



Caribbean Regional Fisheries Mechanism

2020

# CLME+ Flyingfish Sub-project Final Technical Report Caribbean Regional Fisheries Mechanism (CRFM) Secretariat CRFM, Technical & Advisory Report No. XX/2020





Development of this Information Product and its contents, and/or the activities leading thereto, have benefited from the financial support of the UNDP/GEF Project:

**“Catalysing Implementation of the Strategic Action Programme (SAP) for the Sustainable Management of shared Living Marine Resources in the Caribbean and North Brazil Shelf Large Marine Ecosystems”**

(CLME+ Project, 2015-2020)

The CLME+ Project is executed by the United Nations Office for Project Services (UNOPS) in close collaboration with a large number of global, regional and national-level partners. All are jointly referred to as the “CLME+ Project co-executing partners”.

[www.clmeproject.org](http://www.clmeproject.org)  
[info@clmeproject.org](mailto:info@clmeproject.org)

As a GEF Agency, the United Nations Development Programme (UNDP) implements a global portfolio of GEF co-funded Large Marine Ecosystem projects, among which the CLME+ Project.



[www.undp.org](http://www.undp.org)

Through the International Waters (IW) focal area, the Global Environment Facility (GEF) helps countries jointly manage their transboundary surface water basins, groundwater basins, and coastal and marine ecosystems.



[www.thegef.org](http://www.thegef.org)

UNOPS mission is to serve people in need by expanding the ability of the United Nations, governments and other partners to manage projects, infrastructure and procurement in a sustainable and efficient manner.

 **UNOPS** [www.unops.org](http://www.unops.org)

CLME+ Project Information Products are available on the CLME+ Hub ([www.clmeplus.org](http://www.clmeplus.org)) and can be downloaded free of cost.

**Publication:**

**CRFM Secretariat, March, 2020**

[secertariat@crfm.int](mailto:secertariat@crfm.int)

© All rights reserved.

**Citation: CRFM, 2020. CLME+ Flyingfish Sub-project Final Technical Report, Caribbean Regional Fisheries Mechanism (CRFM) Secretariat, Belize City, CRFM Technical & Advisory Report No. XX/2020**

The **CRFM Secretariat and the CLME+ Project co-executing partners** encourage the reproduction, dissemination and use of this Information Product. Except where otherwise indicated, material from this Information Product may be copied, downloaded, reproduced and disseminated for private study, research, educational and advocacy/awareness-raising purposes, or for use in non-commercial products or services, without special permission from the copyright holder(s), provided that the appropriate acknowledgment of the source is made and that endorsement by the Author(s) and/or the GEF, UNDP and the CLME+ Project co-executing partners of the users' views, products or services is not implied in any way. No part of this publication may be reproduced, disseminated or used for any commercial purposes or resold without the prior written permission of the Author(s).

## CLME+ Project Information Product Series **[– Technical Reports]**

### Disclaimer:

The designations employed and the presentation of information in any format in this Information Product do not imply the expression of any opinion whatsoever on the part of the GEF, UNDP and/or any of the CLME+ Project co-executing partners concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

The mention of specific companies or of certain manufacturers' products does not imply that they are endorsed or recommended by the GEF, UNDP and/or any of the CLME+ Project co-executing partners in preference to others of a similar nature that are not mentioned.

Unless expressly stated otherwise, the content, facts, findings, interpretations, conclusions, views and opinions expressed in this Information Product are those of the Author(s), and publication as a CLME+ Project Information Product does not by itself constitute an endorsement of the GEF, UNDP and/or any of the CLME+ Project co-executing partners of such content, facts, findings, interpretations, conclusions, views or opinions.

The GEF, UNDP and/or any of the CLME+ Project co-executing partners do not warrant that the information contained in this Information Product is complete and correct and shall not be liable whatsoever for any damages incurred as a result of its use.

### CLME+ Project co-executing partners:



## Contents

<b>FOREWORD</b> .....	<b>7</b>
<b>INTRODUCTION</b> .....	<b>8</b>
<b>CHAPTER I – PROJECT STRATEGY</b> .....	<b>9</b>
<b>Rationale</b> .....	<b>9</b>
Cost effectiveness, sustainability and replication potential .....	19
Beneficiaries and stakeholder involvement plan .....	19
<b>CHAPTER 2 – PROJECT IMPLEMENTATION STATUS</b> .....	<b>21</b>
• <b><u>THE DATA REPOSITORY/BIBLIOGRAPHIC DATABASE WAS MADE AN INTEGRAL (SOME MAY SAY “CENTRAL”) PART OF THE CRFM DATA PORTAL, PROVIDING A MEDIUM FOR DATA STORAGE AND ACCESSIBILITY FOR A MULTIPLICITY OF SPECIES AND ISSUES</u></b> .....	<b>25</b>
• <b><u>THE APPROACHES PROPOSED TO DEAL WITH TRADITIONAL KNOWLEDGE ARE APPLICABLE, NOT ONLY TO FLYINGFISH, BUT TO THE FISHERIES SECTOR AS A WHOLE</u></b> .....	<b>25</b>
• <b><u>THE TRAINING MATERIAL DEVELOPED TO SUPPORT CAPACITY BUILDING DEVELOPED, AS WELL AS THE SUITE OF CAPACITY BUILDING OPPORTUNITIES ARE NOT SPECIFIC TO FLYINGFISH FISHERIES ALONE, AND CAN BE UTILIZED TO BUILD CAPACITY WITHIN THE SECTOR AS A WHOLE</u></b> .....	<b>25</b>
• <b><u>THE APPROACHES TO ADDRESS VALUE CHAIN ANALYSES ARE APPLICABLE WHETHER SPEAKING ABOUT FLYINGFISH OR OTHERWISE</u></b> .....	<b>25</b>
• <b><u>THE MODEL NATIONAL VESSEL LICENSING REGULATIONS, THOUGH FORMULATED IN THE FORM OF A MODEL/HARMONISED FLYINGFISH AMENDMENT TO FISHERIES ACTS RELATE/CAN BE CUSTOMISED TO FACILITATE IMPROVED MANAGEMENT OF ANY SPECIES</u></b> .....	<b>25</b>
• <b><u>THE RECOMMENDATIONS FOR DEVELOPMENT OF NATIONAL DATA COLLECTION SYSTEMS IN SUPPORT OF THE EAF ASSESSMENT AND MANAGEMENT ARE VALID NOT ONLY FOR THE EASTERN CARIBBEAN FLYINGFISH</u></b> .....	<b>25</b>
• <b><u>MINI-DOCUMENTARY ON THE FLYINGFISH FISHERY (OUITUT 3.1A)</u></b> .....	<b>28</b>
• <b><u>EDUCATIONAL MATERIALS ON THE EAF, SUB-REGIONAL FISHERIES MANAGEMENT PLAN FOR FLYINGFISH IN THE EASTERN CARIBBEAN AND THE ASSOCIATED ROLES AND RESPONSIBILITIES OF THE NICS AND FACS IN PLANNING AND DECISION-MAKING. (OUTPUT 3.1B)</u></b> .....	<b>28</b>
• <b><u>REPORTS ON KNOWLEDGE, ATTITUDES AND PRACTICES (KAP) ON THE ECOSYSTEM APPROACH TO MANAGING FLYINGFISH FISHERIES AT THE BEGINNING AND END OF THE PROJECT PERIOD TO QUANTIFY THE EFFECTIVENESS OF STAKEHOLDER AWARENESS AND EAF MANAGEMENT ENGAGEMENT ACTIVITIES IMPLEMENTED UNDER THE SUB-PROJECT; AND, TO DETERMINE IF STAKEHOLDER ENGAGEMENT IN THE POLICY CYCLE HAS IMPROVED. (OUTPUT 3.1C)</u></b> .....	<b>29</b>
• <b><u>REPORT ON NATIONAL STAKEHOLDER (MINI-)CONSULTATIONS IN FOUR COUNTRIES PARTICIPATING IN THE FLYINGFISH FISHERY (OUTPUT 3.2D)</u></b> .....	<b>29</b>
<b>MANAGEMENT/STRESS REDUCTION</b> .....	<b>29</b>
• <b><u>RECOMMENDATIONS FOR IMPROVEMENTS IN NATIONAL DATA COLLECTION SYSTEMS INCORPORATED INTO THE FMP UPDATE (OUTPUTS 2.2A, 2.2C(II), 4.2B)</u></b> .....	<b>29</b>

• <b><u>MODEL REGULATIONS, CONSISTENT WITH MANAGEMENT RECOMMENDATIONS IN THE UPDATED SUB-REGIONAL FMP (OUTPUT 4.3B)</u></b> .....	<b>29</b>
• <b><u>A SUB-REGIONAL LIST OF AUTHORISED FISHING VESSELS FOR FLYINGFISH (OUTPUTS 2.2C(IV), 4.3C)</u></b> .....	<b>29</b>
• <b><u>EAF MANAGEMENT RECOMMENDATIONS THAT INCORPORATE SOCIO-ECONOMIC INFORMATION OBTAINED FROM THE ACTIVITIES TO ENHANCE DATA AND INFORMATION MANAGEMENT FOR DECISION SUPPORT TO THE EASTERN CARIBBEAN FLYINGFISH FISHERY (OUTPUT 5.1A)</u></b> .....	<b>29</b>
• <b><u>VALUE CHAIN ANALYSIS IN THREE COUNTRIES PARTICIPATING IN THE FISHERY: IDENTIFYING FEASIBLE OPTIONS FOR VALUE ADDITION, IMPROVED SPS AND DISTRIBUTION AND MARKETING (OUTPUT 5.2B)</u></b> .....	<b>29</b>
• <b><u>BUSINESS ACTIVITY PROPOSALS TO FACILITATE LIVELIHOOD ENHANCEMENT, FOCUSED LIVELIHOOD OPPORTUNITIES FROM CURRENT LEVELS (OUTPUT 5.3B)</u></b> .....	<b>29</b>
• <b><u>UPDATED ASSESSMENT/EVALUATION OF MANAGEMENT PERFORMANCE FOR THE FLYINGFISH FISHERY. (OUTPUT 6.1C)</u></b> .....	<b>29</b>
• <b><u>IMPACT ASSESSMENT TOOL ON ADAPTIVE MANAGEMENT</u></b> .....	<b>29</b>
• <b><u>INFORMATION BRIEFS ON LESSONS LEARNT AND BEST PRACTICES TARGETED AT STAKEHOLDERS AT NATIONAL AND REGIONAL LEVELS (OUTPUT 6.2C)</u></b> .....	<b>29</b>
• <b><u>GEF/CLME+ SUB-PROJECT EXPERIENCE NOTES FOR DISSEMINATION BY THE CLME+ PCU TO THE GLOBAL LME COMMUNITY OF PRACTICE (OUTPUT 6.2C)</u></b> .....	<b>29</b>
• <b><u>SUB-PROJECT AFTER-LIFE PLAN, INCLUDING OPTION(S) FOR ADDITIONAL RESOURCES TO BE MOBILISED FOR CONTINUED EAF APPROACH TO FLYINGFISH MANAGEMENT. (OUTPUT 6.3B)</u></b> .....	<b>29</b>
• <b><u>PRESENTATION MATERIALS FOR SUB-PROJECT AFTER-LIFE PLAN (OUTPUT 6.3B)</u></b> .....	<b>29</b>
<b><u>ACRONYMS</u></b> .....	<b>31</b>
<b><u>ANNEX 1. COOPERATION AGREEMENT WITH FRANCE (MARTINIQUE)</u></b> .....	<b>34</b>
<b><u>ANNEX 2. STAKEHOLDER MEETING REPORTS</u></b> .....	<b>35</b>
<b><u>ANNEX 3. EASTERN CARIBBEAN FLYINGFISH FISHERIES MANAGEMENT PLAN 2020-2025</u></b> .....	<b>36</b>
<b><u>ANNEX 4. COMMUNICATION STRATEGY AND ACTION PLAN TO FACILITATE STAKEHOLDER PARTICIPATION IN SUBPROJECT ACTIVITIES</u></b> .....	<b>37</b>
<b><u>ANNEX 5. IMPACT ASSESSMENT TOOL – ENHANCING DATA MANAGEMENT</u></b> .....	<b>38</b>
<b><u>ANNEX 6. MODEL/HARMONISED FLYINGFISH AMENDMENT TO FISHERIES ACTS</u></b> .....	<b>39</b>
<b><u>ANNEX 7. LIST OF CURRENTLY AUTHORISED FLYINGFISH VESSELS FOR 3 MEMBER STATES</u></b> .....	<b>40</b>
<b><u>ANNEX 8. VALUE-CHAIN STUDY REPORT</u></b> .....	<b>41</b>
<b><u>ANNEX 9. TRAINING MATERIAL TO SUPPORT CAPACITY BUILDING AND SUITE OF CAPACITY BUILDING OPPORTUNITIES</u></b> .....	<b>42</b>
<b><u>ANNEX 10. LESSONS LEARNT AND BEST PRACTICES</u></b> .....	<b>43</b>
<b><u>ANNEX 11. SUB-PROJECT AFTER-LIFE PLAN</u></b> .....	<b>44</b>



## FOREWORD

Sub-strategy 5A of the Strategic Action Programme (SAP) for the Sustainable Management of the shared Living Marine Resources of the Caribbean Large Marine Ecosystem and Adjacent Regions (CLME+ SAP) aims to enhance the governance arrangements for implementing an ecosystem approach for flyingfish fisheries. Proposed Lead Organisation: CRFM. In furtherance of that a number of strategic actions were identified, namely: strengthen the FAO-WECAFC and CRFM sub-regional arrangements for the assessment and management of the flyingfish fisheries including the establishment of a decision-making capacity for management; establish and operationalise a formal agreement between the CRFM and France on the management of the flyingfish fisheries; operationalise and strengthen an integrated, sub-regional Decision Support System (DSS) for the flyingfish fisheries (in coordination with the large pelagics arrangements); strengthen the FAO-WECAFC and CRFM capacity to develop, adopt and implement management and conservation measures for the flyingfish fisheries; implement the CRFM/FAO-WECAFC Sub-Regional Management Plan for Flyingfish Fisheries in the Eastern Caribbean; and, develop and implement education and awareness building initiatives to improve understanding and enhanced stakeholder commitment and participation in planning and decision-making in the flyingfish fisheries.

To give effect to these actions, with the support of the Global Environment Facility (GEF) and the GEF Implementing, Cooperating and Executing Agencies the United Nations Development Programme (UNDP), the Intergovernmental Oceanographic Commission of the United Nations Educational, Scientific and Cultural Organisation (IOC of UNESCO) and the United Nations Office for Project Services (UNOPS), the Countries and Regional Organisations and other stakeholders participating in the CLME Project, which have traditionally targeted the four-winged flyingfish embarked on a sub-project under the CLME + project. Executed by the CRFM Secretariat, this sub-project sought to:

- Foster long-term human well-being of the (direct and indirect) stakeholders of the Eastern Caribbean flyingfish fishery through optimized, sustainable stock management and use
- Full policy cycle implementation at the sub-regional level, through the review, updating, adoption and implementation of the sub-regional management plan for flyingfish fisheries
- Full policy cycle implementation at the national level
- Capture and disseminate best practices and lessons learnt, for the replication and up-scaling of the EAF approach in other CLME+ fisheries

The sub-project was designed to give ownership of the work to the participating countries (Barbados, Dominica, Grenada, St. Lucia, St. Vincent and the Grenadines, Trinidad and Tobago) by allowing fisheries divisions (national focal points) to work closely with the six consultants; especially with regard to the development of their own in-country flyingfish fishery management outreach activities with local stakeholder groups (fishers, fisherfolk organizations, and cooperatives). This document provides a summary of the approaches, methods, activities, and outputs of the sub-project

## INTRODUCTION

In the western central Atlantic, the four-wing flyingfish supports commercially important pelagic fisheries in three geographically separate areas: the eastern Caribbean islands, the southern Netherlands Antilles and northeast Brazil. Tagging and genetic studies suggest that there is a distinct, single stock of four-wing flyingfish (*Hirundichthys affinis*) within the eastern Caribbean area extending from Dominica to Trinidad and Tobago. The four-wing flyingfish is essentially an annual species with strong seasonal variation in catches. Flyingfishes are an important prey group for a number of large pelagic predators such as bigeye tuna, dolphinfishes, billfishes, blackfin tuna as well as squids; while the four-wing flyingfish supports important small-scale fisheries in the region in terms of employment generation (with an important role for women in the processing sector), food security and supply of bait for fisheries targeting large pelagic fish species. Like other small-scale fishers in the Caribbean, fishers involved in flyingfish fisheries often belong to the lower socio-economic strata of society.

Due to the socio-economic and ecological importance of flyingfish to the CLME+ region, a specific sub-strategy relating to flyingfish fisheries was included under Strategy 5 of the CLME+ Strategic Action Programme (SAP). Sub-Strategy 5A of the SAP aims to enhance the governance arrangements for implementing an ecosystem approach to flyingfish fisheries in the CLME+ region. Progressive implementation of an ecosystem-based approach to the management of the flyingfish resource will contribute to more efficient fishing activities within an economically viable and competitive small-scale fisheries sector, securing a fair standard of living for those who depend on fishing flyingfish and taking the interests of consumers into account. The significant trophic, technical and economic linkages between the flyingfish fisheries and the fisheries targeting large oceanic pelagic species (e.g. dolphinfish, wahoo, tunas, billfishes) further provide strong justification for the adoption and implementation of an ecosystem approach to the management of these fisheries.

In May 2014 a Regional Fisheries Management Plan (FMP) for Flyingfish in the Eastern Caribbean was approved by the CRFM Ministerial Council, for voluntary regional implementation. This FMP was consistent with the precautionary, ecosystem and participatory approaches to fisheries assessment and management. Based on the distribution of the four-wing flyingfish the FMP stipulated the minimum appropriate management unit for the four-wing flyingfish as the combined Exclusive Economic Zones (EEZs) of the Eastern Caribbean states, from Dominica south to Tobago according to FAO (2010). Measures at both the national and regional levels are to be put in place for an integrated approach to implementation of the FMP for effective EAF management of the shared resource. As a consequence, national management plans were to be developed and implemented; national data collection systems are to be strengthened and national licensing systems established.

Although the 2014 FMP applied to CRFM Member States for which the flyingfish fishery is of real interest, it is important that non-CRFM countries in the region that target the same stock cooperate in its assessment and management. Such action, by the French Overseas Departments in particular, necessitates regional networking and harmonisation of the respective approaches. During the UNDP/GEF *foundational capacity and trust building project* "CLME" (GEF ID 1032) between 2009 and 2014, technical collaboration between the CRFM and IFREMER was facilitated at the CRFM Annual Scientific Meetings; however, similar collaboration at the political and direct stakeholder levels remained a challenge. As a consequence, review of the draft FMP by direct stakeholders in the French Overseas Departments had not been possible, neither was agreement in principle at the political level with the management measures proposed in the FMP. The GEF-supported CLME+ project aiming to catalyse implementation of the CLME+ SAP offers an opportunity to further strengthen the technical linkages between CRFM Member States and the French Overseas Departments as well as to develop governance linkages by engaging French decision-makers and stakeholders in discussions on the results from stock and bio-economic impact assessments, and new/adapted management recommendations and associated reference points proposed for eastern Caribbean flyingfish.



# CHAPTER I – Project strategy

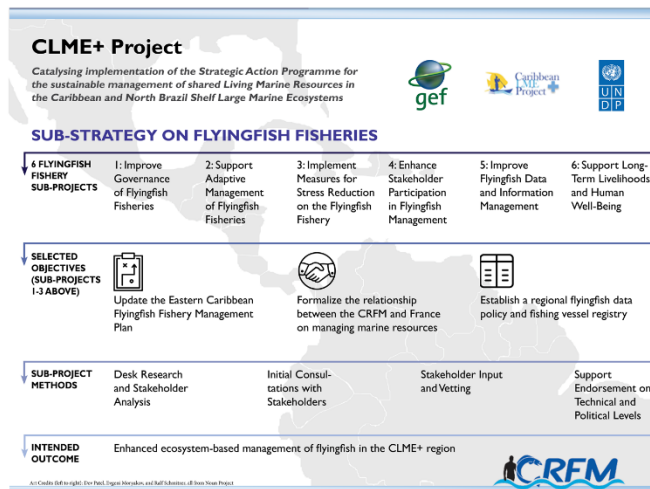
## Rationale

This Sub-Project aimed at contributing to the delivery of Output 3.2. (O3.2.) under COMPONENT 3 of the main CLME+ Project Document: “*Transition to an ecosystem approach for the Eastern Caribbean flyingfish fisheries demonstrated*” It has been developed in response to the corresponding calls for action under (a) the **CLME+ Strategic Action Programme (SAP)**, politically endorsed at the regional level in 2013 and (b) the approved Regional Fisheries Management Plan (FMP) for Flyingfish in the Eastern Caribbean.

More specifically, in the case of the CLME+ SAP, the CLME+ Flyingfish Sub-Project can be linked to SAP Sub-Strategy 5A (and Strategy 5; see figure 1):

- **Sub-Strategy 5A: Enhance the governance arrangements for implementing an ecosystem approach for flyingfish fisheries**
- **Strategy 5: enhance the governance arrangements for implementing an ecosystem approach for pelagic fisheries.**

In addition to this, Actions under SAP Strategies 1, 2 and 3, and under CLME+ Project COMPONENTS 1, 2, 4 and 5 were meant to further facilitate the implementation of this Sub-Project, as they help building the support base for its activities, and for the continuation of efforts beyond the Sub-Project’s lifespan.



Sub-Project activities would build upon:

- the concept of **interactive governance**, defined as *the whole of interactions among public, civil and private actors taken to solve societal problems and to create societal opportunities; including the formulation & application of principles guiding those interactions and care for institutions that enable and control them*
- the findings from the **governance assessments**, conducted under the CLME Project (GEF ID 1032)
- progress and results from **other related regional and national-level efforts**

Sub-Project activities were to further give due attention in the context of *interactive governance* (societal interactions and the creation of societal opportunities) to gender equality and the empowerment of women.

It is broadly recognized that the ultimate, over-arching goal of the implementation of the EAF approach for flyingfish fisheries –i.e. **maximized, sustainable contributions from the resource to human well-being in the region-** will only be achievable in the medium- (6-10 year time frame) to long term (10-20 years). Even so, this over-arching goal constitutes a critically important primary reference for the shaping of the CLME+ Sub-Project’s objectives, outcomes, outputs and activities.

With the over-arching goal to optimize benefits from the resource for the enhancement of human well-being in mind, and cognizant that the implementation timeframe for this Sub-Project was limited to a maximum of 4 years, the Sub-Project’s focus was on implementation of the Sub-Regional Fisheries Management Plan for Flyingfish in the Eastern Caribbean, and more specifically on the following related and inter-linked components of the GEAF framework:

1. Further enhancement and operationalization of transboundary governance arrangements and processes;
2. Enhanced data and information management for decision-support;
3. Enhanced stakeholder participation in all aspects of the management process;
4. Implementation of enhanced stock management/stress reduction measures;
5. Enhancement of livelihoods and by extension human well-being;
6. Adaptive management facilitated

Reference is made in the context of Item 1 above - the operationalization of governance processes - to the components of the policy cycle

The strengthening of the data and information collection and management capacity, within and among the relevant institutional arrangements, are of great importance to facilitate the establishment of an enhanced baseline, and to define common medium- and long-term targets

During the project, and following a participatory approach, the preliminary –and rather generically formulated– targets included in sub-project proposal were to be fine-tuned and validated or revised, as the existing data gaps were gradually being filled.

The participatory approach sought to ensure that the full range of key stakeholders, across the different levels and sectors, were involved. Through the operationalization of the enhanced governance arrangements under the Sub-Project that the processes of more comprehensive stakeholder involvement, and of enhanced target setting/ revision would be facilitated.

h stocks and associated socio-economic benefits would then be periodically reviewed and (where applicable) revised. Such information would assist the different stakeholder groups (governments, civil society stakeholders and private sector) in the implementation of the combination of responses that would be needed to achieve the specified targets

## **Objectives, outcomes and outputs**

### **Objectives**

The objectives of the Sub-Project were four-fold, to:

- a. Foster long-term human well-being of the (direct and indirect) stakeholders of the Eastern Caribbean flyingfish fishery through optimized, sustainable stock management and use
- b. Full policy cycle implementation at the sub-regional level, through the review, updating, adoption and implementation of the sub-regional management plan for flyingfish fisheries
- c. Full policy cycle implementation at the national level
- d. Capture and disseminate best practices and lessons learnt, for the replication and up-scaling of the EAF approach in other CLME+ fisheries

These Sub-Project objectives were aligned with the general management objectives of the approved Sub-Regional Fisheries Management Plan: (a) long-term sustainability of the flyingfish resource (biological objective), (b) optimal use of the flyingfish resource for long-term benefits (socio-economic objective) and (c) sustained ecosystem health (ecological objective).

Responsible management in the face of uncertain information on the true status of the flyingfish stock and uncertainties relating to impacts from climate change, requires a precautionary approach

### **Outcomes, outputs and activities**

#### OUTCOME 1: Governance arrangements in place and operational

This outcome addresses several components of the policy cycle, but focuses mainly on the decision-making component. This Sub-Project focuses on strengthening the governance framework at the sub-regional and national levels through support for completion of at least 1 policy cycle, which will help build additional necessary capacity among the respective entities for effective implementation of the EAF. Consequently, under Output 1.1 the CRFM Ministerial Sub-Committee on Flyingfish is expected to take an active role in reviewing and evaluating new information generated under the project and during implementation of the flyingfish management plan, and the views and suggestions of the range of stakeholders at varying levels in the context of the EAF, so as to propose updated management recommendations for approval by the CRFM Ministerial Council. Further, recognizing that long-term sustainability of the flyingfish resources will be more effective with the cooperation of the French Overseas Departments that exploit the same stock, engagement of these Departments at the political level is addressed under Output 1.2. Such engagement, currently being pursued and supported through CRFM co-financing, is expected to facilitate discussion and agreement on cooperative arrangements for management of the flyingfish resources, to inform elements of a related Memorandum of Understanding. This approach is mindful that the overall regional fisheries governance arrangement to be established under the CLME+ will facilitate active cooperation for the sustainable use, conservation and management of all shared living marine resources through an expected regional commitment. In addition, recognizing the varying success in the establishment of the NICs and their engagement in the management process during the CLME Project, capacity-building of existing NICs

and FACs to participate effectively in the EAF management process will be addressed under Output 1.3, which is distinct from, yet linked to, CLME+ Project Output 1.2 Inter-sectoral coordination mechanisms (including science-policy interfaces, as feasible) (in the main CLME+ Project Document) that seeks to address the arrangements necessary for establishment of the NICs and mechanisms for their sustainability beyond the CLME+ project. Output 1.3 seeks to engage the range of stakeholders in meaningful dialogue, exchange of data and information and active engagement in the management process. Meetings of any existing NICs, FACs and other entities performing similar roles will be facilitated to discuss the EAF, critical issues pertaining to flyingfish management and development of National Management Plans. Recognizing the impacts of lack of availability, or access to required data sets for decision-making and M&E processes, Output 1.4 will deliver a sub-regional data policy, a key component needed to give firmly grounded support to the EAF approach for the flyingfish fishery policy cycle. A formal arrangement for the sharing of data and information within the CRFM has currently not yet been implemented. The formal arrangement proposed will impose an obligation on the part of Member States to share data and information to improve the knowledge base for management decision-making in the EAF context. Work under Output 1.4. will be linked to the work under CLME+ Project Output 1.4.

Output 1.1. Strengthened CRFM Ministerial Sub-Committee, through completion of at least 1 policy cycle, and adoption of updated recommendations for policy & management decisions in the context of the EAF for eastern Caribbean Flyingfish

Proposed activities under this output include:

- a. Improved education of the Sub-Committee on flyingfish EAF management issues, through continued access to and processing of technical information on the EAF approach to management of flyingfish
- b. Direct experience gained by the Sub-Committee through the review and adoption of updated recommendations for the management of eastern Caribbean Flyingfish arising from the new information generated under the Sub-Project that coincides with the period of implementation of the first flyingfish management plan;

Output 1.2. Active cooperation between CRFM and France at the political level regarding flyingfish conservation and management, through active participation in negotiation and flyingfish management meetings

Proposed activities under this output include:

- a. Participation of French authorities with responsibility for fisheries in meetings of the CRFM Ministerial Sub-Committee on Flyingfish (Co-financed by CRFM);
- b. Support for the continued development of management partnership/cooperation agreement between the CRFM and France

Output 1.3. Engagement of National Inter-sectoral Committees (NICs) and Fisheries Advisory Committees (FACs), through meaningful participation of fishers, civil society and private sector in the management process

Proposed activities under this output include:

- a. Convene annual meetings for awareness-building and discussions on:
  - (1) Implementation of the ecosystem approach to fisheries;
  - (2) Eastern Caribbean flyingfish management issues, taking into account present and emerging management needs, including the need to establish a list of authorized fishing vessels, introduce measures to reduce and eliminate IUU fishing practices, to reduce possible impacts of present fishing strategies on long-term flyingfish recruitment, and to improve resilience to climate change and climate variability impacts.;
  - (3) national-level implementation of the sub-regional FMP;
  - (4) Refinement of flyingfish Sub-regional FMP to include additional management measures, as identified and required to reduce the impacts of fishing, climate and environmental change

Output 1.4. Sub-regional data policy for EAF management (decision-support), incorporating data, information and indicators for monitoring performance of the Sub-Regional FMP for flyingfish in the Eastern Caribbean, and by this means for incorporation into updated FMP by end of 1st policy cycle.

Proposed activities under this output include:

- a. Formulation and review of a CRFM sub-regional data policy, taking into account the needs and experiences of implementation of the Sub-regional Flyingfish FMP.

## b. Finalization of the CRFM sub-regional data policy.

### OUTCOME 2: Enhanced data and information management for decision-support

The issue of access to existing information, necessary for EAF management decision-making on the Eastern Caribbean flyingfish, by a range of stakeholders, will be addressed under Output 2.1. Such information will be consolidated and made easily available through an online keyword search facility. By this means, this output will also contribute data and information on the Eastern Caribbean flyingfish resource and fisheries to the respective global inventories of the FIRMS (FAO) consistent with the agreed arrangements at the 15th Session of WECAFC. In support of strengthening the EAF information and knowledge base Output 2.2 comprises a number of analyses, as identified in the Sub-regional FMP, to provide new information for generation of updated management advice in support of the EAF, including refined operational objectives, indicators and reference points (quantified) to facilitate effective monitoring and evaluation of management performance. In addition to providing new information, the execution of these projects also serves: (1) to identify the key data and information requirements for the EAF management of Eastern Caribbean flyingfish and their sources at varying levels (local, sectoral, national, sub-regional) and (2) to test the elements that could make up a regional DSS, through identification of practical and feasible options regarding the mechanisms and processes for data and information exchange. Consequently, this output will make recommendations for development of a DSS based on the lessons learnt and experiences gained. Finally, consistent with the requirement for improved catch and effort data this output will, through national annual reporting by CRFM Member States, improve the quality of current data available for assessment of the status of the flyingfish resource. Additional information on the ecological and socio-economic impacts of climate change on pelagic fisheries and options for mainstreaming disaster risk management and climate change adaptation at the national level are key outputs of the previously mentioned SPCR-Regional track, which will also serve to strengthen the EAF information and knowledge base developed under the CLME+ Project.

Output 2.1. Improved stakeholder access to data and information of relevance to application of the EAF assessment and management of eastern Caribbean flyingfish and improved availability of data and information to the global community by year 3.

Proposed activities under this output include:

- a. Establishment of CRFM data and information repository for EAF management of Eastern Caribbean flyingfish, which would include identification and electronic consolidation of all published data and information;
- b. Development of an online, keyword searchable, bibliographic database with facility for download of published documents;
- c. Addressing any copyright issues which may impact on the sharing of data and information;
- d. Support update of FIRMS resource and fisheries inventories for the eastern Caribbean stock of four-wing flyingfish.

Output 2.2 Strengthened EAF information and knowledge base by year 3.

Proposed activities under this output include:

- a. Updated, as well as broadened, multi-objective assessment of the eastern Caribbean flyingfish fisheries to:
  - i. Determine the bio-economic and ecological status of the stock;
  - ii. Quantify baseline estimates of indicators and derive estimates for management reference points;
  - iii. Provide updated recommendations in support of adaptive EAF management.
- b. Comprehensive and gender-sensitive valuation (social and economic) of the current and potential future contribution of flyingfish and associated pelagic fisheries to food security (socio-economic), income (costs and earnings) and employment (socio-economic) and ecosystem goods and services (ecological), with recommendations for enhancement of the livelihoods and improvement of the conditions of work for fishers and processors – study to focus on 4 countries participating in the fishery;
- c. Availability of new information for EAF management and policy cycle implementation support (funded under the respective outputs and shared under Output 2.1):
  - i. Options for value chain problem-solving (Output 5.2);
  - ii. Refined operational objectives, indicators and reference points for monitoring and evaluation of management measures, with socio-economic objectives incorporating goals for achieving gender equality and youth development (linked to Outputs 1.3 and 3.2).



- iii. National level recommendations made consistent with the sub-regional FMP, including provisions for further development of data collection systems (Outputs 4.1 and 4.2)
  - iv. National vessel census for quantifying existing fishing effort and fishing capacity (Output 4.3)
  - v. Revised Sub-regional Fisheries Management Plan for Flyingfish in the Eastern Caribbean (Output 6.2), taking into account present and emerging management needs, including the need to establish a list of authorized fishing vessels, to reduce and eliminate IUU fishing practices, to reduce possible impacts of present fishing strategies on long-term flyingfish recruitment, and to guarantee resilience to climate change and climate variability impacts.
- d. Monitoring and evaluation of management performance at the national and regional levels (Output 6.2)
  - e. Identification of key data and information requirements, associated sources of data and information and the mechanisms for data and information sharing at the regional, national, sectoral and local levels to inform development of a DSS;
  - f. Formulation of a proposal to inform development of a decision support system.

#### OUTCOME 3: Stakeholder participation in the management process enhanced

Stakeholder empowerment (with special attention to gender considerations), through increased awareness of fisheries and environmental issues and related impacts on livelihoods, human well-being, poverty alleviation, food security and other socio-economic as well as ecological consequences is necessary to facilitate their informed participation in the management process.

Output 3.1 addresses this issue through improved education and awareness-building of the NICs and FACs, facilitated by the production and dissemination of information customized to the target audience. The activity is expected to contribute to the overall CLME+ Communications Strategy which will target a range of stakeholders at varying levels (general public, decision-makers, advisors, fishers, processors, civil society, private sector/business) as outlined under CLME+ Project Output 2.4 Overarching CLME+ Communication Strategy, with central and decentralised components and responsibilities. In addition, Output 3.1 of this Sub-Project will quantify improvements in education and awareness of the NICs and FACs on issues pertaining to flyingfish management in the EAF context. Active stakeholder involvement in the EAF management process will be addressed under Output 3.2. Through a number of national consultations stakeholders will be engaged in identifying solutions for addressing socio-economic, ecological and governance issues and for refining the management operational objectives, indicators and reference points to facilitate monitoring and evaluation of implementation of the Sub-regional and national management plans. In addition, such consultations will provide for broad stakeholder review of any proposed amendments to the Sub-regional management plan. It is expected that outputs of stakeholder consultations will be considered by the FACs and NICs within the wider governance framework, to facilitate the provision of management advice to the national authorities with responsibility for fisheries and the environment initially, and later extended during SAP implementation to other authorities (e.g. via the NICs to planning and development, trade, social development, etc.). This output will also contribute to testing of the overall policy cycle and in particular, the level of stakeholder engagement in the respective process.

Output 3.1 Education and public awareness-building improved in at least 4 of the countries participating in the fishery by project end.

Proposed activities under this output include:

- a. Production and dissemination of a mini-documentary on the flyingfish fishery, scientific and management issues, approaches to management, proposed management measures, legislation and enforcement, and highlighting challenges and opportunities in respect of gender and youth. Proposed dissemination options include posting on the CRFM, CLME+ Project and CNFO websites; airing on national and regional television, posting on Youtube, shared with Fisheries Departments, Ministries with responsibility for the Environment, WECAFC Secretariat and French Overseas Departments;
- b. Production and dissemination of educational materials on the EAF, Sub-Regional Fisheries Management Plan for Flyingfish in the Eastern Caribbean and the associated roles and responsibilities of the NICs and FACs in planning and decision-making.
- c. Conduct of surveys on knowledge, attitudes and practices (KAP) on the ecosystem approach to managing flyingfish fisheries at the beginning and end of the project period to quantify the effectiveness of stakeholder awareness and EAF management engagement activities implemented under the Sub-Project.

Output 3.2 Full range of stakeholders involved in EAF management by project end.

Proposed activities under this output include:

- a. At least three national stakeholder consultations in at least four countries participating in the flyingfish fishery, allowing for representative participation by gender and by youth, to discuss ecological, socio-economic and governance issues, to identify feasible options for management within the context of the EAF, including development, implementation, monitoring and evaluation of national management plans, validation of outputs from research activities and proposals for updates of the Sub-regional FMP for onward transmission through the policy cycle, overall flyingfish governance performance, including communication and reporting methods and performance, and recommendations on all of the above for onward transmission through the policy cycle;
- b. Conduct of KAP surveys at the beginning and end of the project period to ascertain the whether the level of stakeholder engagement in the policy cycle has improved.

OUTCOME 4: Management/stress reduction measures defined, and implementation initiated

The Sub-Regional FMP for Flyingfish in the Eastern Caribbean proposes a number of management measures and identifies specific actions for improvement in management (pp 34 – 35 In CRFM, 2014). The Sub-Project will assist in implementing some of the proposed measures and actions, but due to the complex and time-consuming processes for national endorsement of the respective initiatives it is not likely that the desired end result will be achieved in all cases within the 5-year time frame of the Project, though the outlook is better during the 10-year period for SAP implementation. Assistance to selected CRFM Member States in customizing the Sub-regional FMP to suit the national situation, i.e. to identify and prioritise national level activities and available resources for implementation, is addressed under Output 4.1. The NICs and FACS are expected to play a key role in this initiative. Output 4.2 addresses key issues of data deficiencies identified in the Sub-regional FMP. Specifically, through a review of fishing operations, including distribution and marketing systems and identification of other agencies (e.g., governmental, non-governmental, private sector) which record data and information of relevance to fisheries management, feasible options, including strengthened in-country institutional linkages (integrated data collection systems), for expanding and improving the available data and information-base to support the EAF assessment and management will be recommended and the required resources for implementation identified. Recognizing however, the financial and human resource constraints, and the lack of a mechanism for sustainable long-term financing, this activity will also provide recommendations for the optimal use of the existing resources in improving data requirements in the EAF context. Output 4.3 seeks to address the critical need for implementation of a basic fisheries management tool – a vessel licensing system, stipulated as one of the management measures under the Sub-regional FMP. Output 4.3 is directly linked to Output 1.3: “Key regional policies, declarations and/or regulations, and associated national-level legislation and/or plans, are appropriate to enable effective EBM/EAF in the CLME+”, in the main Project Document. While current fisheries acts may make provisions for vessel licensing systems, the enabling legislation may not exist and arrangements to support national vessel licensing systems varies among countries. Assistance will be provided to review existing national fisheries legislation and to provide recommendations and options for the way forward, including model legislation, for consideration of the respective countries. In addition, vessel censuses will be conducted to estimate existing fishing effort and fishing capacity, which are key fisheries statistics required to inform management decision-making, particularly fishing effort controls.

Output 4.1 The sub-regional FMP for flyingfish implemented in at least the major harvesting countries by year 2

Proposed activities under this output include:

- a. National stakeholder consultations (funded under Output 3.2) and meetings of the NICs and FACS for FMP monitoring and evaluation (funded under Output 1.3) [note to CRFM Colleagues: “Technical support for National-level planning, promotion and implementation of the sub-regional FMP” would be provided via our personnel contribution to the consultations]
- b. Refinement of national-level management recommendations based on FAC and NIC FMP monitoring and evaluation reports, and taking into account the need to incorporate present and emerging management needs, including the need to establish a limited vessel entry system, to reduce and eliminate IUU fishing practices, to reduce possible impacts of present fishing strategies on long-term flyingfish recruitment, and to improve resilience to climate change and climate variability impacts.

Output 4.2 Recommendations for further development of national data collection systems in support of the EAF assessment and management of the eastern Caribbean Flyingfish fishery in at least 3 major harvesting countries participating in the fishery by year 3

Proposed activities under this output include:



- a. Review of fisheries operations and related data collection systems as well as general national data collection systems in 3 countries
- b. Provide recommendations for improvements in national data collection systems to be incorporated into the FMP update upon completion of the first policy cycle.

Output 4.3 Model national vessel licensing regulations formulated for adoption in accordance with legislation, and census of flyingfish vessels by year 3, used to establish list of authorized fishing vessels.

Proposed activities under this output include:

- a. Assessment of samples of national fisheries legislation in respect of licensing arrangements – if provisions are already made for licensing of fishing vessels then (b)
- b. Develop model regulations, consistent with management recommendations in the Sub-regional FMP
- c. Conduct national censuses of flyingfish fishing vessels, which would allow measurement of fishing capacity required for imposing fishing effort regulations.

OUTCOME 5: Long-term enhancement of livelihoods/human well-being facilitated

The Sub-Project serves to advance the respective process towards long-termed enhancement of livelihoods and human well-being. Firstly, Output 5.1 ensures that based on the socio-economic findings under Output 2.2 appropriate management advice is formulated for consideration of decision-makers and incorporated in the revised Sub-regional FMP for flyingfish in the eastern Caribbean. Secondly, Output 5.2 provides livelihood enhancement options informed by a value-chain analysis that investigates several critical issues pertaining to marketing and trade including those highlighted in the Sub-regional FMP (e.g., market gluts and inadequate distribution leads, inadequate post-harvest technology, discontinuous market supplies due to species seasonality, difficulties in producing cost-competitive export products). Further, based on the results and recommendations of the value chain analysis as well as the valuation studies under Output 3.2, activity proposals designed to enhance livelihoods and human well-being will be addressed under Output 5.3. Capacity-building activities in specific communities in key areas/topics identified will be incorporated into the activity proposals and coincide with their implementation.

Output 5.1 Updated Management recommendations to enhance livelihoods and human well-being (with due attention to gender equality and youth development issues), in at least three countries participating in the fishery by year 3.

The proposed activities under this output include:

- a. Updated EAF management recommendations that incorporates socio-economic information from Outputs 2.2 and 5.2 as well as recommendations for enhancement of the livelihoods, improvement of the conditions of work of fishers and processors and value-chain problem solving;

Output 5.2 Value-chain problem solving - feasible options for added value, improved SPS and distribution and marketing identified in at least three countries participating in the fishery by year 3.

The proposed activities under this output include:

- a. Awareness-building of stakeholders on purpose of study and associated benefits
- b. Value chain analysis – identification of feasible options for value addition, improved SPS and distribution and marketing, and incorporation of information into updated sub-regional FMP and management recommendations.

Output 5.3 Capacity-building to facilitate enhanced livelihoods and human well-being in at least three countries participating in the fishery by project end.

The proposed activities under this output include:

- a. Development and implementation of 1-2 activity proposals to facilitate livelihood enhancement, focused either on increasing market or livelihood opportunities from current levels, and taking into account gender equality and youth development considerations.
- b. Support for implementation of 1-2 activity proposals, which will include hands-on training of the stakeholders involved in proposal development and implementation, as well as core business and management skills.

OUTCOME 6: Adaptive Management facilitated

Periodic assessments of overall performance and progress towards the ultimate objective of enhanced human well-being from sustainable use of the flyingfish resources will be conducted through the use of the Governance Effectiveness Assessment (GEAF) Framework, including an assessment for each component of the policy cycle. The use of this framework will facilitate the adoption of an adaptive management process, and will ensure that processes remain aligned with, and directed to this overarching objective (Output 6.1.). Through annual reports of the Caribbean Fisheries Forum and the CRFM Pelagic Fisheries Working Group (PWG) and CRFM/WECAFC Working Group on Flyingfish in the Eastern Caribbean, monitoring of the performance of management measures proposed in the Sub-regional FMP, at both the national and regional levels, will also be addressed here. As well, a comprehensive evaluation of FMP performance will be undertaken and based on the findings, along with other outputs of the Sub-Project, management strategies will be adapted to better achieve the stated goals (sustained fishery resource (biological); optimal use of the fishery for long-term benefit (socio-economic); sustained ecosystem health (ecological)). In addition, the Sub-regional FMP will be updated to capture the new information generated, new and adapted management strategies as well as proposals for medium/long-term sustainable financing mechanism(s)/plans. This updated Sub-regional FMP, having undergone the review process at various governance levels, will be presented for endorsement by the CRFM Ministerial Sub-Committee on Flyingfish and approved by the CRFM Ministerial Council.

Lessons learnt and best practices will be shared with coordinators of the other two EAF Sub-Projects (Spiny Lobster, Shrimp and Groundfish) and at various fora (national and regional) to facilitate replication and up-scaling of the EAF approach in other CLME+ fisheries, and –through Component 5 of the main project - other LMEs. This information-sharing will be addressed under Output 6.2 with specific products customized to the various target audiences.

The post-project financing needs are addressed under Output 6.3, and will include commitment of additional resources to ensure continuation of the efforts towards full-scale implementation of EAF for the flyingfish fishery beyond the CLME+ Sub-Project lifespan. As explained previously, this will include the development of management finance-sharing arrangements.

Output 6.1: Management performance reviewed and management strategies adapted on completion of policy cycle.

The proposed activities under this output include:

- a. Review and report by the CRFM on implementation of FMP at the national level based on management measures, operational objectives, indicators and reference points outlined in the 2014 Sub-Regional FMP as well as discussion on medium/long-term sustainable financing mechanisms
- b. Review and report by the CRFM PWG and the CRFM-WECAFC Working Group on Flyingfish in the Eastern Caribbean reports on implementation of FMP at regional level
- c. Comprehensive assessment/evaluation of management performance based on (a) and (b) above
- d. Meetings of the CRFM PWG and the CRFM-WECAFC Working Group on Flyingfish to review and update FMP - based on scientific studies, NIC and FAC inputs (as formulated from broader stakeholder inputs), monitoring and evaluation of FMP performance as well as inclusion of medium/long-term sustainable financing mechanism(s)/plans
- e. Updated FMP and management measures considered and approved by CRFM Ministerial Sub-Committee and by the CRFM Ministerial Council to complete the policy cycle

Output 6.2: Sharing of lessons learnt and best practices from full policy cycle implementation by project end.

The proposed activities under this output include:

- a. Critical assessment of performance of all components of the policy cycle with recommendations for improvements at each stage of the policy cycle.
- b. Validation of assessment
- c. Production of information briefs on lessons learnt and best practices targeted at a range of stakeholders (national and regional partners).

Output 6.3: Additional co-financing leveraged for sub-project implementation and formally adopted sub-project after-life plan.

The proposed activities under this output include:

- a. Agreement on additional resources to be mobilised by the major parties, CRFM, WECAFC, and Member States for continued EAF approach to flyingfish management.
- b. Preparation and adoption at CRFM and WECAFC levels of post-project plan, with budget sharing arrangements incorporated and resource mobilisation strategy defined.

### **Project indicators and impact monitoring**

For the CLME+ Sub-Projects, the conceptual approach to project progress & impact monitoring was to be similar to the one adopted for the main UNDP/GEF CLME+ Project. This approach is reflected in the structure and content of the Results Framework contained under Section 4 of this document. It is based on the GEF indicator categories for project monitoring & evaluation (M&E) (Figure 3), and enriched with additional categories stemming from the work developed under the TWAP Project (GEF ID 4489, see also Figure 4). Under the project's M&E framework, (draft) SMART targets have been associated with the different project outputs.

With its strong focus on being a catalyst for enhanced, transboundary governance processes, many of the Sub-Project's Indicators would fall under the category of "Process Indicators".

It would therefore be of critical importance to continuously link processes and obtained progress/results back with, and periodically re-evaluate them from the perspective of the over-arching goal to which the project is expected to contribute, i.e. maximized, sustainable contributions from the flyingfish resource to human well-being and socio-economic development. In this context, periodic fine-tuning and/or revision of planned processes may be needed, as preliminary results are evaluated and additional knowledge is acquired. Such will demand an adaptive (project) management approach.

In line with the above, preliminary "Stress Reduction" and, as feasible, "Ecosystem/Stock Status" and "Socio-economic Status" Indicators and associated Targets are to be defined, following –to the extent that such is possible during the Sub-Project inception phase - a consultative/participatory approach. Where such was not possible yet during the project preparation phase, baseline values for indicators will be identified using the best information available to date. These values would need to be updated as better information becomes available as a consequence of the implementation of activities under the Sub-Project.

For certain of the (draft) targets currently set under the project results framework, a fine-tuning and/or formal revision and adoption of their values by a broad group of (relevant) stakeholders will not be feasible until the transboundary governance arrangements and processes that will facilitate such broader stakeholder participation have been made operational. The operationalization of these processes is expected to be achieved through the activities associated with esp. Outcome 1 and 2 of the Sub-Project.

Certain of these project indicators and their associated baseline values and targets can then also become part of the overarching, longer-term Monitoring & Evaluation Framework for SAP implementation, and contribute to the "State of the Marine Ecosystems and associated living resources" reporting that will be supported through CLME+ Project Component 5.

### **Risks and assumptions**

As a consequence of the multi-country and multi-stakeholders nature of the project, the current absence of an RFB - with an associated decision-making body - that encompasses all countries and territories fishing for the eastern Caribbean flyingfish, together with the differences in customs/culture, language, legal and management frameworks, there are a series of risks the project will have to deal with, and a number of assumptions it will have to work under. Combined, the dynamics of risks, and the periodic review (and revision, where applicable) of assumptions, would justify the adoption by the Sub-Project, of an adaptive approach to project management and implementation.

Risks and assumptions, identified or made during the project preparation phase, have been given due consideration during project design.

- Political and governance considerations

There is a risk that political turn-over and the inertia typical of an evolution away from Business-as-Usual schemes, together with the more-or-less fixed periodicity and timeframes proper of regional, sub-regional and national-level political and governance processes, may impact on the speed with which targets set under this Sub-Project can be met.

In order to mitigate to the best possible extent this risk, due consideration has been given during the project design to strong ownership over the project by the relevant RFBs; further, project milestones and targets have

been defined to the best possible extent in alignment with the established frequencies and expected timeline of relevant native planning and decision-making events in the region

However, it is to be noted that delays in the operationalization of the CLME+ Project, beyond the currently anticipated initiation of the project during the first months of 2015, will impact on the feasibility of some of the currently defined targets, included under the Project Results Framework in this document. In such case, a critical revision of the results framework (incl. a re-evaluation and alignment of targets with the calendar of native governance processes) will need to be made during the project inception phase.

Risks further include lack of (interest in) cooperation among range states for sustainable management of Eastern Caribbean flyingfish and related fishing activities and ineffective management of an important prey species within the ecosystem. Mitigation measures include increased awareness of decision makers and stakeholders as well as legally binding agreements. Another risk is that France may not become a formal political partner but institutional arrangement under WECAFC exists, and technical engagement may minimize this risk by way of provision of data and information to inform scientific analyses and update of FMP. Additionally, work under the main Project will be conducted on the establishment of a region-wide, permanent fisheries coordination mechanism, which would then also encompass the different dependent territories.

Other risks are the limited or uncertain funding levels of governments and (sub-)regional organizations; shifts in political priorities (e.g. as a consequence of natural disasters), and difficulties in reaching consensus among the different countries and stakeholders; the cost of improving critical data & information sets; aversion to change on the side of stakeholders (e.g. fishers, intermediaries, consumers); etc.

Insufficient political will or low priority is likely to cause delays in amendments to legislation, establishment of MCS, improved data collection strategies at national level resulting in ineffective management of flyingfish resource and inability to complete the policy cycle for the full package of management measures under the (prospective) management plans, within the timeframe available to the Sub-Project. Mitigation measures include interventions at high decision-making levels to gain necessary support, and, where feasible and meaningful, the early implementation of selected, high priority management measures at the pilot/demo scale: early results from the demonstration of measures will be critical to maintain political and stakeholder buy-in and secure further donor support.

In consideration of the above, there will be a need to identify and/or forge strong political and technical leadership in the region, as well as good lobbying capacity. Involvement and participation of stakeholders should be improved. Limited (political will for) inter-sectorial communication and stakeholder participation may delay proper decision making, or affect the legitimacy and/or buy-in for decision and associated actions. Recurrent administrative and technical turn-over can lead to substantial delays in implementation.

- Legal considerations

Regional and national legal frameworks are often still not sufficiently harmonized. Many of the regional regulations are not binding; in practical terms, the concept of “voluntary implementation” makes such regulations subject to an increased risk of non-compliance. Measurable impacts from the expected Outcomes, especially at the level of stress reduction or environmental or socio-economic conditions, may take (much) more than 5 years to manifest themselves, at levels other than the local scale. Weak (capacity to enforce or ensure) compliance with regulations hinders the possibility of reaching goals and targets “in the field”.

- Considerations of human, technical and financial capacity

Technical data and info on the fisheries sector is not always compiled, analyzed and made available to the users and for decision making. Limitations on national government funding have an influence on the availability of (qualified/sufficiently trained or experienced) human and technical resources. Often, limitations persist in the awareness/understanding of the importance of developing a knowledge base for decision making. There could be difficulties in reaching consensus on technical matters for decision making.

- Insufficient or inadequate coordination among different projects and initiatives

Full achievement of projected targets will also depend on effective collaboration among the different relevant programmes, projects and initiatives that will take place in the region during the Sub-Project lifespan, and on the effective leveraging of additional co-financing support. The broad political endorsement of the CLME+ SAP, with its sub-strategy on flyingfish fisheries, and the central role of the CRFM in the execution of the Sub-Project, will facilitate collaborative efforts and synergies among the different initiatives relevant to the flyingfish fisheries. Efforts under the main Project to further expand, consolidate and strengthen the CLME+ Partnership will further contribute to this. Work on the Outputs under Component 6 (Outcome 6) will deal with the issue of additional financial support, and the M&E mechanism to be established under this component will help track progress, to ensure that targets can be achieved within the available time frame.



A critically important risk is that efforts towards EAF supported through the GEF contribution would come to a stall at project end. For this reason, the Sub-Project will work on a strategy, to be delivered by sub-project year 3, to ensure the continuity of efforts beyond the sub-project lifespan.

### **Cost effectiveness, sustainability and replication potential**

Sub-Project activities were to be embedded within the context of a sub-regional priority, set under the FMP and meetings of the CRFM Fisheries Forum and Ministerial Council. This means that the project would be able to build upon past and ongoing efforts at sub-regional and national levels, which in turn would result in the high cost effectiveness of the GEF investment under this Sub-Project. Strategic coordination of efforts with other national, sub-regional and even global initiatives was expected to further enhance cost effectiveness. Cost effectiveness would further also be increased through the outputs under Outcome 6 of the sub-project, in particular those relating to replication, up-scaling and long-term sustainability of activities and results:

The replication potential of the Sub-Project is substantial because:

The sub-project had been designed in such a way as to enable cost-effective replication and up-scaling of best practices and lessons learnt from the implementation of activities in a limited sub-set of countries, across the wider range of CLME+ states.

At the level of the efforts toward the adoption of EAF, replication would be facilitated across the Sub-Projects under CLME+ Project Document Component 3, as all sub-projects have been shaped around a common conceptual framework: the Governance Effectiveness Assessment Framework (GEAF). The use of this framework, developed under the TWAP Project (GEF ID 4489) and adopted by the CLME+ Project will not only facilitate replication within the context of the suite of CLME+ Sub-Projects, but also among other efforts to adopt the EAF approach, both within the CLME+ region and beyond.

**Sustainability** of progress and results obtained through the CLME+ Sub-Project's contributions was to be ensured as:

- (a) the sub-project's design foresaw strong ownership over the project activities by those organizations and institutions at the sub-regional and national level that have a formal long-term mandate for the management of the four-wing flyingfish resource
- (b) the timeline of sub-project activities and milestones was to be aligned as much as possible with the timeline of the relevant existing governance processes in the CLME+ region
- (c) the development and region-wide adoption of a monitoring & evaluation (M&E) framework to track progress towards EAF for the four-wing flyingfish fisheries in the CLME+, including the definition of medium- to long-term targets in terms of desired status of flyingfish stocks, and associated desired socio-economic benefits, would trace a roadmap for action which would extend beyond the sub-project life span itself
- (d) the development of a project after-line plan, to be delivered by the end of sub-project year 3, was embedded as a specific output (O6.3.) in the sub-project's logical framework under Outcome 6

### **Beneficiaries and stakeholder involvement plan**

In the medium and long term, the most important beneficiaries of the four-wing flyingfish Sub-Project activities were expected to be the peoples (both women and men) of the southern island chain that make a living, or benefit in any other way, out of the sustained existence of the four-wing flyingfish resource. In this context, the stakeholder groups on which the Sub-Project activities would mostly focus were to be: fisherfolk, and stakeholders along the value chain. "*End consumers*" of the four-wing flyingfish resource will of course also be beneficiaries of the project outcomes.

In the shorter term, the Sub-Project activities were expected to strengthen those organizations and institutions that have been given a mandate linkable to, or of relevance for the over-arching objective of the CLME+ fourwing flyingfish Sub-Project.

These include (sub-)regional fisheries bodies, and fisheries ministries and technical departments at the country level, plus their peers involved in the management of the marine environment and/or other fisheries. Within the context of integrative, interactive governance, this "*public sector*" stakeholder group would be expanded to also

include fisherfolk, relevant civil society and private sector representatives with key roles relevant to the four-wing flyingfish policy and management cycles.

Achieving sustainable flyingfish fisheries, as a means to sustain livelihoods and promote socio-economic development in the CLME+, can also be of strategic importance in the context of the other objectives of the CLME+ Project, and the over-arching objectives of the CLME+ SAP.

**Beneficiary countries:** Countries involved: CRFM Member States (in particular Barbados, Grenada, Trinidad and Tobago, Saint Lucia, and Dominica) and French Islands (esp. Martinique)

**Other Countries Benefitting:** WECAFC countries with pelagic fisheries (due to ecological linkage, flyingfish being an important prey species); all CLME+ countries adopting or aiming to adopt EAF (through the exchange of lessons learnt and best practices, obtained from early flyingfish EAF approach results).

Involvement in project implementation of key stakeholders linkable to the four-wing flyingfish policy and management cycles were to be secured through the project management & execution arrangements -specifically designed for this purpose and through the provisions made for this purpose under the Sub-Project logframe and budget. Special attention will be given under the stakeholder involvement plan to gender equality and the empowerment of women.

Stakeholder involvement (e.g. figure 2) was expected to take place through the implementation of the project activities. Periodic reviews, and, whenever applicable, revisions of the stakeholder involvement plan would take place during project execution under the concept of adaptive project management.



*Figure 2 Stakeholder consultations in revising the ECFE FMP*



## CHAPTER 2 – Project implementation status

### Overview

Project title:

CLME+ Sub-project # 3: EAF for the Eastern Caribbean Flyingfish

Responsible divisions/units in UNEP:

UNOPS-CLME+ PCU

Project starting date: 18 April 2016

Project completion date: 31 March 2020

Total budget (us\$): \$835,000 (GEF)

Partners and leveraged resources:

Partners: CRFM Secretariat; Member States' fFDs; l'institut Français de Recherche pour l'Exploitation de La Mer (Ifremer); OECS Commission; Mona Office for Research and Innovation (MORI) of the University of the West Indies

Estimated in-kind contributions: US\$ 18,231,674

### Collaboration with partners.

CRFM secretariat implements the subproject in collaboration with the fisheries divisions/departments of CRFM member states; specifically, Commonwealth of Dominica, Saint Lucia, St. Vincent and the Grenadines, Barbados, Grenada and Trinidad and Tobago

Ifremer serves as the technical liaison for the french departement of martinique and has represented that flyingfish-landing state's interests in the implementation of the sub-project .

The OECS commission implements the gef-funded caribbean regional oceanscape project, which aims to “develop and implement integrated ocean governance policies to leverage sustainable public and private investment in the waters of oecs members states and other participating caribbean countries”. The commission also coordinates the implementation of the eastern caribbean regional ocean policy, and as such has a mandate to collaborate on issues related to marine/maritime issues within the waters of oecs member states.

Mona Office for Research and Innovation (MORI) of the University of the West Indies co-implements the marine sub-component of the caribbean regional track of the Pilot programme for Climate resilience (Caribbean PPCR) with the CRFM secretariat and in that capacity has collaborated with the integration of the subproject-funded combined data and information repository and bibliographic database for accessing via a single portal on the crfm website portal developed

### Additional resources leveraged

CAD 495,413 follow-up funds were leveraged for a Mainstreaming gender in fisheries initiative from Global Affairs Canada

## Project status

### Information on the delivery of the project

Activities/Outputs (as listed in the project document)	Status (Achieved/ongoing)	Results/Outcomes (measured against the performance indicators stated in the project document)
<p><b>Output 1.1.</b> Strengthened CRFM Ministerial Sub-Committee, through completion of at least 1 policy cycle, and adoption of updated recommendations for policy &amp; management decisions in the context of the EAF for eastern Caribbean Flyingfish</p>	<p>Achieved: CRFM will continue working on this output after sub project completion, for sustainability</p>	<p>Eastern Caribbean Flyingfish Fisheries Management Plan 2020-2025 developed and discussed by the 3rd Meeting of the CRFM Ministerial Sub-Committee on Flyingfish Fishery in the Eastern Caribbean (MSCFF); and, subsequently approved by the CRFM Ministerial Council.</p> <p>Also, activities/outputs below have contributed to further strengthening of the MSCFF</p>
<p><b>Output 1.2.</b> Active cooperation between CRFM and France at the technical level regarding flyingfish conservation and management, through active participation in negotiation and flyingfish management meetings</p>	<p>Ongoing work will continue post sub project to strengthen collaboration</p>	<p>Several steps to enhance the partnership between CRFM and France with regards to Eastern Caribbean flyingfish fisheries have taken place. A draft (technical/management) Cooperation Agreement with France (Martinique) has been developed (Annex 1) and is to be included as Annex E to the Eastern Caribbean Flyingfish Fishery Management Plan 2020-2025. The CRFM Ministerial Council has approved the process going forward toward its final negotiation, approval and signature, noting that this process may, perforce, have to continue post-subproject.</p>
<p><b>Output 1.3.</b> Engagement of National Inter-sectoral Committees (NICs) and Fisheries Advisory Committees (FACs), through meaningful participation of fishers, civil society and private sector in the management process</p>	<p>NICs or FACs are either non-existent, defunct or non-functional (Most Fisheries Acts make reference to FACs but many of them have not been established), however participation of fishers, civil society and private sector in the management process has been facilitated using existing structures</p>	<p>The OECS Commission's Ocean Governance Unit was a "target" of collaboration, given that Organisation's development of the National (and Regional) "Ocean Governance Team" Mechanism. The subproject hosted meetings where stakeholders provided input and feedback on the partnership development process and other subproject outputs; including a special meeting of the WECAFC Working Group on Flyingfish (in October 2018) and a regional consultation of flyingfish (in May 2019), as well as supporting the 3rd Meeting of the MSCFF. The reports of these meetings are to be found in the consultants' final technical consultancy reports; and the ones more specifically facilitated by the CRFM, as Annex 2 (a to d)</p>

Activities/Outputs (as listed in the project document)	Status (Achieved/ongoing)	Results/Outcomes (measured against the performance indicators stated in the project document)
<b>Output 1.4.</b> Sub-regional data policy for EAF management (decision-support), incorporating data, information and indicators for monitoring performance of the Sub-Regional FMP for flyingfish in the Eastern Caribbean, and by this means for incorporation into updated FMP by end of 1 <sup>st</sup> policy cycle	Achieved	Sub-regional data policy approved by CRFM Ministerial Council and accepted it as a “base” data policy that could be used to inform development of other similar policies. The data policy, is to be included (as annex F) in the Eastern Caribbean Flyingfish Fisheries Management Plan 2020-2025 (Annex 3).
<b>Output 2.1.</b> Improved stakeholder access to data and information of relevance to application of the EAF assessment and management of eastern Caribbean flyingfish and improved availability of data and information to the global community by year 3	Achieved	A link to the combined data and information repository for EAF management of Eastern Caribbean flyingfish (which will ultimately include identification and electronic consolidation of all published data and information) and online, keyword searchable, bibliographic database (with facility for download of published documents) is available on the CRFM website. ( <a href="http://crfm.int">http://crfm.int</a> click on: <CRFM Portal>).
<b>Output 2.2</b> Strengthened EAF information and knowledge base by year 3.	Achieved	The plethora of documents/outputs of the subproject have contributed to this output. See <i>Section 3. List of attached documents</i> below.
<b>Output 3.1</b> Education and public awareness-building improved in at least 4 of the countries participating in the fishery by project end.	Achieved	The plethora of documents/outputs of the subproject have contributed to this output. See <i>Section 3. List of attached documents</i> below.
<b>Output 3.2</b> Full range of stakeholders involved in EAF management by project end.	Achieved	Communication Strategy and Action Plan (Annex 4) developed to facilitate stakeholder participation in subproject activities. Stakeholder identification and analysis of key regional and selected national stakeholders has been updated. Full range of stakeholders involved in development of EAF management strategies that were incorporated into ECFF-FMP 2020-2025.
<b>Output 4.1</b> The sub-regional FMP for flyingfish implemented in at least the major harvesting countries by year 2	Achieved: CRFM will continue working on this output after sub project completion, for sustainability	Guide for review of monitoring and evaluation of the 2014 Eastern Caribbean Flyingfish Fishery Management Plan developed. ECFF-FMP 2020-2025 approved by CRFM Ministerial Council

Activities/Outputs (as listed in the project document)	Status (Achieved/ongoing)	Results/Outcomes (measured against the performance indicators stated in the project document)
<p><b>Output 4.2</b> Recommendations for further development of national data collection systems in support of the EAF assessment and management of the eastern Caribbean Flyingfish fishery in at least 3 major harvesting countries participating in the fishery by year 3</p>	Achieved	Recommendations for further development of national data collection systems in support of the EAF assessment and management of the eastern Caribbean Flyingfish fishery incorporated into ECFF-FMP 2020-2025 and impact assessment tool developed (see Annex 5)
<p><b>Output 4.3</b> Model national vessel licensing regulations formulated for adoption in accordance with legislation, and census of flyingfish vessels by year 3, used to establish list of authorized fishing vessels.</p>	Partially Acheived	<p>Model national vessel licensing regulations formulated in the form of a model/harmonised flyingfish amendment to fisheries acts (Annex 6)</p> <p>Census not done but list of currently authorised flyingfish vessels done for 3 Member States (Annex 7)</p>
<p><b>Output 5.1</b> Updated Management recommendations to enhance livelihoods and human well-being (with due attention to gender equality and youth development issues), in at least three countries participating in the fishery by year 3</p>	Achieved	Management recommendations to enhance livelihoods and human well-being (with due attention to gender equality and youth development issues) incorporated into ECFF-FMP 2020-2025
<p><b>Output 5.2</b> Value-chain problem solving - feasible options for added value, improved SPS and distribution and marketing identified in at least three countries participating in the fishery by year 3.</p>	Achieved	Value-chain problem solving - feasible options for added value, improved SPS and distribution and marketing identified for three countries participating in the fishery (see Annex 8)
<p><b>Output 5.3</b> Capacity-building to facilitate enhanced livelihoods and human well-being in at least three countries participating in the fishery by project end</p>	Not fully achieved	Training material to support capacity building developed, as well as identification of a suite of capacity building opportunities (Annex 9 a – c)
<p><b>Output 6.1:</b> Management performance reviewed and management strategies adapted on completion of policy cycle.</p>	Achieved	Management performance reviewed and management strategies incorporated into ECFF-FMP 2020-2025

Activities/Outputs (as listed in the project document)	Status (Achieved/ongoing)	Results/Outcomes (measured against the performance indicators stated in the project document)
<b>Output 6.2:</b> Sharing of lessons learnt and best practices from full policy cycle implementation by project end	Achieved: and to be continued post-subproject	Reports of sub-project consultancies include lessons learnt and best practices. (see annex 10). A number of experience notes were prepared which can be disseminated to the global LME community of practice
<b>Output 6.3:</b> Additional co-financing leveraged for sub-project implementation and formally adopted sub-project after-life plan	Achieved and to be continued post subproject	Sub-project after-life plan approved by CRFM Ministerial Council (Appendix 11). Funding leveraged for gender mainstreaming follow-up to flyingfish subproject

### How the project has nurtured sustainability.

A number of aspects of the subproject are replicable in other regions and/or for other species: from inception, as conceived, the subproject was seen as being exemplar that could be applied to other species in the region and or other regions where fisheries management issues are comparable. The approach to interfacing with multiple stakeholders through different level of the decision hierarchy has proven to give rise to products/outputs that were easily acceptable to all concerned. Additionally, the nature of the products were such that the very same deliverable could be used as a basis for similar outcomes or other species, for example:

- the data policy developed by the subproject for flyingfish was of such a quality that the CRFM Ministerial Council decreed that it should be used as a base for similar policies for other species.
- the cooperation agreement devised to facilitate technical cooperation on flyingfish management was such that it was “upgraded” as an agreement on management of living marine resources in general
- the data repository/bibliographic database was made an integral (some may say “central”) part of the CRFM data portal, providing a medium for data storage and accessibility for a multiplicity of species and issues
- the approaches proposed to deal with traditional knowledge are applicable, not only to flyingfish, but to the fisheries sector as a whole
- the training material developed to support capacity building developed, as well as the suite of capacity building opportunities are not specific to flyingfish fisheries alone, and can be utilized to build capacity within the sector as a whole
- the approaches to address value chain analyses are applicable whether speaking about flyingfish or otherwise
- the model national vessel licensing regulations, though formulated in the form of a model/harmonised flyingfish amendment to fisheries acts relate/can be customised to facilitate improved management of any species
- the recommendations for development of national data collection systems in support of the EAF assessment and management are valid not only for the eastern Caribbean Flyingfish

### Lessons learned and best practices

#### Enhancing Governance Arrangements

Staff, financial, and infrastructure resources for flyingfish management are lacking across the region. Without financial and technical support for fisheries management activities, Eastern Caribbean countries will be challenged to implement the revised ECFF-FMP.

Additional financial resources will be needed to implement many aspects of the revised ECFF-FMP, Data Policy, and Cooperation Agreement, and consultancy participants should begin researching these as soon as possible.

Local stakeholder involvement and expertise is a critical component of cooperation building efforts.

Technical body capacity must be strengthened if the Cooperation Agreement and the Data Policy are to improve shared living marine resource management in the Eastern Caribbean.

Political-level agreement for the Cooperation Agreement between the CRFM and Martinique within the timeframe of the CLME+ Project was infeasible, and the CRFM will pursue a more practical technical level agreement.

### Enhancing Data and Information

There is clearly a need to increase efforts to include national management objectives and data collection system capabilities as a foundation for design of national data systems which will roll up to regional systems (bottom up). The collection of data may require legislative/national fishery regulatory changes to ensure full and appropriate fishery data is being collected within Member States.

Recent attention on fiscal condition of Member States and rise in Blue Economy priorities has shifted the focus in many member states financial support for fisheries divisions. In light of this it is likely that species-specific assessment and associated management activities should be considered in the final report. Advice should include reference to multispecies harvesting efforts, significant climate and environmental change, and budgetary constraints on national governments in the region.

### Enhancing Stakeholder Participation

Fisheries-related NICs and FACs were intended to be the key target groups for awareness raising and capacity building activities under the assignment. However, in three of the four selected focus countries, these fisheries-focused (formally set up and titled as such) mechanisms did not exist, while in one it was inactive. As such, the consultants had to construct an “informal stakeholder arrangement” in the selected project countries, by establishing a representative group of stakeholders in each country that could potentially be representative of a NIC or FAC or equivalent. However, due to the informal nature of these arrangements, and despite requests for consistent involvement by agency representatives, it was difficult to maintain attendance by the same participants throughout the project. This would have affected the process of creating awareness and capacity building among the four informal groups, and the delivery of the KAP surveys, using a longitudinal approach.

The informal nature of the arrangements also impacted the intention to have the engaged groups sustained by their national governance institutions beyond the project, even though some participants recognised the need for such multi-stakeholder arrangements.

In future, it would be better if the assignment reflected a more careful prior assessment of the mechanisms in place for the implementation of actions. In the absence of such arrangements, a more rigorous, targeted and costly mobilisation approach would need to be employed to ensure continuity of stakeholder representation. With a better assessment of on-the-ground realities and provision of adequate resources, the assignment could have included actions to address the formalisation of the arrangements/groups established, with more attention paid to sustainability.

### *Best practices*

The following best practices were implemented during the assignment.

- Following the hosting of the first round of consultations, it was noted that a “one-size-fits-all” approach could not be adopted for the remaining consultations, in terms of the topics covered for capacity building and creating awareness. This was particularly evident in the case of Trinidad and Tobago, where it became apparent that there were flaws in the governance arrangement for the management of the flyingfish fishery that appeared to be creating conflict among the stakeholders, and which needed to be managed for any movement forward. The process and objectives for the second and third consultations in Trinidad and Tobago were therefore tailored with these considerations in mind. Similarly, in St. Vincent and the Grenadines, where it was noted that flyingfish is not a targeted species, but rather occurs as incidental catch in other pelagic fisheries, discussions about the fishery focused more on the potential for the sustainable development of a fishery, using EAF.
- The approach to capacity building took into consideration the diversity of stakeholders, who had varying ranges of knowledge about the flyingfish fishery and its management. As such, efforts were made to use interactive exercises during consultations, where all stakeholders (fisheries agencies, fisherfolk, private sector etc.) could share their knowledge on the fishery in a participatory manner, thereby increasing the overall knowledge of the group.

### Implementation of Management/Stress Reduction Measures

Utilizing the Model Fisheries (Amendment) Act and Model Flyingfish Fisheries Regulations developed through the Stress Reduction project, each country can integrate the relevant amendments into national legislation and/or regulations as needed.

Strengthened local stakeholder groups are a critical bridge between fisheries division staff and fishers. Their involvement in fishery management, including data collection, monitoring, and sharing and receiving information



related to decision-making reduces the management burden on national fisheries divisions.

The ability of the CRFM and national focal points to implement harmonized data collection and management protocols is dependent on political support, including from national environment ministries and international bodies.

### Long-term livelihood enhancement

It has been noted in other reports from the CLME+/SP3: Eastern Caribbean Flyingfish Projects that greater emphasis is needed by Member States to collect catch and landings data, however, a similar emphasis is needed to collect information on the social and economic metrics of the flyingfish fishery (such as employment, income, market value, etc.). This information is important for both management purposes and to promote investment opportunities in the continued sustainable development of the flyingfish fishery.

Mobilizing local knowledge through a standardized monitoring program over an increased range of environmental conditions and ecological (including social and economic) components in the marine environment can provide valuable insight for science, policy and decision making that can have a positive long-term impact on the sustainable use and management of the broader ecosystem within the region.

It is important that focus on the business of harvesting flyingfish be maintained and supported by governments. This can involve enhancing the role of fishers and fishers' organizations in non-consumptive aspects of the fishery including data collection, monitoring, and analysis, which can contribute to fishers' livelihoods. Thus, a high priority for regional organizations and Fisheries Division is investing in and supporting the continued development of fishers' organizations through training and investment in new ventures related to data collection, reporting, business skills (numeracy skills, administrative skills, organizational governance etc.). In addition to creating alternative employment and incomes within fishing communities, these skills can contribute to better decision-making at the community level related to economic performance and sustainability thus protecting livelihoods and promoting greater collaboration across the value chain (fishers, regulators, marketers, processors, and exporters).

Promoting collaboration and cooperation between Member States should take into account that flyingfish are currently used for different purposes; but there is potential for diversification so that all Member States benefit from all the potential uses of the catch (i.e. food consumption/security, bait for high valued large pelagics, commercial processing for local, tourist and export marketing). Furthermore, regional cooperation amongst industry players can create new opportunities for business development on matters such as dockside monitoring, electronic at-sea monitoring, and export/tourist marketing. This can lead to diversification of livelihoods within the industry sector and reduce barriers for inter-governmental collaboration in management of the fishery.

### Facilitating Adaptive Management

Not all relevant stakeholder groups, such as fisheries scientists, lawyers, and value chain representatives, were engaged in early discussions leading to the development of the ECFF-FMP. Had all these groups been involved from the beginning, they might be currently more involved in implementation. Sharing synthesized data and information regarding the fishery with fishermen also helps secure their buy-in and trust of data collectors and fishery managers.

In some countries, managers and stakeholders might not appreciate the full socioeconomic and ecological value of flyingfish, especially including indirect benefits through the role of flyingfish as a forage species for other large pelagics. Fishers and other stakeholders are more likely to engage if they see the value of their participation and the value of the fishery. Effective communication about the benefits of a regional flyingfish management regime, and how these benefits outweigh its implementation costs, could help build engagement.

Although there have been many efforts to harmonize aspects of fishery management across countries in the region, many of them have not resulted in strong, lasting frameworks. This could be due to the short-term nature of the grant-funded projects and shortages of local staff and financial capacity.

The ECFF-FMP development and implementation process exposed the low level of flyingfish scientific understanding. A better understanding of the level of flyingfish harvest, changes in the fish stocks, and the ecological importance of flyingfish to other pelagic fish species are necessary for making informed management decisions.

Staff, financial, and infrastructure resources for flyingfish management are lacking across the region. Without financial and technical support for fisheries management activities, Eastern Caribbean countries will be

SUBSIDIARY LEGISLATION

FLYINGFISH FISHERIES REGULATIONS

ARRANGEMENT OF REGULATIONS

REGULATION

1. Citation.
2. Interpretation.
3. Application.
4. Use of vessel to fish.
5. Conditions for transport of fish.
6. Use of vessel to transport fish.
7. Fishing.
8. Application for document.
9. Registration.
10. Grounds for refusing licence.

11. Offence.

12. Prohibition.

13. Dragging a net or seine.

14. Restrictions on operation of certain boats/vessels.

15. Suspension or cancellation of licence.

16. Research and training.

*Figure 3 Flyingfish regulations were incorporated into the model Fisheries amendment Act*

challenged to implement the ECFF-FMP or other FMPs. Tackling all aspects of ECFF-FMP implementation at once is not feasible in the current situation, so prioritization of next steps will be necessary.

The widely varying direct economic importance that the flyingfish fishery holds in individual Eastern Caribbean countries has impeded collaborative regional management efforts.

### List of sub-project outputs

A number of intermediary outputs that contributed to the overall outcome of the sub-project, have been produced. These are not necessarily included here as annexes to this report but are cited here and are available under separate cover (including on the CRFM website): their number, size and nature/form precluded inclusion herein. They have been listed in relation to the sub-project consultancy that gave rise to them and the sub-project output to which they relate are included in parentheses.

#### Enhanced Governance arrangements

- Updated flyingfish management plan and recommendations for the management of eastern Caribbean Flyingfish arising from the new information generated under the Sub-Project (output 2.1c (iv)),
- Appropriate information products (press releases, infographics and/or videos) to facilitate continued access to and processing of technical information on the EAF approach to management (output 1.1, 1.3)
- Management partnership/cooperation agreement between the CRFM and France (output 1.2)
- CRFM sub-regional data policy through a consultative process, taking into account the needs and experiences of implementation of the Sub-regional Flyingfish FMP (output 1.4)
- Impact assessment tool on Enhanced Governance arrangements for CRFM use in follow up work.

#### Data and Information Management

- CRFM data and information repository for EAF management of Eastern Caribbean flyingfish, which would include identification and electronic consolidation of all published data and information (output 2.1a)
- Online, keyword searchable, bibliographic database with facility for download of published documents (output 2.1b)
- Updated, as well as broadened, multi-objective assessment of the eastern Caribbean flyingfish fisheries (output 2.2a)
- Gender-sensitive valuation (social and economic) of the current and potential future contribution of flyingfish and associated pelagic fisheries (output 2.2b)
- System proposal for collection and storage of traditional (unpublished) knowledge about the ecosystem and fishery.
- Evaluation of management performance at the national and regional levels (output 2.2d)
- Identified key data and information requirements, associated sources of data and information and the mechanisms for data and information sharing (output 2.2e)
- Model catch documentation scheme for the flyingfish fishery based on the FAO CDS guidelines, that is using the guideline template as the starting point for developing the model (output 2.1d)
- Customised catch documentation scheme for the flyingfish fishery of Barbados (output 2.1d)
- Proposal to inform development of a decision support system (output 2.2f)
- Impact assessment tool on enhance data and information management

DRAFT CATCH DOCUMENTATION  
SCHEME - BARBADOS

PREPARED FOR: CARIBBEAN REGIONAL FISHERIES MECHANISM



WORLD BANK GROUP



#### Improving Stakeholder participation

- Mini-documentary on the flyingfish fishery (output 3.1a)
- Educational materials on the EAF, Sub-Regional Fisheries Management Plan for Flyingfish in the Eastern Caribbean and the associated roles and responsibilities of the NICs and FACs in planning and decision-making. (output 3.1b)

- Reports on knowledge, attitudes and practices (KAP) on the ecosystem approach to managing flyingfish fisheries at the beginning and end of the project period to quantify the effectiveness of stakeholder awareness and EAF management engagement activities implemented under the Sub-Project; and, to determine if stakeholder engagement in the policy cycle has improved. (output 3.1c)
- Report on national stakeholder (mini-)consultations in four countries participating in the flyingfish fishery (output 3.2d)

#### Management/Stress reduction

- Recommendations for improvements in national data collection systems incorporated into the FMP update (outputs 2.2a, 2.2c(ii), 4.2b)
- Model regulations, consistent with management recommendations in the updated Sub-regional FMP (output 4.3b)
- A sub-regional list of authorised fishing vessels for flyingfish (outputs 2.2c(iv), 4.3c)

#### Livelihoods enhancement

- EAF management recommendations that incorporate socio-economic information obtained from the activities to Enhance data and information management for decision support to the Eastern Caribbean flyingfish fishery (output 5.1a)
- Value chain analysis in three countries participating in the fishery: identifying feasible options for value addition, improved SPS and distribution and marketing (output 5.2b)
- Business activity proposals to facilitate livelihood enhancement, focused livelihood opportunities from current levels (output 5.3b)

#### Adaptive management

- Updated assessment/evaluation of management performance for the flyingfish fishery. (output 6.1c)
- Impact assessment tool on adaptive management
- Information briefs on lessons learnt and best practices targeted at stakeholders at national and regional levels (output 6.2c)
- GEF/CLME+ Sub-project Experience notes for dissemination by the CLME+ PCU to the global LME community of Practice (output 6.2c)
- Sub-Project after-life plan, including option(s) for additional resources to be mobilised for continued EAF approach to flyingfish management. (output 6.3b)
- Presentation materials for Sub-project after-life plan (output 6.3b)



---

## Report sign-off

<b>Name of authorized official of Executing Agency:</b> Milton O Haughton		<b>Name of Project Manager:</b> Peter A. Murray	
<b>Title:</b> Executive Director			
<b>Signature:</b>	<b>Date:</b>	<b>Signature:</b>	<b>Date:</b>

## ACRONYMS

**CARICOM**

Caribbean Community and Common Market

**CBO**

Community-Based Organisation

**CCAD**

Central American Commission for Environment and Development

**CEP**

Caribbean Environment Programme (UNEP)

**CERMES**

Centre for Resource Management and Environmental Studies

**CFMC**

Caribbean Fisheries Management Council

**CITES**

Convention on the International Trade of Endangered Species

**CLME**

Caribbean Large Marine Ecosystem

**CLME+**

Caribbean and North Brazil Shelf Large Marine Ecosystems (CLME Project)

**CRFM**

Caribbean Regional Fisheries Mechanism

**DSS**

Decision Support system

**EAF**

Ecosystem Approach to Fisheries

**EBM**

Ecosystem-based Management

**EcoQO**

Ecosystem Quality Objective (CLME SAP)

**FAO-WECAFC**

Food and Agricultural Organisation of the United Nations - Western Central Atlantic Fisheries Commission

**GDP**

Gross Domestic Product

**GEF**

Global Environment Facility

**GPA**

Global Programme of Action for the Protection of the Marine Environment from Land Based Activities



**ICCAT**

International Commission for the Conservation of the Atlantic Tuna

**ICM**

Integrated Coastal Management

**IGO**

Inter-Governmental Organisation

**ILO**

International Labour Organisation

**IMO**

International Maritime Organisation

**IOC**

Intergovernmental Oceanographic Commission of UNESCO

**IOCARIBE**

IOC UNESCO Sub-commission for the Caribbean Sea and Adjacent Regions

**IUU**

Illegal, Unreported and Unregulated fishing

**IWECO**

Integrating Water, Land and Ecosystem Management in Caribbean Small Island Developing States (GEF)

**LBS**

Protocol concerning Pollution from Land-Based Sources and Activities (Cartagena Convention)

**LME**

Large Marine Ecosystem

**LMR**

Living Marine Resources (CLME Project)

**MARPOL**

International Convention for the Prevention of Pollution from Ships

**MCS**

Monitoring, Control and Surveillance

**NAP**

National Action Plan

**NBSLME**

North Brazil Shelf Large Marine Ecosystem

**NGO**

Non-Governmental Organisation

**NPOA**

National Plans of Action

**OECS**

Organisation of Eastern Caribbean States

**OSP**

Oil Spills Protocol (Cartagena Convention)

**OSPESCA**

Central America Fisheries and Aquaculture Organisation

**REMP**

Regional Environmental/Ecosystem Monitoring Programme (CLME Project)

**RFMO**

Regional Fisheries Management Organisation

**RGF**

Regional Governance Framework (CLME Project)

**SAP**

Strategic Action Programme (CLME Project)

**SBO**

Societal Benefits Objective (CLME SAP)

**SD**

Strategic Direction (CLME SAP)

**SGP**

Small Grants Programme (GEF)

**SIDS**

Small Island Developing States

**SLMR**

shared Living Marine Resources (CLME Project)

**SPAW**

Specially Protected Areas and Wildlife Protocol (Cartagena Convention)

**TDA**

Transboundary Diagnostic Analysis (CLME Project)

**UN**

United Nations

**UNDP**

United Nations Development Programme

**UNEP**

United Nations Environment Programme

**UNESCO**

United Nations Educational, Scientific and Cultural Organisation





























