna and tuna-like fishes in the Atlantic Ocean and its adjacent Seas. At present, several countries, including those with Overseas Territories (i.e. France and UK) within the CLME are Contracting Parties to the ICCAT Convention. CARICOM has participated in ICCAT in observer capacity since 1991. Its representation is actively coordinated by the CRFM.

In 2012, the Caribbean Fisheries Forum established a CRFM Working Group on ICCAT to promote a more active participation in regional governance and management of large pelagic fishery resources. Furthermore, the CRFM Ministerial Council adopted a Declaration on Illegal, Unreported and Unregulated (IUU) Fishing (the Castries Declaration) in 2010. Also, in 2011 the CRFM Ministerial Council unanimously adopted a Common Fisheries Policy for CARICOM States (CCCFP), which makes provisions for CARICOM-level coordination of holistic fisheries governance activities that incorporate the precautionary approach and the ecosystem approach. These recent developments by the CRFM show that the work carried out in the framework of the CLME Project, including the SAP development, is being mainstreamed into effective sub-regional and regional governance of transboundary fisheries resources.

#### **3.2 Other cooperation extended by CRFM to CLME project activities**

In addition to the two case studies (large pelagic fisheries and flyingfish fisheries) executed under the auspices of the CRFM, the CRFM has actively contributed to CLME Project activities undertaken by other project partners. For instance, FAO requested and obtained the constant assistance of the CRFM Secretariat in provision of technical support throughout the delivery of its Case Study to address the continental shelf fisheries and related ecosystem. CRFM and OSPESCA cooperated in convening a joint High-Level Ministerial Meeting and in developing a Joint Action Plan to address a broader and formal regional management approach for the spiny lobster fishery that has been the subject of a CLME pilot project led by OSPESCA. CRFM has, over the period of the project, facilitated requests by UWI CERMES to accommodate activities and discussions for development of the Regional Governance Framework component.

Also, the CRFM has prepared a dataset of information on CRFM publications to date for input into the IMS-REMP project component. The Information Management System (IMS), together with the Regional Environmental Monitoring Programme (REMP), aims to provide, among other information, references and links to sources of reliable, up-to-date data and information on ecosystems, environment and related issues for decision making and governance.

These complementary components on data and information were developed and implemented under the responsibility of the Intergovernmental Oceanographic Commission's Sub-commission for the Caribbean and Adjacent Regions (IOCARIBE). The tools are an IOCARIBE contribution to the Caribbean Large Marine Ecosystem project (CLME), which aims to strengthen the management of the shared living marine resources of the Wider Caribbean.

#### 4. VISION FOR THE FUTURE AND GUIDING OBJECTIVES

The overall vision for the future of the Wider Caribbean Region (WCR) encompasses healthy marine ecosystems that are adequately valued and protected through robust, integrative and inclusive governance arrangements at local, national, sub-regional and regional levels that effectively enable adaptive management, which maximizes, in a sustainable manner, the provision of goods and services in support of enhanced livelihoods and human well-being.

The overarching Ecosystem Quality Objective (EcoQO) encompasses healthy pelagic ecosystems including the conservation, protection and / or restoration of the fish stocks and biodiversity of the pelagic ecosystem. The objective also aims to safeguard the habitats and community structure of the ecosystems from fishery impacts, direct and indirect physical impacts and pollution impacts that diminish the contributions of these systems to enhanced livelihoods and human well-being.

The overarching Societal Benefit Objective (SBO) encompasses the provision of goods and services by the ecosystems so that it maximizes the systems' contributions to societal well-being and development needs in the Wider Caribbean Region including the preservation of aesthetic, traditional, health and scientific values of the ecosystem. The SBO further envisages contributions from the shared living marine resources to meet the region's food and nutritional and socio-economic development needs. These needs include the alleviation of poverty and reduction of vulnerability of small-scale fishers, their communities and special target groups such as the elderly, women and children in fishing communities.

In terms of governance, the objective encompasses the establishment and implementation of co-ordinated and cost-effective governance arrangements for safeguarding the environmental health of the large pelagic fisheries ecosystem. It further includes the establishment and implementation of coordinated and cost-effective fisheries governance and management arrangements that are broadly supported, well informed, equipped to implement the ecosystem approach and allow for the equitable participation of all stakeholders.

The objectives and strategic directions for the pelagic fisheries ecosystem for the CLME SAP are shown in table 1 below.

**Table 1: Objectives and strategic directions for the pelagic fisheries ecosystem for the CLME SAP**

	<b>UNSUSTAINABLE EXPLOITATION</b>	<b>HABITAT DEGRADATION AND COMMUNITY MODIFICATION</b>	<b>POLLUTION</b>
EcoQOs  Conservation, and restoration where necessary, of the health of the pelagic ecosystem within the WCR.	Protection, and restoration where necessary, of the health and natural balance of exploited fish populations occurring within the marine ecosystem, adopting a precautionary management strategy, as needed.	Conservation, and restoration where necessary, of the natural structure and function of the ecosystem, biological diversity, and ecosystem resilience, adopting a precautionary management strategy, as needed.	Conservation, and restoration where necessary, of the health of the aquatic environment, with emphasis on guaranteeing agreed standards of water and habitat quality.

<p>SBOs</p> <p>Provision of goods and services by the pelagic ecosystem such that it contributes to societal development needs of the WCR, and to preservation of the associated aesthetic, traditional, health, educational and scientific values.</p>	<p>Sustainable and optimal use of living marine resources, for meeting the region's food and nutrition security needs, and other social and economic benefits associated with such exploitation.</p>	<p>Responsible and sustainable management of pelagic ecosystem goods and services, for fulfilling social and economic development needs, while also preserving the full aesthetic, traditional, cultural, health, educational and scientific values of such goods and services.</p>	<p>Fulfilment of social and economic development objectives, through responsible management of environmental health, necessary for preventing risks to human health and well-being.</p>
<p>Strategic directions</p> <p>Establishment and implementation of cooperative and cost-effective governance and fisheries management arrangements that are fully supported, well informed and equipped to implement ecosystem based management</p>	<p>Establishment and implementation of cooperative and cost-effective governance and fisheries management arrangements that are fully supported, well informed, and equipped to implement the ecosystem approach to fisheries management</p>	<p>Establishment and implementation of cooperative and cost-effective arrangements for fully supported and well-informed sustainable and diverse social and economic development and management planning and decision-making</p>	<p>Establishment and implementation of cooperative and cost-effective arrangements for fully supported and well-informed management of environmental health, and for sustaining its contribution to human health and well-being</p>

## 5. PHYSICAL AND POLITICAL GEOGRAPHY

### 5.1 The Caribbean Large Marine Ecosystem (CLME)

The Caribbean Sea Large Marine Ecosystem (CLME)<sup>3</sup> is a semi-enclosed sea located between North and South America. It is bounded by Central America to the west.

<sup>3</sup> See [http://www.eoearth.org/article/Caribbean\\_Sea\\_large\\_marine\\_ecosystem?topic=49597](http://www.eoearth.org/article/Caribbean_Sea_large_marine_ecosystem?topic=49597). The Encyclopedia of Earth.

**Map 1: Location of the Caribbean Large Marine Ecosystem. (Source: NOAA)**



It encompasses an area of 2,515,900 square kilometers and is the second largest sea in the world. The LME is comprised of four deep basins: the Venezuelan Basin in the east, the Colombian Basin in the west (from which it is separated by a ridge), the Cayman Trough in the northwest, and the Yucatan Basin in the north.

The Caribbean Sea LME is considered a Class III, low (<150 gC/m<sup>2</sup>-yr) productivity ecosystem, according to SeaWiFS global primary productivity estimates, although upwelling along the northern coast of Venezuela contributes to relatively high productivity in that area. Other factors contributing to the greater productivity of South America's northern coast are the nutrient input from rivers and estuaries.

As far as Governance is concerned, as many as 38 countries and dependencies border the Caribbean Sea Large Marine Ecosystem, and need to address the numerous transboundary issues existing in this LME. The Caribbean Large Marine Ecosystem (CLME) Project has been assisting Caribbean countries to improve the management of their shared living marine resources through an ecosystem based approach since 2009. The case study on review of existing policy, legal and institutional arrangements for governance and management of large pelagic fisheries in the CLME, including stakeholder identification and analysis, has focused on the eastern Caribbean sub-region.

An overview of the physical and political geography of the eastern Caribbean sub-region is provided in CRFM, 2012e, pp. 51 - 53. Figure 1 of the report (p. 51) shows the major surface currents and river outflows affecting the wider Caribbean. Figure 2 of the report (p. 52) provides a synthesis of physical oceanographic characteristics of possible significance to fisheries in the eastern Caribbean.

The eastern Caribbean is characterized by a series of volcanic islands, which the Lesser Antilles islands arc including the States / islands of Grenada, St. Vincent and the Grenadines, St. Lucia, Martinique (department of France) and Dominica. These islands are characterized by high reliefs and limited shelf

areas. To the east of the islands runs the 6000 m deep Tobago Trough. Barbados is located to the east of the trough. Trinidad and Tobago sit on a wide continental shelf associated with the South American mainland.

As far as the political geography is concerned, the eastern Caribbean sub-region, also referred to as Lesser Antilles, is one of the most compact multinational archipelagos in the world. With the exception of Martinique, which is a department of France, the other islands are all independent. All States have asserted jurisdiction over their territorial seas and exclusive economic zones and claimed a 12 nautical mile (n.m.) territorial sea, a 200 n.m. exclusive economic zone and a continental shelf. The information is shown in table 2 (Berry, D.S. & U. Tietze. 2012, p. 34).

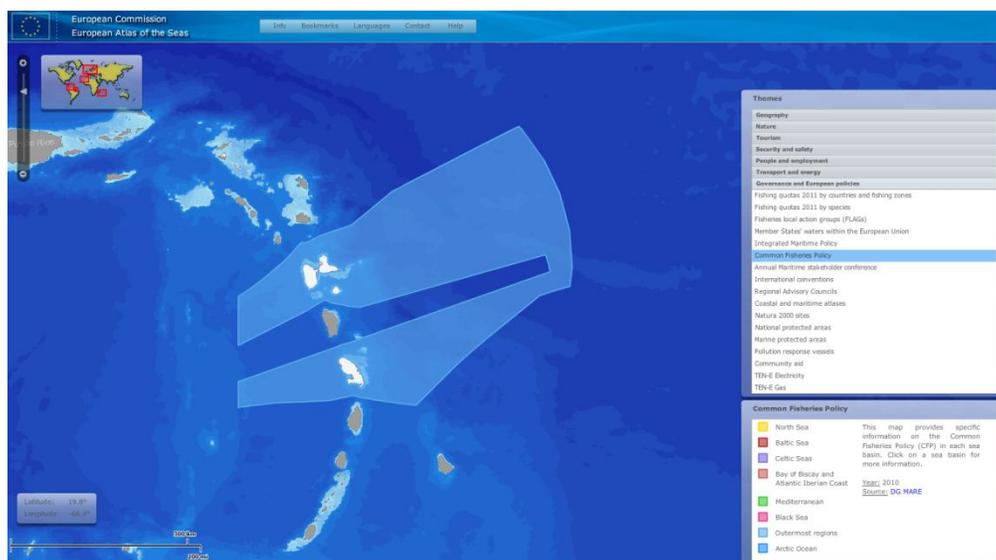
**Table 2: Limits of Territorial Sea, Contiguous Zone, Exclusive Economic Zone and Continental Shelf**

<b>State</b>	<b>Limits of territorial sea (TS), contiguous zone (CZ), exclusive economic zone (EEZ) and continental shelf (CS), in nautical miles</b>
<b>Barbados</b>	TS (12), EEZ (200), CS (to outer limit of continental margin or 200)
<b>Dominica</b>	TS (12) , CZ (24), EEZ (200)
<b>Grenada</b>	TS (12) , EEZ (200)
<b>Martinique*</b>	TS (12) , CZ (24), EEZ (200), CS (to outer limit of continental margin or 200)
<b>St Lucia</b>	TS (12) , CZ (24), EEZ (200), CS (to outer limit of continental margin or 200)
<b>St. Vincent and the Grenadines</b>	TS (12) , CZ (24), EEZ (200)
<b>Trinidad and Tobago</b>	TS (12) , CZ (24), EEZ (200), CS (to outer limit of continental margin or 200)
<b>United States of America</b>	TS (12), CZ (24), EEZ (200), CS (to outer limit of continental margin or 200)
<b>Venezuela</b>	TS (12), CZ (15), EEZ (200), CS (200 or to the limits of exploitation)

While each State is capable of asserting jurisdiction over fisheries within these areas of maritime jurisdiction, as permitted by national laws and international law, there is a lack of clearly delimited maritime boundaries between neighbouring States and almost all States have unresolved or disputed maritime boundaries.

Since Martinique is an overseas department of France, the European Union's Common Fisheries Policy applies to Martinique. Map 2 shows the French EEZ areas around Martinique and Guadeloupe that are covered by the EU's CFP (Berry, D.S. & U. Tietze. 2012, p. 39).

**Map 2: EU Common Fisheries Policy Areas in Eastern Caribbean (Martinique and Guadeloupe)**



Membership in regional and international organizations with responsibility for fisheries management and development in the wider Caribbean region is shown in table 3.

**Table 3: Membership of Eastern Caribbean States in International and Regional Organizations**

Country / Organization	FAO	WECAFC	ACS	CARICOM	OECS	ICCAT
Barbados	√	√	√	√		√
Dominica	√	√	√	√	√	
Grenada	√	√	√	√	√	
Martinique (France)	√	√	√	√		√
St. Lucia	√	√	√	√	√	
St. Vincent and the Grenadines	√	√	√	√	√	√
Trinidad and Tobago	√	√	√	√		√

The membership of Eastern Caribbean States to international and regional conventions and treaties of relevance to fisheries as of June 2012 is shown in CRFM, 2012e, p. 62 (table 4).

**Table 4: Membership to International and Regional Conventions and Treaties of Relevance to Fisheries (as of June 2012)**

Country	UNCLOS	UN Fish Stocks Agreement	FAO Compliance Agreement	CITES	CBD	MARPOL IMO	Cartagena Convention	SPAW Protocol	FAO Port States Measures Agreement
Barbados	√	√	√	√	√	√	√	√	-
Dominica	√	-	-	√	√	√	√	-	-
Grenada	√	-	-	√	√	-	√	-	-
Martinique (France / EU)	√	√	√	√	√	√	√	√	-
St. Lucia	√	√	√	√	√	√	√	√	-
St. Vincent and the Grenadines	√	√	-	√	√	√	√	√	-
Trinidad and Tobago	√	√	-	√	√	√	√	√	-

Country profile data for the eastern Caribbean islands on geography, governance, demography and economy are provided in CRFM, 2012e, pp. 55, 56.

## **6. FISHERY AND ECOSYSTEM CHARACTERISTICS**

The fishery and ecosystem characteristics of large pelagics fisheries in the Caribbean are described by Berry, D.S. and U. Tietze. 2012, p. 47 - 61. Large pelagic fisheries in the eastern Caribbean are part of the pelagic ecosystem, which provides ecosystem services, i.e. provisioning, regulating, cultural and supporting services. The provisioning services include the provision of fish for commercial, recreational and subsistence fishing; the generation of wave energy and the provision of a medium for transportation, i.e. shipping and pharmaceutical products as well as other services. The prominent regulatory service of the pelagic ecosystem is climate regulation. Cultural ecosystem services include recreational and tourism services and values, knowledge systems and educational values as well as spiritual and inspirational values. Supporting ecosystem services of the pelagic ecosystem include habitat for fish, eggs and larval stages of fish and shellfish, transport of eggs and larvae to feeding and recruitment grounds, provision of adult fish migratory pathways, as well as biodiversity functions related to sea turtles, sea birds and marine mammals.

The tuna and tuna-like fisheries resources occurring in the CLME can be divided into two types. The first type of large pelagic fishery resources consists of less wide-ranging species that migrate more or less within the CLME. Examples are smaller tunas such as blackfin and bullet tunas, dolphinfish, wahoo, cero and king mackerels. An overview of the most recent status of blackfin tuna and other large pelagic fishery resources in the Caribbean is provided by CRFM, 2012c, pp. 45 – 66.

The second type of large pelagic fishery resources consists of species that are oceanic, migrate over long distances and are distributed over areas that extend beyond the CLME. They include yellowfin tuna, bigeye tuna, skipjack tuna, billfishes, Atlantic swordfish and sharks. Large pelagic fishery resources usually occupy the open water. By virtue of their size and physiology, these fish are fast-moving and typically highly migratory. Some, such as the large tunas and billfishes, can migrate over entire oceans, while others such as the smaller tunas and tuna-like species such as mackerels and dolphinfish are thought to migrate over smaller sea areas.

In terms of the physical spatial extent of the distribution of the large pelagic fish stock of interest, the ecosystem management unit could therefore vary from a sub-regional sea area within the CLME, to the whole of the CLME or even the Wider Caribbean Region, or to the entire Atlantic Ocean. In all instances, these fish cross national maritime boundaries, as well as the High Seas, and are thus harvested by a range of fishing fleets belonging not only to many nations bordering the CLME region, but distant water fishing nations. Besides the commercial fishing exploitation interests to the CLME region, the fishing of large pelagic fish is widely recognized to be a major tourist and recreational activity.

Because of the large ocean areas over which these fish species are distributed, sustainable exploitation, management and conservation of these species requires a coordinated effort of states involved in harvesting of these resources. The CLME and the Caribbean Sea are part of a large management area for tunas and tuna and tuna-like species, which includes the Atlantic Ocean and its adjacent seas such as the Caribbean Sea, the Gulf of Mexico and the Guiana-Brazil area. The tuna RFMO for this area is ICCAT, which was established in 1969. The current conservation and management recommendations of ICCAT include Total Allowable Catches (TACs), sharing arrangements for member countries, minimum size limits, effort controls, time / area closures, trade measures, and monitoring and inspection programmes.

In many Caribbean countries, commercial and sport fisheries target large pelagic fishery resources. Over the period 2000 – 2009, CARICOM countries reported to ICCAT a total harvest of 135 226 tonnes of tuna, tuna-like and shark species. Fishing vessels fishing for large pelagic species in CARICOM countries can be divided into five categories (FAO, 2004), i.e. open outboard trolling and longline boats, open outboard gillnetters, decked inboard trolling and gillnet vessels, medium longliners and large longliners.

The large majority of vessels are the open outboard powered ones typical of small-scale fisheries. Larger decked vessels, mainly medium sized longliners, were introduced over the last two decades when regional governments and the fishing industry spent considerable effort to develop the Caribbean region's capacity to harvest large pelagic species through the development of longlining. There are also a number of foreign-flagged larger vessels operating under the open ship registries of Saint Vincent and the Grenadines and Belize; these vessels fish for large pelagic species and generate revenue for the countries concerned.

In addition to commercial fishing activities, recreational fishing, most of it also commercial, plays an important role in the exploitation of large pelagic fishes, particularly when it is directed at long-lived species such as swordfish and other billfishes. Recreational fishing is done by charter boats, by individuals owning their own boat or by visiting sport fishing boats. The numbers of all these types of recreational fishing vessels are not well documented.

## **7. TRANSBOUNDARY FISHERIES GOVERNANCE ARRANGEMENTS**

The transboundary Diagnostic Analysis (TDA) carried out by the CLME identified three priority transboundary problems that affect the CLME, i.e. unsustainable exploitation of fish and other living resources, the degradation and modification of natural habitat and pollution and contamination. In consequence, a transboundary arrangement for holistic fisheries governance and management incorporating an Ecosystem Approach to Fisheries (EAF) management for large pelagic fishes would necessitate coordination of all management activities, from local to regional / international governance mechanisms. Such coordination would guarantee the integration of multiple stakeholder objectives and compatibility of approaches across all sea areas relevant to these stocks (Singh-Renton *et al.* 2011).

The International Commission for Conservation of Atlantic Tunas (ICCAT) is the Regional Fisheries Management Organization (RFMO) responsible for management and conservation of tuna and tuna-like fishes in the Atlantic Ocean and its adjacent Seas. The ICCAT Convention Area includes the CLME region, and any member of the United Nations can become a Party to ICCAT. At present, several countries, including those with Overseas Territories (i.e. France and UK) within the CLME are Contracting Parties to the ICCAT Convention and so are legally bound to participate fully in the ICCAT management process. CARICOM has participated in ICCAT in observer capacity since 1991, with its representation coordinated by CFRAMP and later by the CRFM. By this means, CARICOM / CRFM has a long-standing and good working relationship with ICCAT, and this has promoted more active participation in ICCAT by several CARICOM / CRFM States, and strengthened the profile of these Caribbean States with regard to international cooperation in the management of large pelagic fish resources (Singh-Renton. 2010).

Though fish stock assessment and management are coordinated at the ICCAT level where a regional database on fishing activities is maintained, there is a national-level responsibility for conducting supporting activities such as keeping under review the relevant national supporting policy and legal instruments, as well as national-level coordination of statistics, research, and industry inputs and contributions.

At present, ICCAT's active management efforts are aimed at those large tuna and billfish species that are the targets of commercial and recreational fisheries that are acknowledged to be profitable at the global level. Over the past few years, ICCAT has investigated tuna fishing impacts on other ecosystem components such as seabirds and mammals, and a few ICCAT regulations are now directed at mitigating bycatch impacts. The small tunas or tuna-like species, e.g. blackfin tuna, the mackerels, dolphinfish, and wahoo, support significant commercial fisheries within the CLME region. However, these fish species are currently not actively managed by ICCAT, though because of their hypothesized more coastal / regional stock distributions, ICCAT has repeatedly recommended that the relevant fish species could be managed at the sub-regional / regional level. Notwithstanding, the information base to support informed governance and management of these species is rather weak, perhaps because of the simultaneous absence of the relevant sub-regional / regional governance mechanism.

The CRFM has actively promoted the assessment and management of these large pelagic fishery resources through the Large Pelagic Fish Resource Working Group, the Annual Scientific Meetings, the Caribbean Fisheries Forum and the Ministerial Council. For example, more recently, the 8<sup>th</sup>, 7<sup>th</sup> and 6<sup>th</sup> CRFM Annual Scientific Meetings all reviewed data on blackfin tuna catches and the 7<sup>th</sup> and 6<sup>th</sup> CRFM Annual Scientific Meetings reviewed data on dolphinfish fisheries. In 2010, the CRFM Ministerial Council, adopted a recommendation to review ICCAT participation strategies both at the national and CRFM sub-regional level, with a view to strengthening CRFM cooperation with ICCAT for the benefit of the States involved (CRFM, 2010). This decision eventually led to the establishment by the Caribbean Fisheries Forum in 2012 of a CRFM Working Group on ICCAT (CRFM, 2012a).

Also noteworthy is that the CRFM Ministerial Council adopted a Declaration on Illegal, Unreported and Unregulated (IUU) Fishing (the Castries Declaration) in 2010, and reiterated the importance of implementing the provisions of that Declaration in 2011. Also, in 2011 the CRFM Ministerial Council unanimously adopted a Common Fisheries Policy for CARICOM States (CCCFP), which makes provisions for CARICOM-level coordination of holistic fisheries governance activities that incorporate the precautionary approach and the ecosystem approach (CRFM, 2011a). These recent developments by the CRFM set the stage for its active participation in sub-regional and regional governance of transboundary fisheries resources.

## **8. POLICY, LEGAL AND INSTITUTIONAL DEFICIENCIES AND RESTRICTIONS THAT MAY HINDER EFFECTIVE TRANSBOUNDARY GOVERNANCE OF THE LARGE PELAGIC FISHERIES**

Policy and legal deficiencies and restrictions have been identified by the case study that reviewed existing policy, legal and institutional arrangements for governance and management of large pelagic fisheries in the CLME (Berry, D.S. & U. Tietze. 2012, pp. 3 - 44). While States in the eastern Caribbean have asserted jurisdiction over fisheries within areas of their maritime jurisdiction, as permitted by national laws and international law, there is a lack of clearly delimited maritime boundaries between neighbouring States and almost all States have unresolved or disputed maritime boundaries.

Gaps exist in relation to adherence in the region to major regional and international treaties related to ocean governance, fisheries and environmental law such as:

- the United Nations Convention on the Law of the Sea,
- the Agreement on Straddling Fish Stocks and Highly Migratory Fish Stocks,
- the International Convention for the Conservation of Atlantic Tunas,
- the Agreement Establishing the Caribbean Regional Fisheries Mechanism,

- the Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas (FAO Compliance Agreement),
- the Common Fisheries Policy Agreement,
- the Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing,
- the Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region (Cartagena Convention), and
- the Protocol concerning specially protected areas and wildlife to the Convention for the protection and development of the marine environment of the wider Caribbean region (the SPAW Protocol).

National fisheries laws and regulations are general silent about ocean governance principles and best practices, as set out in international non-binding instruments such as the FAO Code of Conduct for Responsible Fisheries, its related Plans of Action and Technical Guidelines, and the Castries Declaration on Illegal, Unreported and Unregulated Fishing including principles such as using the best available scientific information, applying the precautionary and ecosystem based approaches to fisheries management, the principle of sustainable use, the participatory approach, and principles of good governance.

The same case study identified institutional and management deficiencies (Berry, D.S. & U. Tietze. 2012, pp. 52 – 63). As far as ecosystem considerations and the involvement of fishery industry and other stakeholders in the formulation, implementation, evaluation and revision/updating of fisheries management plans through Fishery Advisory Committees and other means is concerned, it was observed that this was done in the past on an ad hoc basis and not in a consistent manner.

Most existing national fisheries management plans and policies are of a more generic and general nature, some still in draft form and in the process and need of being revised and updated. Present fisheries management plans and regulations also do not address the important issue of cooperation and linkages with other Government agencies, authorities and stakeholders to deal with the degradation of coastal and aquatic ecosystems that might negatively affect the reproduction and health of other pelagic fishery resources and organisms that these resources depend on for food and reproduction.

Weaknesses in the national fisheries data collection system are of particular concern under an ecosystem management regime. This applies both to the type of data presently collected and to the methods of data collection, recording and analysis. There is also a lack of economic and social information about the large pelagic fisheries, which is needed to attract investments in sustainable harvesting and value addition as well as a lack of information needed to understand the health of the marine ecosystem, which supports the large pelagic fishery. At the sub-regional level, there is a complete lack of sub-regional databases, which is a major obstacle for sub-regional management efforts.

As far as the involvement of stakeholders in large pelagic fisheries is concerned, the case study found that most stakeholders at the regional level had high capacity for and were willing to participate in governance and management of the fishery. Levels of influence were found to be high for direct users and participants in the fishery and for decision-makers. Constraints at the regional level regarding stakeholder participation were identified as a lack of clear and consistent messages about governance, EAF and participatory processes. Opportunities for more meaningful stakeholder participation were seen in the emergence of a Common Fisheries Policy for CARICOM States (CCCFP) and an increased involvement in ICCAT as highlighted in chapter <sup>7</sup>.

At the national level, the case study found that direct users of the resource as well as decision makers had a high level of influence and willingness to participate in governance and management but only low capacities to do so. Some indirect users and secondary stakeholders did not even consider themselves stakeholders and were unwilling to participate in any governance arrangement.

Constraints at the national level included low representation in stakeholder organizations, inefficient communication within and among organizations, inadequate understanding of the roles and responsibilities of stakeholders in the fishery and inadequate resources for effective participation in governance. Opportunities at the national level for a more effective participation were identified as an increasing awareness of the need for sustainable management and conservation of natural resources among stakeholders and the existence of “champions” or stewards within organizations who can act as catalysts for change.

## **9. RECOMMENDED REFORMS, STRATEGIES AND ACTIONS TO BE TAKEN FOR EFFECTIVE GOVERNANCE AND MANAGEMENT OF THE LARGE PELAGIC FISHERIES USING AN ECO-SYSTEM APPROACH**

### **9.1 Transboundary fisheries governance considerations in the CLME sub-region for achieving EAF management**

*Proposed transboundary fisheries governance arrangements in the CLME region for achieving EAF management*

A number of studies have explored the options for a relevant transboundary fisheries governance arrangement for large pelagic fishes in the WCR (e.g. Mahon and McConney. 2004, Singh-Renton and Haughton. 2004, Fanning *et al.* 2011, Singh-Renton *et al.* 2011), and options for the CLME were further explored and developed, with emphasis on achieving EAF (CRFM, 2011b, 2012d). Essentially, the major challenge at the CLME regional level is that ICCAT’s species management focus remains restricted, and not all countries within the CLME region are Contracting Parties to the ICCAT Convention. Although a non-member State of ICCAT, as a third State, would not be bound under the law of treaties by ICCAT’s treaty obligations, there are other obligations of a general nature which affect such non-member states. All States fishing within the ICCAT regulatory area are bound by the duty to exercise effective control over their vessels and to take into account the existence of ICCAT and its conservation and management measures (Lodge *et al.* 2007).

Furthermore, Article 17 of the Agreement on Straddling Fish Stocks and Highly Migratory Fish Stocks, which sets out principles for the conservation and management of such fish stocks, authorizes member states to request cooperation of non-member fishing entities and to grant benefits commensurate with that cooperation. Article 17 (3) states that States which are members of a sub-regional or regional fisheries management organization or participants in a sub-regional or regional fisheries management arrangement shall, individually or jointly, request the fishing entities referred to in article 1, paragraph 3, which have fishing vessels in the relevant area to cooperate fully with such organization or arrangement in implementing the conservation and management measures it has established, with a view to having such measures applied de facto as extensively as possible to fishing activities in the relevant area.

Furthermore, Article 17 (4) allows parties to “take measures consistent with this Agreement and international law to deter activities of such vessels which undermine the effectiveness of sub-regional or regional conservation and management measures.” The latter provision has led some to argue that the Agreement effectively forces non-parties to either join the sub-regional or regional organization, or to comply with the latter’s conservation measures (Vicuña. 2001, Berry, D.S. & Tietze, U., 2012).

Sub-regional coordination of cooperation management and conservation is urged for two reasons: (i) accurate representation of sub-regional data and stakeholder interests within the ICCAT forum for the large tunas and billfishes; (ii) effective coordination of sub-regional statistics, research and management of small tunas and tuna-like species, with the benefit of official ICCAT inputs and endorsements that would also include stakeholders from distant water fishing nations. In this regard, the proposed intervention is the establishment of a sub-regional CLME governance mechanism consisting of a formal partnership arrangement of the relevant sub-regional organizations and ICCAT, with the relevant capacities to achieve agreed aims as outlined above. This partnership should be supported by the sub-regional organizational arrangements that are already incorporating EAF management approaches, and have structures in place for facilitating coordinated governance among their respective memberships. The partnership arrangement should consolidate the efforts at the CLME sub-regional level, and agree on measures for the CLME sub-region that are endorsed for implementation by all States through the ICCAT process.

Other key basic challenges exist at the national level for CLME countries, and the following interventions are proposed. There is a need to increase the level of commitment by individual countries to legal sub-regional and international fisheries and environmental instruments, as this will give greater overall commitment to achieving EAF and cooperation with any large pelagic fisheries governance arrangement in place. Similarly, in view of the fact that the CLME consists of a complicated network of maritime areas and is subject to multiple jurisdictions, CLME countries should complete their national maritime boundary delimitation negotiations. This will provide the necessary legal foundation for effective monitoring, control and surveillance / enforcement activities.

National fisheries governance arrangements incorporating the ecosystem approach also need to be strengthened, so that all stages of the process are active and work in concert towards agreed common goals. National fisheries legal and policy instruments need to be regularly reviewed, updated, and enforced to comply with the agreed provisions under the corresponding sub-regional and international legal instruments.

Fisheries Advisory Committees (FACs) need to be strengthened to ensure participation of all stakeholders and to include representation from other sectors, which impact on unsustainable fisheries and other transboundary issues and should closely liaise with NICs.

The national inter-sectoral committees (NICs) advocated by the CLME project should continue and expand their operations to be directly involved in monitoring, managing, and evaluating all stages of the national governance and management processes: policy and legislation; identification and prioritization of governance aims and effort at the country level; statistics, research and technical evaluations of the resource, ecosystem and industry performance; engagement of and consultation with the full breadth of stakeholders in advancing a holistic and ecosystem-based approach both at the national and regional levels of governance. Strong data, information and knowledge exchange systems are also needed to guarantee well-informed EAF management planning and decision-making at both the national and regional levels. Hence, progress made and lessons learned from the IMS - REMP component of the CLME project should be used to inform the development of longer-term systems, both at the national and regional levels.

A stronger commitment to collection and sharing of data is needed. A review of the management of large pelagic fisheries in CARICOM countries concludes that while progress has been made with national level data collection and management, it is still insufficient to meet all obligations under Annex I of the United Nations Fish Stocks Agreement (Berry, D.S & U. Tietze. 2012, p. 62).

Table 5 shows the proposed SAP Framework for EAF Governance and Management of Large Pelagic Fisheries in the CLME, and with specific analysis of the linkages and framework of the SAP interventions and activities provided in *Appendix 1* to this report.

**Table 5: SAP Framework for EAF Governance and Management of Large Pelagic Fisheries in the CLME**

<i>Intervention</i>	<i>Strategy</i>	<i>Targets</i>	<i>Indicators</i>	<i>Investments</i>	<i>Timeframe</i>	<i>Cost</i>	<i>Responsibility</i>
<p>1. Establish sub-regional fisheries governance arrangement for implementing EAF management of large pelagic fisheries.</p> <p>2. Strengthen National fisheries governance arrangements for implementing EAF management of large pelagic fisheries.</p>	<p>1. Establish, empower, and equip a formal partnership arrangement of the relevant sub-regional and regional organizations and ICCAT.</p> <p>2. Empower NICs and FACS to monitor, manage and evaluate EAF management performance at the national level and to represent national governance interests in the regional governance arrangement for large pelagic fisheries.</p>	<p>1a. Formal partnership arrangement successfully established and operational.</p> <p>1b. Establish a regional data, information, and knowledge exchange management system to support sub-regional EAF management and decision-making (successor to CLME's IMS-REMP).</p> <p>2a. NICs/FACS strengthened/empowered for active and direct involvement in national activities pertaining to EAF management of large pelagic fisheries.</p> <p>2b. Strengthened</p>	<p>1a. Conclusion of Memorandum of Understanding (MOU) between CRFM/WECAFC and ICCAT regarding the management of coastal large pelagic fisheries.</p> <p>1b (i). Sub-regional EAF management plan for large pelagic fisheries.</p> <p>1b (ii). One EAF management period cycle of operation successfully implemented.</p> <p>1c. CLME's IMS-REMP continued/strengthened/formally mainstreamed, with regional information products used for EAF management and decision-making.</p> <p>2a (i). NIC management plan for large pelagic fisheries.</p> <p>2a (ii). One national EAF management period</p>	<p>1a. WECAFC to formally approach ICCAT and take lead in drafting MOU. MOU to be signed by ICCAT, WECAF and CRFM.</p> <p>1b (i). Interested sub-regional organizations and ICCAT to hold consultations (intra and inter-organizational consultations) for reaching agreement on nature and operation of partnership arrangement for large pelagic fisheries management within the CLME sub-region.</p> <p>1b(ii). Each regional organization involved will need to include among its activities, the additional monitoring and management activities associated with the provisions of the formal partnership arrangement</p> <p>1c. Sub-regional</p>	<p>1 a. One year.</p> <p>1b (i). Two years.</p> <p>1a(ii) Three years</p> <p>1b. Three years</p> <p>2a. Two years</p> <p>2b. Three years</p> <p>2c. Three years</p> <p>2d. Three years.</p>		<p>1. CRFM, OSPESCA, WECAFC, ICCAT</p> <p>2. Countries within the CLME</p>

		<p>National data, information and knowledge exchange systems.</p> <p>2c. Complete and empowered stakeholder representation in EAF management planning and decision-making.</p> <p>2d. Ratify multilateral fisheries and environmental treaties, update/adopt EAF legislation FAC and NIC legislation, delimitate maritime boundaries</p>	<p>cycle of operation successfully implemented.</p> <p>2b. National data, information and knowledge exchange systems established to contribute effectively to the continuation of CLME's IMS-REMP, with national information products used for EAF management planning and decision-making at both the national and regional levels.</p> <p>2c. Ratification of key multilateral fisheries and environmental treaties, EAF and fisheries legislation updated and national regulations enacted, marine boundaries delimited</p>	<p>organizations involved in partnership and ICCAT to invest in the management of CLME's IMS-REMP successor.</p> <p>2a. Investment for legislating and enforcing the EAF and FAC/NIC concept.</p> <p>2b. Investment in development of data, information and knowledge products at the national level for informing EAF management of large pelagic fisheries.</p> <p>2c. Investment in development of national stakeholder network and contributions to NIC.</p> <p>2d. Investment in ratification of multilateral treaties, updating EAF and fisheries legislation and regulations, negotiations on maritime boundary delimitations and conclusion of agreements</p>			
--	--	--	--	---	--	--	--

## 9.2 Specific interventions/activities and reforms to be implemented for effective governance and management of the large pelagic fisheries using an ecosystem-based approach

*With reference to Intervention 1 of above SAP table: establish sub-regional fisheries governance arrangement for implementing EAF management of large pelagic fisheries*

### 1.1 Legal and policy interventions / activities (Berry, D.S. & U. Tietze. 2012)

- 1.1.1 Provision of legal and technical assistance to Barbados, Dominica, Grenada, Martinique, Saint Lucia, Saint Vincent and the Grenadines, Trinidad and Tobago, **if and as required, to ratify all of below multilateral fisheries and environmental treaties, either as individual states or through a representative regional organization.** Such a move would ensure both the consistency of their treaty obligations and their participation in, and awareness of, related fisheries and environmental developments. The concern expressed about the already onerous obligations assumed by some member states in relation to treaties (in terms of legislative requirements and reporting obligations), could be addressed by representative membership through a regional organization, or by means of technical assistance by a regional organization. Ratification of the following treaties is recommended (in order of priority):
- the *United Nations Convention on the Law of the Sea*,
  - the *Agreement on Straddling Fish Stocks and Highly Migratory Fish Stocks*,
  - the *International Convention for the Conservation of Atlantic Tunas*,
  - the *Agreement Establishing the Caribbean Regional Fisheries Mechanism*,
  - the *Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas (FAO Compliance Agreement)*,
  - the *Common Fisheries Policy Agreement*,
  - the *Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing*,
  - the *Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region (Cartagena Convention)* and
  - the *Protocol concerning specially protected areas and wildlife to the Convention for the protection and development of the marine environment of the wider Caribbean region (the SPAW Protocol)*.
- 1.1.2. Provision of legal and technical assistance, if and as required, to **States adjacent to the French territories of the Eastern Caribbean**, or Caribbean regional organizations for the **establishment of arrangements similar to the Agreement on Fisheries between the European Economic Community and the Government of the Commonwealth of Dominica.** Such treaty arrangements should explicitly adopt principles such as: using the best available scientific information, applying the precautionary and ecosystem based approaches to fisheries management, the principle of sustainable use, the participatory approach, and principles of good governance.
- 1.1.3 Provision of legal and technical assistance, in relation to **non-binding international legal instruments**, to States to both **publicize and utilize their relevant principles and approaches**, particularly those set out in the FAO Code of Conduct for Responsible Fisheries, its related Plans of Action and Technical Guidelines, and the Carriacou Declaration on Illegal, Unreported and Unregulated Fishing. These principles and best practices also **should be formally incorporated into national legislation** as should the provisions of any agreements to which a country is signatory.
- 1.1.4. Provision of technical and financial assistance to **regional organizations to enable them to help their Member States harmonize their fisheries policies, practices and laws.** Regional

organizations should be tasked with helping to mobilize technical and financial resources. They should also be called upon to assist Member States with their reporting obligations under regional and international treaties. The CRFM **Ministerial Council, Caribbean Sea Commission of the Association of Caribbean States, WECAFC and OSPESCA** all should be used to help promote cooperation on fisheries and environmental issues.

## 1.2 Fisheries Management, Research, Data Collection and Sharing

### *Management*

- 1.2.1 For the management and conservation of oceanic highly migratory and straddling stocks, the **participation in and collaboration with ICCAT** needs to be expanded with CRFM and other RFOs playing an expanded facilitating, advisory and coordinating role. Provision of technical support to the RFOs is needed to enable them to play this role.
- 1.2.2 The **management and assessment of the region's small-tunas and tuna-like species** such as blackfin and bullet tunas, dolphinfish, wahoo, cero and king mackerels, which are presently not actively managed by ICCAT, is best achieved through a formal management partnership arrangement between ICCAT and one or more Regional Fisheries Organizations (RFOs), e.g. CRFM, OSPESCA and WECAFC.

The main focus of this management partnership would be to actively assess and manage the region's small-tunas and tuna-like species such as blackfin and bullet tunas, dolphinfish, wahoo, cero and king mackerels, which are currently not actively managed by ICCAT. Such a management partnership might also provide a forum for knowledge sharing between ICCAT and the sub-regional organizations, which can help to identify EAF management strategies for all large pelagic resources in CLME currently managed by ICCAT and its member states.

A formal management partnership agreement would have to be negotiated with ICCAT through a Memorandum of Understanding (MOU) or otherwise. It is suggested that WECAFC takes the lead in these negotiations as it has the broadest membership among the RFOs and hence many more of its members are also members of ICCAT. Furthermore, WECAFC is also a subsidiary body of FAO as is ICCAT and could seek assistance from FAO regarding the preparation of a MOU. WECAFC should do so in consultation and cooperation with other RFBs such as the CRFM and OSPESCA.

Once a MOU has been concluded, CRFM, in close cooperation with, and assistance from OSPESCA and WECAFC, should take the lead in preparing management plans for the region's small-tunas and tuna-like species such as blackfin and bullet tunas, dolphinfish, wahoo, cero and king mackerels as well as in coordinating the implementation of these sub-regional plans in close cooperation with the concerned countries of the sub-region.

### *Data Collection and Networking*

- 1.2.3 Provision of technical support for the **establishment of a sub-regional data base** including catch data to be maintained and managed by CRFM. A separate sub-regional database is needed because ICCAT's database does not include space for social and economic data at present. Additionally, basic catch and effort data should continue to be stored by ICCAT and the sub-regional database should help to strengthen the ICCAT database for ICCAT purposes.

To enable CRFM to manage the data base, the post of Programme Manager (Statistics and Information) at the CRFM Secretariat should be filled as a matter of urgency.

- 1.2.4 Establishment of a **regional network for improvement of collaboration of national scientists** from fisheries authorities, other agencies and academic institutions in collection and sharing of data and information needed for integrated evaluations of large pelagic fish resources and related ecosystems including social, economic, environmental and climate data.

### ***Research***

The information to be generated by studies described below should be treated as baseline information, which is to be regularly updated through sample surveys and other means in close cooperation with the stakeholders involved. There is further a need for continued active research to ensure strong understanding of the resources and the ecosystem and to keep this understanding current and up to date as well as to inform the development of EAF performance indicators, which would be monitored on a more routine basis.

- 1.2.5 Provision of technical and financial support for an **economic valuation of current national fishing industries for tuna and tuna-like fishes** including harvest and postharvest activities and facilities in cooperation with national ICCAT working groups or existing fisheries authorities and FACs. Valuation should also include projected valuation of plausible industry development scenarios taking into account costs and earnings of harvest and postharvest operations, technological alternatives, sources and type of investments, social and economic benefits as well as impacts on food security, employment and income, social dependency/livelihood vulnerability, ecosystem services and other aspects. The valuation should be carried out in close cooperation with fishers' organizations and fishery industry associations/representatives. The cooperation should include identification of information needs, study design, data collection and analysis. The valuation should generate advice to CRFM member states, fishery industry and fishers' organizations for improving the social, economic and financial performance and benefits of large pelagic fisheries and related value addition in the sub-region through national or sub-regional initiatives and assessment of economic contribution of large pelagic fisheries to regional economy. The study is to be guided by the CRFM Working Group on ICCAT (WGI) and/or LPWG and findings to be shared at the levels of the participating regional fisheries bodies for incorporation into decision-making.
- 1.2.6 Provision of technical and financial support for an **economic valuation of current recreational fisheries for tuna and tuna-like fishes** in selected Caribbean countries. Studies should cover all costs and benefits including social equity questions, i.e. which social groups benefit and which are negatively affected. Aspects to be covered: estimated capital investment, estimated operating costs, earnings, ancillary benefits through boatbuilding, manufacture / sale of fishing gear and other equipment, expenditure by recreational fishers for boarding and lodging, transport, equipment and other items. The recreational fishery industry should be closely associated with design and implementation of the study.
- 1.2.7 Provision of technical support for a **cost/benefit analysis of participation in ICCAT**. Generation of information to be used by policy makers and the public of the current and potential value of ICCAT membership for realizing the full range of social, economic and ecological benefits in the context of exploitation rights, fishing opportunities and the benefits accruing from conservation/restoration of a valuable fishery resource and marine ecosystem.

- 1.2.8 Provision of technical and financial support for a **study of stakeholder participation and FACs**. With the purpose to ensure a meaningful stakeholder participation in the management, conservation and development of large pelagic and other fishery resources and the CLME, it is proposed to carry out a sub-regional study. The outcome of the study should be twofold: (1) a proposal to revise the structure and functioning of the present Fisheries Advisory Committees including required changes to existing fisheries acts; (2) to prepare guidelines for stakeholder participation in the management, conservation and development of large pelagic and other fishery resources and the CLME in formal as well as informal ways. The outcomes would be achieved by reviewing history and functioning of FACs in selected Caribbean countries and by reviewing and documenting case studies of successful stakeholder participation and the lessons learnt. Such case studies should include a comparative case study of the functioning of fisheries commissions in the United States and other countries of interest and their role in the governance of the marine Ecosystem and the identification of lessons to be learnt.
- 1.2.9 Provision of technical support for **identification and development of EAF Performance Indicators**. Within the CLME management cycle, management and conservation of large pelagic migratory fish resources in the context of the CLME needs reliable performance indicators to assess and evaluate the impact of management measures, identify successes and failures and to adapt management approaches, policies and measures to the reality on the ground. With this in mind and recognizing that statistics and research systems in many Caribbean countries have difficulties meeting the challenges of conventional fisheries management, there is a need to identify simple indicators of resource health, food web stability, habitat stability and the impacts of climate change that could be used in the short term. Single species biological and ecological studies such as tagging and genetic studies to determine stock boundaries and migration patterns of wahoo, king mackerels are proposed to provide basic information for the indicators.

### **1.3 Stakeholder Participation (CRFM, 2012d)**

- 1.3.1 Provision of technical and financial support for the improvement of stakeholder engagement in management and governance of large pelagic fishery in the Wider Caribbean Region through the development of a participation strategy with an implementation plan. The strategy should aim to encourage participation at all levels at the EAF management cycle, i.e. (a) generation of data and information, (b) analysis of information and generation of advice, (c) decision-making, (d) implementation and (e) review and evaluation and adaptation of management approaches, strategies and plans.

It is expected key stakeholders such as the Caribbean Network of National Fisherfolk Organizations (CNFO) are to play an advisory role at the regional level similar to the role FACs are supposed to play at the national level. The stakeholder participation interventions should give special attention to the needs and interests of vulnerable groups within fishing communities and strengthen their resilience.

The participation strategy should include a sub-strategy to empower vulnerable and poor segments of the fisheries sector through small-scale enterprise development with training and microfinance support, provision of health and other social services and thus enable them to meaningfully participate in the conservation and management of fishery resources and the CLME.

- 1.3.2 Provision of technical and financial support for the Improvement of stakeholder engagement in management and governance of large pelagic fisheries in the Wider Caribbean Region through the development of a communication strategy with an implementation plan. The communication

strategy should aim to improve public awareness and understanding of the importance of the fishery and build support for improved management. Key stakeholders such as the Caribbean Network of National Fisherfolk Organizations (CNFO) are to develop their own positions on various issues related to fisheries and ecosystem management and conservation and communicate such positions to other stakeholder and policy makers.

- 1.3.3 Provision of technical and financial support for the improvement of stakeholder engagement in management and governance of large pelagic fisheries in the Wider Caribbean Region through the establishment of Action Learning Groups (ALGs) to improve peer learning and support for engagement in Governance.
- 1.3.4 Provision of technical financial support for the Improvement of stakeholder engagement in management and governance of large pelagic fisheries in the Wider Caribbean Region through the development of a financing strategy with a fund-raising plan.
- 1.3.5 Provision of technical and financial support for the improvement of stakeholder engagement in management and governance of large pelagic fisheries in the Wider Caribbean Region through mentoring and coaching of stakeholder groups.

*Under Intervention 2 of SAP table: Strengthen national fisheries governance arrangements for implementing EAF management of large pelagic fisheries*

## **2.1 Legal and policy interventions/activities** (Berry, D.S. & U. Tietze.2012)

- 2.1.1 Provision of legal and technical assistance to **State's efforts to delimit all of their maritime boundaries**. In the interim, if boundary delimitation is not possible at present, neighbouring states should enter into **bilateral or multilateral agreements allowing joint monitoring, control and surveillance (MCS)**. The OECS Common Fisheries Surveillance Zone could be used as a model, but ideally the scope should embrace the Wider Caribbean Sea.
- 2.1.2 Provision of legal assistance to review **national fisheries laws of all of the states** to ensure that they conform to modern fisheries management standards. Where fisheries laws do not formally require the **provision of data to national authorities by fishers, this should be mandated**.
- 2.1.3 Provision of legal assistance to ensure the **national laws fully implement the treaty obligations** assumed by each state.
- 2.1.4 **National Regulations related to fisheries statutes should be enacted and implemented** (as permitted by the relevant Fisheries Act), and updated where necessary.
- 2.1.5 Provision of technical assistance to review and update **fisheries management plans**, and where no such management plan exists, one should be created and brought into force as a matter of urgency.
- 2.1.6 Provision of technical assistance to formally set out the **principles and best practices from non-binding instruments** – including the FAO Code of Conduct for Responsible Fisheries and the Castries Declaration on Illegal, Unreported and Unregulated Fishing – **in national legislation**. Such principles include: using the best available scientific information, applying the precautionary and ecosystem based approaches to fisheries management, the principle of sustainable use, the participatory approach and principles of good governance.

- 2.1.7 Greater effort should be made to **harmonize national fisheries and environmental legislation** within the region. Technical assistance, as needed, should be provided for this purpose.
- 2.2 Fisheries Management, Research, Data Collection and Sharing** (Berry, D.S. & U. Tietze.2012)
- 2.2.1 Provision of technical and financial support for allocation of more **staff and resources** for the collection, recording and analysis of fisheries statistics and CLME information and provision of adequate training.
- 2.2.2 Provision of technical and financial support for **strengthening of national data collection systems for large pelagic migratory species** to ensure supply of adequate data to data bases on large pelagic migratory fish resources. This should include the collection of **catch and effort data from recreational fishing for both coastal and oceanic large pelagic species** by making it mandatory to submit catch records on a semi-annual basis. Renewal of fishing licenses should be made subject to submission of satisfactory catch records.
- 2.2.3 As recommended by the Regional Policy and Planning Workshop on the FAO Code of Conduct for Responsible Fisheries (CCRF) in the Caribbean held at the University of the West Indies, Cave Hill Campus, Barbados, from 6-9 December 2011, countries should **improve their data collection on shark catches** and landings as well as the skills to identify different shark species, in line with the FAO Technical Guidelines on the IPOA sharks and ICCAT recommendations. This will require provision of technical support in many cases.
- 2.2.4 Provision of technical support for **harmonization and improvement of national vessel registration and licensing systems** and expansion of use of LRS to clearly identify vessels fishing for large pelagic fish resources, track change of ownership, base of operation and use of vessels and provide information on licensed/registered large pelagic fishing vessels to CRFM to be incorporated in a sub-regional data base to be maintained by CRFM. Recreational vessels licensed to fish for large pelagic species should be included in data base. Involvement of stakeholders such as large pelagic fishers, fisherfolk associations, recreational fishers and other stakeholders in identifying suitable data collection mechanisms and interpretation and use of data collected.
- 2.2.5 Provision of technical and financial support for **harmonization and standardization of catch and effort as well as social, economic and ecological data collection systems among all states so that it can be easily shared/pooled for inclusion in CRFM sub-regional / regional data bases.**
- 2.3 Stakeholder Participation** (CRFM, 2012d)
- 2.3.1 Provision of technical and financial support for the improvement of stakeholder engagement in management and governance of large pelagic fishery in the Wider Caribbean Region through the development of a participation strategy with an implementation plan. The strategy should aim to encourage participation at all levels at the EAF management cycle, i.e. a) generation of data and information, b) analysis of information and generation of advice, c) decision-making, d) implementation and e) review and evaluation and adaptation of management approaches, strategies and plans.

The stakeholder participation interventions should give special attention to the needs and interests of vulnerable groups within fishing communities and strengthen their resilience.

The participation strategy should include a sub-strategy to empower vulnerable and poor segments of the fisheries sector through small-scale enterprise development with training and microfinance support, provision of health and other social services and thus enable them to meaningfully participate in the conservation and management of fishery resources and the CLME.

- 2.3.2 Provision of technical and financial support for the improvement of stakeholder engagement in management and governance of large pelagic fisheries in the Wider Caribbean Region through the development of a communication strategy with an implementation plan. The communication strategy should aim to improve public awareness and understanding of the importance of the fishery and build support for improved management. National fisherfolk organizations are to develop their own positions on various issues related to fisheries and ecosystem management and conservation and communicate such positions to other stakeholder and policy makers.
- 2.3.3 Provision of technical and financial support for the improvement of stakeholder engagement in management and governance of large pelagic fisheries in the Wider Caribbean Region through the establishment of Action Learning Groups (ALGs) to improve peer learning and support for engagement in Governance.
- 2.3.4 Provision of technical financial support for the improvement of stakeholder engagement in management and governance of large pelagic fisheries in the Wider Caribbean Region through the development of a financing strategy with a fund-raising plan.
- 2.3.5 Provision of technical and financial support for the improvement of stakeholder engagement in management and governance of large pelagic fisheries in the Wider Caribbean Region through mentoring and coaching of stakeholder groups.

### **9.3 Implementation arrangements**

While all interventions / activities listed above are deemed to be pertinent for the effective governance and management of the large pelagic fisheries using an ecosystem-based approach, their relevance differs as far as their assessed priority, time frame and cost are concerned.

Keeping in mind the need for a phased approach to the implementation of the SAP, also because of limited resources available for implementation, it is assumed here that phase one interventions are those interventions, which have a high priority and can be implemented in the short-term. These interventions / activities are highlighted in blue. Phase two interventions/activities are assumed to be interventions with a high priority, which can only be implemented in the medium and long-term. They are highlighted in green.

The distinction between phase one and phase two interventions/activities has been made because it is assumed that the implementation of a SAP gains momentum when results become visible already in the short-term. Or in other words: once high priority interventions/activities have been successfully implemented, public / political support can be more easily secured for the implementation of other high priority interventions / activities which require a longer timeframe for implementation.

Phase three interventions/activities are those with a medium priority regardless of their time frame. They are highlighted in red. None of the interventions listed in the table are considered of a low priority.

However, it is suggested that the assessments made in this report are reviewed and priorities re-affirmed by the concerned stakeholders indicated in the table as being responsible for implementation.

**Table 6: Implementation Arrangement for specific SAP Interventions/activities for EAF Governance and Management of Large Pelagic Fisheries in the CLME**

Intervention / activity	Responsible Party <sup>4</sup>	Priority (l:low, m:medium, h:high)	Time frame (s:short-term, m:medium-term, l:long-term)	Cost (l:low, m:medium, h:high)
<b>Sub-regional EAF legal and policy interventions</b>				
1.1.1 Ratification of multilateral fisheries and environmental treaties	MBDA,NGA, RFO	h	m	l
1.1.2 Agreements with French territories of the Eastern Caribbean	MBDA,NGA, RFO	m	m	l
1.1.3 Incorporation of non-binding international legal instruments into national legislation	MBDA,NGA, RFO	h	m	l
1.1.4 Regional organizations to help their Member States harmonize their fisheries policies, practices and laws	MBDA,NGA,RFO	h	m	m
<b>Sub-regional EAF management, research and data collection interventions</b>				
1.2.1 Expansion of participation in and collaboration with ICCAT	MBDA,RFO	h	s	m
1.2.2 Management and assessment of the regions small-tunas and tuna-like species	RFO,NGA	h	s	l
1.2.3 Establishment of a sub-regional data base/ expansion of ICCAT data base	MBDA, RFO	h	m	h
1.2.4 Regional network for improvement of collaboration of national scientists	RFO,RTI	h	s	l
1.2.5 Economic valuation of current national fishing industries for tuna and tuna-like fishes	MBDA,RFO,RTI	h	s	m
1.2.6 Economic valuation of current recreational fisheries for tuna and tuna-like fishes	MBDA,RFO,RTI	m	m	m
1.2.7 Cost/benefit analysis of participation in ICCAT	MBDA,RFO,RTI	h	s	m
1.2.8 Study of stakeholder participation and FACs	MBDA,RFO,RTI	m	m	m

<sup>4</sup> RFO : Regional Fisheries Organisation, MBDA : multi- or bilateral development agency, NGA : National Government Authorities, RS : Regional Stakeholders, NS : National Stakeholders

1.2.9 Identification and development of EAF Performance Indicators	MBDA,RFO,RTI	m	m	m
<b>Sub-regional stakeholder intervention</b>				
1.3.1 Development of participation strategy	MBDA,RFO,RS,RTI	h	s	m
1.3.2 Development of communication strategy	MBDA,RFO,RS,RTI	h	s	m
1.3.3 Establishment of Action Learning Groups	MBDA,RFO,RS,RTI	h	m	l
1.3.4 Development of a financing strategy and fund-raising plan	MBDA,RFO,RS,RTI	h	m	l
1.3.5 Mentoring and coaching of stakeholder groups	MBDA,RFO,RS,RTI	m	m	l
<b>National EAF legal and policy interventions</b>				
2.1.1 State's efforts to delimit all of their maritime boundaries or bilateral or multilateral	MBDA,NGA, RFO	h	s	m
2.1.2 Review of national fisheries laws regarding modern fisheries management standards	MBDA,NGA, RFO	h	s	m
2.1.3 Provision of legal assistance to ensure national laws fully implement treaty obligations	MBDA,NGA, RFO	h	s	m
2.1.4 National Regulations related to fisheries statutes enacted, implemented and updated	NGA, RFO	h	s	l
2.1.5 Review and update fisheries management plans	MBDA,NGA, RFO	h	s	m
2.1.6 Set out principles and best practices from non-binding in national legislation	MBDA,NGA, RFO	h	m	m
2.1.7 Harmonization of national fisheries and environmental legislation within region	MBDA,NGA, RFO	h	m	m
<b>National EAF management, research and data collection interventions</b>				
2.2.1 Allocation of more staff and resources for fisheries statistics and CLME information and training	MBDA,NGA, RFO	h	s	m
2.2.2 Strengthening of national data collection systems for large pelagic migratory species	MBDA,NGA,RFO	h	s	m
2.2.3 Improve data collection on shark catches	MBDA,NGA,RFO	m	m	l

2.2.4 Harmonization and improvement of national vessel registration and licensing systems	MBDA,NGA,RFO	h	s	m
2.2.5 Harmonization and standardization of catch and effort data collection systems	MBDA,NGA,RFO	h	s	m
<b>National EAF stakeholder interventions</b>				
2.3.1 Development of participation strategy	MBDA,NS,RTI,RFO	h	s	m
2.3.2 Development of communication strategy	MBDA,NS,RTI, RFO	h	s	m
2.3.3 Establishment of Action Learning Groups	MBDA,NS,RTI, RFO	h	m	l
2.3.4 Development of a financing strategy and fund-raising plan	MBDA,NS,RTI, RFO	h	m	l
2.3.5 Mentoring and coaching of stakeholder groups	MBDA,NS,RTI	m	m	l

## 10. MONITORING AND EVALUATION

In the general SAP document for the CLME and adjacent regions, two interventions and seven broad activities are identified to be implemented for the large pelagic fisheries. Under these broad activities, the SAP for the large pelagic fishery presented in this report, identified 35 specific activities shown above for implementation. For the purpose of monitoring and evaluation, the broad interventions and activities of the general SAP are considered here.

### 10.1 Broad interventions and activities for large pelagic fisheries identified in the general SAP document

#### Intervention 1:

Establish sub-regional fisheries governance arrangement for implementing EAF management of large pelagic fisheries.

#### Activities:

- 1.1 Formal partnership arrangement successfully established and operational.
- 1.2 Establish a regional data, information, and knowledge exchange management system to support sub-regional EAF management planning and decision-making (successor to CLME's IMS-REMP).
- 1.3 Strengthening of regional organizations' individual capacities to support other activities (1.1, 1.2, & 1.4).
- 1.4 Strengthen intra-regional coordination and cooperation (policy, technical levels) for contribution to ICCAT process and also regional-national coordination and cooperation in this context.

## Intervention 2:

Strengthen National fisheries governance arrangements for implementing EAF management of large pelagic fisheries.

### Activities:

- 2.1 NICs / FACs strengthened/ empowered for active and direct involvement in national activities pertaining to governance of large pelagic fisheries (review and keeping legislation updated, adherence to international agreements, public education, formal NIC / FAC arrangement and Plan of Action, support for 1 - 2 policy cycles).
- 2.2 Strengthened / expanded national data, information and knowledge exchange systems (at national level and national-regional linkages).
- 2.3 Complete and empowered stakeholder representation in fisheries governance planning and decision-making (local capacity building and education for contribution to NIC / FAC process (mechanism for local-NIC / FAC interactions, and implementation, reflected by consultations and reports).

The general SAP identifies the CRFM as lead agency tasked with the implementation of these interventions and activities.

## **10.2 Responsible parties and mechanisms**

The main responsibility for monitoring and evaluating the implementation of the interventions and activities of the SAP for the large pelagic fisheries rests with the organizations, which are tasked with the implementation of specific particular interventions and activities as identified in table 5. The overall responsibility for the coordination of all monitoring and evaluation activities lies with the CRFM.

Furthermore, multi and bi-lateral development agencies, funds, financial institutions as well as government and non-government agencies, including stakeholder organizations, which will be funding and investing in the implementation of particular activities, will monitor and evaluate the use of their finances and the outcome of interventions and activities following their own established procedures.

It is recommended here that organizations and institutions involved in the implementation and financing of a particular activity should (1) inform each other on their monitoring and evaluation procedures and adjust these procedures as necessary to make them compatible. Monitoring information should be exchanged on a semi- annual basis among all concerned organizations. A review of progress with the implementation of each activity should be conducted on an annual basis. An evaluation of the impact and outcome of each intervention and the underlying activities should be conducted after three years.

CRFM, as the lead implementing organization should take the lead in all monitoring and evaluation activities and share the information with other regional and sub-regional organizations and stakeholders in EAF in the CLME and adjacent regions. CRFM's Fisheries Forum and the CRFM Annual Scientific Meetings will also play a key role in monitoring and evaluating implementation, outcome and impact of all monitoring and evaluation activities.

## 11. FINANCING MECHANISMS

The case study on large pelagic fisheries in the CLME suggested that at the national level, fisheries administrations and the fishery sector in general are often assigned a low priority, as compared to other sectors, when financial resources are allocated by national level government authorities. At the same time, the fishery sectors both at the regional and national level have received considerable multi- and bi-lateral donor support in the past. This support has been directed both at small-scale fishery infrastructure support as well as at management and institutional support including support to fisherfolk associations and cooperatives.

For the SAP to succeed, it is assumed here that donor support will have to continue. This has been indicated in table 6 for each of the specific interventions, where multi- or bilateral development agencies will have to play a role.

At the same time, there is an urgent need for higher budget allocations at the national level (and possibly at the regional level, too) as well as for higher private investment and credit support from institutional finance. These higher allocations can only be expected to materialize if the fishery sector becomes more transparent and demonstrates its beneficial economic and ecological role and also a more transparent governance structure with full participation and involvement of all concerned stakeholders and the general public. With a view to initiate and support such changes, the SAP includes activities for a stronger participation of FACs and the establishment of NICs as well as a number of studies, which can guide private capital investment and credit flows from institutional finance.

Much of the financing for the implementation of the SAP will have to be done at the national level. In addition to higher budget allocations at the national level, strategies for management cost recovery through user, license, registration fees and fines need to be introduced and implemented. Funding for the establishment and maintenance of regional data bases as well as for carrying out regional management functions of advisory and control and surveillance nature will have to be secured by the CRFM and WECAFC with support of multi- and bilateral donor agencies and funds.

## 12. CONCLUSIONS

The Strategic Action Programme (SAP) for the Eastern Caribbean large pelagic fisheries described in this report has been completed as part of a contract awarded to the Caribbean Regional Fisheries Mechanism (CRFM) by the Caribbean Large Marine Ecosystem (CLME) Project “*Sustainable Management of the shared Living Marine Resources of the Caribbean Large Marine Ecosystems and Adjacent Regions*”. The goals of the CLME Project are being pursued through regional-level and fishery/ecosystem-specific projects and studies. The Project seeks to evaluate and strengthen the technical-scientific information and knowledge base and to use it to inform the formulation of a SAP that will embrace a shared and ecosystem-based management vision for the CLME, and to document agreed priority actions, i.e. policy, legal and investment reforms for advancing the proposed ecosystem approach.

The CRFM was responsible for executing two case studies for the CLME project that were aimed at strengthening the technical-scientific information and knowledge base and at examining options for promoting an ecosystem approach to fisheries governance for (i) the Eastern Caribbean flyingfish fishery and (ii) the large pelagic fishery. The case studies produced four reports on the review of existing policy, legal and institutional arrangements for the governance and management of each of the two fisheries and stakeholder analyses as well as three data collection improvement reports and scientific meeting reports that document findings of the technical-scientific components of the case studies.

It is hoped that the Strategic Action Programme for the effective governance and management of large pelagic fisheries in the CLME presented in this report will be found useful by all stakeholders concerned and provide guidance on the path to a sustainable management of the shared Living Marine Resources of the Caribbean Large Marine Ecosystem.

The overall vision of the SAP for large pelagic fisheries in the Wider Caribbean Region (WCR) encompasses healthy marine ecosystems that are adequately valued and protected through robust, integrative and inclusive governance arrangements at local, national, sub-regional and regional levels that effectively enable adaptive management, which maximizes, in a sustainable manner, the provision of goods and services in support of enhanced livelihoods and human well-being.

The overarching Ecosystem Quality Objective (EcoQO) encompasses healthy pelagic ecosystems including the conservation, protection and / or restoration of the fish stocks and biodiversity of the pelagic ecosystem. The overarching Societal Benefit Objective (SBO) encompasses the provision of goods and services by the ecosystems so that it maximizes the systems contributions to societal wellbeing and development needs in the Wider Caribbean Region including the preservation of aesthetic, traditional, health and scientific values of the ecosystem.

The SAP identifies broad interventions, strategies, targets, indicators, investments, timeframes, costs and responsibilities that are needed for achieving effective governance and management of large pelagic fisheries in the WCR (table 5). Based on the findings of the case studies, these broad interventions have further been sub-divided into specific interventions and reforms to be implemented for effective governance and management of the large pelagic fisheries using an ecosystem-based approach.

While the main responsibility for monitoring and evaluating the implementation of the interventions and activities of the SAP for the large pelagic fisheries rests with the organizations, which are tasked with the implementation of specific particular interventions and activities, the overall responsibility for the coordination of all monitoring and evaluation activities lies with the CRFM.

As mentioned in the previous section, donor support will have to continue for the SAP to succeed. At the same time there is an urgent need for higher budget allocations at the national level as well as for higher private investment and credit support from institutional finance. For this to happen, the fishery sector needs to demonstrate its beneficial economic and ecological role and a more transparent governance structure with full participation and involvement of all concerned stakeholders and the general public.

### **13. REFERENCES**

- Berry, David S., Tietze, Uwe. 2012. CRFM Consultancy Report on Review of Existing Policy, Legal and Institutional Arrangements for Governance and Management of Large Pelagic Fisheries in the Caribbean Large Marine Ecosystem. *CRFM Technical & Advisory Document – Number 2012/8*. 99 pp.
- CRFM 2010. Report and Proceedings of the Fourth Meeting of the Ministerial Council of the Caribbean Regional Fisheries Mechanism.
- CRFM 2011a. Report and Proceedings of the Fifth Meeting of the Ministerial Council of the Caribbean Regional Fisheries Mechanism, Roseau, Dominica, 13 October 2011. Volume 2 – Supplement 1. *CRFM Management Report – PY 2011 / 12*. 36pp.
- CRFM 2011b. Report of the First Meeting of the CRFM/CLME Large Pelagic Fishery Case Study Steering Committee. *CRFM Technical & Advisory Document - Number 2011/2*. 67p.
- CRFM 2011c. Report of Seventh Annual Scientific Meeting – Kingstown, St. Vincent and the Grenadines, 16 - 24 June 2011. *CRFM Fishery Report -2011*. Volume 1. 181pp.

- CRFM 2012a. Diagnostic Study to Determine Poverty Levels in CARICOM Fishing Communities. *CRFM Technical & Advisory Document* – Number 2012 / 3, Volume 1. 398p.
- CRFM 2012b. Report and Proceedings of the Tenth Meeting of the Caribbean Fisheries Forum, Nassau, The Bahamas, 26 – 28 March 2012. Volume 1. *CRFM Management Report* – PY 2012 / 13. 124pp.
- CRFM 2012c. Report and Proceedings of the Tenth Meeting of the Caribbean Fisheries Forum, Nassau, The Bahamas, 26 – 28 March 2012. Volume 1. *CRFM Management Report* – PY 2012 / 13. 124pp.
- CRFM 2012d. Report of Eighth Annual Scientific Meeting – Kingstown, St. Vincent and the Grenadines, 20 - 30 June 2012. *CRFM Fishery Report* - 2012. Volume 1.
- CRFM 2012e. CRFM Consultancy Report on Stakeholder Identification and Analysis of the Large Pelagic Fishery in the Wider Caribbean. *CRFM Technical & Advisory Document* – Number 2012/9. 111pp.
- Fanning, L., R. Mahon, and P. McConney. [eds.]. 2011. Towards Marine Ecosystem-based Management in the Wider Caribbean. *MARE Publication Series No. 6*. Amsterdam University Press. 425pp.
- FAO 1997. Fisheries Management. *FAO Technical Guidelines for Responsible Fisheries*. No. 4. Rome. Italy
- FAO 2003. Fisheries Management 2. The Ecosystem Approach to Fisheries. *FAO Technical Guidelines for Responsible Fisheries*. No. 4. Suppl. 2. Rome. Italy
- FAO 2004. Management of large pelagic fisheries in CARICOM countries. *FAO Fisheries Technical Paper* No. 464. Rome, FAO, 2004. 149pp.
- FAO 2012. Report of the Regional Policy and Planning Workshop on the FAO Code of Conduct for Responsible Fisheries (CCRF) in the Caribbean: Achieving Improved Fisheries Management and Utilization in the Wider Caribbean region, Bridgetown, Barbados, 6 - 9 December 2011. *FAO Fisheries and Aquaculture Report*. No.999. 56 pp.
- Lodge, M.W., D. Anderson, T. Lobach, G. Munro, K. Sainsbury, and A. Willock. 2007. Recommended best practices for regional fisheries management organizations. Royal Institute of International Affairs, Chatham House, London, 141pp.
- Mahon, R. & P. A. McConney. (eds.) 2004. Management of large pelagic fisheries in CARICOM countries. *FAO Fisheries Technical Paper* No. 464. Rome, FAO, 2004. 149pp.
- Singh-Renton S., and M. Haughton. 2004. Options for achieving successful, sustainable management of large pelagic fish resources in the CARICOM region. Pp 125 - 129 *In*: Mahon, R., & P.A. McConney. [eds.]. Management of large pelagic fisheries in CARICOM countries. *FAO Fisheries Technical Paper*. No. 464. Rome, FAO, 2004. 149pp.
- Singh-Renton, S. 2010. Sustainable Development and conservation of Tuna and Tuna-like Species in the Caribbean – The Role of ICCAT. *CRFM Technical & Advisory Document*, No. 2010/ 2. 25 pp.
- Singh-Renton, S., D.J. Die, and E. Mohammed. 2011. An Ecosystem Approach to Fisheries for Large Pelagic Fish Resources in the Caribbean Large Marine Ecosystem. Pp 197-212 *In*: Fanning, L., R. Mahon, and P. McConney. [eds.]. Towards Marine Ecosystem-based Management in the Wider Caribbean. *MARE Publication Series No. 6*. Amsterdam University Press. 425pp.
- Vicuña, F.O. 2001. ‘The International Law of High Seas Fisheries: From Freedom of Fishing to Sustainable Use,’ in *Governing High Seas Fisheries: The Interplay of Global and Regional Regimes*, ed. O.S. Stokke. Oxford: Oxford University Press, 23 - 52.

## **APPENDIX 1: SAP LINKAGES AND FRAMEWORK**

The reference numbers in the first column of the table refer to the following *interventions and activities*.

### Intervention 1:

Establish sub-regional fisheries governance arrangement for implementing EAF management of large pelagic fisheries.

#### Activities:

- 1.1.1 Formal partnership arrangement successfully established and operational.
- 1.2 Establish a regional data, information, and knowledge exchange management system to support sub-regional EAF management planning and decision-making (successor to CLME's IMS-REMP).
- 1.3.1 Strengthening of regional organizations' individual capacities to support other activities (1.1, 1.2, & 1.4).
- 1.4 Strengthen intra-regional coordination and cooperation (policy, technical levels) for contribution to ICCAT process and also regional-national coordination and cooperation in this context.

### Intervention 2:

Strengthen National fisheries governance arrangements for implementing EAF management of large pelagic fisheries.

#### Activities:

- 2.1 NICs / FACs strengthened/ empowered for active and direct involvement in national activities pertaining to governance of large pelagic fisheries (review and keeping legislation updated, adherence to international agreements, public education, formal NIC/FAC arrangement and Plan of Action, support for 1-2 policy cycles).
- 2.2 Strengthened / expanded national data, information and knowledge exchange systems (at national level and national-regional linkages).
- 2.3 Complete and empowered stakeholder representation in fisheries governance planning and decision-making (local capacity building and education for contribution to NIC / FAC process (mechanism for local-NIC / FAC interactions, and implementation, reflected by consultations and reports).

### ***Targets***

With reference to column 4 of below table 1, there are two targets for intervention 1 and four targets for intervention 2.

### ***Indicators***

- 1a. Formal partnership arrangement successfully established and operational.

- 1b. Establish a regional data, information, and knowledge exchange management system to support sub-regional EAF management planning and decision-making (successor to CLME's IMS-REMP).
- 2a. NICs / FACS strengthened / empowered for active and direct involvement in national activities pertaining to EAF management of large pelagic fisheries.
- 2b. Strengthened National data, information and knowledge exchange systems.
- 2c. Complete and empowered stakeholder representation in EAF management planning and decision-making.
- 2d. Ratify multilateral fisheries and environmental treaties, update/adopt EAF legislation FAC and NIC legislation, delimitate maritime boundaries.

With reference to column 5 of below table, there are four indicators for intervention 1 and four indicators for intervention 2 (see table 5).

- 1a. Conclusion of Memorandum of Understanding (MOU) between CRFM / WECAFC and ICCAT regarding the management of coastal large pelagic fisheries.
- 1b (i). Sub-regional EAF management plan for large pelagic fisheries.
- 1b (ii). One EAF management period cycle of operation successfully implemented.
- 1c. CLME's IMS-REMP continued/ strengthened / formally mainstreamed, with regional information products used for EAF management planning and decision-making.
- 2a (i). NIC management plan for large pelagic fisheries.
- 2a (ii). One national EAF management period cycle of operation successfully implemented.
- 2b. National data, information and knowledge exchange systems established to contribute effectively to the continuation of CLME's IMS - REMP, with national information products used for EAF management planning and decision-making at both the national and regional levels.
- 2c. Ratification of key multilateral fisheries and environmental treaties, EAF and fisheries legislation updated and national regulations enacted, marine boundaries delimited

**Table 1: Detailed analysis of intervention / Activity: root cause being addressed; targets (goals); indicators; policy cycle components concerned; regional governance framework components concerned; agencies to be responsible; expected impacts for contributing to ecosystem health; analysis of feasibility and sustainability; requirement of legal reforms.**

Intervention/ activity	Cause <sup>5</sup>	Description	Target	Indicator	Policy Cycle Level <sup>6</sup>	Regional Governance Framework Level <sup>7</sup>	Lead Agency <sup>8</sup>	Collaborating Agency <sup>9</sup>	Impact on Unsustain- able Fisheries <sup>10</sup>	Impact on Habitat Degradation <sup>11</sup>
1	Root	Poor governance	1a, 1b	1a,1 b (i), 1b (ii), 1 c	6	2	IGO- CRFM	GOV, PRIV,CS, NGO	H	M
1.1	Root	Poor governance	1a	1a, 1b(i), 1b(ii)	3	2	IGO- CRFM	GOV, PRIV,CS, NGO	H	M
1.2	Root	Poor governance	1b	1b(i), 1b(ii)	1,2,3	2	IGO- CRFM	GOV, PRIV,CS, NGO	H	M
1.3	Root	Poor governance	1a, 1b	1b(i), 1b(ii)	6	2	IGO- CRFM	GOV, PRIV,CS, NGO	H	M
1.4	Root	Poor governance	1a, 1b	1b(i), 1b(ii)	6	1	IGO- CRFM	GOV, PRIV,CS, NGO	H	M
2	Root	Poor governance	2a,2 b, 2c, 2 d	2a(i), 2a(ii), 2b, 2 d	6	4,5	IGO- CRFM	GOV, PRIV,CS, NGO	H	M
2.1	Root	Poor governance	2a, 2d	2a(i), 2a(ii), 2c	6	4,5	IGO- CRFM	GOV, PRIV,CS, NGO	H	M
2.2	Root	Poor governance	2b	2b	1,2	2,3,4	IGO- CRFM	GOV, PRIV,CS, NGO	H	M
2.3	Root	Poor governance	2a	2a(ii), 2b	3,4,5	4,5	IGO- CRFM	GOV, PRIV,CS, NGO	H	M

<sup>5</sup> R:root, U:underlying, D:direct

<sup>6</sup> 1:data&information, 2:analysis&advice, 3: decision making, 4: implementation, 5: revision, 6: all

<sup>7</sup> 1: global/international, 2: regional, 3:sub-regional, 4: national, 5: local

<sup>8</sup> IGO: Inter-governmental organization, GOV: Government agency, PRIV: Private sector, CS: ?, NGO: Non-governmental Organization

<sup>9</sup> IGO: Inter-governmental organization, GOV: Government agency, PRIV: Private sector, CS: ?, NGO: Non-governmental Organization

<sup>10</sup> H: high, M: medium, L: low

<sup>11</sup> H: high, M: medium, L: low

(Table 1 continued)

<b>Intervention/ activity</b>	<b>Impact on Pollution<sup>12</sup></b>	<b>Screening, needs Legal Reform<sup>13</sup></b>	<b>Screening, feasibility<sup>14</sup></b>	<b>Screening, sustainability</b>	<b>Screening, expected impact</b>
1	L	Y	H	H	H
1.1	L	N	H	H	H
1.2	L	N	H	H	H
1.3	L	N	H	H	H
1.4	L	N	H	H	H
2	L	Y	H	H	H
2.1	L	Y	H	H	H
2.2	L	N	H	H	H
2.3	L	N	H	H	H

---

<sup>12</sup> H: high, M: medium, L: low

<sup>13</sup> Y:yes, N:no

<sup>14</sup> H: high, M: medium, L: low