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# FINAL TECHNICAL REPORT: TECHNICAL SUPPORT TO FACILITATE ADAPTIVE MANAGEMENT FOR EASTERN CARIBBEAN FLYINGFISH FISHERIES



CRFM Secretariat 2019

# CRFM Technical & Advisory Document – Number 2019 / 09

# FINAL TECHNICAL REPORT: Technical Support to Facilitate Adaptive Management for Eastern Caribbean Flyingfish Fisheries

Prepared by Blue Earth Consultants, a Division of ERG (Blue Earth) 283 4<sup>th</sup> St. #202, Oakland, CA 94607, United States, under contract to the Caribbean Regional Fisheries Mechanism (CRFM)

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CRFM Secretariat Belize, 2019

# CRFM TECHNICAL & ADVISORY DOCUMENT 2019 / 09 Final Technical Report: Technical Support to Facilitate Adaptive Management for Eastern Caribbean Flyingfish Fisheries

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This report is an output of the: **Technical Support to Facilitate Adaptive Management for Eastern Caribbean Flyingfish Fisheries (Adaptive Management) Consultancy**, which is being implemented by Blue Earth Consultants, a Division of ERG under contract to the Caribbean Regional Fisheries Mechanism (CRFM)

Disclaimer

This publication has been produced for the CRFM. However, the views expressed herein are those of the authors, and can therefore in no way be taken to reflect the official opinions of the CRFM.

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## **EXECUTIVE SUMMARY**

Blue Earth's Adaptive Management consultancy was one of six consultancies managed by the CRFM that composed the sustainable fisheries sub-strategy relating to flyingfish fisheries as part of the UNDP / GEF funded project, *Catalysing Implementation of the Strategic Action Programme for the Sustainable Management of Shared Living Marine Resources in the Caribbean and North Brazil Shelf Large Marine Ecosystems* (CLME+).

Our final technical report summarizes the approach, methods, activities, and recommendations that we applied to our CRFM consultancy: Technical Support to Facilitate Adaptive Management for Eastern Caribbean Flyingfish Fisheries (Adaptive Management). The Adaptive Management consultancy's primary deliverables were the ECFF-FMP Management Performance Evaluation (Annex E), Fishery Financing Mechanisms: Potential Options for Eastern Caribbean Flyingfish Fishery Management (Annex L), Information Briefs (Annex H), and After-Life Plan (Annex I). The consultancy began in August 2017 and ended in July 2019. The six CLME+ flyingfish sub-project terms of reference (TORs) were highly interrelated such that some deliverables straddled consultancies and contractors. Throughout the Adaptive Management project, we worked to identify linkages and opportunities for streamlining and building off work performed by Nexus Coastal Resource Management Ltd. (Nexus) and the Caribbean Natural Resources Institute (CANARI), the sub-projects' other contractors.

As part of the Adaptive Management consultancy, Blue Earth supported the CLME+ methodology that gave ownership of the work to participating countries by allowing national focal points to take on their own in-country activities. We began our work by researching project related information including the 2014 ECFF-FMP and the CRFM's 2016 implementation evaluation of the FMP. With the assistance of the CRFM, we identified potential informants (national fisheries division staff, CRFM staff, representatives of regional technical level organizations, fishers, fishing cooperative members, and fisherfolk organization representatives) in each of the project's participating countries (Barbados, Dominica, Grenada, Saint Lucia, Saint Vincent and the Grenadines and Trinidad and Tobago) whom we could interview to inform our subregional ECFF-FMP Management Performance Evaluation. As part of this process, Blue Earth, the CRFM, and national focal points supported two country specific meetings (Dominica, St. Lucia) with local stakeholders and one regional meeting with regional technical level organizations. Together, these three meetings-built awareness among the greater flyingfish community for ecosystem-based management strategies for flyingfish in the Eastern Caribbean. During this process, we received additional flyingfish management implementation information from national focal points, local stakeholders, and regional technical level organization representatives that informed our sub-regional ECFF-FMP Management Performance Evaluation. At the conclusion of these meetings, we created an interview tool and conducted 14 interviews with 15 informants. We then synthesized our findings of the online survey, informant interviews, and consultative process to develop our sub-regional ECFF-FMP implementation evaluation. This process also informed our development of the After-Life Plan and Information Briefs.

In addition to the national consultative process and the development of these deliverables, Blue Earth produced a fishery financing mechanism report that addressed our Adaptive Management consultancy. The purpose of this tool is to facilitate the CRFM's and Member States' implementation of the sub-project's After-Life Plan by providing funding options that regional and national fishery managers can further research and develop. We reported our progress on this and all consultancy deliverables to the CRFM in a series of 10 bi-monthly progress reports. As part of the reporting and document submission procedures, we included recommendations that can be used by the CRFM and national focal points to aid their efforts to develop a sub-regional ecosystem-based approach to flyingfish fisheries management. We also provided

the CRFM with lessons learned that emerged from the consultative process that will aid national focal points' and the CRFM's ongoing flyingfish management efforts. These included the following:

- **Develop management financing mechanisms**: Regional partnerships and national fisheries divisions can address their omnipresent concerns over the availability of financial resources by developing financing mechanisms that procure funds to support data collection activities; monitoring, enforcement, and control strategies; equipment purchases; infrastructure improvements; hiring of additional staff; etc.
- Weigh flyingfish benefits in other pelagic fisheries: 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 pelagic fishes. Fishers and other stakeholders are more likely to engage if they see the value of their participation and the value of the fishery.
- Understand how the lack of resources affects flyingfish management implementation efforts: 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 sub-regional ECFF-FMP or other FMPs.
- **Recognize how varying levels of flyingfish socioeconomic importance impact management**: The widely varying direct economic importance that the flyingfish fishery holds in individual Eastern Caribbean countries has impeded collaborative, regional management efforts.

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Figure 1 | Fourwing Flyingfish (Hirundichthys affinis) Pexels



Figure 2 | A fisherman with his flyingfish catch in Tobago The Tobago Project

# ACRONYMS AND ABBREVIATIONS

ADB	Asian Development Bank				
BFAR	Philippines Bureau of Fisheries and Aquatic Resources				
BVI	British Virgin Islands				
CANARI	Caribbean Natural Resources Institute				
CARIFICO	Caribbean Fisheries Co-management project				
CARIFIS	Caribbean Fisheries Information System				
CCCFP	Caribbean Community Common Fisheries Policy				
CDQ	Community Development Quota				
CERMES	Centre for Resource Management and Environmental Studies				
CLME	Caribbean Large Marine Ecosystem				
CLME+	Catalysing Implementation of the Strategic Action Programme for the Sustainable				
	Management of Shared Living Marine Resources in the Caribbean and North Brazil Shelf				
	Large Marine Ecosystems				
CMR	Costal Resource Management office				
CNFO	Caribbean Network of Fisherfolk Organizations				
CQE	Community Quota Entity Program				
CRFM	Caribbean Regional Fisheries Mechanism				
DPSIR	Driver-Pressure-State-Impact-Response Framework				
EAF	Ecosystem Approach to Fisheries				
EBM	Ecosystem-Based Management				
ECFF-FMP	Eastern Caribbean Flyingfish Fisheries Management Plan				
ECMANN	Eastern Caribbean Marine Managed Area Network				
ECROP	Eastern Caribbean Regional Ocean Policy				
EEZ	Exclusive Economic Zones				
EU	European Union				
FAC	Fishery Advisory Committee				
FAO	Food and Agricultural Organization of the United Nations				
FARMC	Fisheries and Aquatic Resources Management Council				
FFA	Pacific Islands Fisheries Forum Agency				
FFC	Forum Fisheries Committee				
FIRMS	Fisheries and Resources Monitoring System				
FIT4CC	Fisheries information technology innovations for resource management and climate				
	change adaptation in the Caribbean				
FMP	Fisheries Management Plan				
GCF	Green Climate Fund				
GDP	Gross Domestic Product				
GEF	Giobal Environment Facility				
	International Convertion for the Concernation of Atlantic Tunos				
ICCAI	Interim Coordination Machanism				
ICM	Franch Research Institute for Exploitation of the Sea				
IMF	International Monetary Fund				
IFO	Individual Fish Quota				
IOC	Intergovernmental Oceanographic Commission				
	Illegal Unreported and Unregulated Fishing				
LGU	Local Government Unit				
LME	Large Marine Ecosystem				
MAO	Municipal Agriculture Office				
MCS	Monitoring, Control, and Surveillance				
	<i>G</i> , <i>-</i> , <i></i>				

MENRO	Municipal Environment and Natural Resources Office
MIMRA	Marshall Islands Marine Resources Authority
MLGU	Municipal Local Government Unit
MPA	Marine Protected Area
NGO	Non-governmental organizations
NIC	National Intersectoral Committee
NMFS	National Marine Fisheries Service
NOAA	United States National Oceanic and Atmospheric Administration
NPF	North Pacific Fishery
NPFMC	North Pacific Fisheries Management Council
NPFT	North Pacific Fisheries Trust
OECS	Organization of Eastern Caribbean States
OSPESCA	Central America Fisheries and Aquaculture Organization
PLGU	Provincial Local Government Unit
PNA	Parties to the Nauru Agreement
PO	Peoples Organizations
PPCM	Permanent Policy Coordination Mechanism
PRI	Program Related Investment
PWG	Pelagic Working Group
RFB	Regional Fisheries Body
SAG	Scientific Advisory Group
SMART	Spatial Monitoring And Reporting Tool
SOMEE	State of Marine Environment and Associated Economies
SVG	St. Vincent and the Grenadines
TAC	Total Allowable Catch
TOR	Term of Reference
UNESCO	United Nations Educational, Scientific and Cultural Organisation
UNDP	United Nations Development Programme
UWI	University of the West Indies
VDS	Vessel Day Scheme
VMS	Vessel Monitoring System
WCPFC	Western and Central Pacific Fisheries Commission
WECAFC	Western Central Atlantic Fishery Commission

## **INTRODUCTION**

This final technical report contains a summary of Blue Earth's and the CRFM's contributions to the UNDP / GEF funded *Catalysing Implementation of the Strategic Action Programme for the Sustainable Management of Shared Living Marine Resources in the Caribbean and North Brazil Shelf Large Marine Ecosystems* (CLME+) project. The CLME+ project joins countries and regional organizations and stakeholders, like the CRFM, to work toward sustainable management of the shared living marine resources of the Caribbean Large Marine Ecosystem and adjacent regions. Under the strategic action plan for the CLME+ project, there is a specific sustainable fisheries sub-strategy relating to flyingfish fisheries, including through inter-sectoral coordination and implementing the ecosystem-based approach to fisheries management. Blue Earth's Adaptive Management consultancy formed one of the six components of the work on this sub-strategy.

The report is for Blue Earth's CRFM consultancy titled: Technical Support to Facilitate Adaptive Management for Eastern Caribbean Flyingfish Fisheries (Adaptive Management). The objective of this work was to enhance long-term livelihoods and human well-being of the local stakeholders of the Eastern Caribbean flyingfish fishery (Barbados, Dominica, Grenada, Saint Lucia, Saint Vincent and the Grenadines, and Trinidad and Tobago) by facilitating an ecosystem approach to the fishery. We intend this report to be available to CRFM Member States; local stakeholders including flyingfish vendors, boat owners, fishers, fisherfolk organizations, and cooperatives; national fisheries division staff (national focal points); and regional technical level organizations.

As part of this final technical report, we present the methods we used to arrive at the consultancy's deliverables. We also present the activities that we designed and performed, with guidance from the CRFM. We divided the report into 13 sections. In section two, we introduce Blue Earth's and the CRFM's approach to the Adaptive Management consultancy. In section three, we provide comments on the consultancy's terms of reference (TOR). In sections four through six, we present the consultancy's methods, our delivery of the TOR, and we describe how both organizations carried out the consultancy's activities. We then describe consultancy mobilization and national missions' aspects in sections seven and eight. In sections nine, 10, and 11, we explain the reporting procedures that we used with the CRFM, the consultancy's technical aspects, and offer some conclusions on the ECFF-FMP Management Performance Evaluation, Fishery Financing Mechanisms: Potential Options for Eastern Caribbean Flyingfish Fishery Management, Information Briefs, and the project's After-Life Plan. In section 12, we offer a list of recommendations that the CRFM and national focal points can use to aid their efforts to develop a sub-regional ecosystem-based approach to flyingfish fisheries management, and we provide lessons learned that emerged from our consultancy work. Lastly, as part of the report's annexes (section 13), we include the consultancy's deliverables. For the Adaptive Management consultancy, these comprise our ECFF-FMP Management Performance Evaluation, Sub-Project After-Life Plan, Information Briefs, and Fishery Financing Mechanisms: Potential Options for Eastern Caribbean Flyingfish Fishery Management, along with various other reports on consultancy activities.

# **APPROACH TO THE ASSIGNMENT**

Blue Earth compiled information provided by local stakeholder groups and national focal points that informed the consultancy's deliverables. We designed this strategy in accordance with the CRFM's approach to the CLME+ projects which gave ownership of the work to the participating countries by allowing fisheries divisions to take on their own in-country activities. To compliment this approach, we reached-out to national focal points, local stakeholders, and regional technical level organizations and performed personal interviews to collect information regarding ECFF-FMP adoption, development, and implementation by Member States. These activities provided us with the additional information we needed

to develop the sub-regional ECFF-FMP implementation evaluation and many other consultancy deliverables.

# COMMENTS ON TERMS OF REFERENCE

The consultancy's terms of reference (TOR) stated that the CRFM was seeking a contractor to perform research and facilitate a process to (1) evaluate flyingfish fishery management performance in the Eastern Caribbean, (2) review and update the existing FMP with input from regional bodies, (3) share lessons learned and best practices nationally, regionally, and across large marine ecosystems, and (4) develop an After-Life Plan for the project that focuses on sustainable financing for managing the fishery. After submitting our first proposal based on our interpretation of the consultancy's scope of work, the CRFM informed us that Nexus and CANARI were contracted to perform various other CLME+ flyingfish sub-project consultancies. Given the need for Blue Earth, Nexus, and CANARI to collaborate on project goals that straddled our respective consultancies, we amended our scope of work and approach to better integrate our activities with those of Nexus and CANARI. We also revised the project budget to reflect these changes.

# ORGANIZATION AND METHODOLOGY

We organized our consultancy methods into three distinct work packages. These were: package one, management performance evaluation and review and update FMP; package two, information briefs and experience notes; and package three, support on After-Life Plan and presentation. We began the work with an inception phase and ended the consultancy with a general reporting phase which also occurred throughout the consultancy process.

Blue Earth began the consultancy by researching project related information including the 2014 ECFF-FMP and the CRFM's 2016 implementation evaluation of the FMP. As part of this process, Blue Earth, the CRFM, and national focal points supported two country specific meetings (Dominica, Saint Lucia) with local stakeholders and one regional meeting with regional technical level organizations. Together, these three meetings-built awareness among the greater flyingfish community for ecosystem-based management strategies for flyingfish in the Eastern Caribbean. During this process, we received additional flyingfish management implementation information from national focal points, local stakeholders, and regional technical level organization representatives that informed our sub-regional ECFF-FMP Management Performance Evaluation. At the conclusion of these meetings, we created an interview tool and conducted 14 interviews with 15 informants. We then synthesized our findings of the online survey, informant interviews, and consultative process to develop our sub-regional ECFF-FMP Management Performance Evaluation. Our development of the deliverables for work packages two and three was also informed by the consultative process and by the information we collected while realizing our other two CRFM consultancies (Technical Support to Enhance the Governance Arrangements for Implementing an Ecosystem Approach for Flyingfish Fisheries, Technical support on Implementation of Management/Stress Reduction Measures in the Eastern Caribbean Flyingfish Fishery).

Specifically, for the fishery financing mechanism report, we developed criteria for the selection of case study fisheries. These criteria included the number of nation states involved in the fishery, participation of developing countries and small island developing states, number of fishers, and total annual landings. We then performed a rapid analysis of fisheries around the world and selected three to focus on as case studies (Philippines municipal fishery, South Pacific islands offshore tuna fisheries, North Pacific fishery). After selecting these fisheries, we researched each case study to learn about their existing funding mechanisms. Then, in a similar process to the one we used to develop the sub-regional ECFF-FMP Management Performance Evaluation, we identified experts in each fishery and created an interview tool. We then conducted interviews with 12 informants from the three case study fisheries to learn more about the financing mechanisms and the successes and challenges that their fishery managers experience. We then

analyzed the information we obtained through research and interviews, and we developed recommendations for the CRFM to consider for bolstering funding available for Eastern Caribbean flyingfish fishery management.

The results from our research informed the consultancy's After-Life Plan. In the document, we presented enabling conditions for completing the policy cycle and management plan. We then recommended key activities for completing the policy cycle and management plan specific to the ECFF-FMP, Cooperation Agreement, Data Policy, and data collection system. We also estimated Eastern Caribbean flyingfish fishery management activity costs for the CRFM and the consultancy's six participating nations. We then used the results from our financing mechanism report to develop the After-Life Plan's section on financing mechanisms and formalizing (co-) financing commitments.

Our research and outreach allowed us to develop an ECFF-FMP Management Performance Evaluation (Annex E), the Fishery Financing Mechanisms Potential Options for Eastern Caribbean Flyingfish Fishery Management (Annex L), Information Briefs (Annex H), and the project's After-Life Plan (Annex I). The consultancy's methods were guided by the following objectives:

- **Objective 1**: Evaluate flyingfish fishery management performance (Work Package 1)
- **Objective 2**: Review and update the existing Eastern Caribbean flyingfish FMP, with input from regional stakeholders, to adapt management strategies and outline sustainable financing mechanisms (Work Package 1)
- **Objective 3**: Share lessons learned and best practices with stakeholders at the national and regional levels and those working in LMEs around the world (Work Package 2)
- **Objective 4**: Develop a sub-project After-Life Plan that identifies an agreed pathway to sustainable financing for Eastern Caribbean flyingfish management (Work Package 3)

Blue Earth team members developed numerous strategies related to consultancy organization, coordination, reporting, and information-sharing requirements for this consultancy. Given the overlapping elements of Blue Earth's three flyingfish-focused consultancies, as well as overlap with work being conducted by Nexus and CANARI, consultancy coordination became a significant component of the Adaptive Management consultancy.



Figure 3 | Grenada Day Use Vessels Bugsy Delesalle

# **DELIVERY OF TERMS OF REFERENCE**

The six CLME+ flyingfish sub-project terms of reference (TORs) were highly interrelated such that some deliverables straddled consultancies and contractors. This necessitated coordination among contractors. Throughout the Adaptive Management consultancy and other related CLME+ flyingfish consultancy led by Blue Earth, we worked to identify linkages and opportunities for streamlining and building off work performed by Nexus and CANARI. Also, as part of our approach to streamlining components across our three consultancies and those implemented by Nexus and CANARI, we endeavored to reduce stakeholder fatigue by consolidating stakeholder outreach and by addressing multiple topics in one consultation to the extent practical.

Blue Earth carried out consultancy activities (see section six for a list of these activities) that fulfilled the TOR's scope of work as it pertains to the following aspects:

Work Package 1

Work Package 2

Work Package 3

General

These activities allowed us to produce deliverables that corresponded to those presented by the CRFM in the consultancy's TOR unless otherwise noted:

# Work Package 1

- (a) Carry out, and facilitate validation of, a comprehensive, updated assessment / evaluation of management performance for the flyingfish fishery: **Annex E**, ECFF-FMP Management Performance Evaluation
- (b) Review and update FMP: Annex G, Revised Sub-Regional Fisheries Management Plan for Flyingfish in the Eastern Caribbean
- (c) Prepare impact assessment tools: **Annex K**, Impact Assessment Tools

# Work Package 2

- (a) Information briefs on lessons learnt and best practices targeted at a range of stakeholders at national and regional levels: **Annex H**, 4 Information Briefs
- (b) Produce at least one GEF / CLME+ sub-project experience note (CRFM later agreed to accept this deliverable as the Information Products during a call with Blue Earth on 12 December 2018): Annex H, 4 Information Briefs
- (c) Prepare an impact assessment tool: **Annex K**, Impact Assessment Tools

# Work Package 3

- (a) Provide technical support to CRFM, WECAFC, and Member States and other relevant stakeholders in considering options and reaching agreement on a sub-project after-life plan, and develop proposal for formal (co-)financing commitments: Annexes I and L, Sub-Project After-Life Plan; Fishery Financing Mechanisms: Potential Options for Eastern Caribbean Flyingfish Fishery Management. The After-Life Plan is a strategy or roadmap that the CRFM can use at the conclusion of the CLME+ flyingfish sub-project to complete the policy cycle and management plan and to continue improving regional management of pelagic fisheries, including the flyingfish fishery. It contains components from all three of Blue Earth's flyingfish sub-project consultancies and also appears in the Governance consultancy's Final Technical Report.
- (b) Provide support for presentation, via preparation of suitable presentation materials, and formal adoption at CRFM and WECAFC levers of post-sub-project plan: **Annex J**, Sub-Project After-Life Plan PowerPoint presentation
- (c) Prepare flyingfish sub-project impact assessment tools, if appropriate: see Governance Final Technical Report Annex K in Impact Assessment Tools

# General

- (a) Prepare an inception report including agreed work plan: Annex B, Caribbean Regional Fisheries Mechanism Inception Report (report includes work plan)
- (b) Prepare bi-monthly technical activity progress reports: Annex D, Final Bi-monthly Technical Report
- (c) Prepare a final technical report

# DESCRIPTION OF ACTIVITIES CARRIED OUT

In this section we summarize the Adaptive Management consultancy's activities that led to the ECFF-FMP Management Performance Evaluation, the Fishery Financing Mechanisms: Potential Options for Eastern Caribbean Flyingfish Fishery Management, Information Briefs, and the Sub-Project After-Life Plan. Below we provide a description of the main activities we used to arrive at the consultancy's deliverables:

- Facilitated a comprehensive, updated assessment / evaluation of management performance for the flyingfish fishery: Annex E, ECFF-FMP Management Performance Evaluation
- Researched three fisheries (Philippines municipal fishery, South Pacific islands offshore tuna fisheries, North Pacific fishery) and develop management financing recommendations: Annex M, Fishery Financing Mechanisms: Potential Options for Eastern Caribbean Flyingfish Fishery Management
- **Researched and produced Information Briefs on lessons learnt and best practices targeted at a range of stakeholders**: Annex H, Information Briefs
- Provided technical support to CRFM, WECAFC, and Member States and other relevant stakeholders in considering enabling conditions, their key activities, time frames, and estimates of management costs as part of a Sub-Project After-Life Plan: Annex I, Sub-Project After-Life Plan
- **Impact assessment tool development**: Annex K, CRFM Flyingfish Impact Assessment Tools

# CONSULTANCIES MOBILIZATION

We began our Adaptive Management consultancy by having a kick-off call with the CRFM. The call allowed our respective organizations to define a strategy that outlined our next steps and how we should manage strategic shifts in the consultancy process and work plan. The CRFM was open about how Blue

Earth could coordinate its consultancies with Nexus and CANARI whose activities were happening concurrently as part of their respective work. After this discussion, we submitted a revised timeline that reflected the CRFM's input. This initial communication also served as a way to discuss consultancy reporting processes, deliverable formats and submission criteria, as well as the review process.

# NATIONAL MISSIONS

Blue Earth, the CRFM, national focal points (national fisheries division staff), and regional technical level organizations supported three meetings



Figure 4 | Eastern Caribbean fishing boats Pixabay

(Dominica and Saint Lucia, May 2018; Barbados, October 2018) that built awareness for ecosystem-based management strategies for flyingfish in the Eastern Caribbean. The Barbados meeting was staged to

increase stakeholder participation in the flyingfish awareness building and consultative process. The work also included the May 2019 meeting in Saint Lucia that led up to the final revised ECFF-FMP and the 3rd Meeting of the Ministerial Sub-Committee on Flyingfish. Specific to our Adaptive Management consultancy, the events allowed local stakeholders, including flyingfish vendors, boat owners, fishers, fisherfolk organizations, and cooperatives the opportunity to offer their thoughts and perceptions regarding implementation of the ECFF-FMP. The objectives of this strategy included the following:

- Convene local stakeholders and national focal points with expertise related to the region's flyingfish fishery and other living marine resources
- Share draft documents related to flyingfish fishery management, including recommendations for updating the Eastern Caribbean fishery management plan (ECFF-FMP), a sub-regional Data Policy conceptual proposal, and a Cooperation Agreement
- Gather local stakeholder input on draft documents to inform revisions and prepare documents for regional endorsement

To help national focal points lead these awareness building and consultative meetings to gain feedback on the document, we created meeting agendas, facilitation plans, and note-taking templates.

During the Dominica and Saint Lucia meetings, flyingfish fishery local stakeholders generally agreed with the information presented in the draft Cooperation Agreement, recommendations to the draft updated ECFF-FMP, and the draft sub-regional Data Policy. In certain instances, however, they felt that the documents could be strengthened with more country-specific information.

The information that Blue Earth collected throughout the awareness building and consultative process with national focal points informed our ECFF-FMP Management Performance Evaluation (Annex E) and Sub-Project After-Life Plan (Annex I). We also refer to the strengthened participation, collaboration, and cooperation frameworks that resulted from the CLME+ flyingfish sub-projects in each of our Information Briefs (Annex H) to promote these processes.

# REPORTING

We produced bi-monthly progress reports for the Adaptive Management consultancy that contained our activities and progress towards the work's deliverables (see Annex D for final progress report). The CRFM organized these reports by consultancy phases, permitting us to outline our advancements from the inception of the consultancy through its end. The CRFM organized the contract status section by consultancy phase and activities according to the TOR's scope of work. The progress reports also contained an overarching reporting section, a lesson learned and best practices section, contract milestones, risks to contract deliverables, and a financial implementation summary. By attaching drafts of the consultancy's deliverables to the bi-monthly reports, the CRFM was able to verify our progress. In addition to bi-monthly progress reports, Blue Earth submitted an Inception Report (Annex B). Throughout the project we held calls with the CRFM during which we discussed project ideas, strategies, concerns, and advancements.

# REPORTING ON TECHNICAL ASPECTS OF THE CONSULTANCY

Blue Earth began work by researching project related information including the 2014 ECFF-FMP and the CRFM's 2016 implementation evaluation of the FMP. With the assistance of the CRFM, we identified potential informants (national fisheries division staff, CRFM staff, representatives of regional technical level organizations, fishers, fishing cooperative members, and fisherfolk organization representatives) in each of the project's participating countries whom we could interview to inform our sub-regional ECFF-

FMP Management Performance Evaluation. As part of this process, Blue Earth, the CRFM, and national focal points supported two country specific meetings (Dominica, St. Lucia) with local stakeholders and one regional meeting with regional technical level organizations (Barbados). Together, these three meetings created awareness among the greater flyingfish community for ecosystem-based management strategies for flyingfish in the Eastern Caribbean. During this process, we received additional flyingfish management implementation information from national focal points, local stakeholders, and regional technical level organization representatives that informed our sub-regional ECFF-FMP Management Performance Evaluation. At the conclusion of these meetings, we created an interview tool and conducted 14 interviews with 15 informants. We then synthesized our findings of the online survey, informant interviews, and consultative process to develop our sub-regional ECFF-FMP implementation evaluation. This process also informed our development of the After-Life Plan and Information Briefs.

In addition to the national consultative process and the development of these deliverables, Blue Earth produced a fishery financing mechanism report that addressed our Adaptive Management consultancy. The purpose of this tool is to facilitate the CRFM's and Member States' implementation of the project's After-Life Plan by providing funding options that regional and national fishery managers can further research and develop. We appended various sections of the financing mechanism report to the After-Life Plan for this reason. We reported our progress on this and all consultancy deliverables to the CRFM in a series of 10 bimonthly progress reports.

Included in many of our consultancy's deliverables are recommendations the CRFM and national focal points can refer to when developing and strengthening future flyingfish management regimes. The lessons learned that emerged from the stakeholder outreach work will also inform national focal points' and the CRFM's ongoing flyingfish management efforts.

# COMMENTS AND CONCLUSIONS

The Blue Earth team supported the CRFM's methodology for its CLME+ flyingfish fishery project throughout the Adaptive Management consultancy. Our ECFF-FMP implementation evaluation activities included research of existing documents, an online survey, and phone interviews. During this process, we received additional flyingfish management information from national focal points, local stakeholders, and regional technical level organization representatives during two national meetings and one regional meeting, reflecting our adherence to allowing national focal points take on their own in-country activities. We organized our findings of the online survey, informant interviews, as well as information we collected throughout the consultative process to develop our ECFF-FMP implementation evaluation. This process also informed the After-Life Plan and Information Briefs. In addition to the national consultative process and the development of the ECFF-FMP Management Performance Evaluation, After-Life Plan, and Information Briefs, Blue Earth produced a fishery financing mechanism report that addressed our Adaptive Management consultancy. The purpose of this tool is to facilitate the CRFM's and Member States' implementation of the sub-project's After-Life Plan by providing funding options that regional and national fishery managers can further research and develop.

# **RECOMMENDATIONS (INCLUDING LESSONS LEARNED)**

Blue Earth's ECFF-FMP Management Performance Evaluation was the product of a stakeholder engagement process, research, an online survey, and interviews with national fisheries division staff, regional fisheries management experts, fishers and fisherfolk organizations, and researchers. The process informed our development of the After-Life Plan and Information Briefs, as well as the considerations, recommendations, and next steps we presented in the fishery financing mechanisms report. The following list of recommendations can be used by the CRFM and national focal points to aid their efforts to develop a sub-regional ecosystem-based approach to flyingfish fisheries management.

# **Recommendations:**

- **Develop adaptive management processes to ECFF-FMP implementation**: The flyingfish fishery's importance varies between Eastern Caribbean nations. Flyingfish policy goals that are flexible, consider shifts in the political environment, and are specific to individual Member States are needed to ensure that future implementation efforts are time and cost effective.
- **Prioritize two-way stakeholder engagement**: Fishers and other stakeholders want to understand the science that supports management decisions. Therefore, the appropriate body, such as the CRFM or CRFM-WECAFC Working Group on Flyingfish, could develop regular updates to stakeholders including fishers. Managers could identify champions from each stakeholder group to assist with disseminating information and building buy-in. To assist with development of buy-in, managers could highlight the significance of the recent reductions in flyingfish presence and catch. Whereas reduction in catch has led many stakeholders to become less invested in managing the species, the reduced catch might be better treated as a cause for concern and subsequently attract more of their attention.
- **Support participation of fisherfolk organizations**: Through their membership, fisherfolk organizations hold great potential to support fisheries divisions' flyingfish management efforts. National focal points should attempt to provide them with capacity-building support in areas such as vessel or fishing license recording and data collection. Other groups such as chain of custody members, the business and legal sectors, and local police, could also take a stronger role in flyingfish management. This strategy would alleviate some of the budget and staffing shortcomings that fishery divisions around the region are experiencing.
- Understand how the lack of resources affects flyingfish management implementation efforts: 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 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.
- **Develop future management recommendations and harvest control rules around stock assessment results**: Our evaluation of the ECFF-FMP was based on informant perceptions. Evaluation of the updated FMP should be based on stock assessments whose methods are robust and accepted by the research community. Because the updated FMP does not define a trigger point, managers may want to focus their attention on defining one via an evaluation of the flyingfish population.

# Lessons Learned:

- A business approach to flyingfish management is lacking: There could be opportunities in some countries, such as Saint Vincent and the Grenadines, to further develop the flyingfish fishery. In addition, through enhanced collaboration with France (Martinique) on flyingfish management, there could be opportunities to tap into more lucrative markets for flyingfish products.
- **Flyingfish benefits are not perceived evenly across the region:** 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 pelagic fishes. Fishers and other stakeholders are more likely to engage if they see the value of their participation and the value of the fishery.

## **ANNEX A: TERMS OF REFERENCE**

#### ANNEX A

### CLME' SUB-PROJECT #3: EAF FOR THE EASTERN CARIBBEAN FLYINGFISH TERMS OF REFERENCE

### CONSULTANT SERVICES TECHNICAL SUPPORT TO FACILITATE ADAPTIVE MANAGEMENT FOR EASTERN CARIBBEAN FLYINGFISH FISHERIES CLME/SP3-FF/EOI-FAM/01/17

#### 1.0 INTRODUCTION

In view of the significance of the Eastern Caribbean four-wing flyingfish commercial fisheries, the CRFM, in collaboration with WECAFC and with support provided during the corresponding case study under the CLME Project (GEF ID 1032), developed and finalized a Sub-regional Management plan (Sub-regional FMP) for Flyingfish in the Eastern Caribbean. The plan takes into account the relevant provisions of two key CRFM instruments, the Agreement on the Establishment of the Caribbean Community Common Fisheries Policy (CCCFP), and the 2010 Castries (St. Lucia) Declaration on Illegal, Unreported and Unregulated (IUU) Fishing. The Sub-regional FMP was endorsed by the 15<sup>th</sup> Sessions of WECAFC, by the Caribbean Fisheries Forum in April 2014, and by the CRFM Ministerial Council in May 2014, following extensive consultation with stakeholders at both the national and regional levels, and is now cleared for voluntary, regional implementation by CRFM Member States. The general management objectives outlined in the Sub-regional FMP are: (a) sustained flyingfish resources (biological objective), (b) optimal use of the flyingfish resource for long-term benefits (socio-economic objective) and (c) sustained ecosystem health (ecological objective)

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. Under this sub-strategy, a number of short-term (0 - 5 years) and medium-term (6-10 years) actions were agreed upon:

5A.i [Short]	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;
5A.2 [Short]	Establish and operationalise a formal agreement between the CRFM and France
	on the management of the flyingfish fisheries;
5A.3 [Short, Medium]	Operationalise and strengthen an integrated, sub-regional Decision Support
	System (DSS) for the flyingfish fisheries (in coordination with the large pelagies
	arrangements):
5A.4 [Short, Medium]	Strengthen the FAO - WECAFC and CRFM capacity to develop, adopt and
	implement management and conservation measures for the flyingfish fisheries
	(full policy cycle implementation);
5A.5 [Short, Medium]	Implement the CRFM / FAO-WECAFC Sub-Regional Management Plan for
	Flyingfish Fisheries in the Eastern Caribbean;
5A.6 [Short, Medium]	Develop and implement education and awareness building initiatives to improve
	understanding and enhanced stakeholder commitment and participation in
	decision-making in the flyingfish fisheries.

The Sub-Project of which this consultancy is a part, aims at contributing to the delivery of Output 5. Long-term enhancement of livelihoods / human well-being facilitated (O5.1, O5.2, O5.3.) under COMPONENT 3 of the main CLME<sup>1</sup> Project Document: "Transition to an ecosystem approach for the

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*Eastern Caribbean flyingfish fisheries demonstrated*<sup>2</sup> It has been developed in response to the corresponding calls for action under (a) the CLME<sup>1</sup> 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.

This Consultancy seeks to contribute to fostering long-term human well-being of the (direct and indirect) stakeholders of the Eastern Caribbean flyingfish fishery by facilitating adaptive management for Eastern Caribbean flyingfish fisheries.

The UNOPS will provide general oversight for the action. The CRFM is responsible for providing technical supervision, leadership and coordination to execute the activities related to this action.

THE CONSULTANT: Eastern Research Group, Inc.

## 2.0 OBJECTIVE

To facilitate adaptive management for eastern Caribbean flyingfish fisheries

## 3.0 SCOPE OF WORK

The Consultant will work under the general direction of Peter A. Murray, Programme Manager, Fisheries Management and Development, to review management performance and adapt management strategies on completion of policy cycle; develop and produce products for sharing of lessons learnt and best practices from full policy cycle implementation available and to be used by project end; analyse options for the leveraging of additional co-financing for sub-project implementation and support the adoption of a sub-project after-life plan.

The scope of work covers all activities necessary to accomplish the Expected Results stated. The main tasks / activities are as follows:

## Work Package 1

- (a) Carry out, and facilitate validation of, a comprehensive, updated assessment/evaluation of management performance for the flyingfish fishery.
- (b) 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,
  - This updated review and report will be based on, and mindful of, the earlier 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 and discussion on medium/long-term sustainable financing mechanisms
  - Provide support for examination of the updated review and report by the CRFM PWG and the CRFM-WECAFC Working Group on Flyingfish in the Eastern Caribbean, and incorporate the recommendations of these Working Groups to prepare an updated FMP.
  - Provide support for the consideration and approval by CRFM Ministerial Sub-Committee and by the CRFM Ministerial Council of the CRFM/WECAFC Working Group-approved updated FMP and management measures, to complete the policy cycle
- (c) Prepare impact assessment tools, if appropriate, for CRFM use in follow up work



Work Package 2

- (a) In consultation with CRFM Staff, Staff of Fisheries Divisions / Departments, appropriate stakeholders and the other consultants contracted as part of this sub-project, produce information briefs on lessons learnt and best practices targeted at a range of stakeholders at national and regional levels
- (b) Produce at least one GEF / CLME+ Sub-project Experience note for dissemination by the CLME+ PCU to the global LME community of Practice
- (c) Prepare an impact assessment tool for CRFM use in follow up work

Work package 3

- (a) Provide technical support to CRFM, WECAFC, and Member States and other relevant stakeholders in considering options and reaching agreement on a Sub-Project after-life plan, and develop proposal for formal (co-)financing commitments, including agreed option(s) for additional resources to be mobilised by the major parties, for continued EAF approach to flyingfish management.
- (b) Provide support for presentation, via preparation of suitable presentation materials, and formal adoption at CRFM and WECAFC levels of post-Sub-project plan, with budget sharing arrangements incorporated and resource mobilisation strategy defined
- (c) Prepare impact assessment tools, if appropriate, for CRFM use in follow up work

General

- (a) Prepare an inception report including agreed work plan for the consultancy
- (b) Prepare bi-monthly technical activity progress reports.
- (c) Prepare a final technical report, taking into account comments provided by the CRFM Secretariat. The report would at least contain the following sections: Acknowledgements; Abbreviations and Aeronyms; Executive Summary; Introduction; Approach to the Assignment; Comments on Terms of Reference; Organization and Methodology ; Delivery of Terms of Reference ; Description of Activities Carried Out; Project Mobilization; Summary reports of national missions (as appropriate); Reporting; Comments and Conclusions; Recommendations (including lessons learned); Annex 1 Terms of Reference ; Annex 2 Inception Report ; Annex 3 Detailed Mission Reports; Annex 4 Consultancy Products, namely, Work plan; programme reports; [validated] FMP performance assessment report(s); CRFM/WECAFC Working Group meeting report; updated FMP; information brief(s) on lessons learnt and best practices/recommendations in implementing policy cycle; Sub-project experience note(s); Postproject plan document, including report on proposed formal (co-)financing commitments; Presentation materials for presenting post-project plan to CRFM and WECAFC; impact assessment tool(s) as appropriate; project final technical report; project final financial report; other agreed reports.
  - Drafts of each product are to be reviewed by the CRFM, prior to finalization

#### 4.0. EXPECTED RESULTS

- Management performance reviewed and management strategies on completion of policy cycle adapted
- (2) Products for sharing of lessons learnt developed and disseminated and best practices from full policy cycle implementation identified and shared
- (3) Options for the leveraging of additional co-financing for sub-project implementation analysed formal adoption of a sub-project after-life plan facilitated.

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## 5.0 DELIVERABLES

- An inception report and work plan
- Interview guides and respondent lists:
- FMP Evaluation Report;
- Final updated FMP
- Products for sharing of lessons learnt and best practices (including but not limited to Information Briefs and Experience Notes)
- Sub-Project After-Life Plan
- Appropriate number of Impact Assessment Tools
- 8. Appropriate number of bi-monthly progress reports
- Final Technical report as described in the scope of work (with annexed Bi-monthly Progress Reports); including final, publisher-ready versions of all the deliverables of the assignment

## 6.0 ROLES AND RESPONSIBILITIES

The Consultant is responsible for execution of the main ACTIONS and accomplishing the Expected Results and Deliverables as outlined above.

In the conduct of the assignment the KEs will be supported by the CRFM Secretariat, which will provide overall guidance on implementation of the contract. The CRFM Secretariat will assign two (2) staff (fisheries experts) who will work closely with the team at all times. The CRFM Secretariat will also assist in the circulation of documents for regional-level review, and facilitate the finalization of all documents produced.

The CONTRACTING PARTY, through the CRFM Sceretariat in Belize and St. Vincent and the Grenadines, will provide the following assistance to the Consultant in a timely manner: [agreed-upon assistance to be provided by CRFM Secretariat]

## 7.0 REPORTING

The Consultant will prepare an inception report, progress reports and final reports. The progress reports will be submitted bi-monthly over the contractual period. The final technical report should include methodologies used to deliver the various outputs, with lessons learned and recommendations for follow up action, and include final technical deliverables in publisher-ready format. The report should be produced in Microsoft Word for Windows format and submitted electronically to the CRFM Secretariat.

## 8.0 LOGISTICS

All logistical arrangements pertaining to travel by the Consultant and workshop participants are the responsibility of the Consultant.

## 9.0 DURATION

The assignment will require 24 months, for the period 1 August 2017 to 26 July 2019.



# ANNEX B: INCEPTION REPORT AND WORK PLAN

# **Document Introduction**

To begin our consultancy with the Caribbean Regional Fisheries Mechanism (CRFM), Blue Earth Consultants, a Division of Eastern Research Group, Inc. (Blue Earth), held an inception call with CRFM on 8 August 2017. Call participants were Kelsey Jacobsen and Charlotte Dohrn of Blue Earth and Peter Murray, June Masters, and Delmar Lanza of CRFM. We held a second call with Rena Kieval of ERG's Communications Team on 10 August 2017 to discuss the communications products component of the consultancy in more detail. This document summarizes the key decisions from the two calls and serves as a reference for updating the original scope of work for the consultancy.

# **Overarching**

Through our discussions on the inception call, we addressed several overarching topics that apply across consultancy components:

- Throughout this consultancy and other related CLME+ consultancies led by Blue Earth and Nexus Coastal, we will work to identify linkages and opportunities for streamlining and building off of work performed through the range of consultancies
- As part of the approach of streamlining components across consultancies, Blue Earth will endeavor to reduce stakeholder fatigue by consolidating stakeholder outreach, addressing multiple topics in one consultation to the extent practical
- CRFM will send a letter introducing national ministry-level contacts to this consultancy; Blue Earth suggests consolidating this announcement with a similar announcement regarding the other new consultancy focused on Stress Reduction, to reduce confusion and multiple emails to the ministerial contacts

# Vision of a Successful Consultancy

We discussed CRFM's perspective on what success will look like at the conclusion of this consultancy. Main points included the following:

- Overall objective of improving sustainable management of the Eastern Caribbean flyingfish fishery, including through integration with related consultancies (e.g., consultancies conducted by Blue Earth, Nexus, and CANARI)
- Updated EFCC-FMP that is workable and incorporates stakeholder input through a consultative process
- Concise, effective communications products that help build a groundswell of support for EAF management and involvement in the policy and management cycle
- Clear direction forward for the various aspects of implementing EAF management for the Eastern Caribbean flyingfish fishery after the duration of the CLME+ project
- Lessons learned that can be transferred to other fisheries

# **Consultancy Approach**

# Work Package 1: FMP Implementation and Management Recommendations

We discussed our approach to the management implementation evaluation, including the following:

- Blue Earth will combine efforts among this Work Package, Work Package 1 of the Stress Reduction consultancy, and existing efforts through our ongoing consultancy, to the extent practical, to streamline work on evaluating ECFF-FMP implementation, making recommendations for improving the FMP, and updating the FMP
- The Blue Earth Team will work with CRFM to determine the most appropriate and cost-effective consultative process to gain feedback on ECFF-FMP implementation; the process could, but will not necessarily, include in-person meetings
- For ease of comparability to CRFM's 2016 implementation report, Blue Earth will organize the evaluation topics to match the organization in the 2016 report
- We will ensure that the evaluation includes a regional aspect (in addition to national) by gathering information about progress and challenges to regional management coordination; we will ask for opinions about regional management from both national-level stakeholders and regional stakeholders
- Informants in the consultative process for the implementation evaluation may include individuals from national fisheries agencies (e.g., contacts already made through Blue Earth's ongoing consultancy), French Regional Council of Martinique, University of West Indies Centre for Resource Management and Environmental Studies (CERMES), Trinidad and Tobago Assembly and / or a representative of Tobago specifically, OECS Commission, Association of Caribbean States, and WECAFC.
- Peter A. Murray and Blue Earth will seek out meeting notes from the CRFM-WECAFC Working Group on Flyingfish that could provide information relevant to the management implementation evaluation

We also briefly discussed the sustainable financing aspect of the FMP update:

- The assessment of potential sustainable financing options should include an assessment of whether generating sustainable financing for EAF management of the flyingfish fishery is feasible in the first place; if not, explain why it is not feasible and if so, identify potential financing options
- It is not clear at present what entity(ies) funding should be directed to, and this will be part of the consultancy to determine; funding could go to levels including national, regional, and WECAFC.

# Work Package 2: Information Briefs and Experience Notes

Discussion from both calls included the following points regarding the communications products to be developed through Work Package 2.

Initial discussion of audiences and goals of the communications products:

- The communications products are a critical aspect of this consultancy, providing one component in the larger effort to help build support for implementation of the ECFF-FMP
- Target audiences for the products are expected to include policymakers, technical management staff such as chief fisheries officers, fishermen, and possibly fish consumers; different messages and types of communications tools may be needed to effectively reach each of these groups

- The Blue Earth Team will consider possibilities for reaching younger generations and all gender groups
- Communications products will aim to describe what has been done, why a change is needed, and what readers action or change readers should make
- The Blue Earth Team has leeway to recommend the types of information products that may be most effective, which will likely include short documents continuing from CRFM's existing policy briefs and issues papers, as well as infographics; we will discuss the possibility of supporting other media such as web content or radio if appropriate
- We will utilize straightforward, accessible language and avoid technical jargon or lengthy text in the communications products, so they are easily understood without being overly basic.

Potential informants and consultative process:

- Depending on the information sought, interview informants may include Blue Earth's existing contacts in each country as well as organizations like CERMES, the OECS Commission, Association of Caribbean States, and WECAFC
- We will send draft content of the communications products to Peter and June to distribute to colleagues within CRFM; CRFM will flag any areas of potential concern, such as relating to specific national sensitivities, and the Blue Earth Team will engage contacts in the relevant country(ies) to rectify before publication
- If necessary, based on the content of the communication products, the Blue Earth Team will engage representatives of fishing communities, such as through fishing organizations, to review their draft content before publication

# Work Package 3: Develop Sub-Project After-Life Plan

High-level discussion of Sub-Project After-Life Plan included the following:

- The plan should include actions that will need to take place at the national, CRFM, and WECAFC levels
- Blue Earth will reach out to Terrence Phillip at the Caribbean Natural Resources Institute (CANARI) to coordinate on CANARI's work on the sub-project relating to stakeholder participation

# Impact Assessment Tools

Each of the three Work Packages calls for the development of an Impact Assessment Tool "if appropriate." We discussed the following related to the Impact Assessment Tools.

- There will likely be opportunities to utilize one Impact Assessment Tool to assess ongoing progress on multiple aspects of this consultancy and / or other consultancy (e.g., the evaluation frameworks for assessing progress on Work Packages 1 and 2 of the Stress Reduction consultancy); thus, it may not be appropriate to develop a separate Impact Assessment Tool for every Work Package
- If Blue Earth believes that an Impact Assessment Tool for one or more of this consultancy's Work Packages is not necessary, we will state this recommendation in a bi-monthly progress report along with a justification of why it is not necessary (or how the tools can be used to assess multiple Work Packages)
- In Blue Earth's second bi-monthly report for this consultancy, we will provide input for CRFM's consideration on whether Impact Assessment Tools will be appropriate for each Work Package and suggest which elements, if any, could be addressed by a single Impact Assessment Tool

# **Communication**

Blue Earth and CRFM will utilize the following guidelines for communication between CRFM and Blue Earth; these guidelines were discussed in the context of the Stress Reduction consultancy and assumed to apply to both consultancies:

- CRFM will send all communications to Kelsey Jacobsen, cc'ing Tegan Hoffmann and Charlotte Dohrn
- Blue Earth will send all communications to Peter Murray, cc'ing <u>secretariat@crfm.int</u>, <u>crfmsvg@crfm.int</u> and June Masters june.masters@crfm.int; for matters relating to contracts, finances, and reporting, we will also cc Delmar Lanza <u>delmar.lanza@crfm.int</u>
- Blue Earth will save all Word, Excel, and PowerPoint documents as Microsoft Office 97 (.doc, .xls, .ppt) formats to ensure file compatibility across computer platforms.

# **Timeline**

The timeline below outlines the Blue Earth team's work plan to the consultancy. Please note that we will submit a combined timeline that addresses all six flyingfish consultancies following conversations with Nexus Coastal and CANARI.

echnical Support to Facilitate Adaptive Management for					2018										2	2019		
Fastern Caribbean Elvingfish Fisheries				>		•	. <del>.</del>	Y	е	~ 10	ŗ				гđ	÷γ	e	
Dreposed Dreject Timeline 2017 2010		Au£	oct O	De No	Jan	Feb	Apr	. Β	n j	√lul Aug	Sep	s oc	Dec	Jan Feb	Ba	Apr Ma	n i	ĥ
Proposed Project Timeline - 2017-2019	Key Outputs	= P	ossib	le Blu	e Ear	th cal	l wit	h clie	ent									
Project Inception																		
Activity A: Host Inception Call	Alignment on project objectives; Revised evaluation objectives																	
Activity B: Develop Inception Report	Final Inception Report																	
Work Package 1: Management Performance Evaluation and Review and Upda	ite FMP																	
Phase 1.1: Research																		
Activity A: Perform Document Review and Web Research	Compiled evaluation, lessons learned, and financing findings																	
Activity B: Prepare for and Conduct Interviews	Interview guides and respondent lists; Interview data																	
Phase 1.2: Analysis and Share Findings																		
Activity A: Analyze Data	Trends, findings, and recommendations																	
Activity B: Implement a Consultative Process with CRFM PWG and CRFM-	Summary of findings and recommendations; working group																	
WECAFC Working Group on Flyingfish	engagement tools																	
Phase 1.3: Draft and Final Products and FMP Endorsement																		
Activity A: Prepare Evaluation Report and Draft Updated FMP	Draft Evaluation Report and Updated FMP																	
Activity B: Support Consideration and Approval by the CRFM Ministerial Sub-	Buy-in and engagement from stakeholders																	
Committee and CRFM-WECAFC Working Group on Flyingfish																		
Activity C: Finalize Updated FMP	Final Updated FMP approved by stakeholders																	
Activity D: Prepare Impact Assessment Tool	Impact assessment tool																	
Work Package 2: Information Briefs and Experience Notes																		
Phase 2.1: Align on Topics and Format for Communications Products																		
Activity A. Develop Information Product Topics	Information product topics																	
Activity B. Develop Outlines and Creative Concepts	Draft and final outlines and creative concepts																	
Phase 2.2: Develop Information Products																		
Activity A. Produce Information Briefs and Experience Notes	Draft and final Information Briefs and Experience Notes																	
Activity B. Prepare Impact Assessment Tool	Impact assessment tool																	
Work Package 3: Develop Sub-Project After-Life Plan																		
Phase 3.1: Research																		
Activity A: Align on Goals and Outline for Sub-Project After-Life Plan	Alignment on Work Package objectives																	
Activity B: Develop Draft Sub-Project After-Life Plan Outline	Plan outline																	
Activity C: Conduct Interviews	Survey questions and respondent lists; Interview data																	
Phase 3.2: Analysis and Share Findings																		
Activity A: Analyze Data	Trends and findings																	
Activity B: Develop and Vet After-Life Plan Straw Proposal	PPT; Engagement and buy-in																	
Phase 3.3: Draft and Final Products																		
Activity A: Draft, Revise, and Support Endorsement of After-Life Plan	Draft Plan; Final Endorsed Plan																	
Activity B: Prepare Impact Assessment Tool	Impact assessment tool																	
General Reporting																		
Activity A: Prepare Inception Report	Final Inception Report																	
Activity B: Prepare Bi-Monthly Technical Activity Progress Reports	Bi-monthly reports																	
Activity C: Prepare Final Technical Report	Draft and final Technical Report																	

# ANNEX C: REPORT ON MISSIONS AND CONSULTATION ACTIVITIES

# **Introduction**

This document provides a summary of national flyingfish consultative processes regarding Eastern Caribbean flyingfish management. These activities were held as part of consultancies by Blue Earth Consultants (Blue Earth), a Division of Eastern Research Group, Inc. for the Caribbean Regional Fisheries Mechanism (CRFM). Three meetings took place, two of which were held at the national level by national focal points (Saint Lucia and Dominica; May 2018), and the third in Barbados (October 2018) where stakeholders from six countries and several international bodies attended a special meeting of the CRFM-Western Central Atlantic Fishery Commission (WECAFC) Working Group on Flyingfish.

The meetings contributed to several key outputs of Blue Earth's consultancies to advance flyingfish fishery management in the Eastern Caribbean. The outputs include an updated Eastern Caribbean Flyingfish Fishery Management Plan (ECFF-FMP), a cooperation agreement between the CRFM and Martinique on living marine resource management, a data policy for Eastern Caribbean flyingfish, a performance evaluation of implementation of the ECFF-FMP.

Blue Earth is completing three consultancies under contract to CRFM as part of the United Nations Development Programme / Global Environment Facility funded project, *Catalysing Implementation of the Strategic Action Programme for the Sustainable Management of shared Living Marine Resources in the Caribbean and North Brazil Shelf Large Marine Ecosystems* (CLME+). These meetings contributed to outputs associated with all three consultancies.

# National-Level Meetings

In the beginning stages of our consultancies, Blue Earth developed draft recommendations for how to update the ECFF-FMP, a data policy, and a cooperation agreement for review. To engage stakeholders in developing these documents, we organized a consultative process with focal points in each of the six Eastern Caribbean countries (Barbados, Dominica, Grenada, Saint Lucia, Saint Vincent and the Grenadines, and Trinidad and Tobago). Below are the objectives and methodology for this consultative process.

# Objectives

The stakeholder meeting objectives were as follows:

- Convene stakeholders with expertise related to the country's flyingfish fishery and other living marine resources
- Share draft documents related to flyingfish fishery management, including recommendations for updating the Eastern Caribbean fishery management plan (ECFF-FMP), a sub-regional data policy conceptual proposal, and a cooperation agreement
- Gather stakeholder input on draft documents to inform revisions and prepare documents for regional endorsement

# **Materials and Methods**

Blue Earth created the following flyingfish fishery stakeholder meeting facilitation templates to help incountry focal points lead national consultative meetings to gain feedback on the documents.

- **Meeting agenda**: High-level guidance to share the meeting objectives and topics with stakeholders with country-specific flyingfish expertise.
- **Facilitation plan**: A more detailed guide for national points of contact to use while leading consultative meetings, including key discussion questions.
- **Note-taking template**: A template in which focal points recorded input from the meeting discussions; focal points shared the notes with Blue Earth following the meetings.

As part of the consultative process, the Blue Earth team (including subcontractors Chris Milley and Mark Tupper) held calls with at least one fisheries division staff in each of the six ECFF-FMP participating countries to walk through these meeting facilitation materials and answer their questions. Fisheries staff used the materials to stage, facilitate, and document workshops in Dominica (9 May 2018) and Saint Lucia (25 May 2018). Focal points from the other four countries did not hold consultative meetings. Below, we summarize the main themes in the feedback gathered in Saint Lucia and Dominica.

# Key Outcomes: Saint Lucia

Stakeholders generally agreed with the draft recommendations for updating the ECFF-FMP and with the information presented in the draft sub-regional data policy and cooperation agreement. Additionally, they provided input summarized below.

# ECFF-FMP Update Recommendations

Stakeholders suggested the following:

- Present the document in a more user-friendly way (e.g., text boxes with key points at the beginning of each section, tables that highlight priority information).
- Address management gaps by merging the sub-regional flyingfish management plan with Saint Lucia's national plan where appropriate.
- Rank the management measures in order of importance.
- Add the need to research species that feed on or are otherwise part of the flyingfish food wed to determine how an increase or decrease in their abundance will impact the flyingfish population.
- Include sustainable flyingfish harvesting methods and mention the need to determine flyingfish habitats and spawning grounds.
- Add a description of how flyingfish research will be financed.
- Use language clearly stating that all stakeholders will be involved in flyingfish governance activities.
- Define obtainable measuring and monitoring objectives.

# Sub-Regional Data Policy

Meeting participants discussed and / or suggested the following:

- Based on this draft, Saint Lucia would support the outlined agreements.
- The data generated by the policy's research activities should be interpreted into useful information that flyingfish managers can utilize.
- The policy's most useful aspect is its data management and sharing approach.
- Environmental data including about sargassum, factors impacting flyingfish abundance, and costs of operation are needed to support fishery decision-making.
- The policy should include high-priority protocols that include data ownership and access rights.
- The policy should define the entity responsible for enforcing it.

# Cooperation Agreement

Flyingfish stakeholders stated and / or recommended the following:

- Saint Lucia would support the draft agreement.
- The Chairman of the CRFM Ministerial Council should endorse the agreement on behalf of CRFM Member countries.
- Knowledge transfer between stakeholders and training in sustainable fishing techniques for entrylevel fishers should be a component of the agreement.
- The dispute settlement process needs to be clarified.

# **Key Outcomes: Dominica**

Meeting participants generally agreed with the information presented in the cooperation agreement draft, recommendations for updating the ECFF-FMP, and sub-regional data policy draft. In certain instances, however, they felt that the latter two documents could be strengthened with more country-specific information.

# ECFF-FMP Update Recommendations

Meeting participants discussed the following recommendations regarding the ECFF-FMP update:

- Dominica could adopt the ECFF-FMP, though it may be useful to also prepare a national FMP that captures unique local issues.
- Managers should keep stakeholders apprised of the ECFF-FMP's progress and roll-out strategy at the regional and national levels and allow stakeholders to play a central role in these activities.
- Certain ECFF-FMP aspects currently not in place in Dominica may need to be rolled out incrementally, including logbooks and a licensing scheme.
- Fish aggregating device impacts on the flyingfish fishery need research so we can better address them.
- Managers should look at the trigger point more closely as more data, including on flyingfish captured for bait, become available.
- Fisherfolk groups and cooperatives should be involved in adaptive management activities.

# Sub-Regional Data Policy

Outcomes from the participants' discussion on the draft data policy included the following:

- Dominica would require a policy or Memorandum of Understanding before it could share data.
- The data policy's most useful aspects are fisher data collection and data sharing.
- The following types of data (and frequency of collection) are needed to support fishery decision making in Dominica:
  - Catch and effort (daily)
  - Social (annually)
  - Economic (price of fish sold should be collected at least monthly, trip costs daily)
  - Seasonality (annually)
  - Weather and seas (daily)
- High priority issues in Dominica related to the policy include data sharing (access rights), ownership, and usage.

# Cooperation Agreement

The discussion surrounding the draft cooperation agreement included the following points:

- Most aspects of the cooperation agreement are useful.
- Participants did not propose any refinements to the agreement.
- The agreement should be endorsed by the CRFM and the Organization of Eastern Caribbean States.

# Special Meeting of the CRFM-WECAFC Working Group on Flyingfish

All consultants involved in the CLME+ flyingfish sub-project, which includes Blue Earth, Nexus Coastal Resource Management, and the Caribbean Natural Resources Institute (CANARI), had trouble gaining input and participation from national focal points. This played out when only two of the six countries held stakeholder meetings through the process described above. Given these challenges, Blue Earth, Nexus, CANARI, and the CRFM determined that the most effective way to gather input from all countries would be to hold a special meeting of the CRFM-WECAFC Working Group on Flyingfish for all focal points. Blue Earth developed the first draft agenda for the two-day meeting held in Barbados, developed a facilitation plan, and facilitated select sessions. Below is a summary of the desired meeting outputs and discussion outcomes; further detail is available in Annex F of this Final Technical Report.

# Desired Meeting Outputs

Going into the meeting, the outputs sought included the following:

- A compilation of all deliverables and outputs of the six consultancies
- Analysis of the relationship between planned outputs and Member States' needs and capacities
- Comments and suggestions on the deliverables and outputs to facilitate updating of the Flyingfish FMP
- Considerations and suggestions concerning institutional and incentive structures and responsibilities of governments and other stakeholders for bringing the ECFF-FMP into implementation in the region, including identification of constraints and recommendations.

# Discussion Outcomes

Below is a summary of the main points gathered through discussion of each of the primary meeting topics.

# Capacity Availability and Needs

Themes that came out of the meeting discussions of fisheries management capacity and needs in the region included the following:

- Many national fisheries divisions lack human and technical capacity to implement the ECFF-FMP.
- Fishers' organizations hold potential for supporting both fisheries divisions and fishermen, but they require training and capacity development to meet their potential.
- There is a need for more two-way information sharing with fishermen, including sharing rationales for why certain regulations are in place and engaging fishermen in information analysis and dissemination.
- A mechanism such as National Intersectoral Committees (NICs) / Fishery Advisory Committees (FACs) or another appropriate fishery advisory entity is needed to enhance engagement of

experts and fishermen in decision-making. Membership in these groups needs careful consideration to ensure all stakeholder groups are represented.

# ECFF-FMP

Below are several outcomes of the participants' discussions about the draft updated ECFF-FMP:

- There are currently many gaps in understanding of flyingfish ecological and fishery dynamics and filling these gaps will be a critical first priority for implementing the ECFF-FMP.
- The existing draft ECFF-FMP is highly technical; to make it more accessible to all stakeholder groups, it could either be re-written to be more straightforward or could come with an accompanying summary in plain language.
- There is a need for a strategy, or implementation plan, for how to deploy the ECFF-FMP at the national level and integrate it with existing national FMPs.
- There is a need to emphasize the roles of fishermen, fishers' organizations, and NICs/FACs (or other appropriate fisheries advisory bodies) in the ECFF-FMP.
- The 5,000-tonne trigger point can be viewed as an impetus to consult with fishermen about the state of the stock and their catches, rather than triggering a close of the fishery.
- Currently relevant factors such as sargassum, climate change, ocean acidification, changes in fishery focus to different species, and changes in fishing methods should appear in the ECFF-FMP.

# <u>Data Policy</u>

Below are several outcomes from the participants' discussions of the draft data policy:

- There are numerous arrangements in development and created through past projects related to fisheries data collection and management.
- The data policy is a high-level policy, not a detailed plan.
- The data policy should link to the Caribbean Community Common Fisheries Policy.
- The data policy focuses on flyingfish as a pilot species and can be used as a model or expanded to address other fishery data policies in the future.
- CRFM will take on the role of compiling and analyzing flyingfish data from Eastern Caribbean countries.
- There needs to be consistency in data formats, collection timelines, minimum data requirements across countries, and an understanding of data confidentiality and intellectual property.
- Implementation of the data policy will focus on incremental progress, focusing on critical data collection in the near term on catch, landings, and vessel registration.
- There could be the need to create an incentive and consequence system for participation in data collection.
- Technologies such as smartphones and tablets could provide cost-effective and convenient options to improve data collection.

# Data Collection Approaches and Minimum Requirements

Chris Milley from Nexus presented a set of data collection recommendations for input. These included mandatory membership in fishers' organizations and the introduction of logbooks that fishers would fill out and submit at landing sites in exchange for a landings fee waiver. He recommended that fishers' organizations collect the logbooks and share aggregated data with fisheries divisions.

- Mandatory membership in fishers' organizations is not feasible without a high level of political intervention.
- Logbooks could be effective, though fishermen need to retain ownership over their personal data.
- Many fishers' organizations do not have adequate resources to manage and analyze fishermen's data.
- Cost recovery methods other than landings-based fees could be effective.
- Fisheries divisions could host annual events for fishermen where they share scientific findings. The events can incentivize fishermen to collect data.
- Fishers need a mandatory requirement to report catches. Alternatively, the incentive of receiving synthesized findings and participating in data analysis may provide sufficient incentive for fishermen to participate in data collection.
- E-logbooks are worth investigating as a convenient way for fishermen to collect and submit data.

# Cooperation Agreement

Meeting participants came to several conclusions regarding the draft cooperation agreement, including the following.

- The cooperation agreement will address all major, shared living marine resources in the relevant geography.
- The cooperation agreement should mention sharing of information that would be useful for combatting illegal, unreported, and unregulated fishing. There could be complications discussing markets and marketing since this would necessitate review by other bodies, like from the central French government.
- Gaining political-level agreement within the timeframe of the CLME+ consultancies is infeasible; therefore, we will seek a more practical agreement at the technical level in the near term. CRFM and Martinique may pursue a political-level agreement in the future.
- The most effective approach will be to begin with a simple agreement that all parties can agree to.
- CRFM will sign the cooperation agreement on behalf of its member nations, through either the Secretariat or the Ministerial Council, depending on the level of the signatory representing Martinique.

# Additional Stakeholder Consultations

The CRFM held additional stakeholder consultations during Blue Earth's Governance consultancy. These included a March CRFM Forum meeting, a May 2019 regional consultation in St. Lucia, and the 3rd meeting of the CRFM Ministerial Sub-Committee on Flyingfish, in Basseterre, Saint Kitts and Nevis in June, during which participants reviewed and discussed the consultancy's draft Eastern Caribbean Flyingfish Fisheries Management Plan 2020 - 2025, Cooperation Agreement, and Data Policy.

# **Conclusions**

The stakeholder engagement process for revising the ECFF-FMP and developing the Data Policy and Cooperation Agreement have included several opportunities for individuals in the region to provide input and comments. This process included the three meetings described in this document as well as other engagement methods including an online survey, phone interviews, and opportunities to provide written comments on draft documents. Blue Earth gathered input from each of these methods to develop updated, revised versions of the documents for further review and vetting. After a final round of stakeholder feedback via written comments, Blue Earth finalized the documents for endorsement at the appropriate levels.

# ANNEX D: FINAL BI-MONTHLY ACTIVITY PROGRESS REPORT

# Blue Earth (ERG) CRFM Flyingfish Sub-Project Adaptive Management Consultancy - Progress Report #11, July 2019

This document summarizes activities and progress made by the Blue Earth team (Blue Earth Consultants, a Division of Eastern Research Group, Inc. [Blue Earth] and colleagues at Eastern Research Group) on the consultancy, "Technical Support to Facilitate Adaptive Management for Eastern Caribbean Flyingfish Fisheries" (Adaptive Management). Blue Earth is completing the Adaptive Management consultancy under contract to the Caribbean Regional Fisheries Mechanism (CRFM) as part of the United Nations Development Programme (UNDP) / Global Environment Facility (GEF) funded project *Catalysing Implementation of the Strategic Action Programme for the Sustainable Management of shared Living Marine Resources in the Caribbean and North Brazil Shelf Large Marine Ecosystems* (CLME+ Project). This consultancy is closely linked to the "Technical Support to Enhance Governance Arrangement for Implementing an Ecosystem Approach for Flyingfish Fisheries" (Governance) and the "Technical Support on Implementation of Management / Stress Reduction Measures in the Eastern Caribbean Flyingfish Fishery" (Stress Reduction) consultancies that Blue Earth is also implementing. This document reflects work performed under this consultancy to date. The *Contract Status* section below is organized by activities as listed in the scope of work.

## **Contract at a Glance**

Sub-Project Title	Technical Support to Facilitate Adaptive Management for Eastern Caribbean								
	Flyingfish Fisheries								
Consultant	Eastern Research Group, Inc.								
Contract name	Technical Support to Facilitate Adaptive Management for Eastern Caribbean								
	Flyingfish Fisheries								
Update Period	9 February 2019 – 5 April 2019								
Contract Lead	Eastern Research Group, Inc.								
Contract Start Date	1 August 2017								
Contract end date	26 July 2019								
Total Contract Amount	\$105,655								
Cash received (to date)	\$47,534.99								
Amount spent	\$105,655								
Activity Implementation	Good Satisfactory Poor								
Status	X								
Financial Implementation	Good Satisfactory Poor								
status	X								
Project Partners	None								
Submitted by	Andy Bystrom								
Submission date	July 2019								
## **Contract Status**

Each table below lists the activities included under each Work Package of the consultancy, as well as the status of activities and results achieved to date. Please note that this Bi-Monthly Progress Report is cumulative; therefore, status descriptions include activities completed during past reporting periods as well as the current reporting period.

Project Inception		
Activities (as listed in the Scope of Work)	Status	Results to Date (measured against the Deliverables / Outputs listed in Contract Document(s))
Host Inception Call	<ul> <li>Complete:</li> <li>Organized and held inception call between CRFM Secretariat staff and Blue Earth.</li> </ul>	<ul><li>Draft call agenda and other materials</li><li>Completed inception call</li></ul>
Develop Inception Report	<ul><li>Complete:</li><li>Developed and submitted Inception Report.</li></ul>	Inception Report

Work Package 1: Management Performance Evaluation and Review and Update FMP		
Activities (as listed in the Scope of Work)	Status	Results to Date (measured against the Deliverables / Outputs listed in Contract Document(s))
Perform Document Review and Web Research	<ul> <li>Complete:</li> <li>Reviewed FMP Implementation Evaluation.</li> <li>Developed criteria for selecting case study fisheries for subsequent research on their financing sources.</li> <li>Began researching possible case study fisheries.</li> <li>Began web research on potential sustainable financing options for the Eastern Caribbean flyingfish fishery.</li> </ul>	Criteria for selecting case study fisheries
Prepare for and Conduct Interviews	<ul> <li>Complete:</li> <li>Developed additional interview questions related to the FMP that we will ask country focal points, building off the Governance and Stress Reduction consultancies.</li> </ul>	<ul> <li>National fishery division contact list</li> <li>Online survey questions and respondent lists developed under the Governance consultancy, plus summary of online survey findings</li> </ul>

		-
	• The Blue Earth team (Nexus staff) conducted initial visits to focal countries and held meetings with key informants.	• Additional interview questions regarding the FMP
	• Blue Earth is currently coordinating with CANARI regarding their second round of consultation meetings and the feasibility of adding on to their meetings to streamline the stakeholder consultation process.	<ul> <li>Initial trip to focal countries completed by Nexus under a separate consultancy</li> <li>Packet of materials for national</li> </ul>
	• Developed a packet of materials to support focal points leading consultative processes, held calls with country focal points to discuss	consultative processes distributed to points of contact
	facilitation and reference materials and support coordinating stakeholder processes.	• 5 completed planning calls with focal points to support coordinating
	• Held 5 calls with 11 focal points in Barbados, Dominica, Grenada, Saint Lucia, Saint Vincent and the Grenadines, Trinidad and Tobago	<ul><li>consultative processes</li><li>ECFF-FMP implementation</li></ul>
	<ul><li>to review draft materials and plan national consultative processes.</li><li>Supported consultative processes in member countries and collected</li></ul>	evaluation interview guide and respondent list
	stakeholder feedback on recommendations for updating the FMP from Saint Lucia.	• Financing mechanisms interview guide and respondent list
	• Reviewed information and data gaps from online survey to inform development of interview guide consistent with the Performance Evaluation Outline.	<ul> <li>15 evaluation stakeholder interviews</li> <li>12 financing expert interviews</li> </ul>
	• Developed interview guide to inform the Performance Evaluation and informant list.	
	• Completed interviews with 15 individuals to inform the performance evaluation	
	• Developed interview guide and informant list for interviews on case study fisheries financing mechanisms to supplement web research	
	<ul> <li>Completed interviews with 12 informants regarding the case study fisheries financing mechanisms</li> </ul>	
Analyze Data	Complete:	• Summary of online survey findings
	• Analyzed comments on the recommendations for updating the FMP and FMP online survey responses collected under the Governance	developed for Stress Reduction consultancy
	consultancy.	Revised list of recommendations for
	• Compiled feedback collected through the online survey to identify data gaps and inform interview guide development	updating the FMP developed under Governance consultancy
	Revised recommendations for updating the ECFE-FMP	Draft Undated ECFF-FMP
	<ul> <li>Integrated comments into first draft updated ECFF-FMP</li> </ul>	

	<ul> <li>Analysed interview insights on FMP implementation evaluation and cross-walked with earlier FMP update online survey responses</li> <li>Analysed interview data and web research on financing mechanisms</li> <li>Reviewed meeting notes from CRFM WECAFC meeting in Barbados and updated ECFF-FMP</li> <li>Discussed trigger point recommendations and the inclusion of stock assessment recommendation into revised updated ECFF-FMP</li> <li>Added available flyingfish data to draft Updated ECFF-FMP for March Forum meeting review.</li> </ul>	
Implement a Consultative Process with CRFM PWG <sup>1</sup> and CRFM-WECAFC Working Group on Flyingfish	<ul> <li>Complete:</li> <li>Held a call with Nexus staff following their visits to focal countries to discuss the outcomes of stakeholder consultations and inform planning for future consultative processes to be held under this consultancy.</li> <li>Corresponded with CANARI about the schedule for their focus groups and consultations in order to potentially coordinate trip and meeting schedules.</li> <li>Developed approach for supporting focal points facilitating national stakeholder consultations to gain input on draft Recommendations for Updating the FMP under the Governance consultancy.</li> <li>Developed materials to support facilitation (e.g., list of recommendations for updating the FMP, draft meeting agenda, draft facilitation plan, draft note-taking template, etc.) and submitted to CRFM Secretariat for review under the Governance consultancy.</li> <li>Revised materials and submitted to focal points for their review.</li> <li>Held calls with focal points to discuss materials and plan national consultative processes.</li> <li>Supported implementation of national consultative process in Saint Lucia and received documentation of stakeholder feedback on proposed revisions to the FMP.</li> <li>Participated in call with CRFM Secretariat, Nexus, and CANARI to discuss steps for multi-level stakeholder engagement</li> </ul>	<ul> <li>Packet of materials for national consultative processes distributed to points of contact</li> <li>Summary of National Consultative Processes</li> <li>Draft Flyingfish Stakeholder Meeting Summary Report (Appendix B)</li> </ul>

<sup>&</sup>lt;sup>1</sup> Note that there **has** not been, nor is likely to be, a meeting of the CRFM PWG during the course of this consultancy

	<ul> <li>Developed and revised draft agenda for 1.5-day meeting in Barbados on 1 – 2 October 2018</li> <li>Participated in 1 – 2 October 2018 Barbados meeting with multi- country stakeholders; further consultations will be completed by CRFM or member countries at their discretion</li> <li>Prepared revised cooperation agreement and data policy for stakeholder input; awaiting compiled input from CRFM</li> <li>Revised cooperation agreement and data policy per stakeholder comments and resubmitted both documents</li> <li>Submitted Draft Flyingfish Stakeholder Meeting Summary Report</li> </ul>	
Prepare Evaluation Report and Draft Updated FMP	<ul> <li>Complete:</li> <li>Completed and submitted a progress report towards the evaluation of the ECFF-FMP under the Stress Reduction consultancy. The FMP Evaluation Report under this consultancy and Work Package 1 of the Stress Reduction consultancy are closely linked. We will draw upon the preliminary findings in the progress report, in addition to the results of the national consultative processes, to develop the Evaluation Report.</li> <li>Developed updated outline of the Draft Management Performance Evaluation Outline.</li> <li>Revised the Performance Evaluation Outline to more closely align with the 2016 ECFF-FMP evaluation</li> <li>Currently developing second draft updated ECFF-FMP</li> <li>Developed ECFF-FMP implementation evaluation report</li> <li>Developed report on case studies and financing mechanism options for Eastern Caribbean flyingfish fishery management</li> <li>Submitted Final FMP Evaluation Report</li> <li>Submitted revised second draft updated ECFF-FMP</li> <li>Revised second draft updated ECFF-FMP</li> <li>Submitted revised second draft updated ECFF-FMP</li> <li>Revised second draft updated ECFF-FMP</li> <li>Revised second draft updated ECFF-FMP</li> <li>Submitted revised second draft updated ECFF-FMP for stakeholder comments</li> <li>Submitted revised second draft updated ECFF-FMP for stakeholder comments</li> <li>Submitted revised second draft updated ECFF-FMP for stakeholder comments</li> </ul>	<ul> <li>Progress Report on Eastern Caribbean Flyingfish Fishery Management Plan Monitoring and Evaluation completed for the Stress Reduction consultancy</li> <li>Draft Management Performance Evaluation Outline</li> <li>First draft updated FMP</li> <li>ECFF-FMP implementation evaluation report</li> <li>Report on financing options for Eastern Caribbean flyingfish management</li> <li>Final FMP Evaluation Report</li> <li>Draft Updated ECFF-FMP (Appendix A in Governance progress report #13)</li> </ul>

Support Consideration and	Complete:	Draft Undated ECEE-EMP
Approval by the CRFM	• Participated in call with CRFM Secretariat Nexus and CANARI to	
Ministerial Sub-Committee and	discuss steps for multi-level stakeholder engagement	
CRFM-WECAFC Working	<ul> <li>Developed agenda including time to present and discuss potential</li> </ul>	
Group on Flyingfish	undates to the FMP at October Barbados meeting of the WECAEC	
1 9 6	Working Group on Flyingfish	
	• CRFM Secretariat staff planning for October 2018 Ministerial	
	Council meeting to gain feedback on FMP updates from political-	
	level stakeholders	
	• Participated in 1 - 2 October 2018 Barbados meeting to gain input	
	from CRFM and WECAFC members: further consultations will be at	
	the discretion of CRFM and WECAFC	
	• Developed plan and timeline with Peter Murray on the revisions,	
	review, and finalization of the ECFF-FMP	
	• Currently updating the ECFF-FMP for CRFM and stakeholder input	
Finalize Updated FMP	Complete:	Draft Undated ECEE-EMP
T manze opeared T mi	<ul> <li>Discussed draft revisions at CREM-WECAEC meeting and received</li> </ul>	Final Undated ECEE_EMP
	feedback for further revisions	• I mai opuated Left - I wi
	• Submitted draft of the updated ECFF-FMP and revisions according	
	to PAM comments.	
	• Timeline for updated FMP inclusion in CRFM Forum discussed	
	• Submitted draft updated ECFF-FMP for March Forum meeting	
	review	
	• Submitted revised version for review during 3rd meeting of the	
	CRFM Ministerial Sub-Committee on Flyingfish	
	Updated FMP approved by CRFM	
Prenare Impact Assessment Tool	Complete:	Revised impact Assessment Tools
repute impact ressessment root	<ul> <li>Developed draft Impact Assessment Tools (IATs) that address Blue</li> </ul>	<ul> <li>Impact Assessment Tools revised</li> </ul>
	Farth's work under Blue Farth's three CRFM consultancies:	again
	Governance, Adaptive Management, and Stress Reduction	uguin
	• Revised the IATs to align with CLME+ Governance Effectiveness	
	Assessment Framework based on feedback from Robin Mahon and	
	Lucia Fanning.	
	• Revised IATs based on further input from CRFM.	

Work Package 2: Information Briefs and Experience Notes		
Activities (as listed in the Scope of Work)	Status	Results to Date (measured against the Deliverables / Outputs listed in Contract Document(s))
Develop Information Product Topics	<ul> <li>Complete:</li> <li>Reviewed documents related to outreach and information products.</li> <li>Developed draft press release submitted to CRFM on 27 July 2018</li> <li>Developed and revised draft agenda for 1.5-day meeting in Barbados on 1 – 2 October 2018</li> <li>Discussed development and process for agreement with PhD candidate and CERMES affiliate Lisa Soares</li> <li>Developed agenda including time to present and discuss draft Data Policy at October Barbados meeting</li> <li>Gained feedback on the draft data policy from St Lucia and Dominica; incorporated feedback into draft, which we will send to CRFM along with other materials in preparation for the Barbados meeting</li> <li>Proposed plan for information products</li> <li>At 1 – 2 October 2018 Barbados meeting, discussed reallocating Work Package 2 funds to updating of CANARI video or supporting an implementation plan</li> <li>Gained feedback from CRFM on the possible uses of remaining budget in this work package</li> <li>Developed topics (4 information products)</li> </ul>	<ul> <li>Draft second press release</li> <li>Saint Lucia consultative process completed, and attendance list and documentation of stakeholder feedback received</li> <li>Drafted and revised Barbados meeting agenda</li> <li>Dominica consultative process completed, and documentation of stakeholder feedback received</li> </ul>
Develop Outlines and Creative Concepts	<ul> <li>Complete:</li> <li>Reviewed existing examples of concept notes and briefs on CRFM's website.</li> <li>Began work towards developing outlines and creative concepts; awaiting response on possible reallocation of funds</li> <li>Developed outlines and creative concepts for different types of information products. CRFM agreed that Blue Earth would only submit Draft Information Products</li> </ul>	Draft Information Products
Produce Information Briefs and Experience Notes	Complete:	<ul><li>Submitted 4 Information Products</li><li>Revised Information Products</li></ul>

Work Package 2: Information Briefs and Experience Notes		
Activities (as listed in the Scope of Work)	Status	Results to Date (measured against the Deliverables / Outputs listed in Contract
	<ul> <li>Produced 4 Information Products (Updated FMP, Data Policy and Cooperation Agreement, FMP evaluation, Next Steps)</li> <li>Received CRFM comments</li> <li>Revised and resubmitted 4 Information Products</li> </ul>	
Prepare Impact Assessment Tool	<ul> <li>Complete:</li> <li>Developed draft Impact Assessment Tools (IATs) that address Blue Earth's work under Blue Earth's three CRFM consultancies: Governance, Adaptive Management, and Stress Reduction.</li> <li>Revised the IATs to align with CLME+ Governance Effectiveness Assessment Framework based on feedback from Robin Mahon and Lucia Fanning.</li> <li>Revised IATs based on further input from CRFM.</li> </ul>	<ul> <li>Impact Assessment Tools</li> <li>Revised Impact Assessment Tools</li> </ul>

Work Package 3: Develop Sub-Project After-Life Plan		
Activities (as listed in the	Status	Results to Date (measured against the
Scope of Work)		Deliverables / Outputs listed in Contract
		Document(s))
Align on Goals and Outline	Complete:	None
for Sub-Project After-Life	• Held initial discussions with CRFM about the content and purpose of	
Plan	the After-Life Plan.	
Develop Draft Sub-Project	Complete:	• Draft annotated outline of Sub-Project
After-Life Plan Outline	Produced draft annotated outline for Sub-Project After-Life Plan	After-Life Plan
Conduct Interviews	Complete:	• Interview information from Fishery
	Conducted phone interviews with informants from the Philippines	Financing Mechanisms report
	Municipal Fishery, South Pacific Islands Offshore Tuna Fisheries, and	included in After-Life Plan
	the North Pacific Fishery that informed the Fishery Financing	
	Mechanisms report. Reports results used to develop After-Life Plan.	

Analyze Data	Complete:	Working Draft After-Life Plan
	• Compiled information and feedback during the consultative process and	
	knowledge obtained through consultancy deliverable development	
Develop and Vet After-Life	Complete:	• Draft After-Life Plan and PowerPoint
Plan Straw Proposal	• Developed draft After-Life Plan and PowerPoint proposal presentation	presentation
	Draft After-Life Plan reviewed by CRFM	
Draft, Revise, and Support	Complete:	• Final After-Life Plan
Endorsement of After-Life	Revised and resubmitted After-Life Plan	
Plan	Received further CRFM comments	
	Drafted final version of After-Life Plan	
Prepare Impact Assessment	Complete:	Impact Assessment Tools
Tool	• Developed draft Impact Assessment Tools (IATs) that address Blue	Impact Assessment Tools revised
	Earth's work under Blue Earth's three CRFM consultancies:	again
	Governance, Adaptive Management, and Stress Reduction.	
	• Revised the IATs to align with CLME+ Governance Effectiveness	
	Assessment Framework based on feedback from Robin Mahon and	
	Lucia Fanning.	
	• Revised IATs based on further input from CRFM.	

Constal Perperting		
General Reporting		
Activities (as listed in the	Status	Results to Date (measured against the
Scope of Work)		Deliverables / Outputs listed in Contract
		Document(s))
Project Inception Report	Complete:	Project Inception Report
	• Developed, revised, and finalized a project Inception Report.	
The appropriate number of	Complete:	• 10 bi-monthly progress reports
bi-monthly reports	• This is Blue Earth's tenth and final bi-monthly progress report	
	submitted under this project.	
Prepare Final Technical	Complete:	Final Technical Report
Report	• Requested clarification from CRFM on aspects of the final technical	*
	report on 3 July 2019 and received CRFM response on 26 March 2019	
	Submitted Final Technical Report in July 2019	

<b>Overarching Reporting</b>		
Identify any adjustments / changes that have been made to deliverables / outputs	<ul> <li>We agreed to a revised payment schedule, including a due date for the second set of deliverables and payment on 30 September 2018. We attached this schedule in the column to the right.</li> <li>For the "Final updated FMP" included as a deliverable for the second payment, Blue Earth will submit revisions to the FMP based on input gathered to date, and the final FMP will be submitted through the Governance consultancy.</li> <li>We changed the dates of payments 4 and 5 so they are one month before the contract end date.</li> </ul>	Nov-18 Adaptive Management Payment 2         (1.) Interview guides and respondent lists         [BEC]         (2.) Tools to guide consultative processes         related to the evaluation, lessons learned,         and sustainable financing information         gathered as a part of Work Package 1         [BEC]         (3.) Summary of national consultative         processes [BEC]         (4.) FMP Evaluation Report [BEC]         (5.) Final updated FMP [BEC/Mark]
	<ul> <li>The consultancy timelines have shifted due to response rates of incountry stakeholders, timing of the multi-stakeholder meeting in Barbados, and other factors. However, with feedback from the meeting in Barbados we are moving forward on developing the next set of deliverables.</li> <li>We created two IATs that address components of all three</li> </ul>	<ul> <li>(6.) Impact Assessment Tool (if jointly deemed necessary by the Consultant and the CRFM) [BEC]</li> <li>(7.) An appropriate number of bi-monthly progress reports [BEC]</li> <li>Adaptive Management Payment 3</li> <li>(1.) Draft and final outlines and creative</li> </ul>
	<ul> <li>consultancies.</li> <li>In place of the remaining national in-country meetings including validations meetings, CRFM, the WECAFC Subcommittee on Flyingfish, and consultants supported travel for technical staff members and other stakeholders to attend the meeting in Barbados on 1 – 2 October. The meeting was the primary opportunity for these stakeholders to provide feedback and discuss the key outputs across consultancies. The week following the meeting, the CRFM Secretariat was expected to provide an update and gain further feedback on each of the outputs and the process forward with the CRFM Ministerial Council and transmit this feedback to the consultants. Please note that CRFM indicated that the Ministerial</li> </ul>	<ul> <li>(1.) Drat and man outmits outmits and creative concepts [BEC]</li> <li>(2.) Final Information Brief(s) [BEC]</li> <li>(3.) Final Experience Note(s) [BEC]</li> <li>(4.) Impact Assessment Tool (if jointly deemed necessary by the Consultant and the CRFM; [BEC]</li> <li>(5.) An appropriate number of bi-monthly progress reports [BEC]</li> <li>May-19</li> <li>Jun-19 Adaptive Management Payments 4 and 5         <ol> <li>(1.) Sub-Project After-Life Plan outline, full draft, and final [BEC]</li> <li>(2.) Interview guide and respondent list [BEC]</li> <li>(3.) Impact Assessment Tool [BEC]</li> </ol> </li> </ul>
	<ul> <li>Council did not discuss the flyingfish consultancies.</li> <li>We took a different approach than scoped for Work Package 2 and worked with the CRFM beginning in September 2018 to develop the consultancy's information products.</li> <li>We produced 4 information products that were approved by the CRFM in April 2019.</li> </ul>	<ul> <li>(4.) An appropriate number of bi-monthly progress reports [BEC]</li> <li>(1.) Final Technical Report as described in the scope of work (with annexed Bi-monthly Progress Reports) including final, publisher-ready versions of all deliverables of the assignment [BEC]</li> <li>(2.) Drafts of each product having been reviewed by the CRFM, prior to finalisation [BEC]</li> </ul>

	• We have an agreed upon timeline for the Updated FMP revisions in accordance with the CRFM Forum meeting in March 2019	
Identify Lessons Learnt and Best Practices	<ul> <li>Lessons learned include the following:</li> <li>ECFF-FMP implementation can be enhanced by adaptive management processes. This is due to the flyingfish fishery's varied importance between Eastern Caribbean nations. Flyingfish policy goals that are flexible, consider shifts in the political environment, and are specific to individual Member States are needed to ensure that future implementation efforts are time and</li> </ul>	
	<ul> <li>Much of the consultancies results are based on perception (FMP implementation) and not quantitative data. The project deliverables were designed in the hopes that there will be more quantitative data regarding the fishery in the future.</li> <li>In some cases, processes outlined in the consultancy proposal for gaining stakeholder input need to be revised to fit the schedules</li> </ul>	
	<ul> <li>and time commitments of stakeholders, particularly those at the political level.</li> <li>The <i>de facto</i> sequence for gaining input from a range of stakeholders in the Eastern Caribbean involves gaining input from technical- and community-level stakeholders first and discussing with political-level stakeholders later in the process.</li> <li>Elvingfish must be considered together with other fisheries in the</li> </ul>	
	<ul> <li>Eastern Caribbean, since in many countries fishermen target multiple species.</li> <li>Clear and consistent communication with the CRFM is crucial to maintaining the project's continuity</li> <li>Maintain a view of what will be useful for the CRFM and Eastern</li> </ul>	
	<ul> <li>Wantain a view of what will be useful for the CKFW and Eastern Caribbean flyingfish management in the big picture when determining the direction to take with deliverables written in the contract.</li> </ul>	
Identify contract milestones achieved within update period	<ul> <li>Milestones include the following (also mentioned above in Status column):</li> <li>Development of options for CRFM to choose among for how to deploy remaining Work Package 2 funds</li> </ul>	

-				
		•	Completion of FMP evaluation and fisheries financing mechanisms	
			interview guides and interviews	
		•	Analysis of evaluation data and development of draft ECFF-FMP	
			Implementation Evaluation report	
		•	Analysis of financing case study research and interviews and	
			development of draft Financing Mechanisms report	
		•	Draft FMP evaluation report was submitted and approved with	
			Data Policy and Cooperation Agreement annexes	
		•	4 Information Products	
		•	Approved After-Life Plan and PowerPoint presentation	
Id	entify any risk to contract	Ple	ase outline the risk management strategy adopted	
ou	tputs			
Ri	sks to the contract outputs	Ris	k management strategies include the following:	
in	clude the following:	•	Communicate proactively with sub-contractors and other	
1.	Overlap among flyingfish		consultancy leads to share key information, milestones, and	
	sub-projects and		strategize coordinated meetings and stakeholder consultations.	
	coordinating work and		Developed a new deliverable schedule across all projects with	
	deadlines for related		Nexus and shared with CRFM for feedback.	
	deliverables across several	•	Efforts were made during the consultancy to streamline contact and	
	contractors.		information requests of key stakeholders, including by sharing	
2.	Potential stakeholder fatigue		respondent and attendee lists where appropriate and by	
	due to the number of		coordinating with CANARI to build off their consultation	
	projects and deliverables		activities.	
	that require input from	•	Worked closely with country points of contact to build	
	fisheries officers and other		understanding of the flyingfish efforts and their willingness to lead	
	stakeholders.		in-country stakeholder consultative processes. Utilize alternative	
3.	Difficulty engaging		approaches to in-person consultative processes where necessary,	
	necessary stakeholders for		such as webinars and calls. For in-person consultative processes,	
	in-person consultative		we allowed ample lead time to plan and confirm availability.	
	processes.	•	Allocate consultant staff time to support key countries with	
4.	Difficulty gaining		national focal point consultative meetings (Saint Lucia, Grenada)	
	substantive input from		and a regional meeting (Barbados)	
	flyingfish fishermen	•	Consistently moved forward on Work Package 2 and ECFF-FMP	
	(particularly in Barbados)		updates when direction from CRFM was given.	
	who may be at sea during	•	Regarding supporting the endorsement of the After-Life Plan, Blue	
			Earth acted upon all CRFM requests to add information and further	

	proposed consultative process timelines	develop the After-Life Plan to increase the likelihood of its endorsement by the CRFM	
5.	Potential for low survey		
	response rates and non-		
	statistically significant		
	representation of fishers due		
	to timing of the flyingfish		
	fishery season and limited		
	survey capacity.		
6.	Limited capacity of in-		
	country stakeholders		
	including fishery staff to		
	support the project,		
	including Tobago's		
	requirement of additional		
	capacity in order to		
7	participate		
/.	After Life Dlen		

# **Financial Implementation**

Contract implementation on track?			track?	If no, please indicate why
Yes	Х	No		
Is revised payment schedule needed? If yes,		needed? If yes,	Blue Earth and Nexus have agreed to a timetable of deliverable deadlines based on the timing of in-	
please attach revised plan.			country visits and the CRFM-WECAFC meeting held in October 2018.	

## **Additional Information**

Identify any activities during the reporting	No components of the activities reported on explicitly address gender equality. However, the 8th Special
period that address gender equality	Meeting of the Ministerial Council has issued the following statement on gender, youth and decent work:
	"The Council accepted that international and national norms regarding issues pertaining to gender, youth,
	and decent work be adhered to, and be incorporated into all CRFM policies, protocols, programmes, and
	plans." This statement was considered throughout the remainder of the consultancy and the deliverables it
	produced.

## ANNEX E: ECFF-FMP PERFORMANCE ASSESSMENT REPORT

### **Background and Rationale**

This document summarizes findings from an evaluation of the implementation of the Eastern Caribbean Flyingfish Fishery Management Plan (ECFF-FMP). It serves as an update to the similar evaluation that took place in 2015, with the report published in 2016, by the Caribbean Regional Fisheries Mechanism (CRFM).<sup>2</sup> The CRFM and member countries involved in this work (Barbados, Trinidad and Tobago, Grenada, Saint Lucia, Saint Vincent and the Grenadines, and Dominica) may use this evaluation report to inform priorities for implementation of the forthcoming updated ECFF-FMP. The objectives for this evaluation, which are based on the ECFF-FMP management measures, included to report on the following:

- Progress towards adoption of the ECFF-FMP and implementation of national approaches to support management of flyingfish fisheries
- Status of collection and reporting of flyingfish catch and effort data
- Progress towards establishment of authorized national entry systems for flyingfish fisheries
- Progress towards conducting a stock assessment to estimate abundance of flyingfish
- Adoption of a precautionary sub-regional total annual catch trigger point
- Development of precautionary management measures to implement if trigger point is reached (e.g., implementation of sub-regional freeze on flyingfish effort and/or fishing capacity, reassessment of resource status, and update of management measures)
- Progress towards strengthening national data collection systems
- Status of stakeholder awareness and engagement in the management process
- Other aspects of flyingfish fishery management performance (e.g., monitoring, control, and surveillance systems)
- Lessons learned that can improve regional cooperation for transboundary fishery management

Blue Earth Consultants (Blue Earth), a Division of Eastern Research Group Inc. (ERG), conducted this evaluation for the CRFM under the consultancy titled, *Technical Support to Facilitate Adaptive Management for Eastern Caribbean* Flyingfish *Fisheries*. The consultancy is part of the United Nations Development Programme (UNDP) / Global Environment Facility (GEF) funded project, *Catalysing Implementation of the Strategic Action Programme for the Sustainable Management of shared Living Marine Resources in the Caribbean and North Brazil Shelf Large Marine Ecosystems* (CLME+ Project). The objectives and organization of this document closely reflect those of CRFM's 2016 ECFF-FMP Implementation Report to enable comparison. Likewise, this evaluation provides a starting place and point of comparison for future evaluations.

## **Methodology**

Blue Earth took the following steps to evaluate the ECFF-FMP:

- 1. **Document review:** Reviewed the 2016 CRFM ECFF-FMP implementation evaluation.
- 2. **Online survey:** Many of in-country stakeholders' responses to a previous online survey related to the ECFF-FMP update; therefore, we reviewed these responses to help identify where more input was needed to answer the evaluation questions.
- 3. **Interviews:** Developed an interview guide (Appendix 1) that followed up on the online survey and gained more information related to the implementation evaluation. Blue Earth performed a total of

<sup>&</sup>lt;sup>2</sup> Mohammed, E. (2016). Implementation Report (2014 - 2015): Sub-regional Fisheries Management Plan for Flyingfish in the Eastern Caribbean. *CRFM Technical & Advisory Document*, No. 2016 / 01. 29 pp + 6.

14 phone interviews with 15 people, representing national fisheries divisions in all six focal countries as well as individuals with expertise at the regional level (Appendix 2).

- 4. **Data Analysis:** Compiled all input from the online survey and interviews to draw out key findings.
- 5. **Report Development and Refinement:** Drafted this report, which includes recommendations for the CRFM on furthering implementation of the ECFF-FMP. We will ask stakeholders from each member country to review the relevant summaries below and provide input for refinement and finalization.

### Key Findings: National Initiatives

### Barbados

Blue Earth developed a summary of the status of implementing key initiatives of the ECFF-FMP in Barbados (Table 1). Green indicates accomplishment of the initiative, yellow indicates partial accomplishment, and orange indicates limited to no accomplishments. We provide further detail in the sections below.

-			1				
National Initiative				Status			
Adopted ECFF-FMP					Yes		
Level	of fisheries mana	gement	capacity	Medium	ı		
National-level flyingfish FMP in place				No			
Natio	nal legislation in p	olace		No; dra	ft fisher	ries regulations (not flyingfish-	
				specific	)		
Existing legislation supportive of ecosystem			Yes, though not explicitly				
approach to fisheries management			nent				
Existing legislation supportive of			Yes, inc	lirectly	through the Food and Agriculture		
preca	utionary approac	h		Organiz	ation o	f the United Nations' Code of	
				Conduc	t for Re	esponsible Fisheries	
Data	collection occurrin	ng		Landings, effort			
Vessel registry in place			Yes				
Stakeholder consultations since previous		None; only with technical staff					
<b>ECFF-FMP</b> implementation evaluation							
	= accomplished		= partially accom	olished		= no accomplishment	

Table 1. Overview of ECFF-FMP implementation in Barbados

The evaluation research determined that Barbados is facing several cross-cutting challenges regarding flyingfish management, including the following:

- Absence of explicit reference to the ecosystem approach to fisheries management (EAF) in existing legislation
- Regulatory and administrative context that hinders adoption, development, and implementation of the ECFF-FMP
- Limited staff and trainings to complete data collection
- Limited stakeholder engagement and fisher participation in data collection, and low levels of support for legislation that facilitates stakeholder involvement / awareness building for the ECFF-FMP
- Dated legislation that does not support licensing / registration of flyingfish fishers (current system is from the 1940s)
- Little use of fisher organizations for direct involvement

# Adoption of the ECFF-FMP and Development and Implementation of National FMP for Management of Flyingfish Fisheries

Barbados has adopted the ECFF-FMP at the ministerial level, and the Fisheries Division and partners are implementing some of its aspects, including data collection, vessel registration, and participation in regional fisheries management meetings. Interview informants believe Barbados has a medium level of human resources and infrastructure capacity to develop and implement fisheries management plans<sup>3</sup>. Barbados does not currently have flyingfish management legislation; it does, however, have draft national fisheries management regulations with general management principles that apply to all fisheries including flyingfish. Limited political will to prioritize flyingfish management and allocate resources to the Fisheries Division hinders full implementation of the ECFF-FMP.

#### Legislation and Monitoring, Control, and Surveillance in Support of Management of Flyingfish Fisheries

There have been no major changes to legislation and monitoring, control, and surveillance of flyingfish fishing in Barbados since the previous ECFF-FMP implementation evaluation. Barbados has no national legislation in place to support implementation of the ECFF-FMP. The country has draft regulations for general fisheries management (mentioned above), which, if passed, would direct efforts on activities including licensing, data collection, and logbooks for all fisheries including flyingfish. Although there is no direct mention of EAF in the draft national regulations, the regulations are consistent with EAF. Likewise, although the precautionary approach is not noted in existing legislative tools, fisheries officers stated that Barbados endeavors to follow the Food and Agriculture Organization of the United Nations (FAO) Code of Conduct for Responsible Fisheries, which includes the precautionary approach as a guiding principle.

Table 2 provides a summary of the items related to monitoring, control, and surveillance that existing legislation requires. To give full effect to monitoring, control, and surveillance systems for the ECFF-FMP, Barbados would need to pass its draft fisheries legislation and build political will to implement it.

Element of Fisheries Management	Mandatory under Current Legislation?
Provision of data by the flyingfish industry	Yes
Collection of data by authorities	Yes
Analysis of data by the flyingfish fishery authority	No, but implemented nonetheless
Reporting on flyingfish fisheries data analyses to inform management	No, but implemented nonetheless
Consultation with flyingfish fisheries stakeholders on management issues	No, but implemented nonetheless
Support for EAF	Not explicitly
Support for the precautionary approach to fisheries management	Yes, through FAO Code of Conduct
Designation of specific management and conservation measures	No, but implemented nonetheless

#### Table 2. Management elements that are mandatory under Barbados' fisheries law

 $<sup>^{3}</sup>$  Interview respondents from each country were asked whether the existing capacity in their country is low, medium, or high, where low indicates that there is less than about 30% of capacity needed and high indicates that there is more than around 60 - 70% of what is needed.

### Data Collection and Reporting in Support of Research and Informed Decision-Making

There have been few improvements to data collection and reporting in Barbados since the previous ECFF-FMP implementation evaluation. Lack of a landing site, and market data collection, protocol hinders data collection efforts. Another challenge is securing fishermen's cooperation in data collection, such as through consistent and accurate completion of logbooks. To gain their participation, informants said that more effort is needed to build fisher understanding of the benefits they can receive by sharing data.

Barbados submits landings data to the FAO and CRFM upon request. Scientists analyze data from select landing sites and multiply them by a standardized factor to estimate total catch. This practice is not consistent with the precautionary approach to fisheries management and leads to discrepancies between the total catch recorded in country and what Barbados reports to the FAO. The method is also problematic for achieving sustainable management decisions. Data shared with FAO and CRFM does not include information about specific fishermen. Table 3 summarizes the types of data and data collection frequency in Barbados; the Fisheries Division stores data electronically using Microsoft Excel.

Type of Data	Data Collected?	Frequency
Landings	Yes	Daily
Catch	No	N/A
Effort	Yes (number of fishing trips)	Daily
<b>Biological / Ecological</b>	No	N/A
Economic	Limited	N/A
Social	No	N/A

#### Table 3. Data Collected in Barbados

In addition to fishery data collection, researchers are conducting studies focused on flyingfish in Barbados. One research project synthesized fishers' observations of changes in ocean conditions and changes in the flyingfish fishery over the last decade, and its results are consistent with the projected impacts of climate change.<sup>4</sup> Another study analyzes sargassum movements and the roles sargassum plays in the life histories of flyingfish and dolphinfish.<sup>5</sup> Additionally, fisheries officers shared information about the University of the West Indies (UWI) Gender in Fisheries Team's postharvest gender and organizational research in Barbados.

### Authorized National Entry (License/Permit) System for Flyingfish Fisheries

The Barbados Fisheries Act makes provisions for the development of fisheries management plans but does not indicate how vessel licensing or permitting should take place. The draft fisheries management regulations provide guidance on updating vessel licensing; however, the current approach follows a longstanding process and database. The current vessel registry contains the following vessel data:

- Depth (or draft)
- Dimensions
- Name

- Vessel type
- Vessel use / fisheries involved in
- Weight
- Names and contact information of associated people

 <sup>&</sup>lt;sup>4</sup> Johnson, D. R., Oxenford, H.A., Cox, S. and Franks, J. S. (2018). *Holopelagic sargassum and the complexities of predicting influxes and impacts on pelagic fisheries of the Lesser Antilles*. Gulf and Caribbean Fisheries Institute 2018. San Andres, GCFI.
 <sup>5</sup> Anderson, K. and Oxenford, H. A. (2018). *Fishers' observations of climate change impacts on the flyingfish fishery in Barbados*. Gulf and Caribbean Fisheries Institute 2018. San Andres, GCFI.

There are around 430 vessels registered in Barbados that may catch flyingfish. Informants were unable to comment on whether this represents an increase or decrease in the number of registered vessels since the 2015 ECFF-FMP implementation evaluation, although the total catch has declined.

### Awareness-building of Stakeholders on the ECFF-FMP and their Engagement in the Management Process

Officials in Barbados have held few stakeholder consultations regarding the flyingfish fishery since the previous implementation evaluation. The Caribbean Natural Resource Institute (CANARI) carried out mini-consultations related to its CLME+ sub-project focused on stakeholder assessment and engagement. Informants mentioned that recent, fisheries staff reviewed highly technical updates to fishery management documents, and that these updates were not relevant for other fishery stakeholders or the public to participate in. One informant mentioned that further guidance on stakeholder engagement would be useful to include in the updated ECFF-FMP.

### Dominica

Blue Earth developed a summary of the status of implementing key initiatives of the ECFF-FMP in Dominica (Table 4). Green indicates accomplishment of the initiative, yellow indicates partial accomplishment, and orange indicates limited to no accomplishments. We provide further detail in the sections below.

Natio	National Initiative				Status		
Adopted ECFF-FMP			Yes				
Level	l of fisheries manag	gement	capacity	Medium	n-high		
Natio	onal-level flyingfish	n FMP	in place	Nationa	l fisher	ies management plan (not	
				flyingfi	sh-spec	ific)	
National legislation in place			No				
Existing legislation supportive of EAF			No				
Exist	ing legislation sup	portive	of	No			
preca	utionary approac	h					
Data	collection occurrin	ıg		Landings, effort, economic, social			
Vesse	el registry in place			Yes			
Stakeholder consultations since previous			Yes, on fisheries generally (not flyingfish-				
ECFF-FMP implementation evaluation			specific	)			
	= accomplished		= partially accom	omplished = no accomplishment			

Table 4. Overview of ECFF-FMP implementation in Dominica

Dominica faces several cross-cutting challenges on flyingfish management, including:

- Low economic dependence on the species and therefore, low public interest in flyingfish data collection and management process
- Lack of legislation that supports EAF and the precautionary approach to fisheries management
- Lack of patrol vessels, areal observation, and electronic monitoring tools for enforcement and surveillance
- Insufficient number of staff and training for existing staff to collect accurate landings and effort data
- Lasting impacts on infrastructure and equipment from Hurricane Maria (2017)
- Little use of fisher organizations for direct involvement

# Adoption of the ECFF-FMP and Development and Implementation of National FMP for Management of Flyingfish Fisheries

Since 2002 there have been no changes to Dominica's fisheries legislation to support flyingfish management. However, the country formally adopted the 2014 ECFF-FMP and included it as an amendment in its Fisheries act of 1987. The country has partially implemented the ECFF-FMP, as existing legislation does not address fisheries to the individual species level. A national fisheries management plan does, however, regulate gear types for all species, including mesh sizes, which are relevant to the flyingfish fishery. There are no plans to fully implement the ECFF-FMP because and fishers increasingly use the species as bait for other pelagic species rather than landing and commercializing flyingfish itself. Despite excessive damage from Hurricane Maria, including loss of the Fishery Division's offices and vessels, the division has enough staff to implement the ECFF-FMP. There are plans in place for the affected government divisions, including the Fisheries Division, to repair offices and infrastructure and bring management back up to pre-hurricane levels.

### Legislation and Monitoring, Control, and Surveillance in Support of Management of Flyingfish Fisheries

Existing fisheries legislation requires the Fisheries Division and a Fisheries Advisory Committee (FAC), composed of stakeholders, to implement monitoring, control, and surveillance activities. However, currently there is not an active FAC in Dominica. Current legislation also requires that fishers and fisher organizations comply with the Fishery Division's data collection activities and provide data when solicited to do so at various landing sites. Dominica's Fisheries Act and subsequent amendments do not reference the EAF or the precautionary approach to fisheries management, though they do include specific management and conservation measures that focus on MPA development, mesh size regulations, and species-specific closed seasons.

There are no flyingfish-specific enforcement or monitoring efforts in Dominica. A decline in flyingfish abundance in Dominica's waters changed the focus of fishing effort: where fishers once landed economically viable quantities of flyingfish, they now primarily use flyingfish for bait to capture larger pelagic species. The declining role of flyingfish in fisher livelihoods, as well as the continued importance of other pelagic fisheries, has led to reduced public interest in implementing ECFF-FMP monitoring, control, surveillance, and enforcement systems. Table 5 summarizes the items related to monitoring, control, and surveillance that existing legislation requires.

Element of Fisheries Management	Mandatory under Current Legislation?
Provision of data by the flyingfish industry	Yes
Collection of data by authorities	No, but completed nonetheless
Analysis of data by the flyingfish fishery authority	No, but completed nonetheless
Reporting on flyingfish fisheries data analyses to inform management	No, but completed nonetheless
Consultation with flyingfish fisheries stakeholders on management issues	No, but completed nonetheless
Support for EAF	No
Support for the precautionary approach to fisheries management	No
Designation of specific management and conservation	Certain aspects are in place for all
measures	fisheries (mesh sizes, closed seasons, MPAs)

#### Table 5. Management elements that are mandatory under Dominica's Fisheries Law

### Data Collection and Reporting in Support of Research and Informed Decision-Making

The Fisheries Division analyzes flyingfish data to inform management and consults with stakeholders on governance issues. The Division's landing and effort data procurement policy includes but is not limited to flyingfish data. Since 2015, its augmented data collection systems by implementing a fisherfolk logbook system (still in the beginning phases) and revising data collection procedures that will more accurately record ex-vessel prices, location, and fish aggregating device use. Table 6 lists the types of flyingfish data collected in Dominica.

Dominica submits flyingfish fishery catch and landings data CRFM when requested. The Fisheries Division faces some challenges with the data recording process, such as interest from division staff to input and clean the data in the Microsoft Access database, and there is a generally low level of compliance of fishers with sharing their landings data with the division.

Type of Data	Data Collected?	Frequency
Landings	Yes	Daily
Catch	No	N/A
Effort	Yes (number of boats, gear used, hours fished)	Daily
Biological / Ecological	No	Starting program–species to be determined
Economic	Yes	Daily
Social	Yes	5-year census

#### Table 6. Data collected in Dominica

The Fisheries Division seeks to collect biological data (lengths and weights) of all fish landed, including flyingfish, but has yet to begin these efforts. The division considered flyingfish fishery independent surveys, aimed at better understanding the resource's abundance, to better determine the fishery's level of direct economic importance. However, the study is no longer feasible because of Hurricane Maria's damage to the Division's boats.

#### Authorized National Entry (License/Permit) System for Flyingfish Fisheries

Dominica's Fisheries Division issues general fishery access licenses to individual fishers as well as for vessels, though neither is gear- or species-specific. However, licenses are not specific to gear type, target species, or fishing areas. Certain services, including providing equipment to fishermen, are tied to these licenses. The existing fisheries legislation requires that vessel and fisher information is stored electronically; however, limited number of technical staff and level of training makes it difficult to accurately transcribe and clean data. The Fisheries Division is considering improving licensing systems for fisheries in general; currently, they collect the following vessel data:

- Colors or designs
- Crew members
- Depth and length
- Duty-free concessions granted to owner
- Engine type

- Materials
- Name
- Type of fishing
- Type of vessel
  - Where it operates from

The division requires fishers applying for a license to provide the following information:

Address

Contact information

- Date of birth
- Identification number
- Name
- Next of kin

- Point of operation
- Trainings
- Years in fishery sector
- Informants did not know the total number of boats targeting flyingfish because most fishers use their catch for bait. What they do know is that Hurricane Maria destroyed 60 percent of Dominica's fishing fleet in 2017.

### Awareness-building of Stakeholders on the ECFF-FMP and their Engagement in the Management Process

Since 2015, the Dominica Fisheries Division incorporated awareness / training activities with fishers into regularly scheduled community meetings. This demonstrates a commitment to adopt components of the ECFF-FMP particularly with respect to the role of fishers in co-management. A key topic that arises during flyingfish discussions is the growing concern over Sargassum and its impact on flyingfish abundance. Fisher cooperatives participate in these consultation sessions, while the Fisheries Division engages processors and vendors in one-on-one consultations. Fishers and non-fisher stakeholders have maintained a relatively stable level of participation in these meetings since 2015. Informants believe that there would be more participants if there had been more outreach to flyingfish stakeholders early in the ECFF-FMP discussions.

### Grenada

Blue Earth developed a summary of the status of implementing key initiatives of the ECFF-FMP in Grenada (Table 7). Green indicates accomplishment of the initiative, yellow indicates partial accomplishment, and orange indicates limited to no accomplishments. We provide further detail in the sections below.

Natio	onal Initiative			Status		
Adopted ECFF-FMP			Yes			
Level of fisheries management capacity			Low			
Natio	nal-level flyingfish	FMP in place	e	No; draft fisheri	ies ma	anagement plan since 1989 for
				coastal pelagics	5	
National legislation in place				No		
Existi	ing legislation sup	oortive of EAI	F	No, but current revision will contain		
Existing legislation supportive of			No			
preca	utionary approacl	n?				
Data	collection occurrin	ıg		Limited landing	g data	
Vesse	el registry in place			Yes		
Stakeholder consultations since previous		Yes				
ECFF-FMP implementation evaluation?						
	= accomplished	= part	ially a	ccomplished		= no accomplishment

Table 7. Overview of ECFF-FMP implementation in Grenada

Grenada faces several cross-cutting challenges regarding flyingfish management:

- Limited infrastructure for implementation of management activities
- Fisheries staff attrition due to national fiscal condition and policy

- Limited staff capacity to implement fisheries management strategies, including monitoring, control, and surveillance and data collection
- Limited resources for information dissemination from Fisheries Division to fishers and cooperatives
- Little use of fisher organizations for direct involvement

### Adoption of the ECFF-FMP and Development and Implementation of National FMP for Management of Flyingfish Fisheries

Grenada formally adopted the 2014 ECFF-FMP but does not completely implemented it. The country does not have a national FMP addressing flyingfish management, though they have demonstrated commitment by preparing a draft national FMP for coastal pelagics that encompasses flyingfish. However, this FMP has remained in draft form since 1989. Informants rated Grenada's level of human resources and infrastructure capacity for fisheries management as low. This is partially due to a recent IMF staff attrition program in which, for every 10 staff members who retire, the division only replaces three. Grenada receives assistance from The World Bank to reorganize its Ministry of Agriculture, Forestry and Fisheries to better reach its mandates.

In addition, informants mentioned that Grenada has an insufficient amount of university graduates prepared to work for the Fisheries Division. There is also limited government commitment to prioritize and provide resources for fishery management. Informants believe CRFM support would aid the management plan implementation process.

#### Legislation and Monitoring, Control, and Surveillance in Support of Management of Flyingfish Fisheries

Though Grenada has not adopted its 1989 draft coastal pelagics FMP, the ministry revised the country's 1986 Fisheries Act and its regulations. The revisions will allow the ministry to address pressing issues including illegal, unreported, and unregulated (IUU) fishing, EAF, ecosystem-based management, co-management strategies, and the precautionary approach to fisheries management. The Fisheries Division is optimistic that Grenada will pass revised legislation by 2019. There is also an existing law for monitoring, control, and surveillance, which is one of the main functions of the ministry. Table 8 summarizes the monitoring, control, and surveillance items that existing legislation requires.

Element of Fisheries Management	Mandatory under Current
	Legislation?
Provision of data by the flyingfish industry	No
Collection of data by authorities	Yes
Analysis of data by the flyingfish fishery authority	Yes
Reporting on flyingfish fisheries data analyses to inform	Yes
management	
Consultation with flyingfish fisheries stakeholders on	Yes
management issues	
Support for EAF	No, will appear in revised legislation
Support for the precautionary approach to fisheries	No, will appear in revised legislation
management	
Designation of specific management and conservation	Yes
measures	

Table 8. Grenada fisheries law mandatory management elements

### Data Collection and Reporting in Support of Research and Informed Decision-Making

Data collectors in Grenada record daily flyingfish landings at primary landing sites. Because of the large number of secondary landings sites, data collected represents an estimated 30 percent of total landings. The total amount of flyingfish caught and not landed is unknown because longline fishers use the majority of flyingfish caught as bait. Grenada has a strategy to collect effort and catch data, but they are not implementing it. The country does not collect flyingfish specific biological/ecological, economic, or social data. The flyingfish fishery does not have high direct economic importance in Grenada, and therefore the development of flyingfish data collection, management, and sharing policies is not a priority.

The Fisheries Division stores landings data in an Excel database, and they share data with the CRFM and make it publicly available. Table 9 summarizes flyingfish data types and data collection frequency in Grenada. There is currently no record of flyingfish research outside of regular data collection performed in Grenada.

Type of Data	Data Collected?	Frequency
Landings	Yes	Daily, at primary landing sites
Catch	No	N/A
Effort	No	N/A
<b>Biological / Ecological</b>	No	N/A
Economic	No	N/A
Social	No	N/A

#### Authorized National Entry (License / Permit) System for Flyingfish Fisheries

The Grenada Fisheries Act requires all fishing vessels to register annually and all fishers must register once. Fisher and vessel registration are not specific to the flyingfish fishery, and there is no limit to how many boats or fishers can be registered in total. Grenada plans to develop updated legislation for vessel registration through the Climate Change Adaptation in the Eastern Caribbean Fisheries Sector or CC4Fish project; Grenada collects the following data for all vessels:

- License number
- Names and contact information of associated people allowed to fish
- Registration number

- Size of engine
- Vessel length and name
- Vessel owner, location, value
- Vessel type and material

They collect the following data on all fishers:

- Age
- Location
- Member or not of a cooperative
- Name
- Time in fishery

Informants did not know the precise number of flyingfish vessels in Grenada. They estimate that the number has dropped in the last 15-20 years but remained relatively stable since 2015. Fisheries Division staff estimate it to be less than 50, including vessels catching flyingfish for bait and as opportunistic catch when other species are not present. Informants calculate that around 90% of Grenada's flyingfish catch is used as bait. However, in the last 5-10 years longliners have shifted from using flyingfish for bait to purchasing scad and jack, leading to further reduced dependence on flyingfish.

Awareness-building of Stakeholders on the ECFF-FMP and their Engagement in the Management Process Grenada's Ministry of Agriculture, Forestry and Fisheries held two flyingfish stakeholder ECFF-FMP consultations with fishers, cooperatives, processors, and academia since the previous ECFF-FMP implementation evaluation. They also surveyed fishers, vendors, and the general public on how the industry has changed. Informants said the ECFF-FMP's stakeholder facilitation guidance was helpful to this process, though they needed to make modifications for Grenada's local context.

### Saint Lucia

Blue Earth developed a summary of the status of implementing key initiatives of the ECFF-FMP in Saint Lucia (Table 10). Green indicates accomplishment of the initiative, yellow indicates partial accomplishment, and orange indicates limited to no accomplishments. We provide further detail in the sections below.

14010			i impienienienienieni				
National Initiative				Status			
Adopted ECFF-FMP							
Level of fisheries management capacity					Low		
Natio	nal-level flyingfish	FMP	in place	Fisherie	s Act a	nd management plan (not	
				flyingfi	sh-spec	ific)	
Natio	nal legislation in p	lace		Fisherie	s Act (	not flyingfish-specific)	
Exist	xisting legislation supportive of EAF			Yes			
Exist	Existing legislation supportive of			No			
precautionary approach							
Data	collection occurrin	ıg		Landing	gs, effor	rt, economic, social	
Vesse	el registry in place			Yes			
Stake	Stakeholder consultations since previous		Some with fishers, boat owners, processors,				
ECFF-FMP implementation evaluation		vendors, NGOs (not all flyingfish-specific)					
= accomplished = partially accomp			olished		= no accomplishment		

Table 10. Overview of ECFF-FMP implementation in Saint Lucia

Saint Lucia faces some cross-cutting challenges regarding flyingfish management, including the following:

- Low direct economic dependence on the species, leading to low fisher interest in flyingfish management process and low priority of flyingfish-related legislation
- Lack of precautionary approach to fisheries management in existing legislation
- Limited monitoring, control, and surveillance capacity
- Limited human and technical capacity (e.g., hardware and software) needed for real-time data collection and analysis
- Lack of uniformity of database structures, making data analysis difficult
- Little use of fisher organizations for direct involvement

# Adoption of the ECFF-FMP and Development and Implementation of National FMP for Management of Flyingfish Fisheries

Saint Lucia has not formally adopted the ECFF-FMP. The Department of Fisheries has no current initiatives to update the country's FMPs or fisheries legislation based on the ECFF-FMP. The department does not view the ECFF-FMP's adoption as high priority due to the seasonality of the flyingfish catch, the low number of fishers involved in the fishery, the multispecies nature of the sector, and the low revenue that flyingfish generates. Though Saint Lucia's Fisheries Act supports fisheries-specific FMP development, there is no flyingfish-specific FMP initiative to date. Fishermen in Saint Lucia note the decline of flyingfish in their waters and are unsure about the cause. The Department of Fisheries observes that limited capacity (e.g., number of staff, expertise and trainings, and resources) inhibits its ability to implement the ECFF-FMP, enforce the Fisheries Act, and engage in fisher consultations. They need greater assistance (financial and technical) to make flyingfish management a higher priority.

Legislation and Monitoring, Control, and Surveillance in Support of Management of Flyingfish Fisheries While the Fisheries Act, Shipping Act, and Physical Planning Act all include or allow for an ecosystem approach to fisheries management, there is no legal requirement to monitor the status of the ecosystem or the impacts that fishing activities have on it. Specific management and conservation measures are designated for coastal ecosystems, including coral reefs, and the Shipping Act references pollution. The Environmental Impact Assessment process does not consider effects on the ecosystem and some mentioned that it is legislatively weak. Saint Lucia's fisheries legislation does not specifically mention the precautionary approach to management. Table 11 summarizes monitoring, control, and surveillance items that Saint Lucia's legislation requires.

Element of Fisheries Management	Mandatory under Current
	Legislation?
Provision of data by the flyingfish industry	Yes
Collection of data by authorities	Yes
Analysis of data by the flyingfish fishery authority	Yes
Reporting on flyingfish fisheries data analyses to inform	Yes
management	
Consultation with flyingfish fisheries stakeholders on	Yes
management issues	
Support for EAF	No, but certain aspects are implemented
Support for the precautionary approach to fisheries	No
management	
Designation of specific management and conservation	Yes
measures	

Table 11. Management elements that are mandatory under fisheries law in Saint Lucia

#### Data Collection and Reporting in Support of Research and Informed Decision-Making

Data collection and reporting in Saint Lucia did not change since the 2015 ECFF-FMP implementation evaluation. The Department of Fisheries is interested in collecting data in real time, but capacity limitations hinder efforts to improve flyingfish data recording efforts. Notwithstanding these challenges, officials collect and submit flyingfish landing data to the CRFM.

The Department of Fisheries has a verbal, undocumented flyingfish policy that provides guidance on data collection, management, and sharing. The department collects landing data 15 days per month, compiles them in an MS Dos-based database, analyzes them to estimate total landings contributing to the 5,000-ton

regional fishery catch limit, and submits the analyzed date to the FAO and CRFM. They also collect effort data, including fishing trips, fuel consumption, and time spent fishing. The department compiles economic and social data in the form of ex-vessel flyingfish landing values and fisher household information, which they solicit during licensing and renewal. Researchers have not conducted any studies focused on flyingfish in Saint Lucia since the 2015 implementation evaluation outside of regular data collection. Table 12 summarizes the types of flyingfish data and frequency of data collection in Saint Lucia.

Type of Data	Data Collected?	Frequency
Landings	Yes	15 days / month
Catch	No	N/A
Effort	Yes (number of fishing trips, fuel used, time spent fishing)	15 days / month
<b>Biological / Ecological</b>	No	N/A
Economic	Ex-vessel value	15 days / month
Social	Yes (fisher household data)	Yearly

#### Table 12. Data collected in Saint Lucia

#### Authorized National Entry (License / Permit) System for Flyingfish Fisheries

Saint Lucia's Fisheries Act regulates gear type use (e.g., mesh size), but does not control the catch of specific species. Annual fishing licenses are therefore not explicitly issued for the flyingfish fishery, but for fishing in general. Since 2015, Saint Lucia collected the following data associated with each vessel and fisher license:

- Captain and / or vessel owner's name and identification number
- Vessel name
- Gear type
- Vessel identification number
- Fisher household information (spouse, number of children, etc.

It is difficult to know how many Saint Lucian fishing vessels are catching flyingfish. However, fishermen perceive that the total number of fishing vessels targeting any species has increased 2015 due to an influx of people from other non-fishing related sectors (farmers specifically) entering the fishing industry. Fishermen sell most flyingfish caught in Saint Lucia rather than using it for bait.

#### Awareness-building of Stakeholders on the ECFF-FMP and their Engagement in the Management Process

The Department of Fisheries and fishers believe that further stakeholder consultation would improve ECFF-FMP by-in, though the ECFF-FMP does not provide adequate guidance on how to facilitate this involvement. The department surveyed fishers since the previous ECFF-FMP implementation evaluation to understand how the flyingfish fishery has changed. Because the value chain is relatively simple, they included many flyingfish fishers who are also processors in the survey. Additionally, CANARI hosted a training workshop for fishing cooperative members. Informants mentioned that participation in general fisheries meetings hosted by the government increased in recent years, and participation from non-fisher stakeholders remained stable. Informants suggested that an expanded ECFF-FMP socio-economic scope might increase support for its implementation, since the low direct socio-economic importance of the fishery leads the country to de-prioritize the FMP.

#### Saint Vincent and the Grenadines

Blue Earth developed a summary of the status of implementing key initiatives of the ECFF-FMP in Saint Vincent and the Grenadines (SVG) (Table 13). Green indicates accomplishment of the initiative, yellow indicates partial accomplishment, and orange indicates limited to no accomplishments. We provide further detail in the sections below.

Natio	nal Initiative		•	Status				
Adop	ted ECFF-FMP			No				
Level	of fisheries mana	gement	capacity	Medium				
Natio	nal-level flyingfish	FMP	in place	No; draft fis	neries	and aquaculture policy		
				(flyingfish is	inco	rporated)		
Natio	nal legislation in p	lace		No; amendn	ent to	o fisheries and aquaculture		
				policy proje	ted fo	or 2019		
Existi	ing legislation sup	portive	of EAF	No				
Existi	ing legislation sup	portive	of	No				
preca	utionary approacl	1						
Data	collection occurrin	ng		Landings, ef	fort			
Vesse	l registry in place			Yes				
Stake	keholder consultations since previous		Yes					
ECFF-FMP implementation evaluation								
	= accomplished		= partially accom	omplished = no accomplishment				

Table 13. Overview of ECFF-FMP implementation in Saint Vincent and the Grenadines

SVG faces several cross-cutting challenges regarding flyingfish management:

- Limited political will to prioritize flyingfish management and enforce license fee legislation
- Lack of ecosystem or precautionary approaches to fisheries management in existing legislation
- Limited staff and equipment for enforcement and data analysis
- Limited biological, social, and economic data
- Difficulties with information dissemination between the ministry and fishers
- Little use of fisher organizations for direct involvement

# Adoption of the ECFF-FMP and Development and Implementation of National FMP for Management of Flyingfish Fisheries

SVG has not adopted the ECFF-FMP, but it is consulting with fishers and private sector stakeholders to advance the process. The Ministry of Agriculture, Forestry, Fisheries, Rural Transformation, Industry and Labour drafted a fisheries and aquaculture policy that contains specific flyingfish management aspects, but informants pointed out that things move more swiftly at the regional level (when there is buy-in by fisheries minsters) than they do at the national level. Given that it is feasible for SVG to adopt the ECFF-FMP in lieu of a national FMP, increased support from the CRFM for national adoption of the ECFF-FMP would help prioritize this initiative in SVG. Informants estimate that SVG has a medium level of human resource and infrastructure capacity for fisheries management. Obstacles to adoption include limited resources (personnel and financial) and limited political will, driven by fishers' low economic dependence on the flyingfish resource.

#### Legislation and Monitoring, Control, and Surveillance in Support of Management of Flyingfish Fisheries

There were no major changes to flyingfish monitoring, control, and surveillance in SVG since the previous ECFF-FMP implementation evaluation. National legislation does not require flyingfish fishers to submit catch and landing data to the Fisheries Division; instead, inspectors record landing and effort data. The country's fisheries legislation (from 1983) does not mention EAF or the precautionary approaches to fisheries management, though the draft Amendment to fisheries and aquaculture policy includes both strategies, as well as conservation measures and co-management systems relevant to this fishery. In 2017, the FAO supported a review of this legislation, with fishers, and they expect an amendment to pass in 2019 or 2020. Table 14 provides a summary of the items related to monitoring, control, and surveillance that existing national legislation requires.

Element of Fisheries Management	Mandatory under Current
	Legislation?
Provision of data by the flyingfish industry	No
Collection of data by authorities	Yes
Analysis of data by the flyingfish fishery authority	Yes
Reporting on flyingfish fisheries data analyses to inform	Yes
management	
Consultation with flyingfish fisheries stakeholders on	No, but implemented nonetheless
management issues	
Support for EAF	No
Support for the precautionary approach to fisheries	No
management	
Designation of specific management and conservation	Yes
measures	

Table 14. Mandatory management elements under fisheries law in SVG

Implementation of the ECFF-FMP would require stronger enforcement of the current fisheries legislation. For example, fishers are required to have licenses, but the division does not enforce this requirement, creating an open access fishery in which activities are difficult to monitor and control.

#### Data Collection and Reporting in Support of Research and Informed Decision-Making

SVG achieved improvements in data collection and reporting since the previous ECFF-FMP implementation evaluation. There are now more data collection personnel, updated lists of registered fishers, and they now house data in a Microsoft Excel spreadsheet. The Fisheries Division submits flyingfish landing, exports, and effort data to the CRFM upon request, which is typically less than annually. While they record daily landing and effort data at major landing sites, the ministry lacks the capacity to analyze the information and share the results with fishers. A key challenge to improving these data collection activities is the low level of communication between data collectors in the field and staff who digitize that data, which sometimes leads to errors and inconsistencies. Additionally, informants do not know the amount of flyingfish caught for bait because fishers retain this information in log books that data collectors do not review. Without the assistance of fishers, a true understanding of the fishery is impossible. Table 15 summarizes the types of flyingfish data and frequency of data collection in SVG. There is no record of flyingfish research in SVG beyond some landings data collection.

Type of Data	Data Collected?	Frequency
Landings	Yes	Daily
Catch	No	N/A
Effort	Yes (but improvement needed)	Unclear
<b>Biological / Ecological</b>	No	N/A
Economic	No	N/A
Social	No	N/A

#### Table 15. Data collected in SVG

#### Authorized National Entry (License / Permit) System for Flyingfish Fisheries

SVG's fisheries legislation includes provisions for an authorized entry system, but the division does not enforce fisher license requirements. Fisheries Division staff commented that they should update fisher identification cards, but the political will required to enforce a fishing license / permit system is low because fisheries contribute just 2% of the country's Gross Domestic Product. Regarding vessel registration, all boats must register with the Fisheries Division, though it is unclear what types of data they record. Fishers no longer target flyingfish in SVG, and informants estimate that there are around 10-20 vessels catching flyingfish; landings resulting from incidental catch declined since 2015.

Awareness-building of Stakeholders on the ECFF-FMP and their Engagement in the Management Process Since the previous ECFF-FMP implementation evaluation, SVG held fishing stakeholder, though none focused on flyingfish specifically. CANARI held a fisher capacity development workshop and the Japan International Cooperation Agency funded a co-management and small-scale fisheries guidelines project. Attendees included fishers and boat owners, processors, vendors, and the Maritime Association. The ministry shared news items from these workshops with the public, and they are trying to better inform the public about the roles of the Caribbean Network of Fisherfolk Organizations (CNFOs) in light of recent fleet expansions and larger boats.

#### Trinidad and Tobago

Blue Earth developed a summary of the status of implementing key initiatives of the ECFF-FMP in Trinidad and Tobago (Table 16). Green indicates accomplishment of the initiative, yellow indicates partial accomplishment, and orange indicates limited to no accomplishments. We provide further detail in the sections below.

National Initiative	Status
Adopted ECFF-FMP	No
Level of fisheries management capacity	Low
National-level flyingfish FMP in place	No
National legislation in place	No; draft fisheries management bill (not
	flyingfish-specific)
Existing legislation supportive of EAF	Not mandatory, but environment management
	requirements exist
Existing legislation supportive of	Not mandatory, but environment management
precautionary approach	requirements exist
Data collection occurring	Landings, effort
Vessel registry in place	No

Table 1	6. (	Overview	of ECFF-F	FMP i	mplementatio	on in	Trinidad	and '	Tobago
	· · ·								- 00 mg 0

Natio	nal Initiative		Status	
Stake	cholder consultations since	e previous	Yes	
ECFF-FMP implementation evaluation				
	= accomplished	= partially accomp	olished	= no accomplishment

Trinidad and Tobago face several cross-cutting challenges regarding flyingfish management:

- Human resources and budget limitations hindering adoption of the ECFF-FMP or development of a national plan
- Limited Fisheries Division budget, leading to difficulties collecting data and implementing monitoring, control, and surveillance activities
- Differing fisheries situations in Trinidad versus Tobago that impede communication
- Lack of fishing license and vessel registration systems
- Limited public participation in the management process
- Little use of fisher organizations for direct involvement

# Adoption of the ECFF-FMP and Development and Implementation of National FMP for Management of Flyingfish Fisheries

Trinidad and Tobago have not adopted or initiated a process to adopt the ECFF-FMP, though it informally or operationally adopted some of the ECFF-FMP. Flyingfish is primarily a concern in Tobago (more than Trinidad), and ECFF-FMP related activities in Tobago include stakeholder consultations and limited fisheries data collection efforts. The country does not have a national flyingfish FMP and does not have plans to develop one. Insufficient number of staff and trainings are the main fishery management obstacle that the country faces. The Fisheries Division is short-staffed and does not have the capacity to carry out the fisher surveys needed to develop a national FMP. The division also has inadequate data collection and analysis equipment (e.g., computers, printers, software). Informants noted that many of the division's staff are young and need more exposure to FMP implementation processes and procedures.

Given these struggles, ECFF-FMP and / or a national flyingfish FMP implementation would require outside support, such as CRFM supported trainings on FMP development and implementation. Informants also noted that the ECFF-FMP does not grant the Fisheries Division adequate regulatory powers to enable implementation. They noted that adopting the ECFF-FMP in addition to a national flyingfish FMP would be the best legislative strategy for flyingfish resource management.

Legislation and Monitoring, Control, and Surveillance in Support of Management of Flyingfish Fisheries Fisheries managers in Trinidad and Tobago and the FAO are developing a fisheries management bill that will stand up to international scrutiny. If the Cabinet approves the bill, it will significantly change how the Republic manages its fisheries. Current legislation does not incorporate EAF or the precautionary approach to fisheries management, although more generalized environmental management requirements are linked to these strategies. The Fisheries Act contains management and conservation measures, but there is low department staff capacity to enforce them.

Table 17 provides a summary of the items related to monitoring, control, and surveillance that existing legislation requires.

Element of Fisheries Management	Mandatory under Current	
	Legislation?	
Provision of data by the flyingfish industry	No	
Collection of data by authorities	Yes	
Analysis of data by the flyingfish fishery authority	Yes, but staffing challenges prevent	
Reporting on flyingfish fisheries data analyses to inform	Yes	
management		
Consultation with flyingfish fisheries stakeholders on	No, but part of extension service work	
management issues		
Support for EAF	Not explicitly	
Support for the precautionary approach to fisheries	Not explicitly	
management		
Designation of specific management and conservation	Yes, but limited enforcement	
measures		

#### Table 17. Mandatory fisheries law management elements in Trinidad and Tobago

#### Data Collection and Reporting in Support of Research and Informed Decision-Making

Existing legislation requires data collection and analysis and since the previous ECFF-FMP implementation evaluation, Trinidad and Tobago attempted to increase the number of data collectors and liaise with processors to collect export data. However, limitations in staffing and technical equipment do not allow for data collection on all flyingfish landing beaches and the Fisheries Division does not have staff trained to analyze data. Furthermore, data collectors do not have training in proper collection methods and often rely on catch and landing information that fishers share, with no way of determining their accuracy. Informants mentioned consolidating landing sites as an opportunity to increase the coverage and accuracy of fisheries data.

Trinidad and Tobago submit landing and effort data to ICCAT and other convention bodies. They do not know whether the division submitted flyingfish data to the CRFM since July of 2015 because the staff member previously in charge of this activity retired.

Table 18 summarizes the types of data and frequency of data collection on flyingfish in Trinidad and Tobago. The division does not currently store the data electronically.

Type of Data	Data Collected?	Frequency
Landings	Yes	Daily
Catch	No	N/A
Effort	Yes (number of fishing trips)	Daily
<b>Biological / Ecological</b>	No	N/A
Economic	No	N/A
Social	No	N/A

Table 18. Data Collected in Trinidad and Tobago

Regarding flyingfish research, fisheries staff suggested that an economic analysis of flyingfish importance would be helpful to understand production costs and which sectors are benefiting from the industry. In addition, a member of the Fisheries Division is planning an assessment of flyingfish abundance and biology during the fishing season. This assessment will collect information on the length, weight, and sex of flyingfish to determine length-weight relationships, condition factor, sex ratio, sexual maturity, and gonadosomatic indices. This information will enable comparison with previous studies in other Eastern Caribbean locations.

#### Authorized National Entry (License/Permit) System for Flyingfish Fisheries

Trinidad and Tobago's current fisheries legislation requires open access to its resources, including flyingfish, and the Republic does not implement a fishing license or vessel registration system. Consequently, informants were unable to estimate the number of fishing vessels catching and/or landing flyingfish. The country's draft fisheries bill does, however, require the implementation of a license system. Thanks to the daily data collection activities taking place, the division is generally aware of the vessels that land flyingfish. They believe both flyingfish landings and the number of boats catching flyingfish have declined since July of 2015. Informants cite IUU fishing activities, along with the recent influx of sargassum, as the probable causes for these declines, and they stress the nation's need for stricter maritime boundary control to deter illegal fishing.

Awareness-building of Stakeholders on the ECFF-FMP and their Engagement in the Management Process Since the previous ECFF-FMP implementation evaluation, stakeholder consultation workshops in Trinidad and Tobago involved flyingfish fishers, processors, boat owners, vendors, cooperatives, and NGOs. While there were no public awareness programs or national trainings, informants noted that participation from non-fisher stakeholders in the ECFF management process increased since 2015. They also believed that stakeholder buy-in for the ECFF-FMP could be improved if the plan better addressed livelihoods issues. Additionally, informants felt that the details presented in the ECFF-FMP sections up to the Management Objectives are very informative and effectively guide the development of National Flyingfish Management Plans and local FACs to aid in the ECFF-FMP's implementation.

#### Key Findings: Regional Initiatives

This section describes collaborative initiatives to harmonize regional aspects of Eastern Caribbean flyingfish management. These aspects include data and information; legislation and regulations; coordination between the CRFM and France; and monitoring, control, and surveillance.

#### Harmonizing Data and Information Collection, Analysis, and Sharing

Eastern Caribbean fishery managers have discussed harmonizing data collection, analysis, and sharing since the 1980s. Over the years, projects through the CRFM and other organizations have supported these efforts. The Caribbean Fisheries Information System (CARIFIS) software, which was developed on behalf of the CRFM, aimed to provide a common data collection system across member states; however, CRFM found itself without enough funding to update and upgrade its operating system. As a result, individual country databases currently differ in structure, content, and format and are therefore incompatible with one another. Driven by the ECFF-FMP requirements, the Organisation of Eastern Caribbean States (OECS) initiated a process to develop a standardized data collection system. There is also an ongoing project to strengthen national data collection and regional data sharing through a Fishery Inventory Resource Monitoring System. As a separate effort, the Caribbean Network of Fisherfolk Organizations (CNFO) members are designing a standardized data collection and reporting system - to be introduced in 2019 - that will incentivize countries to submit landing reports and therefore collect data regionally.

As part of the CLME+ project taking place at the time of writing this document, CRFM consultants are developing recommendations for how individual countries can update their fishery data collection processes. As part of the recommendations, electronic monitoring could play a role in fisheries monitoring by reducing the need for staff on the water and at landing sites and by increasing coverage of monitoring

activities across the fleet. Implementation of these recommendations consistently in participating countries would represent a significant step toward regional harmonization.

Interview informants commented that fishermen and the public hold the key to driving improvement in fishery data collection. There is a current low level of political will to address flyingfish management, in part because fishermen do not wish to take on more burdens to support data collection and management and political influences may decrease the priority of fisheries in government. The success of any data management system will depend on voluntary data reporting by fishermen and government support.

#### Improving and Harmonizing Fisheries Management Legislation, Registration, and Licensing

Below are summaries of progress on flyingfish legislation, registration, and licensing. As part of the CLME+ project taking place currently, CRFM consultants are developing legislative instruments that individual countries can use to update their licensing legislation. Consistent implementation of these amendments throughout the region would represent a significant step toward regional harmonization.

#### **Legislation**

The first push to harmonize fisheries legislation began in the 1980s, but the efforts at this time are incomplete. Presently, the OECS provides resource materials for harmonized national fisheries legislation, for example through the Caribbean Community Common Fisheries Policy. The OECS also supported the Fisheries Policy for Dominica 2012-2037 and a fisheries and aquaculture policy for the Dominica, Grenada, and SVG.<sup>6</sup> CRFM led projects to integrate legislation in other sectors (e.g., sanitary measures), including by developing model acts that countries could use to harmonize their own legislation.

#### Registration and Licensing

CRFM projects promoted regional harmonization of registration and licensing, though informants pointed out that limited action on this front. Any current efforts to improve regional cooperation follow in the wake of nearly 20 years of work to coordinate registration and licensing procedures. This includes development and use of the TIP/LRS database in the 1990s to store licensing and registration information and catch and effort data. The system fell out of favor and in the 2000s and was replaced by CARIFIS, which had a layout similar to its predecessor. Managers abandoned this software too, and since 2008 the system has been ad hoc.

More recently, CNFO member organizations worked with the Centre for Resource Management and Environmental Studies, CANARI, the CRFM, and OECS to promote flyingfish stakeholder awareness. As part of the ongoing CLME+ project, consultants are developing a list of registered flyingfish fishing vessels in key Eastern Caribbean flyingfish fishing countries, which will help build understanding of the current flyingfish fishing situation.

## Formalizing Fishery Management Coordination between the CRFM and France

Long-standing technical collaboration exists between Ifremer (France's national oceanographic institution) and the CRFM, formalized by a cooperation agreement between the two organizations. Activities that this partnership facilitates focus on participation in scientific meetings. There is no similar agreement regarding

<sup>&</sup>lt;sup>6</sup> SOFRECO. (2012). Fisheries Policy for Dominica, 2012-2037 Support to formulate a fisheries and aquaculture policy for the Commonwealth of Dominica, Grenada, and St. Vincent and the Grenadines. [pdf]. European Union, p. 11. Available at <a href="http://www.acpfish2-eu.org/uploads/projects/id140/11544%20-%20ACPFISH%20II%20-%20CAR%20-%201.2%20-%20B2b%20-%20Fisheries%20Policy%20Dominica%2001.pdf">http://www.acpfish2-eu.org/uploads/projects/id140/11544%20-%20ACPFISH%20II%20-%20CAR%20-%201.2%20-%20B2b%20-%20Fisheries%20Policy%20Dominica%2001.pdf</a>. [Accessed 1 November 2018].

the region's shared fisheries management and policy. The current state of affairs could change given Martinique is a member of the OECS, an organization whose work includes harmonizing fisheries acts, including flyingfish acts. With this in mind, the CRFM conducted outreach with the French concerning flyingfish legislation, fisher licensing, and vessel registration. The countries have not yet made efforts to harmonize data collection.

As part of the CLME+ project, consultants are developing a cooperation agreement between the CRFM and France regarding shared management of the Eastern Caribbean's flyingfish resource. Representatives from Ifremer and the Fisheries Department of the Martinique's Collectivité participated in a meeting of the Joint CRFM-WECAFC Working Group on Flyingfish in the Eastern Caribbean in October 2018 to review and comment on a draft of the cooperation agreement. They also participated in a May 2019 regional consultation in St. Lucia to work on formalizing management coordination.

# Improved Monitoring, Control, and Surveillance, and Ending Illegal Unreported and Unregulated (IUU) fishing

There have been numerous initiatives to integrate monitoring, control, and surveillance legislation for various fisheries in the region. For example: CRFM and ICCAT have collaborated with respect to large pelagics. The Castries Declaration on IUU fishing - proposed by the CRFM – *ACP Fish II programme: Strengthening fisheries management in ACP* (the African, Caribbean and Pacific States Group) project supported the development of regional monitoring, control, and surveillance strategies to tackle IUU fishing.<sup>78</sup> A joint working group on IUU involving WECAFC, the CRFM and OSPESCA encouraged all Caribbean states to join regional efforts to reduce IUU fishing by developing lists of authorized fishing vessels, vessels involved in IUU fishing, and standards for fishing vessel marking and identification.<sup>9</sup>

At a more local level, Trinidad and Tobago is drafting a memorandum of understanding with other countries, including SVG, on IUU and monitoring. The Regional Security System in Barbados also established and implemented a Fisheries Prosecution and Interdiction Course funded by the EU to support/assist the combating of IUU fishing.

### Key Findings: Achievement of ECFF-FMP Management Measures and 2016 Evaluation Recommendations

This section provides a status and progress summary on each of the ECFF-FMP Management Measures, which closely link to the recommendations from the 2016 ECFF-FMP implementation evaluation. Many of the findings below are described in earlier sections of this report, so the sections below provide brief summaries.

# Progress towards adoption of the ECFF-FMP and implementation of national approaches to support management of flyingfish fisheries

Three countries (Barbados, Dominica, and Grenada) have adopted the ECFF-FMP. Although the remaining three countries adopted or implemented some parts of the ECFF-FMP, there are no processes in place for adoption in Saint Lucia or Trinidad and Tobago. SVG held stakeholder consultations as a first step to

<sup>&</sup>lt;sup>7</sup> Augustus, G. (2013). *Castries Declaration on IUU Fishing: Getting Fisherfolk on Board, Policy Brief No. 1.* [pdf]. Belize City: Caribbean Regional Fisheries Mechanism, p.1-2. Available at: <u>http://www.crfm.net/~uwohxjxf/images/Castries Declaration -</u> <u>Getting Fisherfolk Onboard - Policy Brief 1.pdf.</u> [Accessed 1 November 2018].

<sup>&</sup>lt;sup>8</sup> ACP FISH II Programme. (2013). *About Us.* [online]. Available at <u>http://www.acpfish2-eu.org/</u>. [Accessed 1 Nov. 2018].

<sup>&</sup>lt;sup>9</sup> Caribbean Regional Fisheries Mechanism (CRFM). (2017). *Caribbean countries tackle IUU fishing by marking and recording their vessels*. [online]. Available at <u>http://www.crfm.net/index.php?option=com\_k2&view=item&id=579:caribbean-countries-tackle-iuu-fishing-by-marking-and-recording-their-vessels&Itemid=303</u>. [Accessed 1 November 2018].

possibly adopting the regional FMP. All six countries have either a draft or adopted national fisheries management act and / or FMP, though none are specific to flyingfish.

#### Status of collection and reporting of flyingfish catch and effort data

Five out of the six countries collecting flyingfish landings and effort data are at minimum. Two countries (Dominica and Saint Lucia) also collect social and economic data. Grenada collects only limited landings data. All six countries share flyingfish data with the CRFM and other bodies, such as the FAO and ICCAT, when requested, but data requests and sharing do not occur on a regular basis. The CRFM shares summaries of compiled national data at annual Fisheries Forum meetings, but they do not regularly share synthesized information with stakeholders.

#### Progress towards establishment of authorized national entry systems for flyingfish fisheries

All countries except SVG and Trinidad and Tobago implement vessel registration systems; Dominica and Grenada also have fishing licensing systems for individual fishers. Through the CLME+ flyingfish projects, consultants are compiling lists of registered vessels in key flyingfish fishing countries and making recommendations for stronger, harmonized vessel and fisher registration systems.

#### Progress towards conducting a stock assessment to estimate stock abundance of flyingfish

There has been no progress on a stock assessment of the Eastern Caribbean flyingfish, as more comprehensive and accurate data would be needed to conduct a reliable study. At the special meeting of the CRFM-WECAFC Working Group on Flyingfish, participants determined that a near-term goal will focus on consistent collection of catch and effort data, which would be the foundation needed to consider conducting a stock assessment.

#### Adoption of a precautionary sub-regional total annual catch trigger point

There have been no revisions to the 5,000 tonne trigger point. Please see the section below for further detail. Development of precautionary approach if trigger point is reached

At the special meeting of the CRFM-WECAFC Working Group on Flyingfish, participants discussed treating the trigger point as an impetus to conduct outreach to fishers and other stakeholders to learn more about the stock's status. However, an accurate understanding of flyingfish catch totals, and thus whether the trigger point has been surpassed, would require more comprehensive data collection across the region. During the 16 meeting of the Forum in March 2019, meeting attendees agreed that the updated ECFF-FMP should not contain a specific tonnage associated with the trigger point.

#### Progress towards strengthening national data collection systems

There are significant gaps in flyingfish fishery data collection across the region, characterized by incomplete landings data collection, lack of catch data collection, and limited capacity to collect other types of data needed for well-informed management decisions. As part of the CLME+ flyingfish projects, consultants are developing recommendations for a harmonized regional approach to flyingfish data collection. Consultants conducted in-country consultations to learn about the challenges and realities facing data collectors and developed template data collection forms that could be used across the region.

#### Status of stakeholder awareness and engagement in the management process

Six fisheries divisions carry out stakeholder engagement activities with fishers, processors, and other stakeholders; most of these engagements broadly focus on fisheries, with some notable examples of flyingfish-specific stakeholder consultations relating to the ECFF-FMP. There is general need for greater understanding about ECFF-FMP implementation in the region, however. Therefore, there is room for stronger stakeholder awareness of, and engagement in, flyingfish management.

#### Lessons Learned

This section provides a summary of the key lessons learned surrounding ECFF-FMP implementation. It focuses on regional, country-specific, scientific, and business-oriented aspects.

- **Stakeholder involvement**: 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.
- **Fishery Benefits:** 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.
- **Harmonization**: 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.
- **Data collection and research**: 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.
- **Resources**: 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 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.
- **Varying socioeconomic importance**: The widely varying direct economic importance that the flyingfish fishery holds in individual Eastern Caribbean countries has impeded collaborative regional management efforts.

#### **Recommendations**

Below are several recommendations, stemming from this evaluation, which CRFM and its partners could consider for improving regional flyingfish fishery management.

• **Develop an ECFF-FMP implementation plan**: An ECFF-FMP implementation plan, focusing on feasible, short-term steps, would refocus management efforts down to the national level where they are most needed at this time. It would help national fisheries divisions focus available resources on

priorities that are consistent across the region, and lead to measurable regional progress on important aspects like data collection.

- **Collect key actionable data**: Focus short-term data collection on key areas, including catch and effort, that can inform important steps such as a stock assessment and re-evaluation of the 5,000 tonne trigger point. If resources are available, a fishery-independent study could also assist with a future stock assessment. Ensure that all data collection efforts are harmonized across the region (consistent forms, terminology, units of measurement, etc.) to facilitate information sharing, synthesis, and reliable findings. Consider electronic monitoring to collect consistent, unbiased data across the fishing fleet.
- **Update national licensing systems**: Utilizing the revised legislation and draft amendments developed through the current CLME+ project, each country integrates the relevant amendments into national legislation and/or regulations as needed.
- **Prioritize two-way stakeholder engagement**: Fishers and other stakeholders want to understand the science that supports management decisions. Therefore, the appropriate body, such as the CRFM or CRFM-WECAFC Working Group on Flyingfish, could develop regular updates to stakeholders including fishers. For example, share synthesized fishery data and information with fisheries associations and / or directly with fishers who participate in data collection. Managers could identify champions from each stakeholder group to assist with disseminating information and building buy-in. To assist with development of buy-in, highlight the significance of the recent reductions in flyingfish presence and catch. Whereas reduction in catch has led many stakeholders to become less invested in managing the species, the reduced catch might be better treated as a cause for concern and more attention on the species.
- **Support participation of fisherfolk organizations**: Through their membership, fisherfolk organizations hold great potential to support fisheries divisions' flyingfish management efforts. Select key fisherfolk organizations with the greatest potential and importance to the fishing communities and provide capacity-building support in areas such as vessel or fishing license recording and data collection. Other groups such as chain of custody members, the business and legal sectors, and local police, could also take a stronger role in flyingfish management. This strategy would alleviate some of the budget and staffing shortcomings that fishery divisions around the region are experiencing.
- **Consider a business approach to flyingfish management**: There could be opportunities in some countries, such as SVG, to further develop the flyingfish fishery. In addition, through enhanced collaboration with France (Martinique) on flyingfish management, there could be opportunities to tap into more lucrative markets for flyingfish products. Consider integrating business or market focused guidance in the next iteration of the ECFF-FMP.
- **Determine how flyingfish abundance levels impact other fisheries**: A stronger understanding of the role flyingfish play in the diets of other pelagic fishery species would help managers effectively manage both types of fisheries. Managers could use findings to justify their actions to develop and implement flyingfish management strategies. This would be particularly useful in countries where flyingfish landings contribute minimally to fisher livelihoods, and landings of their predator species (such as dolphinfish) contribute more greatly.
- **Develop management financing mechanisms**: Regional partnerships and national fishery divisions can address their omnipresent concerns over the availability of financial resources by developing financing mechanisms that procure funds to support data collection activities; monitoring, enforcement, and control strategies; equipment purchases; infrastructure improvements; hiring of additional staff; etc. Some possible transboundary financing mechanisms for regional-level management are described in the report "Financing Mechanisms for Eastern Caribbean Flyingfish Management" produced as part of the current CLME+ project.
## **Conclusions**

There was some progress on implementing the ECFF-FMP across the Eastern Caribbean since the previous implementation evolution in 2015. However, significant gaps exist, and it is far from fully implemented. At a broader sociopolitical level, some of the stalls in implementation are due to the relatively low, and in many cases declining, direct socioeconomic importance of flyingfish. Fisheries in general also struggle to gain priority status among the many other issues at the regional and national levels. Next steps for implementing the ECFF-FMP should therefore be highly focused, and leverage existing resources in the most efficient, harmonized way possible. Several next steps are mapped out in the Sub-Project After-Life Plan for implementing key documents related to the CLME+ flyingfish sub-project. These next steps relate to:

- Implementation of the ECFF-FMP, data policy, cooperation agreement, and improvements to flyingfish fishery data collection
- Establishment of the enabling conditions for implementing the items above, including conditions relating to stakeholder involvement, political support, technical and financial capacity, and communication and cooperation
- Key activities needed to establish the enabling conditions listed above
- Implementation of steps to increase financing for flyingfish management
- Philosophy on monitoring, evaluation, and adaptive management of flyingfish management

With this guidance and some of the necessary frameworks in place, managers will need to prioritize activities and allocate the necessary resources for carrying them out to improve Eastern Caribbean flyingfish management.

## **Appendix 1 to Annex E: Interview Guide**

## About this Document

This document includes interview objectives and an interview guide to inform an evaluation of management performance of the Eastern Caribbean flyingfish fishery. Blue Earth Consultants, a Division of ERG (Blue Earth) is conducting the evaluation for the Caribbean Regional Fisheries Mechanism under the "Technical Support to Facilitate Adaptive Management for Eastern Caribbean Flyingfish Fisheries" (Adaptive Management). Blue Earth is completing the projects under contract to the Caribbean Regional Fisheries Mechanism (CRFM) as part of the United Nations Development Programme (UNDP) / Global Environment Facility (GEF) funded project *Catalysing Implementation of the Strategic Action Programme for the Sustainable Management of shared Living Marine Resources in the Caribbean and North Brazil Shelf Large Marine Ecosystems* (CLME+ Project). The evaluation will feed into our development of the updated Eastern Caribbean Flyingfish Fishery Management Plan (ECFF-FMP) in coordination with Nexus Coastal Management, Ltd. To enable comparison with the findings of CRFM's 2016 Implementation Report of the ECFF-FMP, the interview objectives and outline for the management performance evaluation closely reflect key elements of the 2016 evaluation. Ultimately, this evaluation will inform potential opportunities, next steps, and recommendations to improve management of the Eastern Caribbean Flyingfish fishery.

Blue Earth will conduct semi-structured interviews with key experts including fisheries agency staff and others with knowledge of Eastern Caribbean flyingfish fishery management. These questions build off data from the online survey previously deployed to informants and are designed in consideration of the 2016 FMP Implementation Report. Since not everyone will be able to address all questions, we will skip any questions that are not relevant. We will record these non-applicable (N/A) questions differently than "I don't know" responses.

## **Interview Objectives**

Interviews will seek to accomplish the following objectives, which all relate to Eastern Caribbean flyingfish management at the national and regional levels:

- 1. Assess the status of various aspects of management performance, including data collection, monitoring, control, and surveillance, licensing, international cooperation, and outreach.
- 2. Identify achievements toward fulfilling the Eastern Caribbean flyingfish FMP's management measures and CRFM's 2016 evaluation recommendations
- 3. Gather respondents' lessons learned and recommendations to improve Eastern Caribbean flyingfish fishery management

## **Interview Guide**

## Intro Script

I want to thank you for taking the time to speak with me today; your thoughts and opinions will be very valuable to this project. I expect this interview to last approximately an hour. Blue Earth Consultants, a Division of ERG (Blue Earth) is supporting the Caribbean Regional Fisheries Mechanism (CRFM) to enhance management of the Eastern Caribbean flyingfish fishery (ECFF). As you may know, in 2015 the CRFM completed an evaluation of the progress on implementation of the sub-regional flyingfish fisheries management plan (FMP). As part of our work on the flyingfish fishery, Blue Earth is conducting an update to that evaluation. Your insight will help us provide an updated assessment of FMP implementation and make recommendations for improving implementation of the sub-regional FMP.

This project is part of a larger project funded by the Global Environment Facility (GEF) for the Caribbean and North Brazil Shelf Large Marine Ecosystems (CLME+). Flyingfish is one of the three types of fisheries addressed by this project. Frameworks and lessons learned from the improvements to flyingfish management will be applied to the extent feasible to other fisheries in the region.

Before we begin, I want to let you know that information you share today is not confidential. We will share information we learn through these interviews with the CRFM. If you don't know the answer to a question, please just let us know. We might then ask if you have the name and contact information of someone who could answer the question.

Do you have any questions before we begin?

## Introductory Questions

- 1. Could you briefly describe whether your role in the management of the ECFF falls into any of the
  - (a) Management oversight from the regional level
  - (b) Policy and regulation development at the national level
  - (c) Management implementation at the national level
  - (d) Fishermen representative
  - (e) Scientist
- 2. How many years have you been involved?

## Adoption, Development, and Implementation of FMPs

- 3. Are you aware of the Eastern Caribbean Flyingfish Fishery Management Plan (ECFF-FMP)?
- 4. Has your country formally adopted the 2014 ECFF-FMP?
  - (a) [If yes]: Do you know whether it is being implemented? Please describe. If you don't know, please indicate so.
  - (b) [If no]: Has your country initiated a process to formally adopt the ECFF-FMP? If so, please describe where your country is in the process.
  - (c) [If no]: What are some key barriers to adoption of the ECFF-FMP that exist in your country? (Note: provide these examples only if necessary current priorities, lack of regulatory authority, capacity to implement, etc.)
  - (d) [If no]: Are there elements of the FMP that have been informally or operationally adopted or implemented in practice? Please describe.
- 5. Does your country have a national FMP that encompasses flyingfish management?
  - (a) [If yes]: What is the name of the FMP?
  - (b) [If no]: Has your country initiated a process to develop a national FMP that addresses flyingfish? To your knowledge, describe why or why not.
- 6. On a scale of low-medium-high, how would you describe the current level of human resource and infrastructure capacity in your country for development and implementation of fisheries management? Low capacity indicates that you have roughly 30% or less of the development and implementation capacity needed, medium capacity indicates between roughly 30% and 60% of the capacity needed, and high capacity means you have roughly over 60% or more of the capacity needed.
  - (a) [If low]: How, if at all, does your country plan to address the shortage in fisheries management capacity?
- 7. Are there any other challenges you would like to mention that are currently hindering the adoption, development, and implementation of the 2014 ECFF-FMP or a national FMP addressing flyingfish? Please describe.
- 8. Do you have any lessons learned or recommendations you would like to share regarding adoption, development, and implementation of the ECFF-FMP? If yes, please describe. –

9. [If don't know for any questions above]: For any of the information you didn't know above, could you share the name and contact information of a colleague or someone who might know this information?

## *Legislation and Monitoring, Control, and Surveillance in Support of Management of Flyingfish Fisheries* 10. Have there been any changes to legislation to support management of flyingfish fisheries since July 2015?

- (a) [If the country has adopted the sub-regional FMP]: Is the sub-regional flyingfish FMP fully supported by existing legislation in your country that is, legislation supporting monitoring, control, and surveillance and other aspects of fisheries management?
- 11. (a) [If no]: When is it expected that legislation would be updated to give full effect to the subregional flyingfish FMP – that is, legislation supporting monitoring, control, and surveillance and other aspects of fisheries management? [If the country has adopted a national FMP]: Is the national flyingfish FMP fully supported by existing legislation in your country?
  - (b) [If no]: When is it expected that legislation would be updated to give full effect to the national flyingfish FMP– that is, legislation supporting monitoring, control, and surveillance and other aspects of fisheries management?
- 12. Which of the following elements of fisheries management are mandatory under your country's current fisheries legislation?
  - (a) Provision of data by the flyingfish industry
  - (b) Collection of data by authorities
  - (c) Analysis of data by the flyingfish fishery authority
  - (d) Reporting on flyingfish fisheries data analyses to inform management
  - (e) Consultation with flyingfish fisheries stakeholders on management issues
  - (f) Support for the ecosystem approach to fisheries
  - (g) Support for the precautionary approach to fisheries management
  - (h) Designation of specific management and conservation measures
  - (i) Other management measures of relevance to flyingfish fisheries? Please specify.
- 13. What, if any, changes would be required to the existing monitoring, surveillance, and enforcement systems to give full effect to implementation of the ECFF-FMP?
- 14. Are there any other challenges or barriers you would like to mention that hinder support for legislation and the monitoring, control, and surveillance of the ECFF? Please describe.
- 15. Do you have any lessons learned or recommendations you would like to share regarding legislation, monitoring, control, and surveillance of the ECFF? If yes, please describe.
- 16. [If don't know for any questions above]: For any of the information you didn't know above, could you share the name and contact information of a colleague or someone who might know this information?

## Data Collection and Reporting in Support of Research and Informed Decision-Making

- 17. Have there been any improvements to the national fisheries data collection system since July of 2015? Please describe.
  - (a) [If no]: What are the key challenges to improving the fisheries data management system in your country?
  - (b) [If no]: How does your country plan to address these challenges?
- 18. Has your country submitted catch and effort data on flyingfish fisheries from July of 2015 to present?
  - (a) [If no]: What would you say are the reasons for non-submission of catch and / or effort data on flyingfish fisheries?
  - (b) [If yes]: Please describe the type(s) of data and frequency of reporting.

- 19. For each of the following types of data, could you tell me whether your country collects this information (yes, no, don't know) and if so, how often (e.g., daily, monthly, annually)?
  - (a) Landings
  - (b) Catch
  - (c) Effort
  - (d) Biological/ecological
  - (e) Economic
  - (f) Social
  - (g) Other
- 20. For each of the following types of data, could you tell me whether the data are stored electronically, and if so, the storage software used (if applicable)?
  - (a) Landings
  - (b) Catch
  - (c) Effort
  - (d) Biological/ecological
  - (e) Economic
  - (f) Social
  - (g) Other
- 21. Are these data shared with the CRFM?
- 22. Are these data publicly shareable?
- 23. Are there any challenges and barriers you would like to share that hinder data collection, reporting, and support for research and decision making? Please describe.
- 24. Do you have any lessons learned or recommendations you would like to share regarding efforts to collect and use data to improve ECFF management in your country?
- 25. [If don't know for any questions above]: For any of the information you didn't know above, could you share the name and contact information of a colleague or someone who might know this information?

## Authorized National Entry (License / Permit) System for Flyingfish Fisheries

- 26 Does your country implement a fishing license or permit system specifically to control flyingfish fishing?
  - (a) [If yes]: Is vessel licensing / permit information stored electronically?
    - (i) [If yes]: What data elements are stored (e.g. vessel name, size, date registered, etc.)?
  - (b) [If no]: Is there currently another means to keep records of vessels that may fish for flyingfish?
- 27. Has the number of fishing vessels catching flyingfish changed since July of 2015? Please describe the change.
  - (a) How many fishing vessels are currently catching flyingfish in your country?
  - (b) Do you know how many of those vessels are catching flyingfish for food, bait, or as incidental catch?
- 28. Are there challenges or barriers you would like to mention with implementing fishing license / permit systems or keeping records of flyingfish vessels? Please describe.
- 29. Do you have any lessons learned or recommendations you would like to share regarding the current system for licensing and record keeping of flyingfish vessels in your country?
- 30. [If don't know for any questions above]: For any of the information you didn't know above, could you share the name and contact information of a colleague or someone who might know this information?

#### Awareness-building of Stakeholders on the ECFF-FMP and their Engagement in the Management Process

- 31. Since July of 2015, to the best of your knowledge, has the fisheries department in your country contacted the following stakeholder groups to increase their awareness of the Eastern Caribbean flyingfish FMP?
  - (a) Fishers
  - (b) Processors
  - (c) Boat owners
  - (d) Vendors
  - (e) Supporting organizations (e.g. fisher associations, NGO's)
  - (f) General public
  - (g) Other stakeholders please describe
- 32 Since July of 2015, have there been any national trainings implemented to strengthen participation of flyingfish fishers in the management process?
- 33. Since July of 2015, have there been any public awareness programs implemented to strengthen participation of flyingfish fishers in the management process?
- 34. In your opinion, has the level of participation from flyingfish fishers in ECFF management process changed since July of 2015 in your country? If possible, please elaborate.
- 35. In your opinion, has the level of participation from other (non-fisher) stakeholders in ECFF management process changed since July of 2015 in your country? If possible, please elaborate.
- 36. In your country, what actions could be taken to improve stakeholder buy-in for the Eastern Caribbean flyingfish FMP?
- 37. Are there challenges or barriers in your country that hinder outreach efforts regarding the ECFF management process? Please describe.
- 38. Are there any lessons learned and recommendations you would like to share that would improve the awareness and participation of stakeholders in the ECFF management process?
- 39. [If don't know for any questions above]: For any of the information you didn't know above, could you share the name and contact information of a colleague or someone who might know this information?

## <u>Regional Initiatives</u>

- 40. Can you please describe any initiatives in place to harmonize the following aspects of flyingfish management among other countries in the region?
  - (a) Legislation
  - (b) Registration and licensing
  - (c) Data collection, analysis, and sharing
  - (d) Monitoring, control, and surveillance
  - (e) Public / stakeholder awareness
- 41. Are you aware of any collaboration occurring between Eastern Caribbean countries and Martinique or Guadeloupe regarding flyingfish management? Please describe.
- 42. What lessons have you learned that could support management improvements in the region?
- 43 Do you have any additional recommendations to improve harmonization, collaboration, and regional efforts in general?
- 44. [If don't know for any questions above]: For any of the information you didn't know above, could you share the name and contact information of a colleague or someone who might know this information?

## Closing Statement

Thank you for taking the time to speak with me and share your insight today. This has been very valuable for our efforts to improve management of the Eastern Caribbean flyingfish fishery. If you have any other questions or have relevant information to support our evaluation, please feel free to contact us.

## **Appendix 2 to Annex E: Informant List**

The individuals below participated in phone interviews using the interview guide in Appendix A.

Country or Organization	Name, Position, Organization
Barbados	Christopher Parker, Fisheries Biologist, Fisheries Division
Dominica	Derrick Theophille, Fisheries Officer, Fisheries Division
Grenada	Lisa Chetram, District Fisheries Officer, Fisheries Division
	Crafton Isaac, Chief Fisheries Officer, Fisheries Division
Saint Lucia	Sarita Williams-Peter, Chief Fisheries Officer, Division of Fisheries
	McArthur Fowell, fisherman
	Winsbert Harry, National Fisherfolk Cooperative
Saint Vincent and the Grenadines	Kris Isaacs, Senior Fisheries Officer, Fisheries Division
	Garth Ottley, Fisheries Officer, Fisheries Division
Trinidad and Tobago	Ester Terrence, Fisheries Division
	Susan Singh-Renton, Deputy Executive Director
CRFM	June Masters, Statistics and Information Analyst
FAO	Terrence Phillips, StewardFish Project
University of the West Indies	Patrick McConney, Professor
University of Warwick	Lisa Soares, Graduate Student

## ANNEX F: CRFM / WECAFC WORKING GROUP SPECIAL MEETING REPORT

# Report of the Special Meeting of the Joint CRFM / WECAFC Working Group on Flyingfish in the Eastern Caribbean

## MEETING GOAL

The goal of the meeting was to discuss progress, challenges, and next steps for implementing the subregional flyingfish fishery management plan (FMP) and associated outputs to further flyingfish and other fishery resource management in the Eastern Caribbean<sup>10</sup>.

## MEETING PARTICIPANTS

The meeting was attended by technical-level participants including but not limited to representatives of national fisheries divisions, fishers' organisations, authorities of Martinique, OECS Commission, FAO / WECAFC, and the CRFM Secretariat. A list of participants is at appendix 1.

## AGENDA ITEM 1: OPENING REMARKS

Opening remarks were given by Mr. Milton Haughton, CRFM Executive Director; Dr. Yvette Diei Ouadi, Secretary to the FAO's Western Central Atlantic Fishery Commission; and, Mrs. Joyce J. Leslie, Deputy Chief Fisheries Officer of the Government of Barbados. Dr. Diei Ouadi's remarks are at Appendix 2

## AGENDA ITEM 2(A): INTRODUCTION OF PARTICIPANTS

Participants introduced themselves and gave a brief description of their role in the management of Flyingfish fisheries and / or their expectations for the meeting.

## AGENDA ITEM 2(B): REVIEW AND ADOPTION ON MEETING AGENDA

In reviewing the agenda (Appendix 3), participants noted that the agenda represented estimated timing for the discussions and may shift based on meeting discussion priorities. It was also noted that specific consultants would facilitate discussion on the various topics, supported by the others as appropriate. IT was accepted that some items could be combined to allow for continuity of discussions. This is reflected in the item numbering following.

# AGENDA ITEM 2(C): REVIEW OF OBJECTIVES AND EXPECTED OUTCOMES OF MEETING

The Programme Manager, Fisheries Management and Development outlined the objectives of the meeting, noting that expected outcomes were:

- A compilation of all deliverables and outputs to date, and agreed recommendations for informing the final steps of the six consultancies
- Analysis of the relationship between planned outputs and current needs and capacities of the Member States

<sup>&</sup>lt;sup>10</sup> The meeting was supported by the CLME<sup>+</sup> Sub-Project # 3: EAF for the Eastern Caribbean Flyingfish

- Comments and suggestions on the deliverables and outputs, to facilitate preparation of final negotiating draft of the Flyingfish FMP
- Considerations and suggestions concerning institutional and incentive structures and responsibilities of governments and other stakeholders for bringing the Eastern Caribbean Flyingfish FMP into effective implementation in the region, including identification of potential constraints and recommendations.

#### AGENDA ITEM 3: BACKGROUND TO AND TOR OF THE WORKING GROUP

#### Presentation summary

Dr. Yvette DieiOuadi, Secretary to WECAC presented participants with a brief background to the Working group and outlined its terms of reference. Dr. DieiOuadi noted that there are currently 11 WECAFC Working Groups; most of which were established or confirmed in 2012 by the 14th session of the WECAFC Commission and seek to provide to member countries, for their implementation, fishery management advice and recommendations, based on the best available scientific information. The working groups comprise fishery scientists, experts, managers and decision-makers of member countries, Regional partner organizations and NGOs. The Joint WECAFC/CRFM Working Group on Flyingfish has the following terms of reference, to:

- Update and finalize the draft Sub-Regional Fisheries Management Plan for Flyingfish in the Eastern Caribbean, taking into account the need to develop an ecosystem approach to fisheries (EAF) management and climate change issues.
- Establish and commence improved monitoring of fishery performance trends, consistent with agreed management objectives for the operation of the Eastern Caribbean flyingfish fishery.
- Monitor and advise on the implementation of the agreed Fisheries Management Plan.
- Provide advice on the status of the fishery and its management to the CRFM Ministerial Sub-Committee on Eastern Caribbean Flyingfish and to WECAFC.
- Take other necessary actions on emerging issues pertaining to the sustainable use of Eastern Caribbean flyingfish.

Specific activities of the Working Group are the update, in 2014, of the 2012 Sub-Regional Management Plan for Flying Fish in the Eastern Caribbean (ECFF-FMP) based on feedback from stakeholder consultations as well as technical inputs from the Third Joint Meeting of the CRFM's Small Coastal Pelagic Fish Resource Working Group and the CRFM / WECAFC Working Group on Flyingfish in the Eastern Caribbean. The Working groups also sought to carry out an assessment of the status of implementation of the Management Plan for the period June 2014 to May 2015 and make recommendations. Working Group efforts also focused, in 2014 to 2016, on developing the sub-project on EAF for the Eastern Caribbean Flyingfish as an Annex to the Project Document for the CLME+ project. Dr. DieiOuadi noted that the subproject, which is implemented by CRFM, supports the present workshop

## **Discussion**

There was no substantive discussion on this item.

# AGENDA ITEM 4(A): REVIEW OF THE FLYINGFISH FISHERY IN THE EASTERN CARIBBEAN

#### Presentation summary

Mr. Peter A. Murray, CRFM Programme Manager, Fisheries Management and Development, gave participants a brief overview of the known status of the Eastern Caribbean Flyingfish fishery. He noted

that Flyingfish fisheries in the eastern Caribbean are part of the pelagic ecosystem; and that although around 13 species of flyingfish (Exocoetidae) occur in the eastern Caribbean region, only three species (Hirundichthys affinis, Cypselurus cyanopterus and Parexocoetus brachypterus) are known to be exploited, with the target species of the offshore flyingfish fisheries of the eastern Caribbean (accounting for ~ 99% of all flyingfish landed) being the four-wing flyingfish (Hirundichthys affinis). The presentation overviewed the biology, fishery recruitment and seasonality of the four-winged flyingfish and indicated that tagging and genetic studies have recommended that there is a single stock of four-wing flyingfish within the south-eastern Caribbean area, extending from Dominica to Trinidad and Tobago. While noting that the current Sub-regional management plan recommended that, based on quantitative assessments completed in 2008 and in 2011, there is no immediate action required by management to conserve the stock, unless there is a significant increase in catches, an assessment which explored the bio-economic dynamic impacts of managing the multi-fleet and multispecies flyingfish fishery had recommended that, under open access, harvest rates in the neighbourhood of 5000 tonnes / year could result in collapse of this pelagic fishery. Consequently, any approach to the management of flyingfish fisheries must, as far is reasonably practicable, seek to ensure that fishers enjoy decent conditions of work. Management efforts must also ensure that other users also do their share to restore and conserve fishery resources, including: efforts to efficiently regulate fishing fleets; efforts to end illegal, unreported and unregulated (IUU) fishing; reduction and prevention of water pollution and coastal erosion caused by housing, quarries, removal of sand and industrial development; and, proper management of other factors, which have an impact on fisheries resources and the aquatic habitat.

#### **Discussion**

In the ensuing discussion, it was pointed out that flyingfish and fisher behavior changes had taken place since 2011 and that this would have a bearing on revisions to the existing management plan. It was recommended that there was also the need to consider the outcome of recent seismic surveys. This given a need to ensure that both government and fisherfolk develop a better appreciation of seismic impacts on flyingfish and other resources. There was an agreement between the Fisheries Authority and those conducting the seismic surveys in Jamaica, which led to compensation. So, more could be learned from this experience in order to better inform both government and fisherfolk as to possible best practices regarding seismic surveys and compensation. It was also suggested that more information should be gathered about the likely impact of seismic surveys on living marine resources from the Caribbean and other regions, so the discussions and negotiations could be better informed, as oil exploration was becoming more prevalent in the region. In fact, it was considered whether compensation from seismic work could be a source of financing for management plan implementation. It was recommended that most seismic damage is done at egg and larval stage, and flyingfish eggs are not widely dispersed. It was pointed out that the Caribbean is now a target for oil development and there is the possibility that fishermen might want to switch to working for oil industry which may appear more lucrative. It was thought that the causes of disappearance of flyingfish were still unclear, but the link between dolphinfish and flyingfish is important. It was considered important to also consider predation as an issue affecting flyingfish abundance; as an example, it was noted that Amberfish is becoming a fishery in Barbados and it is a predator of flyingfish; there could be other predators preventing flyingfish from flourishing. It was stressed that we need holistic, on the ground, research on how different fisheries affect each other, as well as invasive species like lionfish. It was said that we need to do our own research and not accept what's been done in other countries.

It was pointed out that fishers no longer target flyingfish because fish aggregating device (FAD) fisheries have become more prevalent and profitable, as the techniques used in flyingfish fishing are more complicated compared to FAD fishing for tuna, which is more lucrative in less the time. In Dominica, only a few fishers target flyingfish and this is primarily as a source of bait. While it remains in demand, it is not economical to catch. In Barbados, whereas fishers used to leave "squealers" (banana leaves) in the water

as an attractant to spawning flyingfish females, this is less so now because of the cost to them. It appears that data collection and research is one of the major shortfalls that needs to be addressed.

## AGENDA ITEM 4(B): REVIEW OF THE GOALS AND INTENT OF THE CLME+ PROJECT AND INTENDED OUTCOMES OF THE FLYINGFISH SUBPROJECT

#### Presentation summary

Mr. Peter A. Murray presented this agenda item on behalf of Mr. John English Knowles, Mapping specialist for CLME+ project. It was noted that under the previous (CLME) project, a Strategic Action Programme was developed to address the three major problems in the LMEs: unsustainable fisheries, pollution, habitat destruction. SAP vision and objectives from slide. SAP has been endorsed by twenty-five countries and 6 overseas territories. The SAP is being implemented from 2015 - 2025 (initially). The SAP Vision is: a healthy marine environment in the CLME+ provides benefits and livelihoods for the well-being of the people of the region; while its overalls objective is to ensure that contributions to human well-being, socio-economic development, food security and enhanced livelihoods from goods and services, provided by the ecosystems, are optimized. The CLME+ SAP has been endorsed by twenty-five countries and 6 overseas territories. The programme comprises 6 Strategies, 4 Sub-strategies (one on flyingfish) and 76 Actions (6 on flyingfish). The flyingfish sub-strategy calls for actions towards the adoption of EAF in the flyingfish fisheries.

It was noted that in alignment with the call for Action under SAP Strategy 3, in 2017 the UNDP / GEF "CLME+" Project Coordination Unit facilitated the formal establishment and operationalization of a Coordination Mechanism, of which the membership consists of 8 of the region's Inter-Governmental Organisations with a key marine mandate, including UN Environment and the 3 Regional Fisheries Bodies, as well as the IOC of UNESCO's sub-regional "IOCARIBE" commission for the Caribbean. The Mechanism was formalized through the signing of a Memorandum of Understanding. It aims at enhancing regional coordination and collaboration, supports oversight and promotes the up-scaling of actions towards full-scale SAP implementation and the achievement of associated regional and international environmental, fisheries and sustainable development targets and goals. The ICM also supports the IGOs in carrying out their mandates.

The Current CLME+ Project has as its objective: Facilitating EBM / EAF in the CLME+ region for the sustainable and climate-resilient provision of goods and services from shared living marine resources, in line with the endorsed CLME+ SAP. The Project has 5 components – enhance governance arrangements, and enable, demonstrate, scale-up and replicate activities towards achievement of SAP objectives. SAP calls for actions on flyingfish and the CLME+ Project provides financing for these actions. Noting that the CLME+ SAP and Project call for M&E and reporting, it is seen that the Sub-regional Flyingfish Fishery Management Plan (FMP) implementation and its M & E and SAP M&E / reporting are to be linked. Strategy 5A of the SAP aims to enhance the governance arrangements for implementing EAF for the flyingfish fisheries in the eastern Caribbean. It has 2 short term actions and 4 medium term actions (to be completed by year 2025) that are being implemented under CLME+ Sub-Project # 3, which is aimed at supporting the achievement of output 3.3 of Component 3 of the CLME+ Project (Demonstrate EBM/EAF) "Transition to EAF for the Eastern Caribbean Flyingfish fisheries". The CLME+ Sub-Project # 3 is being executed by CRFM. Other partners include FAO-WECAFC, CERMES / UWI, Fisheries Ministries of participating countries, relevant civil society and private sector actors.

#### **Discussion**

In the discussion on this item it was opined that a full management policy cycle needs to occur at the national level. It was noted that while collective action should be taken at the regional level, each individual country needs to work in concert with others. The meeting was of the view that the revised FMP is the most important output of the sub-project, noting that it actually can be seen as incorporating many of the other outputs. Noting that a lobster subproject is under way through OSPESCA (which speaks to subjects such as FMP, traceability, etc.); there could be some overlap. It was also noted that the OSPESCA Ministerial Council is about to endorse lobster FMP. It was further noted that the groundfish and shrimp sub-project is just getting started through WECAFC. Brazil, Suriname, Trinidad and Tobago and Guyana are the focus of shrimp and groundfish sub-project, which is in early stage. An FAP Data preparation workshop is to be held during October and there is a WECAFC Working Group on data and statistics, which is cross-cutting; seeking to coordinate data collection on themes or species.

It was emphasised that the outputs of the sub-project would be useless if stakeholder participation in implementing the FMP was not strengthened at the national levels. Concern was expressed that stakeholders were only being engaged in fisheries management on an *ad hoc* basis. In this regard, it was noted that there is a need for the establishment of permanent stakeholder consultative arrangements at the national level, including more focus on National Intersectoral Coordination Mechanisms (NICs) (e.g. Fisheries Advisory Committees [FACs]) and ensuring that their composition is truly representative of the sector. There is an urgent need to train true fisheries extension officers; this has been on the back burner too long, but there does not appear to be any fisheries-specific extension training in the whole region. It was agreed that extension training is important, as such training could be used to develop greater familiarity with concepts such as EAF, policy cycle, etc., with more attention being given to establishing/strengthening It is also important to ensure that we can provide feedback on a regular basis to fishers on the data being collected from them, by developing suitable communication products that would be of value to them. This would ensure that they benefit from and incentivize their continued participation in data collection efforts. Consideration should be given to packaging market trends, fish seasonality, etc. in an information product to which fishers can relate and utilise.

## AGENDA ITEM 4(C): PREPARATION OF SOMEE REPORT AND INPUT REGARDING FLYINGFISH FISHERY

#### Presentation summary

Mr. John English Knowles, of the CLME + Project, presented this agenda item via Zoom<sup>11</sup>. The presentation addressed the CLME+ Project State of the Marine Environment and Associated Economies (SOMEE) Reporting Mechanism and Strategic Action Programme Monitoring & Assessment. He noted that a regional SOMEE mechanism is being developed and will be institutionalized within existing regional organizations. It was noted that the reference to associated economies was because of the close link between marine environment and economies in the region. The marine environment supports major economic sectors (fisheries, tourism, shipping, oil and gas) and forms the basis for blue economy and socio-economic development in the bordering countries. On the other hand, pressures from these sectors cause degradation of the marine environment and reduce the very benefits (ecosystem products and services) that these sectors depend on. SOMEE will be the first initiative to integrate environmental state and associated economies. It was emphasised that SOMEE is not a one-time initiative. It will be a regional assessment mechanism that will be institutionalized within the existing intergovernmental bodies that form the regional ocean

<sup>&</sup>lt;sup>11</sup> The CRFM Secretariat extends heartfelt appreciation to Ms. Susanna DeBeauville-Scott, of the OECS Commission, for facilitating the use of the Commission's Zoom facility.

governance framework. SOMEE will integrate and add value to information from different assessments and sources (national, regional, global). This includes inputs from the IUU Working Group and other WGs. SOMEE will also inform development and on the longer term, support regional action plans such as for IUU, nutrients and habitat protection/restoration and the structure of the SOMEE report is aligned with the SAP structure. The overall report structure is based on the SAP strategies and sub-strategies. SOMEE will address a series of questions based on the <u>Driver-Pressure-State-Impact-Response Framework (DPSIR)</u> framework<sup>12</sup>. It is expected that relevant inputs from this WG are available for SOMEE and SAP M & E. The PCU will be holding discussions with CRFM and WECAFC and will provide guidelines for preparing these inputs.

Potential benefits of being part of the SOMEE mechanism were touted, inter alia as:

- Potential financial support through a Sustainable Financing Plan under the PPCM
- Regional platform for disseminating WG outputs to wider audience and raising awareness, leveraging support from donors
- Ensuring appropriate indicators for SOMEE on FF and how to best visualize them to decision makers
- SOMEE will help trigger implementation of FF FMP

#### **Discussion**

During the ensuing discussion it was pointed out that one main issue with SOMEE is that it is supposed to be a flagship output of CLME+ project, documenting the situation of marine environment and economies. Recognising that the flyingfish component should be one of the sub-chapters, the issue is how are we going to contribute to the text of this report. There is need for a mechanism for drafting the report; we also need to know when the flyingfish subsection text is due. It was opined that the SOMEE appears to be detailed, rigorous strategic environmental assessment. This would include oil and gas, fisheries, tourism, etc. The SOMEE activities are looking at management, but outputs of the flyingfish sub-project is to provide management advice to CRFM which is related but not necessarily the same. It was recommended that while this working group is supposed to create the contribution to the SOMEE report, there is need to clearly assign those responsibilities. The vision for the marine atlas was also questioned; and, whether this could contribute into the data platforms we're recommending. It was pointed out that it is being trialed now, and one can share information to be incorporated into it. It is, however, not clear whether countries have already contributed.

#### AGENDA ITEM 5: BRIEF LOOK AT CAPACITY AVAILABILITY AND NEEDS AND CHANGING CONDITIONS AFFECTING THE FLYINGFISH SUBPROJECT This item was deferred and incorporated into Item 17

This item was deferred and incorporated into Item 17.

<sup>&</sup>lt;sup>12</sup> The Driver-Pressure-State-Impact-Response (DPSIR) Framework provides a structure within which to present the indicators needed to enable feedback to policy makers on environmental quality and the resulting impact of the political choices made, or to be made in the future. The DPSIR framework assumes a chain of causal links starting with 'driving forces' (economic sectors, human activities) through 'pressures' (emissions, waste) to 'states' (physical, chemical and biological) and 'impacts' on ecosystems, human health and functions, eventually leading to political 'responses' (prioritisation, target setting, indicators).

## AGENDA ITEM 6 & 7: PRESENTATION AND DISCUSSION OF DRAFT OUTPUTS TO DATE AND GATHER FEEDBACK FOR FURTHER REVISIONS OF SUB-REGIONAL FMP

## Presentation summary

This item was presented by Kelsey Jacobsen of ERG. She noted that the previous update of the ECFF-FMP was in 2014 with general management objectives being: sustained flyingfish resource (biological); optimal use of the flyingfish resource for long-term benefits (socioeconomic); and sustained ecosystem health (ecological). The process for tis current update has been:

- CRFM hired ERG (through its Blue Earth Division), Nexus, and CANARI to update the ECFF-FMP
- Blue Earth developed preliminary recommendations for updating the FMP, which Fisheries Officers from 6 countries commented on
- Two countries (Saint Lucia and Dominica) held stakeholder consultative meetings to provide further feedback
- Blue Earth revised the recommendations, then incorporated them into the ECFF-FMP
- Today we are seeking your input on the updated ECFF-FMP

FMP Update Recommendations in terms of document structure are to streamline background and supporting information; clarify management advice and implementation steps; add additional guiding documents as annexes; ensure readability for all stakeholder audiences. A number of recommendations of topics to consider adding to the ECFF-FMP have also been made, namely:

- Emphasize key framing elements of the updated plan
- Highlight topical priorities
- Lay groundwork for future stock assessments
- Specify management measures
- Specify research needs
- Emphasize the precautionary principle
- Consider how to add value to flyingfish

Recommendations for Prioritizing Effort and Supporting Implementation include providing a realistic roadmap to implementation; harmonize data collection and communication; support collaboration; and, facilitate adoption of the FMP.

An overview of Draft Updated ECFF-FMP was then presented, noting the proposed updates:

- The preface was updated by inclusion of a statement that the FMP can be modified to apply to other fisheries.
- A guiding principle defining EAF management was added.
- Several old and less relevant references were removed from the section on the biology of flyingfish.
- Some minor repetitive language was removed from the section on fishery characteristics
- Issues, constraints, opportunities were compiled into one table, with some refinements
- Management goals, general objectives, operational objectives, actions, indicators, responsibility, and milestones were compiled into one table, with some refinements
- Research needs were compiled into one table, with some refinements

With regard to Implementation of the plan

- Management advice section was removed and incorporated into table in previous section
- Stakeholder participation process diagram was added
- Adaptive management process diagram was added

In the annexes the draft sub-regional data policy was added

The consultants posed a number of discussion questions:

- Are there any overarching comments on the updates?
- Should we streamline some of the background information, placing detail in appendices?
- Would you like us to propose content to fill blank cells in the summary Table 5?
- What type of guidance for stakeholder engagement would be most useful to include in the ECFF-FMP?
- What resources would be needed to perform an annual sub-regional stock assessment?
- How realistic is the 5000 tonne trigger point in light of the high interannual recruitment variability of flyingfish?

## **Discussion**

During the discussion, participants were of the view that there is need for the FMP to speak to capacity building approaches, as well as expanding on research needs. Research needs should be fleshed out quite a bit on how countries can contribute to the research. At the same time, there is insufficient information to help make decisions with regard to necessary capacity building; this needs to be priority before long-term management can be pursued. There is also need for clear guidance on how to implement the plan; including and not limited to national level implementation strategies, as well as a regional one. The document needs to be more user friendly, as currently it does not allow for effective utilization by the variety of stakeholders; this should include a communication strategy and action plan; as well as a resource mobilization strategy and action plan. The plan should also identify capacity gaps and a corresponding strategy, all geared to an enabling framework for resource users. It was felt that it is important to consider the impact of current extreme accumulations of Sargassum, in the FMP. It is also important to interconnect regional with national objectives, as there may be competition between these and other national imperatives; this, mindful of the national objectives for the fishery.

It was noted that a lot of the information used to build the first FMP came from long before 2014: we are seeing more changes now than we saw before and we don't understand what they are or why. It was thought that the Plan needs to take into account all the myriad changes taking place: ecosystem-related (e.g. ocean acidification, climate change) as well as technological; and, international law and policy (e.g. Sustainable Development Goals, etc.): since these have implications for any management measures we may recommend. It was agreed that there is need to look closely as to why implementation of the previous FMP has been less than optimal; and, to identify strategies for realistically addressing the relevant constraints, including issues related to institutional capacities (whether fisheries divisions or fisher's organisations) in the region. It was stated that some stakeholders, like fishermen, are resistant to change, which makes stakeholder analysis really important. It is important to engage stakeholders, such that they are made to understand and share the rationale for decisions and recommendations. It was opined that while we assume fisher groups are strong, they actually have big issues with dynamics (for example: in some places the fishers don't trust the fishers' organisations, which are made mostly of boat owners who, more often than not, do not go to sea; the fishers who actually go to sea are not part of the organisations, which therefore often do not represent those latter interests); sometimes when you empower them, they prevent you from

making any decisions even in their own interest. There has been concern that the current apparent inefficacy of committees such as FACs and NICs may be a function of their composition and, until that's rectified, there will always be that issue with whether or not these committees are in a position to carry out the roles expected of them (in management plans and / or the SAP). It was recommended, therefore, that instead of referring to these committees by name in the FMP, it may be more prudent to utilise a more generic term such as the "appropriate fisheries advisory entities" or something similar.

It was proposed that the annual harvest rates of 5000 tonnes referred to in the 2014 Plan, was not mindful of the lowering of harvest rates consequent upon accumulation of Sargassum. Concern was expressed with regard any closure of the Flyingfish fishery; including the use of the term "trigger point"; it may be useful to consider these as being points that engender engagement of fishers. It was noted that a "flyingfish year" extends from September to September and so this must be borne in mind and taken into consideration. It was stressed that fishermen know what's going on and that information is important to good management decisions. Mindful that discourse on climate change now is on fisheries, tourism, etc. it was considered unfortunate that fisheries managers aren't talking to climate change specialists.

While noting that the FMP needs to speak more to management of resource users; there is a recognised need to ensure that the plan is "EAF-compliant"; and, consider a number of other initiatives that have lessons that we can use, e.g. CARIFICO, ECMANN etc. Consultants were charged, in reviewing the FMP, to be mindful of new (international) management regimes and laws coming into effect, like port state measures and IUU fishing. Consideration should also be given to drafting the FMP such that its outcomes are incremental rather than making definitive statements of outcome which may be impacted by on-the-ground realities as time progresses.

It was agreed that coming out of this current meeting, the consultants will make revisions to the FMP, which would then be circulated among participants who will be expected to return comments within one month from receipt.

## Summary of recommendations

The Meeting:

**<u>Recommended</u>** that in updating the FMP, in terms of document structure, the following should be considered: streamline background and supporting information; clarify management advice and implementation steps; add additional guiding documents as annexes; ensure readability for all stakeholder audiences;

<u>Also recommended</u> adding the following topics to the ECFF-FMP emphasize key framing elements of the updated plan; highlight topical priorities; lay groundwork for future stock assessments; specify management measures; specify research needs; emphasize the precautionary principle; and consider how to add value to flyingfish;

**Further recommended** that prioritizing effort and supporting implementation include providing a realistic roadmap to implementation; harmonize data collection and communication; support collaboration; and, facilitate adoption of the FMP;

<u>Agreed that</u> the plan should also identify capacity gaps and a corresponding strategy, all geared to an enabling framework for resource users;

Highlighted the need to be mindful of the impact of current extreme accumulations of Sargassum;

**<u>Recommended</u>** that WECAFC consider supporting the development of an FMP implementation plan / strategy; possibly through the use of a case study approach, taking into account the lessons learned from attempting to implement the 2014 FMP;

**Proposed** that the revised FMP include an outline of a (1 - 2 page) national implementation plan;

**<u>Recommended</u>** that in reviewing the FMP, there is need to be mindful of new (international) management regimes and laws coming into effect, like port state measures and IUU fishing;

<u>Asked</u> that consideration be given to drafting the FMP such that its outcomes are incremental, rather than making definitive statements of outcome which may be impacted by on-the-ground realities as time progresses;

<u>Noted</u> that the annual harvest rates of 5000 tonnes referred to in the 2014 Plan, was not mindful of the lowering of harvest rates consequent upon accumulation of Sargassum;

**Expressed concern** with regard any closure of the Flyingfish fishery, especially in relation to the use of the term "trigger point"; and

**<u>Recommended</u>** that the trigger points should be considered as points that engender engagement of fishers and review of the fisheries rather than fishery closure.

# AGENDA ITEMS 8 AND 9: PRESENTATION AND DISCUSSION OF DRAFT OUTPUTS AND GATHER FEEDBACK FOR FURTHER REVISIONS OF DRAFT DATA POLICY

## Presentation summary

Presented by Kelsey Jacobsen. She noted that in developing the draft data policy the 2014 ECFF-FMP and additional CRFM and partner documents related to the flyingfish fishery (e.g., FAD Fisheries Recommendations, FIRMS Workshop Report) had been considered. A number of documents were identified through web research on fishery data management best practices (e.g., FAO Guidelines) and existing data management policies from other sectors / locations (e.g., US National Science Foundation, US National Oceanic and Atmospheric Administration, and US National Aeronautics and Space Administration). Mindful of these, ERG had developed a draft Data Policy, on which Fisheries Officers from 6 countries commented; and two countries (Saint Lucia and Dominica) held stakeholder consultative meetings to provide further feedback. The structure of the policy was presented as follows:

## I. Introduction

- Fishery Background
  - History, geography, socioeconomic significance, managing bodies, need for harmonization under ECFF-FMP
- Data Policy Purpose and Scope
  - Purpose to outline data collection priorities, data sources, and approach to integrated data collection, management, and sharing
  - Scope relates to Eastern Caribbean flyingfish fisheries, but could be expanded to address other fisheries
- Data Policy Agreements

• Regional body(ies) will compile data, countries will collect and submit data, all will prioritize data security

## II. Data Prioritization and Sources

- Regional Data Priorities
  - Shortcomings in data collection, supply chain nodes where data will be collected and shared (needs to be populated)
- Policy on Identifying Data Gaps and Priorities
  - Criteria for selecting priority data to collect in all countries
- Data Collection on ECFF-FMP Indicators
  - Data types, frequency, and responsible parties for data related to each ECFF-FMP management goal and objective
- Data Sources

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- Considerations for flyingfish data sources
- Data Collection Tools and Sampling Strategy
  - Guiding principles for data collection tools and sampling strategies

## III. Data Management and Sharing

- Overview of National Data Management
  - Fisheries divisions will harmonize data collection protocols; store using systems that allow regular reporting
- Investment in Data Management Systems
  - Overview of investment from WECAFC, CRFM, FIRMS, UWI (needs to be populated)
- Regional Data Management
  - Database platform considerations; submission and documentation guidelines
  - Data Sharing and Usage Approach
    - Terms of data sharing and usage, definitions of three classes of data

## IV. Data Policy Review and Amendment

• Living document with regular review

## V. Appendices

- Sources referenced to develop the data policy
- Data sources by country
- Example data collection forms
- Sub-regional data policy action plan

As an aid to discussion, the following questions were posed:

- Are there any overarching comments on the draft data policy?
- Can you agree to the "Data Policy Agreements"?
- Who are the end users of data?

- How can regional bodies contribute to the data management system?
- Do you have input on what platform should be used to manage regional data?
- What specific agreements about data sharing and usage can we add to the data policy?
- Are there any modifications to make to the "Data Collection Tools and Sampling Strategies"?
- Do you agree with the criteria for prioritizing data sources?
- Can you all agree to the "Submission" and "Documentation" agreements?
- Would a data policy action plan be useful for mapping out steps for implementing the data policy?
- Do you have input on who should be responsible for enforcing the data policy?

## <u>Discussion</u>

There was general agreement that CRFM should be charged with enforcing the data policy, this mindful that there are currently a number of arrangements in CRFM that are dealing with data collection and analysis; such as the data and shrimp and groundfish working groups. It was emphasised that countries need to be part of the working groups; policy needs to strengthen arrangements already in place to gather, analyze, and report. Data needs to be submitted on certain timelines, and in consistent formats and there should be the expectation of minimum data requirements. It was recognised that care should be taken to ensure that the level of detail included in the document should be consistent with a policy and not an action / implementation plan. In this regard, it was noted that a policy should set framework that is common to everyone, given that some countries may not (ideally) have all the data required. Consideration should be given to the incentives to encourage submission of data and sanctions for non-submission/collection of data. It is also important to ensure that any proposed data collection / management scheme is consistent with what countries currently have the capacity to do. It was emphasised that CRFM's mandate includes specific obligations to collect and share information; hence, what is needed is direction on how to implement / strengthen this obligation. There are some challenges that could be addressed by a data policy not only on flyingfish but other fisheries: within the confines of this project it was decided to develop something specific for flyingfish. A policy should enunciate principles, objectives, but also provide some specificity such as what may be included in strategic plans. This should include:

- types of data needed for flyingfish that all countries should collect.
- format for submission,
- elements for confidentiality and how data or elements of it is treated,
- what other countries can access: whether raw data or not, or data that has been analyzed by WGs in aggregated form

It was recommended that, in terms of overall content, the policy should speak to general principles applicable to all fisheries. We would want a policy that will work with flyingfish and be tested using this species; then it can be modified for others; mindful that general commitments / principles are already outlined in the CCCFP. It was emphasised that implementation of the data policy should not increase the current burden on countries. It was opined that consideration should be given to utilisation of a data sheet that can be used in all countries, which can be adapted for other species as appropriate. It was concluded that this implies countries, to the extent possible, should endeavor to harmonize data collection. One view was that this should not be stated in the policy; that is up to the countries. Noting concerns about confidentiality, harmonisation and completeness of data collection, it was accepted that the policy must speak to quantity and quality of data and it must explicitly state a commitment of countries in this regard. It was also opined that the broader framework under which this policy sits needs to be defined, and then a specific policy for flyingfish could be developed. The view could be taken that this policy is a pilot utilising flyingfish and its further development in the context of the ecosystem approach may encourage donors to support data collection, research, and the like. It was reiterated that what was desirable is something that

sets out priorities, principles and will be sustainable: a framework with very clear long-term commitments with the understanding that countries can all buy into the basic data elements needed. Details beyond general principles may be included in annexes. There should be incremental development based on an understanding of where we are currently and where we need to go; then, be modest in our commitments to get us there based on a clear plan. There must be clearly stated incentives and consequences to keep fishermen continuing to give data; in this regard, Prizes for consistent data provision might be considered as incentives. It was also felt that if we can provide fishers with regular information products that are valuable to them, we can show them what they get out of data they contribute.

It was pointed out that CRFM's governing bodies meet March / April we would want draft final documents to be presented to the Caribbean Fisheries Forum and then the Ministerial Council for final adoption. Then we move to implementation; thus, the deadline is to have something that can be reviewed, and decision made by March 2019.

It was recommended that the data policy should be both on collection and use and that it would be helpful to define what data products need to be generated. The use of the WCS-supported Spatial Monitoring And Reporting Tool (SMART), which was created for monitoring protected areas, but could be used for fisheries was touted. This tool would allow persons to submit data directly via smartphones. This led to the suggestion that the policy might include a statement about the use of technology and the exploration of tools that can be piloted.

It was noted that in the CCCFP articles 11, 15, 16 are relevant to this policy, and hence the policy should speak to each of these guidelines for this specific fishery, in a section that clearly lays out linkages to CCCFP.

It was agreed that, based on discussion in the current meeting, ERG will revise the draft policy within two weeks of the meeting, then circulate the refined draft to participants for comments and then further revise.

## Summary of recommendations

The Meeting:

**<u>Recommended</u>** that the policy should set a framework that is common to everyone, given that some countries may not (ideally) have all the data required.

<u>Also recommended</u> that the policy should enunciate principles, objectives, but also provide some specificity such as what may be included in strategic plans. This should include:

- types of data needed for flyingfish that all countries should collect.
- format for submission,
- elements for confidentiality and how data or elements of it is treated,
- what other countries can access: whether raw data or not, or data that has been analyzed by WGs in aggregated form

**Further recommended** that the general principles referred to in the data policy should be applicable to all fisheries; such that while the policy that will be relevant to flyingfish, and be tested using this species, it can be modified for applicability to others; mindful that general commitments / principles are already outlined in the CCCFP.

<u>Asked</u> that consideration should be given, by Member States to the incentives to encourage submission of data and sanctions for non-submission / collection of data.

**Noted** that it is also important to ensure that any proposed data collection / management scheme is consistent with what countries currently have the capacity to do; and hence, its implementation should not increase the current burden on countries.

**<u>Proposed</u>** that consideration should be given to utilisation of a data sheet that can be used in all countries, and which can be adapted for other species as appropriate.

**<u>Recommended</u>** that the data policy should relate both to data collection and data use and might also define what data products need to be generated.

<u>Noted</u> that the WCS-supported Spatial Monitoring And Reporting Tool (SMART), which was created for monitoring protected areas, could be used for fisheries data capture

**<u>Proposed</u>** that the policy include a statement about the use of technology and the exploration of tools that can be piloted.

**<u>Recommended</u>** that CRFM be charged with enforcing the data policy, this mindful that there are currently a number of arrangements in CRFM that are dealing with data collection and analysis.

## AGENDA ITEM 10: REVIEW OF DAY 2'S AGENDA

Against the background of temporal constraints, this item was not addressed.

## AGENDA ITEM 11: SUMMARY OF DAY ONE'S DISCUSSIONS

The Chair gave a brief summarisation of the previous day one's proceedings and invited the consultants to add anything to this summary. In general, discussion on the data policy was considered "very robust"; notwithstanding that there were different expectations in what should be in such a policy.

## AGENDA ITEM 12 AND 13: PRESENTATION AND DISCUSSION OF DRAFT OUTPUTS AND GATHER FEEDBACK FOR FURTHER REVISIONS OF DATA COLLECTION APPROACHES AND MINIMUM REQUIREMENTS

#### Presentation summary

This item was presented by Chris Milley of Nexus. He noted that the recommendations are based on trips to Grenada and Barbados. He indicated that there is insufficient data to assess the state of the resource with confidence, due to shortcomings in the system. Any exchange happening at sea, catch for bait, personal consumption, landing at minor sites are not captured; this also assumes there are no discards, which is not true. There is, however, sufficient data for qualitative assessment. It was mooted that Sargassum affects catchability and maybe abundance.

Milley proposed the following data collection recommendations:

• fishermen's organizations collect parallel data in Canada and data is confidential; only aggregated information goes out of the organisation and since fishermen misreport to avoid taxes, protect areas

where they fish, etc. when logbooks are controlled by their own organisations they tend to be more accurate; this Nexus recommends using logbooks with fishermen recording the data at sea.

- legislation on mandatory membership in a fishermen's organisation in order to go fishing
- fishermen's organisations should be responsible for collecting logbooks
- logbooks presented at landing sites and landings weighed; waiver of landing fees could be an incentive if they present a logbook, and cost of landings is passed to consumers.
- logbooks become property of fishers' organisations and researchers can access the aggregated data

It was said that the following would serve as justification for the recommended approach(es)

- logbook that captures data on all species promotes community-based co-management
- engages all sectors / stakeholders
- government doesn't have to pay; they don't have the resources anyway
- fishers get involved in earliest stages of the management process
- contributes to adaptive management and thus fishers can be more responsive to change
- promotes science-based knowledge when fishers are involved

#### **Discussion**

The general consensus coming out of the discussion was that using cooperatives as a route for data capture is impractical at this time mindful that, among other things, the fisherfolk organisations do not have enough resources for this; however there appeared to be some scope for individual fishers providing data directly. Consideration should be given to utilise fishers' (more literate / numerate) family members as the conduit for data. Consideration of logbooks should be for electronic route. Question is: "who pays"? on-line. Bibliographic database awaiting upload to CRFM site. Gender survey has preliminary results which can be made available. People are willing to see more women involved in the harvest sector. Vessel census forms have been sent to FDs. In some countries recreational vessels not registered as fishing vessels.

It was clearly opined that fishers do not have capacity to take raw data and turn it into scientific information. If the responsible agency could provide scientific information to fishers based on the data they provided, this would help provide incentive. It was reiterated that ownership of logbooks will be important for this; fishers feel they own the data, and there would also need to be some confidentiality of individuals' data in the organisation. It was recognised that there is a cultural barrier on fishers coming together to share data; it is not considered impossible, but a big leap given the paucity of trust among individual fishermen. It was emphasised that landings information is a major issue and we really need to improve in this area. Systems are rudimentary and we're not getting the info we need.

There was strong opposition to the recommendation about making cooperative membership mandatory; this is far-fetched based on legal systems and freedoms and would take high level political intervention to make this mandatory. It was pointed out that in Malaysia it's legally mandated to be a member of a coop, but it doesn't work. Fishermen coops would need major overhauls to be able to take this on. It was noted, however, that we been working on how to improve the coops and their data collection; in some places there have been advances. It was felt that countries need mandatory requirements for fishers to report on catches. It would require elevating importance of data, in law and / or regulations; with the understanding that one could be penalized or not get licensed for non- or mis-reporting. While being reminded that Belize has mandatory catch reporting for licensing, and it would be good for countries to consider this approach; it was noted however, that not all fishers have licenses. It was reiterated that if fishers provide data and get feedback, this incentive might work better than mandatory reporting; but we need to first identify the types of data we need to collect, then talk about how to best go about collecting it. From our experience with fishers using logbooks (fishermen's notes), you have to show them that using them consistently will

improve their lives significantly. From the Saint Lucia experience in data collection and logbooks, the environmental and socio-economic data is becoming more important. Saint Lucia collects some demographic data, but not a lot of socioeconomic data, but countries should consider that more. It was noted that challenges under CARIFICO were level of detail, transparency and willingness and capacity to fill out logbooks; duplication of data collected since Saint Lucia has landings data collectors; lack of staff to analyze data collected by fishermen. Hence it may be useful and important to find roles for fishers to participate in data analysis. It was also recommended that moving forward, we need to start engaging with families of fishers; this given that a lot of fishers are not literate, but their family members might be.

Based on the request to update the meeting on other aspects of the Nexus consultancy, Milley noted that Nexus had developed a cloud-based repository for reports, etc., and this will be moved to the control of CRFM. FIRMS update will be qualitative, not quantitative; and, about the ongoing factors affecting the fishery including climate change. Nexus ran gender surveys earlier this year in Barbados and Grenada and is in the process of compiling results. They used an online survey tool that allows use of offline tablets/phones with data being uploaded when access is available. There is pretty full participation in the fishery by both genders, but women are more interested in the money management aspects. Vessel census forms have been sent to all fish divisions; registration information has been obtained from all countries, but to do vessel census is time consuming. Participants noted that some countries have no fishing licenses even though it's in the regulations. Females tend to do the accounting for families. It was pointed out that it is important to pay attention to small-scale fisheries guidelines which CRFM has committed to as part of CCCFP.

Data collection is enormously difficult especially with current capacity limitations; thus, we ought to focus on strengthening capacity of both government and fishers' organisations. There is need for enhanced political commitment for evidence-based decision making, which requires long-term data collection. It was pointed out that there are projects in the pipeline on data collection across the region (e.g. FIT4CC with EU funds on fishery data collection in context of climate change; and a CARIFICO project follow-up).

Nexus collected value chain info in Barbados, Trinidad and Tobago, and Grenada. The value chain is short where fish is used for bait, while there is some interest in processing; but the issues relate to the abundance of fish and use for food. In Barbados the value chain is more complex with processors being involved and where it is frozen, and some fillets get exported, although most is sold to fish markets. Costs for the fishery are mainly boats, crew, fuel, bait, processing equipment, electricity and fuel, data collection, landing site management, transportation and shipping. Cost drivers to be considered are: as fishermen are integrated into tourism, there is competition if fishers can make more money in tourism; rising global fuel costs; increasing costs of refrigeration; aging landing site infrastructure; international logistics of marketing; and climate change. A number of possible value chain enhancements were noted: improved fish handing increases value, value added, marketing to tourists, skilled labor training; ice use efficiency, improvements in data collection, transportation equipment end refrigeration upgrades, education at international market and of tourists. What is lacking now is time series on landings, exported weight and value, earnings at harvester level, wages and salaries, labor market characteristics for fishing in general.

## Summary of recommendations

## The Meeting:

Noted that there is some scope for individual fishers providing data directly.

**<u>Proposed</u>** that consideration be given to utilise fishers' (more literate / numerate) family members as the conduit for data. It was also recommended that consideration should be given to the use of electronic logbooks.

**Emphasised** that giving useful feedback to fishers who have provided data would be an incentive that might work better than mandatory reporting.

<u>Noted</u>, however, that this required identification of the types of data required to be collected, then subsequently determining how to best go about collecting them.

**<u>Recommended</u>** that, given that data collection is enormously difficult especially with current capacity limitations, focus should be on strengthening capacity of both government and fishers' organisations; supported by enhanced political commitment for evidence-based decision making that requires long-term data collection.

## AGENDA ITEM 14 AND 15: PRESENTATION AND DISCUSSION OF DRAFT OUTPUTS AND GATHER FEEDBACK FOR FURTHER REVISIONS OF COOPERATION AGREEMENT

#### Presentation summary

This item was presented by Kelsey Jacobsen. The process involved ERG developing a draft cooperation agreement, on which Fisheries Officers from 6 countries commented; two countries (St Lucia and Dominica) held stakeholder consultative meetings to provide feedback and ERG integrated their feedback to produce what is currently being presented. Goals for ECFF and other major shared living marine resources are to: establish and implement an effective arrangement for cooperation between the Participating Parties management; coordinate activities between Participating Parties to leverage existing capacities, fill gaps in capacities, and maximize efficiency; and develop and implement shared management recommendations. The draft agreement is outlined as follows:

#### Preamble

• Statements regarding shared living marine resources, importance of flyingfish, existence of policies, need for sustainable utilization, global and regional agreements

#### **Article 1: Definitions**

• EAF, living marine resource, participating party, etc.

#### **Article 2: Establishment of this Cooperation Agreement**

• Between CRFM Member States and French Eastern Caribbean Departments d'Outre Mer

#### **Article 3: Participation**

• Participating parties are 1) Chairman of CRFM Ministerial Council and 2) Direction de la Mer of Martinique

## Article 4: Scope

• Eastern Caribbean flyingfish or all major, living marine resources of the region, within the region where they are distributed and harvested

## Article 5: Vision and Goals

- Vision of optimum benefits, sustainable utilization for the benefit of the people throughout the region
- Goals to establish cooperation arrangement, coordinate activities for efficiency, develop shared management recommendations

## Article 6: General Undertakings on Implementation

• Participating parties will adopt and fulfill obligations of this agreement, designate appropriate entities to implement, and review priorities

## **Article 7: Roles and Responsibilities**

• Establish governance and procedures, roles of participating parties, and communications protocols

## Article 8: Monitoring, Evaluation, and Adaptive Management

• Determine procedures to measure progress

## **Article 9: Amendments**

• Participating parties may propose amendments, to be agreed by unanimous decision

## **Article 10: Dispute Settlement**

• Participating parties will pursue reasonable resolutions, and arbitrators may be appointed if needed

## **Article 11: Entry into Force**

• Upon signature by each participating party

## Article 12: Withdrawal and Termination

• Participating parties may withdraw with written notice

To engender discussion, the following questions were asked:

- Are there any overarching comments on the draft cooperation?
- Would individuals, countries or the CRFM endorse the agreement on behalf of the countries?
- What would be the implications on individual countries and fishers of the agreement?
- Could individual countries choose to withdraw? If so, what would be the process and implications?

- Would the OECS be the most appropriate venue for review and endorsement of the cooperation agreement?
- What steps need to be taken to initiate the adoption process?

## **Discussion**

After presentation, it was recommended that the issue of intellectual property should be included. Participants noted that the Ministerial Council's mandate is specific in asking for a more comprehensive cooperation agreement, this mandate was reiterated by the 2<sup>nd</sup> meeting of the Ministerial Subcommittee on Flyingfish; thus, notwithstanding the initiative is being funded in the context of one species, it is incumbent to use the opportunity to develop a wider scoped agreement. This especially given the ecosystem approach agreed by Member States. It was noted that in the available time, seeking to have a political level agreement is impractical; so, it is best to focus on a technical level in the first instance / short term. It was recommended that marketing considerations also be incorporated / implied in the agreement. Participants noted that IFREMER is ready / willing to cooperate; such involvement in the further development of the agreement was seen as being of paramount importance.

The current document will be revised based on discussions here and circulated (aim for two weeks' time) for further comments and / or input. The restriction to a more technical agreement was found to be acceptable; this includes in discussion during the CLME+ Project mid-term review process. Participants noted that the draft agreement is not inconsistent with the OECS ocean policy (ECROP), but a broadening of the agreement provides more opportunities for living resources management. It was though that it is important to outline some of the benefits referred to in the vision of the document. As well, ECROP should be mentioned in the preamble.

The meeting accepted that CRFM would be a party to the agreement with the appropriate entity on behalf of France / Martinique, being an/the other party. A timeline in terms of withdrawal notice should be included. In general, it was felt that we should aim for a simple agreement that "begins" an arrangement that can grow. Caution was called for such that overt mention of marketing/trade issues may require that the EU be process be followed, notwithstanding that speaking about marketing allows for talk about an IUU issue, without actually saying that IUU measures are being enforced. It was mooted that benefits to fishers/fisherfolk should be clearly indicated in the preamble of the agreement.

Some editorial and other comments were noted: when citing various agreements, add years instead of footnotes; add fisherfolk to definitions and use it consistently; there is need to give a period over which the agreement will become active, or giving notice to exit; the preamble should mention in which 10 countries are involved. In addition to making sure there is full agreement from all parties before moving it up to higher political parties; it is important to make agreement as simple as possible to engender agreement.

## Summary of recommendations

The Meeting:

**<u>Recommended</u>** that the issue of intellectual property should be included in the cooperation agreement.

<u>Noted</u> that in the available time, seeking to have a political level agreement is impractical; so, it is best to focus at a technical level in the first instance / short term.

<u>Also recommended</u> that notwithstanding the initiative is being funded in the context of one species, it is incumbent to use the opportunity to develop a wider scoped agreement, which would provide more opportunities for living resources management; aiming for a simple agreement that "begins" an arrangement that can grow.

<u>Agreed</u> CRFM should be one party/signatory to the agreement, on behalf of its Member States, with an appropriate entity on behalf of France/Martinique.

## AGENDA ITEM 16: DISCUSS COUNTRIES' APPROACHES TO STAKEHOLDER PARTICIPATION IN, AWARENESS BUILDING FOR, AND IMPLEMENTATION OF THE SUB-REGIONAL FMP AT THE NATIONAL AND LOCAL LEVELS

## Presentation summary

Presented by Melanie Andrews via Zoom<sup>11</sup>. It was noted that an initial update of a stakeholder identification and analysis of the flyingfish fishery in the Eastern Caribbean that was completed by CANARI for the CRFM in 2014 was undertaken and used to inform stakeholder engagement activities under the consultancy. Further updates to the stakeholder identification and analysis were made during further implementation of the consultancy. The following activities under the consultancy were noted as being completed:

- The first round of mini-consultations was held in Barbados, Saint Lucia, Saint Vincent and the Grenadines, Trinidad and Tobago from 4 13 December 2017; reports prepared, finalised and disseminated to focal points and mini-consultation participants.
- A second round of mini-consultations was held in Barbados, Saint Lucia, St. Vincent and the Grenadines, and Trinidad and Tobago from 24 April 4 May 2018. The mini-consultation reports were prepared, finalised and disseminated to focal points and mini-consultation participants.
- Baseline Knowledge, Attitude and Practice (KAP) surveys were conducted from 4 13 December 2017 in Barbados, Saint Lucia, Saint Vincent and the Grenadines, Trinidad and Tobago.
- Baseline KAP reports were prepared, finalised and disseminated to focal points and miniconsultation participants. These reports are also available on project webpage.
- The first set of communication products on NICs and FACs were disseminated as handouts at first national-mini consultations.
- A second set of communications products included two information sheets were developed and disseminated to consultation participants and focal points.
  - "From Hook to Cook & Beyond": facts on the flyingfish; information on the ecosystem approach to fisheries, key policies governing the flyingfish fisheries
  - "From Policy to Practice": the policy cycle; the sub-regional management plan for flying fish in the Eastern Caribbean; benefits of implementing the sub-regional management plan for flying fish in the Eastern Caribbean
- A 16-minute documentary "Spotlight on the Eastern Caribbean Flyingfish Fishery" aimed at improving awareness of the governance and management challenges impacting the Eastern Caribbean Flyingfish Fishery and the critical role of the "Sub-Regional Fisheries Management Plan for Flyingfish in the Eastern Caribbean" in addressing these challenges, was also produced as part of the second set of communications products; and disseminated to stakeholders. This documentary was viewed by meeting participants.

It was noted that all reports and communication products were available on the project webpage for the "Enhancing Stakeholder Participation in Management of the Flyingfish Fishery"<sup>13</sup> consultancy and that the information sheets also would also soon be available on the CLME+ Hub<sup>14</sup>.

Dates for the third (final) round of consultations are yet to be confirmed by focal points. These are scheduled tentatively: Barbados – 16 November 2018; Saint Lucia – 20 November 2018; Saint Vincent and the Grenadines – 21 November 2018; Trinidad and Tobago – 23 November 2018. Final KAP surveys are to be conducted during third (and final) set of mini-consultations.

Findings from the first and second consultations and the baseline KAP survey revealed the following:

- Stakeholder awareness of the *Sub-regional FMP* needs to be raised in all Eastern Caribbean countries that target the four-wing flyingfish
- Appropriate National Intersectoral Coordinating Mechanism (NICs), Fisheries Advisory Committees (FACs) or similar arrangements with potential to deal with management of the flyingfish fishery need to be established or strengthened in each country
- The capacity of key stakeholders such as the fisheries authorities, cooperatives departments, fisherfolk and their organisations needs to be built to facilitate effective implementation of the *Subregional FMP*
- The science-policy interface needs to be strengthened to facilitate effective stakeholder engagement in implementation of the *Sub-regional FMP*

Based on their findings CANARI/UWI-CERMES put forward the following key recommendations to help improve stakeholder engagement in implementation of the Sub-regional FMP:

- Develop an implementation strategy that outlines the roles of relevant agencies / stakeholders in supporting implementation of the various objectives in the Sub-regional FMP. This strategy could include possible sources for resources (funds, technical knowledge etc.) including opportunities (e.g. grants, training and other types of capacity building) available under existing and upcoming regional projects.
- Develop a capacity building strategy that would identify capacity gaps and make recommendations for practical actions that can be taken to improve institutional and stakeholder capacity to implement the Sub-regional FMP at the national level. This strategy should highlight the need for the establishment of appropriate mechanisms to facilitate stakeholder engagement in management of the fishery.
- Develop a communication and awareness building strategy that stakeholders at the national level could use to help build awareness about the Sub-regional FMP. The strategy should identify desired outcomes, target audiences, possible communication products, key messages and dissemination channels etc. Specifically, it is recommended that following the updating of the FMP a summarised version of the plan should be developed, that captures the major points of the plan in easy-to-read leaflets or brief documents that can be distributed to interested parties.

## **Discussion**

During the discussion, with regard to the documentary, it was queried why the FMP update was not mentioned, and an explanation given that the documentary sought to speak to the current situation regarding management of the flyingfish fishery. It was suggested that, notwithstanding, the documentary should have

<sup>&</sup>lt;sup>13</sup> <u>http://www.canari.org/enhancing-stakeholder-participation-in-management-of-the-flyingfish-fishery</u>

<sup>&</sup>lt;sup>14</sup> https://clmeplus.org/

indicated that the FMP is updated regularly. It was also mooted that more time could have been given to the impact of Sargassum on the fishery. ERG suggested that instead of developing information products pursuant to their own contracts, they could work with CANARI to revise the video. It was thought that careful consideration should be given to if this proposal was viable.

Noting the challenges in getting NICs and FACs involved in consultative processes, especially given that these entities were either non-existent or inoperative in most countries, it was suggested that these types of entities should be specifically mentioned in law, and national fisheries-sector decision-making processes should require them. It was indicated that these mechanisms were previously functioning and influential in some countries like Barbados and Belize, but interest has waned; thus, it was thought that there should be a legally designated mandate for such bodies that would provide guidance on constitution of membership, changing of members and the like. While recognizing it was recognised that in most laws, ministers are very powerful, it is being increasingly understood that stakeholders should have input; however, there is more stakeholder involvement in obtaining input, but there are no / very few mechanisms in place to formalize the process for engagement / participation in policy and decision-making.

With regard to the effectiveness of these entities, it was noted that this will always be less than optimal unless there are legal grounds to, and legal recourse if Ministers do not, implement recommendations from such entities. It was noted that, under the CLME+ Project, the Centre for Resource Management and Environmental Studies of the University of the West Indies (UWI-CERMES) is supporting NIC development with a suggestion that any stakeholder coordinating body could be seen as and be given the rights/responsibilities of a NIC, so that, for example a FAC would be considered a NIC. It was emphasised that NICs and FACs need to cover all fisheries, and not for specific fisheries. While regional projects (such as CROP) are requiring that countries set up NICs, there is need to be careful about how and for what purpose they are established; and to make sure that if newly established ones are not over-taxing the persons who may also be members of other issue-related bodies. It was posited that FACs could be established as subcommittees of other bodies such as national ocean governance committees. In some countries, this could be more palatable / workable. It was acknowledged further that these entities would be more effective if they were initiated by the countries rather than being enforced top-down from the regional level. The meeting was reminded that during the 2007 MavGov Project, it was found that fisheries divisions were among the biggest obstacles to establishing NICs and FACs: officers feared political interference. It was suggested that existing fisheries regulations are prescriptive in that they set minimum standards for the FACs, but countries had wide leeway once they're established.

It was noted that one of the main issues consultants have brought up in the course of sub-project implementation, is the untimeliness of responses to consultants' requests. In fact, it was suggested that the biggest challenge for this project lies within in the fisheries departments. Recognising that it is incumbent on fish departments to provide feedback in a timely way, bureaucratic realities: including but not limited to bosses having to oversee and sign everything, rather than devolving responsibilities, often contribute to reduced timeliness. It was indicated that one successful approach that came out of the CARIFICO project was that of using fishermen to communicate to / assist other fishermen in other countries

The need to figure out the timing and development of the SOMEE report was noted. It was agreed that CRFM should send outputs from these meetings to the technical staff who actually attended the meeting in addition to the leadership or focal points who may not have attended.

It was suggested that the Canadian experience of utilising habitat working groups might be mooted in the FMP as a mechanism to be considered. It was noted that it is time to do another stock assessment, using whatever we have. Given that the WECAFC commission is expected to be meeting in April 2019 and a

report of this meeting will go to the commission; this working group should recommend a stock assessment. It was suggested that for the FMP, WECAFC could think about piloting of some portions of it; noting that there is some available FAO funding, for generating data or best practices. To a query whether there is to be an FMP implementation plan/strategy, it was suggested that maybe the WECAFC could support this through the use of a case study approach. It was opined that it would be useful to have an outline of a (1 - 2 page) national implementation plan, this was supported by the suggestion that one of the lessons learned from the last attempt to implement the FMP was the need for such a implementation plan. CNFO is expected to meet to discuss the outcomes of this working group meeting and will discuss proposals for the implementation process.

## Summary of recommendations

The Meeting:

<u>**Commended**</u> the consultants on the awareness materials; noting that, in the main, they sought to speak to the current situation regarding management of the flyingfish fishery.

**<u>Recommended</u>** that a communication and awareness building strategy and action plan be developed, that stakeholders at the national level could use to help build awareness about the Sub-regional FMP

<u>Also recommended</u> that the implementation strategy and action plan include components dealing with the roles of the various actors, resource mobilization, capacity building, communication, etc.

<u>Noted</u> that it may be better to spend the resources available on the development of an implementation strategy

**<u>Recommended</u>** that following the updating of the FMP a summarised version of the plan should be developed, that captures the major points of the plan in easy-to-read leaflets or brief documents that can be distributed to interested parties

<u>Noted</u> the challenges in getting NICs and FACs involvement in consultative processes, especially given that these entities were either non-existent or inoperative in most countries.

**Expressed concern** that this inefficacy may be a function of their composition and, until that's rectified, there will always be the issue of whether or not these committees are in a position to carry out the roles expected of them (in management plans and / or the SAP).

<u>Noted</u> that the effectiveness of NICs and FACs will always be less than optimal unless there are legal grounds to require implementation of recommendations from such entities and legal recourse if this is not done.

**<u>Recommended</u>** that opportunities to establish FACs as subcommittees of other bodies, such as national ocean governance committees, be explored.

<u>Also recommended</u> the identification of lessons learned from other countries, which can be applied in the Eastern Caribbean context, to help strengthen stakeholder consultative mechanisms. In this regard the Canadian experience of utilising habitat working groups might be cited in the FMP as a mechanism to be considered.

**<u>Recommended</u>** that NICs and FACs should be specifically mentioned in law, as a prerequisite of national fisheries-sector decision-making processes.

**<u>Proposed</u>** that Working Group should recommend to the WECAF Commission, at its upcoming meeting tentatively scheduled for April 2019, that a stock assessment for flyingfish be undertaken

**<u>Recommended</u>** that WECAFC determine its willingness to pilot some portions of the Sub-regional FMP, including the development of an FMP implementation plan / strategy, using a case study approach; utilising available FAO funding for generating data or best practices.

## AGENDA ITEM 17: OPEN DISCUSSION ON CHALLENGES IN FURTHERING THE FLYINGFISH SUBPROJECT GOALS AND MRTHODS FOR OVERCOMIN THEM

It was determined that issues related to this item and Item 5 had effectively been covered during discussion of previous items; hence no specific, further discussion ensued.

## AGENDA ITEM 18: WRAP UP AND NEXT STEPS

- WECAFC has noted that there are some small project funds that we should consider using for some case studies revised FMP. The process for taking the report of this meeting, with the recommendations, to the WECAF Commission through the scientific advisory group (SAG) was outlined.
- The Consultants will seek to update the plan, both in terms as content as well as format (to make them more "user-friendly"). It was agreed that ERG would made amendments, to the outputs presented, within the next 2 weeks and then circulate to participants, who will have one month to respond.
- It was <u>recommended</u> that elements of a national plan to implement the (sub-)regional plan should be identified, which should include ideas for resource mobilization. It was emphasised that the plan should be seen as living document that should be revised from time to time.
- Participants <u>proposed</u> that recommendations in the revised FMP should also address the issue of its implementation.
- Once the workshop report is circulated, clear actions for decision making could be identified and / for incorporation into the revised FMP.

## **APPENDIX 1 TO ANNEX F – LIST OF PARTICIPANTS**

Country	Name	Post / Agency
Barbados	Joyce Leslie Joyce.Leslie@barbados.gov.bb	Deputy Chief Fisheries Officer, Fisheries Division
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Saint Vincent and the Grenadines	Mrs. Jennifer Cruickshank-Howard jencruickshankhoward@yahoo.com	Chief Fisheries Officer, Fisheries Division
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Country	Name	Post / Agency	
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## APPENDIX 2 TO ANNEX F – OPENING REMARKS BY SECRETARY TO WECAFC

On behalf of FAO and on my own behalf, as Secretary of the Western Central Atlantic Fishery Commission, I wish to express my appreciation to be bestowed the opportunity to give these remarks at the opening of this 2-day Joint CRFM / WECAFC Working Group Meeting on Flyingfish in the Eastern Caribbean.

Let me take this opportunity to thank the Caribbean Regional Fisheries Mechanism (CRFM) for organizing it. The importance of this event is well known, (needless to elaborate it/will only echo the preceding speakers).

Nevertheless, I wish to highlight here the rationale for my presence here as well as my colleague, Terrence Philipps, Coordinator of the project Developing Organizational Capacity for Ecosystem Stewardship and Livelihoods in Caribbean Small-Scale Fisheries (in short StewardFish Project). This is a threefold rationale:

- 1<sup>st</sup>: From the broader perspective of my organization, the UN Food and Agriculture (FAO), the contribution of Flying Fish to food security and nutrition in the region, coupled with the role played in the economic dynamics, employment and social stability, is sufficiently evidenced to raise a due attention. As an illustration I am aware that in our host country, which happens to add more value to FF, that flyingfish fishery is the most important fishery in terms of employment: 2000 fishers, 500 vendors as well as 325 persons employed as de-boners or workers in fish processing plants. The products generated form the mainstay of the domestic consumption of fish and fishery products. This situation can be equally described in other countries such as Trinidad and Tobago, Saint Lucia, Dominica and Grenada;
- 2<sup>nd</sup>: Indeed, the meeting fits within the framework of the regional collaborative efforts between WECAFC and CRFM, to foster a sustainable management and development of the Eastern Caribbean four-wing flyingfish commercial fishery. I recall that a key milestone of these efforts is the Management Plan, endorsed by the 15<sup>th</sup> Session of the Commission (WECAFC) in 2014. It is therefore reasonably that an event, which aims to appraise the progress, challenges, and identify next steps for implementing this FMP, involves a representative of this RFB / WECAFC;
- 3<sup>rd</sup>: This forum provides an opportunity to meet countries' delegates and regional partners. As a newcomer, who is getting familiar with the Caribbean region, this cost-effective mean enables my easy networking and learning of the development perspectives of a key fisheries

Those institutional and personal motivations, together with the very rich agenda behoove us to be here. We commend the efforts, time and resources of all the partners, including the sister donor agency (UNDP/GEF) and the member countries. We look forward to lively and fruitful deliberations, centered on action-oriented ideas, towards a comprehensive and effectively implemented FMP.

Thank you very much for your attention.

## **APPENDIX 3 TO ANNEX F - AGENDA**

#### Time Item # **Agenda Item** 8:30 - 8:50am 1 **Opening Remarks** CRFM FAO Government of Barbados 8:50 - 9:20 am 2 Introduction of participants Review and adoption on meeting agenda Review of objectives and expected outcomes of meeting 9:20 - 9:45am 3 Background to and TOR of the Working Group (FAO) 4 9:45 - 10:30am Background, Status, Issues, Challenges and Opportunities Regarding FF Fisheries Review of the Flyingfish Fishery in the Eastern Caribbean (CRFM) Review of the goals and intent of the CLME+ project and intended outcomes of the Flyingfish subproject (CLME+) Preparation of SOMEE Report and input regarding flyingfish fishery (CLME+) Brief look at capacity availability and needs and changing conditions affecting 10:30 - 11:15am 5 the flyingfish subproject (CRFM, ERG, NEXUS, CANARI) 11:15 - 11:30am Break 11:30am - 12:30pm 6 Presentation and discussion of draft outputs to date and gather feedback for further revisions of Sub-regional FMP (ERG) 12:30 - 1:30pm Lunch 7 1:30 - 2:15pm Presentation and discussion on proposed inputs into Sub-regional FMP (item 6) by other consultants NEXUS CANARI 2:15 - 3:15pm 8 Presentation and discussion of draft outputs and gather feedback for further revisions of draft Data policy (ERG) 3:15 - 3:30pm Break 3:30 - 4:15pm 9 Presentation and discussion on proposed inputs into draft data policy (Item 8) by other consultants NEXUS CANARI 4:15 - 4:30pm 10 Review Day two's agenda

#### Day 1 (Monday, 1 October)

Day 2 (Tuesday, 2	October)	
Time	Item #	Agenda Item
8:30 - 9:00am	11	Summary of Day one's discussions
9:00 - 10:00am	12	Presentation and discussion of draft outputs and gather feedback for further revisions of Data collection approaches and minimum requirements ( <u>ERG</u> )
10:00 - 10:45am	13	Presentation and discussion on proposed inputs into proposed Data collection approaches and minimum requirements (Item 12) by other consultants ERG CANARI
10:45 - 11:00am		Break
11:00 - 11:30am	14	Presentation and discussion of draft outputs and gather feedback for further revisions of Cooperation agreement ( <u>ERG</u> )
11:45am - 12:30pm	15	Presentation and discussion on proposed inputs into cooperation agreement by other consultants ERG NEXUS
12:30 - 1:30pm		Lunch
1:30 - 2:15pm	16	Discuss countries' approaches to stakeholder participation in, awareness building for, and implementation of the sub-regional FMP at the national and local levels ( <u>CANARI</u> , NEXUS, ERG), including: Resources required Initiatives for (re)establishing national or local consultation mechanisms
2:15 - 2:45pm	17	Open discussion of challenges in furthering the flyingfish subproject goals and methods for overcoming them ( <u>CRFM</u> )
2:45 - 3:15pm	18	Wrap up and next steps

Day 2 (Tuesday, 2 October)
## ANNEX G: UPDATED FISHERIES MANAGEMENT PLAN

This annex is published separately as CRFM Special Publication No. 27.

### **ANNEX H: INFORMATION BRIEFS**



Information Brief No. 1, January 2019

## Updates to the Eastern Caribbean Flyingfish Fishery Management Plan

## Background

The Eastern Caribbean flyingfish fishery management plan (FMP) provides guidance for the management and conservation of four-wing flyingfish. Drafted in 2001, the FMP has been updated in 2008, 2014, and 2019. The Ministerial Council of the Caribbean Regional Fisheries Mechanism and the Western and Central Atlantic Fishery Commission approved the 2014 edition.

## Updates to the 2019 FMP

Since the last FMP update in 2014, fishers have noticed changes in flyingfish catch and environmental conditions, such as masses of sargassum algae, in some areas. The CRFM therefore led an update to the FMP to begin accounting for these changes and to implement an ecosystem approach to fisheries management.

Updates in the 2019 FMP include the following:

#### **Background information**

- Notes potential impacts of climate change on fishing communities and infrastructure
- Emphasizes the importance of flyingfish as a prey species for larger, commercially important fish species
- References the United Nations Sustainable Development Goals and newly created Sub-Regional Data Policy and Cooperation Agreement between CRFM and Martinique

#### **Data collection**

- Names priority data to collect to move toward an ecosystem approach to flyingfish fishery management
- Emphasizes fisher participation

The CRFM-WECAFC Working Group on Flyingfish oversees updates to the FMP. In 2018-2019, it led a process during which stakeholders from six Eastern Caribbean nations provided input on how the FMP could better support fishery management in their country. This briefing document summarizes the updates to the 2019 FMP.

#### **Participatory management**

- Describes Fisheries Advisory Committees (FACs) roles to ensure stakeholder input
- States that fishers should be consulted in advance of, and in the event of, the 5,000tonne trigger point being met
- Adds a description of co-management among fishers and their organizations, FACs, and technical and political bodies
- Provides more detail on adaptive management and stakeholder feedback

Fourwing Flyingfish (Hirundichthys affinis) (photo credit: Pexels)



## Fishers' Opportunities for Involvement

One of the main discussions of the CRFM-WECAFC Working Group on Flyingfish was the importance of participatory processes that engage fishers and fisherfolk organizations in the management process. There are several ways that these groups are encouraged to participate:

- > Collect data: Regularly record data on flyingfish catch and effort and share with data collectors
- Participate in fisherfolk organizations: These organizations help communicate between fishers and managers, and in some countries may collect and/or compile fisheries data
- Know your data confidentiality: Discuss with fisherfolk organizations and national fisheries divisions to understand the confidentiality requirements of how your data are aggregated and shared
- Understand findings: Review summaries of data collected, which the CRFM and/or national fisheries divisions will share

## Conclusion

Environmental changes, political priorities, fishing patterns, and more, impact the Eastern Caribbean flyingfish fishery. Fishers and fisherfolk organizations play key management roles and are urged to participate in the decision making process. Engagement of all stakeholder groups will help move toward ecosystem-based management of the shared flyingfish resource and set an example for other important fisheries.

A fisherman with his flyingfish catch, Tobago (photo credit: The Tobago Project)



#### CRFM

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CRFM members are Anguilla, Antigua and Barbuda, The Bahamas, Barbados, Belize, Dominica, Grenada, Guyana, Haiti, Jamaica, Montserrat, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, Trinidad and Tobago and the Turks and Caicos Islands.

#### Contributors

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Information Brief No. 2, January 2019

## Eastern Caribbean Flyingfish Data Policy and Cooperation Agreement

## Background

The flyingfish fishery is shared across Eastern Caribbean countries and French territories. International agreements call for collaboration among countries to improve ecosystem-based management of living marine resources, including flyingfish. Eastern Caribbean countries and French territories are working together as part of a project addressing fisheries in the Caribbean and North Brazil Shelf marine areas. Their work includes developing a Data Policy and a Cooperation Agreement to harmonize fishery management across the region. CRFM Programme Manager Peter Murray leads a discussion on the Cooperation Agreement at a CRFM-WECAFC Working Group meeting on flyingfish (photo: Chris Milley)



## Data Policy

There is a low level of scientific understanding of the flyingfish fishery, making it difficult to manage. To help solve this issue, stakeholders from several Eastern Caribbean countries developed a Sub-Regional Flyingfish Fishery Data Policy. The Data Policy:

- Outlines regional data collection priorities
- Identifies priority data to collect (catch, fishing effort, and vessel registration)
- Lists considerations for data accuracy, consistency, and sharing
- Identifies the Caribbean Regional Fisheries Mechanism (CRFM) as responsible for overseeing its implementation and managing a regional database
- Provides guidance on data submission and documentation
- Emphasizes data confidentiality
- Sets an expectation of two-way information sharing among fishers, fishers'

organizations, national fisheries divisions, and the CRFM

Fishers' organizations and fishers have a unique understanding of the fishery. They can collect the most accurate data and will be an important part of the data policy. By collecting data on catch (including for bait) and effort, fishers can contribute greatly to fishery management.

Grenada Day Use Vessels (photo credit: Bugsy Delesalle)



## Cooperation Agreement

Flyingfish swim widely throughout the Caribbean and are caught by fishers from several Eastern Caribbean countries and Martinique, a French territory. In the past, there has been limited collaboration among these countries on fisheries management. To address this issue, representatives of these countries helped develop a Cooperation Agreement. The Cooperation Agreement:

- Establishes a cooperation framework between the CRFM Member States and Martinique for managing major, shared living marine resources, including flyingfish
- Sets a vision, goals, and cooperation benefits
- Outlines cooperation responsibilities and activities
- Outlines a method for monitoring, evaluation, and adaptive management of the agreement
- References other existing agreements and policies that call for increased cooperation

The Cooperation Agreement was accepted at the technical level by the CRFM and Martinique. In the future, the CRM and Martinique may seek endorsement at the political level.



#### Fishing boats in Barbados (photo credit: Shayan, Flickr)

## Conclusion

Regional cooperation and harmonization are necessary for improving ecosystem-based management of flyingfish. The Data Policy and Cooperation Agreement are two steps toward solidifying management processes across the region. Fishers are urged to participate in fishery management by exchanging fishery data and information with fisheries divisions and contributing to the management process.

#### CRFM

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#### Contributors

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Information Brief No. 3, January 2019

# Eastern Caribbean Flyingfish Fishery Management Plan Implementation Evaluation and Recommendations

## Background

This document summarizes findings from an evaluation of the implementation of the Eastern Caribbean Flyingfish Fishery Management Plan (ECFF-FMP), both regionally across the Eastern Caribbean and in each focal country (Barbados, Dominica, Grenada, Saint Lucia, Saint Vincent and the Grenadines, and Trinidad and Tobago). Blue Earth Consultants performed an independent evaluation through document review, an online survey, and interviews with in-country stakeholders.

## Recommendations

Based on the regional and country-specific evaluation findings, several recommendations arose for improving flyingfish fishery management. These recommendations are listed in the figure below, with further detail on three that could require engagement from managers and policy-makers in the near term. More detail on each recommendation can be found in the 2018 report, "ECFF-FMP Management Performance Evaluation."

## Recommendations for Improving Flyingfish Management

Develop an ECFF-FMP implementation plan

Collect key actionable data

Update national licensing systems

Prioritize two-way stakeholder engagement

Support participation of fisherfolk organizations

Consider a business approach to flyingfish management

Determine how flyingfish abundance levels impact other fisheries

Develop management financing mechanisms

## Immediate Actions that Managers and Policymakers Can Take

As part of their CLME+ consultancies, the Blue Earth team developed draft legislative amendments and regulations for national licensing systems. Countries must take the next step to initiate a process to put these legal instruments into effect.

Fisherfolk organizations hold great potential to reduce the burden on national fisheries divisions, such as by coordinating data collection and analysis. Countries can empower fisherfolk organizations by providing capacity-building trainings.

As part of their CLME+ consultancies, Blue Earth performed research and developed a list of potential new financing sources for flyingfish management. Countries and regional bodies need to perform due diligence and prioritize financing options to pursue.

## Conclusion

Collaboration and action at the regional and national levels will be needed to implement the recommendations above and improve management of the shared flyingfish resource. To help organize next steps, the CLME+ project commissioned a Sub-Project After-Life Plan, which details enabling conditions and milestones; financing mechanisms; and monitoring, learning, and adaptive management approaches. A separate Information Note summarizes the After-Life Plan and next steps for improving management of Eastern Caribbean flyingfish.

Eastern Caribbean fishing boats (photo credit: Pixabay)



Flyingfish catch (photo credit: Harvey)



#### CRFM

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#### Contributors

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By: Blue Earth Consultants, a Division of Eastern Research Group

Saint Vincent and the Grenadines (Salt Whistle Bay) (photo credit: Jason Pratt)





Information Brief No. 4, January 2019

## Eastern Caribbean Flyingfish Fishery Management: Next Steps

## Background

From 2017-2019, the Caribbean Regional Fisheries Mechanism (CRFM) contracted several consulting firms to assist with various aspects of improving management of the Eastern Caribbean flyingfish fishery. The consultants' activities included:

- Updating the Eastern Caribbean flyingfish fishery management plan (ECFF-FMP)
- Creating a Sub-Regional Data Policy
- Creating a Cooperation Agreement with respect to major, shared living marine resources (including flyingfish) between the CRFM and Martinique
- Recommending flyingfish data collection system improvements
- Developing a list of registered fishing vessels and vessel census
- Creating information products to increase public and stakeholder understanding of flyingfish fishery management

The CRFM recognizes that the momentum created through these consultancies must be built upon in order to further ecosystem-based management of flyingfish fisheries. Their next steps are laid out in a Sub-Project After-Life Plan, summarized here.

## Sub-Project After-Life Plan

The After-Life Plan charts a course for the CRFM and partners to continue building the conditions and activities necessary for implementing the ECFF-FMP and related subproject outputs.

## **Enabling Conditions and Key Milestones**

To achieve the vision of the ECFF-FMP, several enabling conditions will need to exist.

#### Stakeholder involvement

- Strong fisherfolk organizations
- Champions from key stakeholder and nontraditional groups

#### Political support

- Support for ECFF-FMP implementation
- Cooperation with Martinique and endorsement of the Data Policy

#### Technical and financial capacity

- Adequate capacity in fisheries divisions
- · Financing mechanisms in place

#### Communication and cooperation

- Willingness to cooperate at the technical and political levels
- Two-way stakeholder engagement

Pitons of St. Lucia (photo credit: Ron Kroetz)



## Enabling Conditions and Key Milestones – continued

To achieve these enabling conditions, certain milestones will need to be met. These milestones may include the following.

#### ECFF-FMP

- Perform legislative and capacity needs assessments to identify roadblocks for implementation
- Build capacity of select fisherfolk organizations and fishers to participate in management
- Update and pass fisheries acts and regulations to align with the ECFF-FMP
- Develop an implementation plan for national-scale roll-out

#### Cooperation Agreement

- CRFM and Martinique sign the Cooperation Agreement and establish communications approaches
- Develop a more detailed plan for near-term priorities

#### Data Policy

- Establish a database for compiling and analyzing data from across the region
- Develop a protocol for data confidentiality and access



Eastern Caribbean fishers at sea (photo credit: Wikimedia)

### **Financing Mechanisms**

Additional funding will be needed for full implementation of the ECFF-FMP and related agreements.

Among the possible mechanisms, user fees stand out as a potentially feasible option for the Eastern Caribbean. User fees could apply through protected area entry fees, fees on activities like scuba diving or sportfishing, or head taxes on cruise ship arrivals (which could be strengthened through regional cooperation to negotiate with cruise line associations).

User fees, as well as other potential financing mechanisms, will require further due diligence to ascertain whether they will be feasible and result in reliable funding for flyingfish fishery management in the Eastern Caribbean.

#### Fishing boats in Saint Lucia (photo credit: Wikimedia)



## Monitoring, Learning, and Adaptive Management

The CRFM has at its disposal three impact assessment tools it can use to evaluate ongoing progress related to the sub-project after its completion. The impact assessment tools comprise a series of questions; CRFM will need to draw from various sources of data and information to complete the impact assessments, which may include document review, data analysis, surveys, and/or stakeholder interviews. The CRFM could perform the impact assessments regularly, for example every 12-18 months.

## Conclusion

Without continued effort on the part of all participants – fishery managers at the technical and political levels, fisherfolk cooperatives, fishers, and more – achievements through the flyingfish consultancies may not carry forward. Therefore, active participation from each of these stakeholder groups, following the highlevel roadmap laid out in the After-Life Plan, will be necessary. As envisioned by the CLME+ project, processes and outputs developed through the flyingfish consultancies can pave the way for future improvements to other important fisheries in the region, which can learn from the lessons and challenges encountered in this sub-project.

Eastern Caribbean fishing boat (photo credit: Wewn Fawn)



#### CRFM

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#### Contributors

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## ANNEX I: AFTER-LIFE PLAN

### **Background and Purpose**

This document provides an After-Life Plan for Blue Earth Consultants' (Blue Earth), a Division of Eastern Research Group, Inc. three consultancies under contract to the Caribbean Regional Fisheries Mechanism (CRFM). The consultancies constitute part of the flyingfish sub-project of the United Nations Development Programme (UNDP) / Global Environment Facility (GEF) funded project, *Catalyzing Implementation of the Strategic Action Programme for the Sustainable Management of shared Living Marine Resources in the Caribbean and North Brazil Shelf Large Marine Ecosystems (CLME+ Project)*. Blue Earth's three consultancies are:

- 1. Technical Support to Enhance the Governance Arrangements for Implementing an Ecosystem Approach for Flyingfish Fisheries (Governance)
- 2. Technical Support to Facilitate Adaptive Management for Eastern Caribbean Flyingfish Fisheries (Adaptive Management)
- 3. Technical support on Implementation of Management/Stress Reduction Measures in the Eastern Caribbean Flyingfish Fishery (Stress Reduction)

The three primary outputs of Blue Earth's work are an updated Eastern Caribbean Flyingfish Fishery Management Plan (ECFF-FMP), a Sub-Regional Data Policy that outlines data collection priorities and considerations, and a Cooperation Agreement that establishes a framework for cooperation between the CRFM Member States and Martinique with respect to the management of major, shared living marine resources.

The purpose of this After-Life Plan is to provide the CRFM with a roadmap it can use at the conclusion of the CLME+ flyingfish sub-project to complete the policy cycle and management plan and to continue improving regional management of pelagic fisheries, including the flyingfish fishery. The CRFM and Member States involved in the CLME+ Project (Barbados, Dominica, Grenada, Saint Lucia, Saint Vincent and the Grenadines and Trinidad and Tobago) can use this plan to guide their ongoing flyingfish management efforts as they relate to the strategies described in the ECFF-FMP, Data Policy, and Cooperation Agreement. It provides guidance on the enabling conditions needed to move toward ecosystem-based flyingfish fisheries management; key activities for achieving those conditions; estimates of management activity costs; potential financing mechanisms to pursue; and a framework for monitoring, evaluation, and adaptive management.

Several enabling conditions will need to be in place for Member States to complete the policy cycle as it relates to their implementation of the ECFF-FMP, Data Policy, and Cooperation Agreement beyond the timeframe of the CLME+ sub-project. Below, we discuss these enabling conditions and recommended key activities that flyingfish stakeholders can perform to create them.

## Enabling Conditions for Completing the Policy Cycle and Management Plan

The vision for the flyingfish fishery, as stated in the 2014 ECFF-FMP, includes effective cooperation and collaboration among participating states in the conservation, management, and sustainable utilization of the flyingfish resource and related ecosystem in the Eastern Caribbean to secure optimal benefits from those resources for the people and for the Caribbean region. To achieve this vision and implement the outputs created through the flyingfish sub-project, several enabling conditions will need to be in place. These enabling conditions represent the legal, financial, institutional, and management context required to implement the sub-project outputs and ecosystem-based flyingfish fishery management strategies. We recommend that the CRFM and its Member States recognize and consider the importance of the following

enabling conditions as they relate to the successful completion of the Eastern Caribbean flyingfish policy cycle and management plan. We have organized them by the broad themes of stakeholder involvement, political support, capacity-building, and communication.

## Stakeholder Involvement

Stakeholder involvement will play an important role as the CRFM and its Member States continue their efforts to complete the flyingfish policy cycle and ECFF-FMP. The following enabling conditions, some of which are already in place, will facilitate these processes:

- **Strong fisherfolk organizations**: These 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. Fisherfolk organizations with strong operational and technical capacity can enhance stakeholder engagement.
- **Stakeholder champions**: Motivated and knowledgeable individuals from stakeholder groups can disseminate information, build buy-in, and provide a link between fisheries division staff and the greater flyingfish community. Identifying champions in each country and building relationships with them could greatly enhance stakeholder engagement in flyingfish management.
- **Involvement of non-traditional groups**: Chain of custody members, business and legal sectors, and local police can assist with activities such as socio-economic data collection. Involving these groups could alleviate some of the budget and staffing shortcomings that fisheries divisions around the region experience, as well as give managers access to a variety of different types of fishery-related information.

## **Political Support**

The ability of CRFM and its Member States to complete the policy cycle and implement many aspects of the ECFF-FMP is dependent on political support – including from national environment ministries and international bodies – and adherence to the Western Central Atlantic Fishery Commission's (WECAFC) recommendations and resolutions. The following enabling conditions will indicate the existence of this support:

- Support for FMP implementation: With general agreement on the ECFF-FMP in place, there is a need to focus management efforts to the national level where they are most needed. Support from regional management entities (CRFM, WECAFC, etc.) for country specific activities would help national fisheries divisions to use their limited resources on priorities that are consistent across the region. Availability of funds for such support would likely require some level of political support, such as if funding comes from the budget of a ministry or an international body, or if those bodies are responsible for developing grant proposals. Funds raised with new, sustainable financing mechanisms, described in the key activities section below, could be used to support this process.
- Institutionalized cooperation with Martinique and, where appropriate, other non-CARICOM WECAFC Member Countries: Guided by the Cooperation Agreement between the CRFM and France, the CRFM and technical leaders from Martinique will need to establish regular and open communication regarding major, shared living marine resources. Communication and sharing of data and information will be necessary for managing flyingfish stocks in a holistic regional manner, irrespective of national borders.
- Endorsement of the Data Policy: Endorsement of the Data Policy by the CRFM (representing each of the six CLME+ countries) represents one step toward implementing regionally harmonized data

collection and management protocols. Endorsement at the political level would represent even stronger support for this policy and could enable greater investment in implementing the plan.

## **Technical and Financial Capacity**

Staff and stakeholders, including, fisheries division staff, fisherfolk organizations, fishers, and other stakeholders, are ultimately responsible for implementing the various aspects of the ECFF-FMP. Therefore, they require adequate training to carry out their duties. Some enabling conditions that will indicate improved capacity include the following:

- Adequate capacity in fisheries divisions: The fisheries divisions of all six CLME+ countries experience capacity limitations that effect their ability to manage the flyingfish fishery. Enhanced capacity through hiring, trainings, and / or financial resources would aid efforts to implement the ECFF-FMP, Data Policy, and Cooperation Agreement.
- Adequate capacity in stakeholder groups: The updated ECFF-FMP emphasizes the importance of co-management with fishers and other stakeholder groups, and the Data Policy relies on fishers to collect key data. Therefore, these groups will need information and trainings to fill their roles in flyingfish management. As they become knowledgeable and comfortable with their responsibilities, fishers, fisherfolk organizations, value chain members, and others will play increasingly important roles in management activities.
- Financing mechanisms in place: Additional financial resources will be necessary to implement many aspects of the ECFF-FMP, Data Policy, and Cooperation Agreement.

## **Communication and Cooperation**

Another important ingredient that will aid the CFRM and its Member States' efforts to complete the policy cycle and construct harmonized regional flyingfish management activities will be strong communication. Below are some enabling conditions related to communications:

- Willingness to cooperate at the technical and political levels: Regional efforts to manage the flyingfish fishery at the technical and political levels hinge on mutual trust and the understanding that cooperation will lead to benefits for all parties. Willingness to cooperate and share information will be necessary for harmonized management across the sub-region.
- Fishers' willingness to share information: Accurate data collection depends on fishers' willingness to record and share their data with national fisheries divisions. Work is needed to increase fishers' trust of fisheries divisions and willingness to share complete and accurate data.
- Two-way stakeholder engagement: An institutionalized system is needed for sharing data between fishers / fisherfolk organizations, national fisheries divisions, and the CRFM. All parties should play roles in both collecting or compiling data and reviewing and commenting on synthesized fishery data and information. Established communication channels will build trust and mutual understanding of the state of the fishery.

## **Recommended Key Activities for Completing the Policy Cycle and Management Plan**

The CRFM, regional technical level organizations, Member States, fisherfolk organizations, researchers, and flyingfish value chain members can perform key activities to create the enabling conditions necessary to complete the policy cycle and management plan. In this section is a list, in chronological order, of recommended key activities that, when completed, will create the enabling conditions needed to implement the ECFF-FMP, Cooperation Agreement, Data Policy, and data collection systems. Their timeframes refer to the number of months after approval of the After-Life Plan by the CRFM.

## **ECFF-FMP**

The activities in Table 1 will help create the enabling conditions necessary for implementation of the updated ECFF-FMP.

Table 1: Activities to Enable ECFF-FMP Implementation

Activity	Description	Timeframe
Perform needs assessments	Countries conduct legislative and capacity needs assessments, as appropriate, that identify the conditions needed to roll out management of the ECFF-FMP (or a national FMP addressing flyingfish).	Months 1 - 10
Implement capacity- building efforts	Fisheries divisions undertake capacity-building efforts for staff members, fishers, select fisherfolk organizations, and other stakeholder groups as needed to increase their abilities to participate in fishery management efforts.	Months 6 - 10 and periodically in the future
Implement stakeholder engagement	Fishers collect data and report regularly to fisheries divisions; fisherfolk organizations assist with data collection, compilation, and communications between fishers and fisheries divisions. CRFM and fishery divisions regularly share findings from data collection with fisherfolk organizations and fishers.	Ongoing beginning in month 10
Draft harmonized fisheries acts	Each participating country updates their existing fisheries acts to align with the ECFF-FMP and the model act amendments and regulations on vessel registration.	Months 6 - 21
	CRFM / WECAFC Working Group on Flyingfish identifies and secures political support for at least one new revenue stream that supports flyingfish management	Months 1 - 12
Secure sustainable financing	CRFM / WECAFC Working Group on Flyingfish establishes a pilot flyingfish management revenue stream(s)	Months 12 - 18
	Member States and the CRFM/WECAFC Working Group on Flyingfish scale up the management revenue mechanism(s)	Months 18 - 24
Develop implementation plans	Fishery managers create implementation plans that address their needs assessments and map the remaining steps needed to implement priority aspects of the ECFF- FMP (or a national FMP addressing flyingfish).	Months 12 - 18
Endorse management policy	The appropriate national body(ies) endorse fisheries acts and implementation plans.	Months 12 - 18

## **Cooperation Agreement**

The activities in Table 2 will help the participating parties give effect to the Cooperation Agreement between the CRFM and Martinique:

Activity	Description	Timeframe
Sign Cooperation Agreement	Representatives from the CRFM and Martinique sign the Cooperation Agreement and consider whether endorsement at a higher political level is worth pursuing.	Months 1 - 4
Formalize fishery management coordination efforts	The CRFM, Martinique, and, where appropriate, other non- CARICOM WECAFC Member Countries coordinate their fishery management strategies, drawing from the framework provided by the Cooperation Agreement. This activity includes regular communication of their joint expectations for information sharing.	Ongoing, beginning upon endorsement of the agreement
Develop implementation plan	The CRFM and Martinique develop a more detailed plan for near-term priorities on research, data collection, and/or other aspects of coordinated management. If desired, parties also adopt more detailed rules and designate the appropriate entity(ies) responsible for implementing the agreement. The designated responsible entity(ies) determine a schedule for reviewing and revising priorities and direction, at a minimum every three years.	Months 6 - 10

Table 2: Activities that will Enable Cooperation Agreement Implementation

## **Data Policy**

The activities detailed in Table 3 will help flyingfish stakeholders implement the data policy.

Activity	Description	Timeframe
Create centralized database	The CRFM adopts and begins utilizing a specific software and database framework for compiling flyingfish fishery data from across the region.	Months 1 - 6
Draft data access and confidentiality procedures	CRFM leads a stepwise process outlining access privileges to fishery data; appropriate national body(ies) and the CRFM institutionalize this process and share its key points with stakeholders.	Months 4 - 8
Collect standardized and accurate data	Fisheries divisions and fishers collect and share accurate catch, effort, and vessel registration data in a timely manner. The CRFM produces regional information analysis with the data, allowing fishery managers to make informed decisions regarding the use of the Eastern Caribbean flyingfish resource.	Ongoing, beginning in month 8
Test electronic monitoring	Two test countries begin to electronically monitor fishing activities across the fleet and reduce the need for data collectors on the water and at landing sites.	Months 12 - 18

Table 3: Activities that will Enable Data Policy Implementation

Activity	Description	Timeframe
Implement the	All Caribbean states update lists of authorized fishing vessels,	Months 12 - 18
Castries	vessels involved in IUU fishing, and standards for fishing	
<b>Declaration on</b>	vessel marking and identification in accordance with	
IUU fishing	Recommendation WECAFC/17/2018/115.	

#### **Data Collection Systems**

Flyingfish stakeholders will need to perform several activities, including those detailed in Table 4 to improve their flyingfish data collection systems.

Activity	Description	Timeframe
Develop regulatory instruments	The appropriate national body(ies) develop regulatory instruments requiring fishers, fisherfolk organizations, and value chain members to use logbooks and begin researching the feasibility of using electronic data collection tools including Electronic Catch Documentation and Traceability (eCDT) systems.	Months 1 - 6
Train fishers in data recording and management	Regional management bodies, universities, and capacity- building organizations offer trainings in data recording and management, such as the use of logbooks, or appropriate eCDT systems where / when available.	Months 4 - 18
Assess data reliability	Fisheries Divisions survey fishers, fisherfolk organizations, and value chain members determine consistency and completeness of data coverage and compilation. Develop tune-up trainings or other protocols needed based on the survey findings.	Months 12 - 24

Table 4: Activities that will Enable Development of Fishery Data Collection Systems

The CRFM and its Member States' level of capacity to perform the key activities to create the enabling conditions for ECFF-FMP, Data Policy, and Cooperation Agreement implementation will depend on the amount of additional funding that they can secure. In this section, we present yearly estimates, based on best practices, of the management implementation costs for both the CRFM and its Member States involved in the CLME+ Project. The breakdown of these costs in US dollars (Table 5) corresponds to the key activities associated with ECFF-FMP, Cooperation Agreement, Data Policy, and data collection systems implementation that Blue Earth presented in Tables 1-4 above. Cost variations among Member States reflect each fisheries division's management capacity as identified in Blue Earth's ECFF-FMP Management Performance Evaluation report. We estimate the possible cost to fully implement the After-Life Plan to be \$10,000 / year for the CRFM and \$220,000 - \$275,000/year for each Member State. We estimate the possible implementation cost range to be \$500,000 - \$1,000,000 for the CRFM and \$150,000 - \$300,000 for Member States.

In Table 5, we first present activities and their costs that are not specifically associated with the ECFF-FMP, Cooperation Agreement, Data Policy, and data collection systems, but they are nonetheless inherent

<sup>&</sup>lt;sup>15</sup> Western Central Atlantic Fishery Commission (WECAFC). (2017). Eight Session on the Scientific Advisory Board (SAG): Recommendations and resolutions to WECAFC 17 for SAG review. Food and Agriculture Organization of the United Nations, Rome, 30 pp.

to ecosystem-based management strategies for flyingfish in the Eastern Caribbean. These include staffing, travel, and equipment costs. We estimate the total cost of this section to be \$335,000 for the CRFM and between, \$75,000 – \$115,000 for Member States. We estimate that the activities to help create the enabling conditions necessary to implement the updated ECFF-FMP will cost the CRFM \$300,000 and Member States \$25,000. We estimate Cooperation Agreement coordination and implementation costs to be \$100,000 for the CRFM. We do not anticipate Cooperation Agreement coordination and implementation expenses for Member States. We estimate the Data Policy and data collection system implementation cost to be \$75,000 for the CRFM and between \$120,000 and \$135,000 for Member States.

Table 5: Estimates of Yearly Eastern Caribbean Flyingfish Fishery Management Costs in US Dollars for the Caribbean Regional Fisheries Mechanism and its Member States

<u>Costs</u>	<u>CRFM</u>	<u>Barbados</u>	<u>Dominica</u>	<u>Grenada</u>	<u>Saint</u> Lucia	Saint Vincent and the Grenadines	<u>Trinidad</u> and Tobago
Key activities							
Personnel	\$250,000	\$60,000	\$60,000	\$90,000	\$90,000	\$60,000	\$90,000
Travel	\$75,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000
Purchase equipment	\$10,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$15,000
Subtotal	\$335,000	\$75,000	\$75,000	\$105,000	\$105,000	\$75,000	\$115,000
ECFF-FMP		-					
Perform needs assessment;							
build capacity; develop							
implementation plan	\$200,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000
Engage local stakeholders		\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000
Secure sustainable financing	\$100,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000
Subtotal	\$300,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000
Cooperation Agreement		<b>F</b>					
Coordination/implementation							
with France/Martinique	\$100,000						
Subtotal	\$100,000	\$0	\$0	\$0	\$0	\$0	\$0
Data Policy/Collection Systems							
Create centralized database	\$25,000						
Collect/analyze/share data		\$90,000	\$90,000	\$90,000	\$90,000	\$90,000	\$90,000
Test electronic monitoring	\$50,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000
Train fishers in data recording		\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000
Register vessels		\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$25,000
Subtotal	\$75,000	\$120,000	\$120,000	\$120,000	\$120,000	\$120,000	\$135,000
Possible Estimated Annual							
Implementation Cost	\$810,000	\$220,000	\$220,000	\$250,000	\$250,000	\$220,000	\$275,000
Possible Implementation Cost	\$500,000-	\$150,000-	\$150,000-	\$150,000-	\$150,000-	\$150,000-	\$150,000-
Range	\$1,000,000	\$300,000	\$300,000	\$300,000	\$300,000	\$300,000	\$300,000

Funding to support implementation of the ECFF-FMP and related documents, including the Data Policy and Cooperation Agreement, will be needed at both the national and international levels. Regional partnerships and national fisheries divisions can address omnipresent concerns over the availability of financial resources by developing new financing mechanisms. This funding can support activities outlined in the ECFF-FMP, Data Policy, and Cooperation Agreement, including data collection; monitoring, control, and surveillance; equipment purchases; infrastructure improvements; hiring of additional staff; local stakeholder engagement and training; and more (Table 5). Though we provided some estimates above, the amounts of funding needed to support these activities per annum will need to be determined by individual Member States and communicated to the CRFM.

In the report "Financing Mechanisms for Eastern Caribbean Flyingfish Management", we presented research findings and recommendations for the CRFM to consider regarding sustainable financing mechanisms for Eastern Caribbean flyingfish management (see Annex L of this Final Technical Report). To arrive at these recommendations, we developed criteria for the selection of case study fisheries. These criteria included the following:

- (a) Adaptability: Can the mechanism be adapted to suit the social, political, and economic context of Eastern Caribbean fisheries?
- (b) Geographical scope: Is the mechanism geographically limited regarding its impact, activities, and implementation?
- (c) Governance: Are the Eastern Caribbean Member States' fisheries management structures capable of administrating the mechanism, in a transparent manner?
- (d) Experience: Do Member States have financing mechanism development experience and the financial resources available to implement it?
- (e) Performance: At what level of funding and for how long can the mechanism potentially contribute to fisheries management initiatives in the Eastern Caribbean?
- (f) Allocation: Can Member States allocate funding from the mechanism fairly among themselves? If not, do States agree with a disproportionate allocation scheme?

We then performed a rapid analysis of fisheries around the world and selected three to focus on as case studies (Philippines municipal fishery, South Pacific islands offshore tuna fisheries, North Pacific fishery). The information we obtained through research and interviews allowed us to map the flow of funds from source to deployment, describe successes and challenges encountered in implementing each of the mechanisms, and provide ideas of mechanisms that could also be effective in the Eastern Caribbean.

In the report, Blue Earth recommends several financing mechanisms for further due diligence by the CRFM and its Member States. One of these is a permit-based fee system that regulates and/or draws revenue from ocean-based resource extraction activities. Hotel, cruise ship, and departure taxes also offer an opportunity for governments, including fisheries divisions, to use country visitation fees to fund environmental protection and management activities. But potentially the most promising for Eastern Caribbean flyingfish is protected area user fees.

The Eastern Caribbean boasts a wealth of activities for tourists to engage in and places to enjoy, many of which are water-based and depend on a healthy natural environment. There could be opportunities to levy increased or additional fees on access and activities and use a portion of these to fund fisheries management activities like the methods used by the Philippines Municipal Fishery that we detailed in the Fishery Financing Mechanisms Report (see Annex L of this Final Technical Report). This could occur on the local or national scale, such as through park access fees or fees assessed on activities like scuba diving or sportfishing.

The mechanisms we present in our Fishery Financing Mechanisms report may vary among countries. For this reason, the CRFM Secretariat will engage with leadership, including fisheries division staff, to assess the feasibility of implementing the mechanism and its potential financial returns. At the same time, the CRFM Secretariat will engage with leadership at the political level in each country – as well as have conversations with fisheries divisions and local stakeholders – about fishery management costs and the need for managers and fishers to identify management financing mechanisms. As leadership at the political level grows, and managers and local stakeholders begin to understand the gap that exists between current management budgets and the real costs of applying ecosystem-based approaches to fishery management, the more likely they will be to support and buy-into the funding mechanism development process. Because these outreach activities will incur expenses of their own, the CRFM Secretariat will approach potential private and public donor organizations that might be interested in supporting its efforts to identify, build political, management, and stakeholder will, and develop a pilot revenue stream.

After it secures donor funding to initiate this process, the CRFM, national focal points, and local stakeholders will take the following steps to assess the feasibility of developing funding mechanisms. The following steps, will be considered, using the protected area user fee mechanism as an example:

- 1. Perform a landscape analysis of existing protected areas in participating countries, noting those that have an existing entry fee system and their annual visitation levels; identify whether there are protected areas without existing fee structures that could provide a viable revenue stream.
- 2. Perform a willingness-to-pay study, or draw from existing studies in the region, to determine whether visitors would be willing to pay additional or increased fees for access to protected areas.
- 3. Determine a logical chain of custody of the flow of user fee funds from their initial collection point to their final use, based on existing legislative and political requirements; note whether there are points on the chain of custody that could result in leakage or reallocation of the funds to activities other than fishery management.
- 4. Develop and deliver a concise "pitch" to explain the need for the additional user fee to the appropriate political leaders; negotiate the fee level and implement specifics as needed.
- 5. The CRFM's continued partnership with multi- and bi-lateral public and private large-scale environmental funders, including the Caribbean Biodiversity Fund's Conservation Finance Program, in addition to its ongoing pursuit of GEF funding, will ensure CLME+ project continuity. It is essential to identify and secure funding to continue planning and implement the FMP and After-Life Plan. A thoughtful and holistic approach to how any additional funding of this kind might complement existing projects and build on past work could increase the CRFM's chances of obtaining support and the likelihood that the organization could use it in an efficient way.

## Monitoring, Evaluation, and Adaptive Management

A standardized tool is needed to facilitate CRFM's ongoing assessment of implementation of the ECFF-FMP, Data Policy, and Cooperation Agreement. Blue Earth designed three impact assessment tools that CRFM can deploy to assess the extent to which the main objectives of the consultancies are being carried into the future. The impact assessment tools include a tool focused on assessing the Governance consultancy, a tool focused on assessing the Adaptive Management consultancy, and a general tool that addresses aspects that cross both consultancies. The CRFM Secretariat will draw from various sources of data and information to complete the impact assessments, which may include documents, data analysis, surveys, or stakeholder interviews. The CRFM Secretariat will perform the impact assessments regularly following the consultancies' completions, for example every 12 - 18 months.

# ANNEX J: PRESENTATION MATERIALS FOR PRESENTING POST-PROJECT PLAN TO CRFM AND WECAFC





#### Overview

- Background and Purpose
- Enabling Conditions for Completing the Policy Cycle and Management Plan
- Recommended Key Activities for Completing the Policy Cycle and Management Plan
- Estimates of Eastern Caribbean Flyingfish Fishery Management Activity Costs
- Financing Mechanisms and Formalizing (Co-) Financing Commitments
- Monitoring, Evaluation, and Adaptive Management



#### **Background and Purpose**



## **Completing the Policy Cycle and Management Plan** Enabling Conditions Stakeholder Involvement Strong fisherfolk organizations Stakeholder Champions Involvement of non-traditional groups Political Support Support for FMP implementation · Institutionalized cooperation with Martinique and other non-CARICOM WECAFC Member Countries Endorsement of the Data Policy Completing the Policy Cycle and Management Plan **Enabling Conditions** Technical and Financial Capacity Adequate capacity in fisheries divisions · Adequate capacity in stakeholder groups · Financing mechanisms in place Communication and Cooperation Willingness to cooperate at the technical and political levels · Fishers' willingness to share information Two-way stakeholder engagement Recommended Key Activities for Completing the Policy Cycle and Management Plan ECFF-FMP Perform needs as Build capacity Engage stakeholders Mo oths Draft harmonized fisheries acts 1-12 Secure sustainable financing: CRFM/WECAFC secures political support Continue stakeholder engagement Secure sustainable financing: CBFM/WECAFC establishes pilot revenue stream Develop implementation plans Mo ths 12-18 Endorse management policy Continue stateholder engagement Secure sustainable financing: Member States and CRFM/WECAFC scale up revenue mechanism(s)



Cost variations among Member States reflect each fisheries division's management capacity as identified in Blue Earth's ECFF-FMP Management Performance Evaluation report





## ANNEX K: IMPACT ASSESSMENT TOOLS

## **Background and Purpose of this Document**

Below are three impact assessment tools, which address ERG / Blue Earth's work under ERG / Blue Earth's CRFM consultancies -- "Technical Support to Enhance the Governance Arrangements for Implementing an Ecosystem Approach for Flyingfish Fisheries" (Governance), "Technical Support to Facilitate Adaptive Management for Eastern Caribbean Flyingfish Fisheries" (Adaptive Management), and "Technical Support on Implementation of Management / Stress Reduction Measures in the Eastern Caribbean Flyingfish Fishery."<sup>16</sup> The impact assessment tools aim to assess whether the main objectives /actions to enhance the governance arrangements for implementing an ecosystem approach for flyingfish fisheries and to facilitate adaptive management for eastern Caribbean flyingfish fisheries are being achieved. Importantly, the main purpose of these impact assessment tools is to facilitate the Caribbean Regional Fisheries Mechanism's (CRFM) ongoing assessment of work relating to the consultancies following their completion. CRFM may collect information relating to each of the impact assessment tool questions through different means, as appropriate given the nature of the question; for example, this could include surveys or discussions with stakeholders, review of published data or information, and other research methods. Also note that there are various stakeholder groups that CRFM will likely need to correspond with to gather information to answer the assessment questions; some questions can be answered by CRFM staff while others will require reaching out to fishers, fishery officers, participants in international bodies, and more.

The three impact assessment tools in this document include a tool focused on assessing the Governance project, a tool focused on assessing the Adaptive Management Project, and a General tool. The General tool assesses the impact of activities related to implementation of the Eastern Caribbean flyingfish fishery management plan (ECFF-FMP), which relates to all three projects. This document does not include a specific tool for the Stress Reduction consultancy because this project calls for two additional impact assessment tools to be developed and implemented later in the project process; however, the General impact assessment tool assesses whether objectives/actions related to the FMP implementation component of the Stress Reduction project have been achieved.

The indicators and evaluation questions below represent a possible approach to the impact assessment tools; there may also be the opportunity to disaggregate some of the questions further, such as by assessing a single question below separately for each of the six focal countries plus Martinique.

## **Impact Assessment Implementation**

The impact assessments will draw on various sources of data and information, which may include documents, data analysis, surveys, or stakeholder interviews. Some questions below will be easily addressable without data collection, and others will require data collection. CRFM could perform the impact assessments regularly following the consultancies' completions, for example every 12-18 months.

<sup>&</sup>lt;sup>16</sup> ERG/Blue Earth's Stress Reduction consultancy includes additional impact assessment tools that will be developed specific to two of that consultancy's work packages. The ERG/Blue Earth team will both develop those impact assessment tools and implement them during the course of that consultancy. The General impact assessment tool contained in this document also assesses the impact of the Stress Reduction Consultancy.

## **Outlines of Impact Assessment Tools**

## Tool 1: General

Each proposed indicator of success is listed as a section below, with associated evaluation questions. Indicators are focused on FMP implementation and support. With each question, a brief narrative will help explain responses when CRFM implements the impact assessments. This impact assessment tool relates to work under ERG / Blue Earth's Governance, Adaptive Management, and Stress Reduction consultancies.

## **FMP Implementation and Support**

## Indicator 1: Updated ECFF-FMP consistently upheld and implemented by national agency partners

How much progress has each country (Barbados, Trinidad and Tobago, Grenada, Saint Lucia, Saint Vincent and the Grenadines, and Dominica) made on validating the updated ECFF-FMP?
 [For each country]:
 Minimal or no progress (0-25% achieved)
 Moderate progress (25-50% achieved)

□ □ Strong progress (50-75% achieved)	□ Very strong progress (75-100% achieved)
Please provide any necessary explanation for thi	s response:

2. How much progress has each country made on revising its national legislation and regulations as needed to allow for implementation of the updated ECFF-FMP? *[For each country]:* 

□ □ Minimal or no progress (0-25% achieved)	□ □ Moderate progress (25-50% achieved)						
□ □ Strong progress (50-75% achieved)	□ □ Very strong progress (75-100% achieved)						
Please provide any necessary explanation for this response:							

3. Has a sub-regional implementation plan been developed and validated by each of the six countries and the CRFM?

🗌 🗌 No	Yes	□□ In Progress
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- Are all relevant countries participating in sub-regional management of flyingfish fisheries?
   No
   Sometimes
   Yes
   Please provide any necessary explanation for these responses, including indicating which countries are not participating:
- 5. Has a national implementation plan been developed and validated by stakeholders in your country?
- 6 To what extent have the objectives of the updated ECFF-FMP been met to date? [For each objective]:

□ □ Minimal or no progress (0-25% achieved)	□ □ Moderate progress (25-50% achieved)
□ □ Strong progress (50-75% achieved)	□ Very strong progress (75-100% achieved)

Please provide any necessary explanation for this response:

- 7. To what extent is an ecosystem approach to flyingfish fisheries governance at the sub-regional level being implemented?
  - □ Minimal or no progress (0-25% achieved) □ Moderate progress (25-50% achieved)
  - Strong progress (50-75% achieved)
- □ Very strong progress (75-100% achieved)

- 8. What actions have taken place in the past year to implement adaptive management of the Eastern Caribbean flyingfish fisheries?
  - □□ Adjustment of the annual catch trigger point
  - Data collection and/or research to inform management
  - □□ Management measures in response to the trigger point being exceeded
  - □ □ Adjustment of open fishing seasons
  - □ □ Changes in allowable gear
  - □ □ Changes in enforcement and surveillance coverage
  - $\Box$   $\Box$  Changes in vessel permitting system
  - □ □ Changes in stakeholder engagement
  - $\square$  Implementation of targeted outreach and education
  - Other

Please provide any necessary explanation for this response:

9. To what extent are national fisheries authorities responsible for management, research, and planning and national monitoring, control, surveillance, and enforcement agencies provided with the requisite resources to facilitate effective implementation of the ECFF-FMP? *[For each country and Martinique]:* 

2	1 1				
Minimal or no resources	(0-25)	% achieved)	□ □ Moderate resource	ces (25-50% achieved)	

□ □ Strong resources (50-75% achieved)	□ □ Very strong resources (75-100% achieved)
Please provide any necessary explanation for th	nis response:

10. Overall, what is the level of knowledge among relevant staff members in the six focal countries and Martinique regarding the goals and requirements stated in the ECFF-FMP?

□ No knowledge □ Minimal knowledge □ Moderate knowledge

□ Strong knowledge □ Very strong knowledge

Please provide any necessary explanation for this response:

A. What percent increase in knowledge level has occurred over the past year? *[For each country]:* 

 $\Box$  0-15%  $\Box$  15-30%  $\Box$  30-45%  $\Box$  >45% Please provide any necessary explanation for this response:

- 11. Are national fisheries authorities and national monitoring, control, surveillance, and enforcement agencies making consistent efforts to ensure compliance with the ECFF-FMP? *[For each country and Martinique]:* 
  - □ Minimal effort (0-25% achieved) □ Moderate effort (25-50% achieved)

  - Strong eriort (50-75% achieved) US very strong eriort (75-100% ach

Please provide any necessary explanation for this response:

12. Overall, what level of support for implementing the updated ECFF-FMP is currently demonstrated by the decision-makers who have been involved? *Acting as a political champion* 

No support	□ □ Minimally supportive	□ □ Somewhat supportive
Supportive	Very supportive	

11			2	11	
Supporting	scientific	work and	enga	gemen	ıt

 □
 No support
 □
 Minimally supportive
 □
 Somewhat supportive

 □
 Supportive
 □
 Very supportive
 □
 Somewhat supportive

Providing capacity-building opportunities

- □ No support □ Minimally supportive □ Somewhat supportive
- □ Supportive □ Very supportive

Providing funding

05 0		
$\Box \Box$ No support	□ □ Minimally supportive	□ □ Somewhat supportive
□ □ Supportive	□ □ Very supportive	
Generating public supp	port	
□ □ No support	□ □ Minimally supportive	□ □ Somewhat supportive
□ □ Supportive	□ □ Very supportive	
Keeping under review	the supporting work planning and	l budgeting arrangements
□ □ No support	□ □ Minimally supportive	□ □ Somewhat supportive
□ □ Supportive	□ □ Very supportive	
<i>Other – please specify</i>		
□ □ No support	□ □ Minimally supportive	□ □ Somewhat supportive
□ □ Supportive	□ □ Very supportive	
Please provide any nec	essary explanation for these respo	onses:

- 13. What have been the primary impacts of updating and implementing the ECFF-FMP on sub-regional flyingfish management?
- 14. Are the implemented management interventions for flyingfish fisheries producing outcomes that are consistent with the goals set by the ECFF-FMP (e.g., improving food security, improving catch / income, improving safety, security, and health of fishers)?
  - □ Minimal or no progress (0-25% achieved) □ Moderate progress (25-50% achieved)
  - □ □ Strong progress (50-75% achieved)
- □ Very strong progress (75-100% achieved)
- 15. To what extent have financing mechanisms been developed to support management activities required for an ecosystem approach to flyingfish management in the Eastern Caribbean? □ Minimal or no progress (0-25% achieved) □ Moderate progress (25-50% achieved)
  - □ □ Strong progress (50-75% achieved) □ □ Very strong progress (75-100% achieved)

## Indicator 2: Relevant bodies (e.g., NICs/FACs or other similar bodies, CRFM-WECAFC Working Group on Flyingfish, CRFM Pelagic Fisheries Working Group, WECAFC Data and Statistics Working Group, OECS Commission) are actively working toward improved regional flyingfish fishery management

- 1. What additional types of support are still needed to enhance Eastern Caribbean flyingfish fishery management?
  - **Funding**
  - ☐ Fisheries management personnel
  - □ □ Trainings for fisheries management personnel
  - Additional opportunities for regional collaboration
  - **Resources for stakeholder consultations**
  - **Resources for fisherfolk organizations**
  - **Equipment** or supplies

Other:

Please provide any necessary explanation for these responses:

a. For each type of support, what body(ies), processes, inter-sectoral arrangements, or other arrangements would be most appropriate for providing this support?

Are all relevant regional bodies participating in sub-regional management of flyingfish fisheries? 2. No **Sometimes** Yes

- 3. *[For each relevant regional body]:* Are meetings of the regional body taking place on an appropriate basis that is, frequent enough for adequate information exchange, but not too frequently to lose value?
  - $\square$   $\square$  Meetings are not often enough
  - □ □ Meetings are occurring on an appropriate basis
  - ☐ ☐ Meetings are happening too frequently

Please provide any necessary explanation for these responses:

- 4. [For each relevant regional body]: Are there clear agendas leading to action items and responsible parties for each meeting of the relevant regional body?
  No
  Sometimes
  Yes
  Please provide any necessary explanation for these responses:
- 5. Is there an arrangement in place that integrates national flyingfish fisheries into a sub-regional policy cycle that includes all relevant regional bodies?
  Yes
  No
  In Progress
  Please provide any necessary explanation for this response:
- 6. Are all harvesting countries following up on their commitments and action items to further the improvement of regional flyingfish fishery management?
  No
  Sometimes
  Yes
  Please provide any necessary explanation for this response:

## Tool 2: Governance

Each proposed indicator of success is listed as a section below, with associated evaluation questions. Indicators are focused on aspects of ECFF-FMP implementation and support and the data policy specific to the Governance consultancy.

## **Partnership Development**

The indicators and associated evaluation questions in this section are focused on ECFF-FMP implementation and support.

## Indicator 1: Effective management collaboration demonstrated between the CRFM and France

- Has a partnership agreement been endorsed with a signature from each of the relevant Parties (e.g., CRFM Secretariat and Martinique's Direction de la Mer)?
   Yes
   No
   In progress
   Please provide any necessary explanation for this response:
- 2. How often do technical / scientific fisheries agency staff in harvesting countries communicate / work on flyingfish matters (e.g., produce papers, formulate management strategies) with fisheries staff in Martinique?

	$\Box$ $\Box$ 1-3 times per year
$\Box$ $\Box$ 4-10 times per year	☐ More than 10 times per year
Please provide any necessary explanation	on for this response:

3.	How often do CRFM staff communicate / work on flyingfish matters (e.g., produce papers formulate management strategies) with fisheries staff in Martinique? Never I - 1-3 times per year - 4-10 times per year I More than 10 times per year Please provide any necessary explanation for this response:
4.	How often do legislative / policy staff or elected officials in the six countries communicate / wor on flyingfish matters (e.g., produce papers, formulate management strategies) with fisheries staf in Martinique? Never 1-3 times per year 4-10 times per year 10 More than 10 times per year Please provide any necessary explanation for this response:
5.	How many opportunities have been provided in the past year for stakeholder input on flyingfis management from Eastern Caribbean countries and Martinique (e.g., public comment, communit forums, online requests for information and feedback, etc.)? 0 0-1 opportunity 0 2-4 opportunities 5-7 opportunities 0 >7 opportunities Please provide any necessary explanation for this response:
6.	How many Ministerial Sub-Committee and/or Ministerial Council meetings have been held in th past year with participation from Martinique? No meetings 1 meeting 2 meetings 3 meetings 3 meetings Please provide any necessary explanation for this response:
7.	To what extent are the six countries and Martinique upholding their commitments as described i the partnership agreement? Not at all IMinimally IModerately Strongly Very strongly Please provide any necessary explanation for this response:
Data P	licy
The ind	cators and associated evaluation questions in this section are focused on the data policy.
Indica place	or 2: Sub-regional flyingfish data policy validated, approved, and coordination capacity i
1.	Has the updated sub-regional data policy been validated in each country (Barbados, Trinidad an Tobago, Grenada, Saint Lucia, Saint Vincent and the Grenadines, and Dominica) and approved b the CRFM?

Please provide any necessary explanation for this response:

- 2. Does the data policy provide an effective framework to enable harmonized flyingfish data collection and management throughout the Eastern Caribbean?
- Has the CRFM developed a database and begun regularly compiling regional flyingfish data?
   Yes
   No
   In progress
   Please provide any necessary explanation for this response:

- 4. Does the CRFM have adequate resources to facilitate establishment, management, and reporting on the sub-regional flyingfish catch and effort and vessel registry databases?

  Yes
  No
  In progress
  Please provide any necessary explanation for this response:
- 5. Are the necessary systems and software in place to compile, store, and manage national data?
  - □ Minimally in place □ Moderately in place

□□ Strongly in place □□ Very strongly in place

Please provide any necessary explanation for this response:

- 6. Are the necessary systems and software in place to analyze regional data, for the purpose of supporting regional flyingfish management decisions?
  - □ Minimally in place □ Moderately in place
  - □ Strongly in place □ Very strongly in place

Please provide any necessary explanation for this response:

Are flyingfish landings traceable using current data collection tools and approaches?
 Yes
 No
 In progress
 Please provide any necessary explanation for this response:

# Indicator 3: Sub-regional flyingfish data policy consistently upheld and implemented by national agency partners

- 1. Do national fisheries division staff understand the regional flyingfish data priorities and data submission guidelines outlined in the data policy?
  - □□ No understanding □□ Minimal understanding □□ Some understanding
  - □ Good understanding □ Very good understanding
  - Please provide any necessary explanation for this response:
  - (a) If understanding is not adequate, please explain why:
- 2. Are national fisheries divisions effectively communicating standardized data collection methods and sampling requirements to all individuals involved in data collection?

□ □ No communication	□ □ Minimal communication	Some communication
Good communication	□ □ Very good communication	l

Please provide any necessary explanation for this response:

- (a) If communication is not effective, please explain why:
- 3. Are national fisheries divisions consistently collecting and submitting flyingfish fishery data to the CRFM?

Never	$\Box \Box$ Occasionally	□ □ Regularly on an appropriate timeframe
Please provide any ne	ecessary explanation for th	is response:

- (a) If divisions are not collecting and submitting data, please explain why:
- 4. If and when they submit data to the CRFM, are national fisheries divisions submitting all of the required types of flyingfish fishery data?
  Yes
  No
  Sometimes

Please provide any necessary explanation for this response:

5.	Is the CRFM regularly analyzing and synthesizing flyingfish data collected from throughout the sub-region?			
	□□ Yes		Sometimes	
6.	Is the CRFM regularl fisherfolk in all six cou	y sharing synthesized d ntries?	lata and informatio	n with stakeholders including
	□ □ Yes			
Indica	tor 3: Stakeholders act	ively engaged in implen	nentation of sub-re	egional flyingfish data policy
1.	How many informatio focused on Eastern Car year?	n products (e.g., press ribbean flyingfish fisheri	release, Facebook j es have been develo	post, short video, infographic) pped and distributed in the past
	□ □ 0-1 Please provide any nec	□ □ 2-3 essary explanation for th	□□ 4-5 is response:	□ □ More than 5
2.	Have those information	n products been develope	ed with a clear target Sometimes	t audience and purpose?
3.	[For each country]: A data collection? 0 0-10% 0 31-50% Please provide any nec	pproximately what perce 11-20% 50-70% essary explanation for th	ent of flyingfish fish	<ul> <li>are participating in fishery</li> <li>21-30%</li> <li>&gt;70%</li> </ul>
4.	[For each country]: supporting flyingfish fi 0-25% Please provide any nec	Approximately what p shery data collection? 25-50% essary explanation for th	Dercent of fisherfo 50-75% is response:	lk organizations are actively □□ 75-100%
5.	[For each country]: A fishery data collection? 0-25% Please provide any nec	Approximately what per 25-50% essary explanation for th	cent of processors	are participating in flyingfish
6.	[For each country]: Apparticipating in flyingfi 0 0-25% Please provide any nec	oproximately what percents sh fishery data collection 25-50% essary explanation for th	nt of establishments n? D 50-75% is response:	that sell flyingfish products are
7.	Other than the stakehol are actively involved in	der groups mentioned in a flyingfish fishery data c	the above questions collection and how a	, what other stakeholder groups are they involved?

8. Are there any points along the flyingfish supply chain where data is not currently being collected, but would benefit sub-regional flyingfish management if it were collected? Why would these data benefit management?

## **Tool 3: Adaptive Management**

Each proposed indicator of success is listed as a section below, with associated evaluation questions. Indicators are focused on aspects of FMP implementation and support specific to the Adaptive Management consultancy.

## **Information Products**

# Indicator 1: Fishermen, consumers, and organizations are knowledgeable about the flyingfish FMP and supporting its implementation through compliance and consumer choices

- 1. What percent of fishers in your country are estimated to have been exposed to information products (e.g., infographic, press release, radio spot, etc.) relating to flyingfish management in the past year? *[For each country and Martinique]:* 
  - □ Few fishers (0-25%) □ Moderate number of fishers (25-50%)
  - □ □ Many fishers (50-75%) □
- $\square$  Most fishers (75-100%)
  - (a) Approximately how many individual fishers does this represent?

Please provide any necessary explanation for this response:

- 2. How many seafood consumers are estimated to have been exposed to information products (e.g., infographic, press release, radio spot, etc.) relating to flyingfish management in the past year? *[For each country and Martinique]:* 
  - $\Box$  Few consumers (0-25%)
- $\square$  Moderate number of consumers (25-50%)
- □ Many consumers (50-75%) □ Most consumers (75-100%)
- (a) Approximately how many individual seafood consumers does this represent?

Please provide any necessary explanation for this response:

3. Have incidences of fishermen's noncompliance with the flyingfish FMP regulations changed in the past year?

[For each country and Martinique]:

Strongly decreased		□ □ Remained stable
Increased	□ □ Strongly increased	

Please provide any necessary explanation for this response:

- 4. How many national-level public meetings have been held in the past year with the goal of awareness-building of ecosystem-based management for flyingfish fisheries?
  - [For each country and Martinique]:
  - □
     No meetings
     □
     1-2 meetings
     □
     3-4 meetings

     □
     >4 meetings
     □
     1-2 meetings
     □
     1-2 meetings

Please provide any necessary explanation for this response:

- 5. What mechanisms, if any, other than national-level meetings have been tested to strengthen cooperation at the national and regional levels in flyingfish management? Which mechanisms, if any, have been successful?
- 6. Are the following groups participating in sub-regional or national processes for flyingfish? *Fisheries NGOs*

<b>Yes</b>	Sometimes
Fishers	
Yes	Sometimes

Fisheries private s	ector bodies	
Ves	🗆 🗆 No	<b>Sometimes</b>
Environmental NG	Os	
Ves	🗆 🗆 No	□ □ Sometimes

7. Do countries conduct consumer surveys to gather information about seafood buying choices? [For each country and Martinique]:

Never  $\Box$  Once every 3 years

□ □ Once annually Once every 2 years

Please provide any necessary explanation for this response:

[If yes to Question 6] Do consumers report that their seafood buying choices are influenced by the 8. effectiveness of fishery management? [For each country and Martinique]:

□ □ Not at all influenced	Somewhat influenced	□□ Very influenced
Please provide any necessary explanation for this response.		

## ANNEX L: FISHERY FINANCING MECHANISMS - POTENTIAL OPTIONS FOR EASTERN CARIBBEAN FLYINGFISH FISHERY MANAGEMENT

## **BACKGROUND AND METHODS**

## Background

This document summarizes research findings and recommendations for the Caribbean Regional Fisheries Mechanism (CRFM), member countries, and other regional bodies including the Organisation of Eastern Caribbean States and the Western Central Atlantic Fishery Commission (WECAFC) to consider regarding sustainable financing mechanisms for Eastern Caribbean flyingfish management. While this document focuses on the Eastern Caribbean flyingfish fishery, the findings and recommendations could be used more broadly to inform financing options for other fisheries in the region.

Blue Earth Consultants, a Division of ERG (Blue Earth) performed this research for the CRFM under the consultancy, "Technical Support to Facilitate Adaptive Management for Eastern Caribbean Flyingfish Fisheries." This consultancy is part of the United Nations Development Programme / Global Environment Facility (GEF) funded project *Catalysing Implementation of the Strategic Action Programme for the Sustainable Management of shared Living Marine Resources in the Caribbean and North Brazil Shelf Large Marine Ecosystems* (CLME+ Project).

Please see the Appendix for a list of acronyms used in this document.

## Methods

Blue Earth conducted the following steps with the CRFM's input to develop this report and recommendations:

- Developed criteria for the selection of case study fisheries (regarding number of nation states involved in the fishery, participation of developing countries and small island developing states, number of fishers, and total annual landings)
- Performed a rapid analysis of fisheries around the world and selected three to focus on as case studies
- Performed in-depth web research on each case study to learn about their existing funding mechanisms
- Identified experts in each fishery and performed interviews to learn more about the financing mechanisms, successes and challenges, etc.
- Analyzed web and interview findings and drew from Blue Earth's institutional knowledge on funding mechanisms for Caribbean countries and summarized in this report
- Developed recommendations for the CRFM to consider for bolstering funding available for Eastern Caribbean flyingfish fishery management

## **Case Study Fisheries**

Below, we provide an overview of financing mechanisms used to support management of the three case study fisheries. For each case study, we include a brief overview of the fishery, followed by a description of each of its funding mechanisms, including the flow of funds from source to deployment and successes and challenges encountered in implementing the mechanism. Please note that the information below is
based on web research and key informant interviews; it is possible that there are gaps or misconceptions coming from our information sources.

# Philippines Municipal Fishery – Small Pelagic Species Complex

Fishery background



The Philippines fisheries sector includes both capture fisheries and aquaculture. Capture fisheries are divided into commercial and municipal fisheries. The Philippine Fisheries Code of 1998 defines the municipal fishery as traditional, artisanal, subsistence, or smallscale fisheries that involve the use of vessels of three gross tons or less—including fishing operations that do not use boats.<sup>1718</sup> Municipal fishery areas of operation include inland lakes, streams, and marine waters up to 15km offshore.<sup>19</sup> The Philippines Bureau of Fisheries and Aquatic Resources (BFAR) is responsible for the development, improvement, management, and conservation of the country's fisheries. BFAR defers to Local Government Units (LGUs) to enforce all rules and regulations governing the conservation and management of municipal fishery resources.<sup>2021</sup> LGU is a general term encompassing both Municipal Local Government Units (MLGUs) and the larger-scale Provincial Local Government Unit (PLGUs). Each LGU maintains a registry of municipal fishers, monitors entry into municipal waters, and monitors fishing activities.<sup>22</sup> Additionally, an LGU can prohibit or limit fishery activity if it and the Department of Agriculture determine that the municipality's waters are overfished or in danger of being overfished.<sup>23</sup>

As part of their policy-making structure, each LGU has a Fisheries and Aquatic Resources Management Council (FARMC) composed of representatives from different Peoples Organizations (POs), including fisher organizations. To be a legally recognized organization by the municipality, POs must have at least 15 members, officers, by-laws, and a program of action.<sup>24</sup> The POs represent the interests of their respective Barangays, which are the villages within a municipality, and therefore the smallest unit of local government. Each Barangay also has a municipal representative who is part of the FARMC. The FARMC determines policies and management actions and makes funding proposals to the municipality. When approved, the FARMC releases funds to the Barangays for implementation. In this way, the aquatic resource management decision-making process is highly participatory, involving local stakeholders. Figure 1 presents the central and local government offices and community organizations involved in the municipal fishery's management activities.

<sup>22</sup> FAO. Information of Fisheries

 <sup>&</sup>lt;sup>17</sup> The Food and Agriculture Organization of the United Nations (FAO). (2000). *Information on Fisheries Management in the Philippines*. [online] Available at: <u>http://www.fao.org/fi/oldsite/FCP/en/PHL/body.htm</u> [Accessed 5 November 2018].
 <sup>18</sup> Philippine Fisheries Code of 1998. (1998). *Republic Act No. 8550*. [online] Manila: Congress of the Philippines, p. 3. Available

at: <u>https://www.ecolex.org/details/legislation/philippine-fisheries-code-of-1998-republic-act-no-8550-lex-faoc016098/</u> [Accessed 5 November 2018].

<sup>&</sup>lt;sup>19</sup> FAO. Information of Fisheries

<sup>&</sup>lt;sup>20</sup> Ibid

<sup>&</sup>lt;sup>21</sup> The Bureau of Fisheries and Aquatic Resources (BFAR). (2018). About BFAR. [online] Available at:

https://www.bfar.da.gov.ph/aboutUS [Accessed 5 November 2018].

<sup>&</sup>lt;sup>23</sup> Ibid

<sup>&</sup>lt;sup>24</sup> Rosario, G. R. (2017). *Municipal Fisheries*. [online] Available at: <u>https://www.slideshare.net/GeromeRosario/municipal-fisheries</u> [Accessed 5 November 2018].

An estimated 1.4 million fishers participated in the municipal fishery in 2014. In 2015, catch from the fishery was approximately 22% of the country's total fish production, contributing 1.7% to the Philippines gross domestic product (GDP).<sup>2526</sup> In 2014, 63% of the fishery's more than 240,000 registered vessels were motorized (5 - 18m) and 37% were non-motorized (3 - 7m).<sup>27 28</sup> Common gear types include gillnets, hook and line, traps/pots, and cast nets.<sup>29</sup> It is illegal to use gear including trawls of all kinds, purse seines, and fishing gear using compressors.<sup>30</sup> The Municipal Fishery is made up of a wide variety of fish species, with the most commonly caught including Indian sardines (7%) round scad and frigate tuna (6% each); anchovies, Indian mackerel, yellowfin tuna, fimbriated sardine, and squid (4% each); and slipmouth and big-eye tuna (3% and 1% respectively). Various other aquatic species compose the remaining catch.<sup>31 32</sup>

Blue Earth selected the Philippines municipal fishery as a case study because of several characteristics it shares with the Eastern Caribbean flyingfish fishery. These similarities include the following:

- The municipal fishery is a small-scale, domestic fishery.
- Fishing activities occur in and around protected areas and require fisher and vessel licenses / registrations.
- The fishery's top-down and bottom-up management systems and funding mechanisms can be applied to small-scale fisheries in small island developing state, including those in Eastern Caribbean nations.

# **Financing Mechanisms**

Central government appropriations fund much of the management of the Philippines municipal fishery. Government-funded mechanisms include grant programs used to purchase patrol boats, support capacity building, and fund livelihood programs. Philippine organizations also draw from international aid to fund collaborations between the national government and LGUs on fisheries management planning strategies and staff capacity development Fee-based mechanisms including license fees and protected area entrance fees also help finance localized fishery management activities. POs and municipality staff collect and deposit funds into the LGU's treasury, where they are kept and disbursed to support local community organizations' surveillance and protected area development and management activities. Several financing mechanisms utilized for the fishery are described below.

# Fishing License Fee

# Description of the Mechanism

All vessels and fishers operating in the Philippines municipal fishery are required to register with their LGU, and most fishers must pay a license fee. Generally, each province and its associated municipalities' local government structures determine whether this registration is with an MLGU or a larger, more centralized PLGU. Fishermen pay the fee in cash annually in January or February, and those who pay are exempt from paying taxes on their catch that year. Fees range between US\$10 - 20, though some small-scale fishers are not required to pay.

<sup>26</sup> Southeast Asian Fisheries Development Center (SEAFDEC). 2018. *Fisheries: Country profile, Philippines*. [online] Available at <u>http://www.seafdec.org/fisheries-country-profile-philippines/</u> [Accessed 5 November 2018].

<sup>&</sup>lt;sup>25</sup> Rosario. *Municipal Fisheries*.

<sup>&</sup>lt;sup>27</sup> Ibid

<sup>&</sup>lt;sup>28</sup> Rosario. *Municipal Fisheries*.

<sup>&</sup>lt;sup>29</sup> Ibid

<sup>&</sup>lt;sup>30</sup> Ibid

<sup>&</sup>lt;sup>31</sup> Ibid

<sup>&</sup>lt;sup>32</sup> SEAFDEC. Fisheries: Country profile, Philippines.

# Flow of Funds

Fishers pay license fees to LGUs, where they are held in the LGU treasury. These fees typically represent roughly one-third of the municipality's total annual budget; the national government supplies the remaining two-thirds of the LGU's budget through annual appropriations. Managers channel funding collected through license fees back to fishery management based on decisions made by the FARMC. About 60% of the license fees are allocated to local Barangays, who work with POs to fund, among other things, fisher capacity-building initiatives and MPA administrative and surveillance activities, no-fishing area development, focus groups, and public consultations. To combat illegal, unreported, and unregulated fishing (IUU) within the municipal fishery, a significant portion of the funds also go to local officers who carry out monitoring, control, and surveillance (MCS) activities, including monitoring landings and detecting and reporting improper fishing activities to local police.

The remaining 40% is disbursed among the LGU's Costal Resource Management Office (CMR), Municipal Agriculture Office (MAO), and/or Municipal Environment and Natural Resources Office (MENRO) for



Figure 2. Flow of fishing license funds to support Philippines municipal fishery management

education and communication activities. This funding supports staff roles to provide the municipality with information, education, and communication regarding fisheries management. These efforts correspond to each municipality's annually updated fisheries management plan. Individual municipality budgets vary in size, so the amount allocated for fishery management could be as low as US \$10 - 20 thousand / year or as high as US\$100 thousand / year. Figure 2 illustrates the flow of funds, where items in blue indicate funding from license fees and items in grey are other funding sources.

# Successes and Challenges

Below are several aspects of this funding mechanism that have worked well, as well as some challenges mentioned by interview informants.

# <u>Successes</u>

**Locally-based management initiatives**: Community members develop and carry out locally-based fishery management activities, creating a sense of ownership and a commitment to continue what they have started. **Stakeholder cooperation**: Strong partnerships between fishers and local and national government divisions facilitates efficient implementation of management strategies.

**Reduction in IUU fishing**: Local law enforcement and fisher organizations support monitoring, control, and surveillance strategies, thereby enhancing protections against IUU fishing. *Challenges* 

**Corruption**: Misappropriation of funds meant for fisheries management occurs, although recent efforts to investigate these cases by the League of Municipalities and the Ombudsmen's Office have improved the situation.

**Unsustainable livelihoods**: There is limited support for projects to enhance fishers' economic resilience. **Little emphasis on conservation**: Management activities do not prioritize protection of critical habitats (e.g., mangroves, sea grass beds), which underpin long-term fisheries productivity.

# Possible relevance to Caribbean flyingfish management

In countries with already established fee-based license systems, negotiations could result in an agreed percentage of these funds earmarked for management activities. Activities that could benefit include fisher capacity building, MCS, and data collection. Development of this funding mechanism, however, is dependent on the willingness of fishers to pay more for their licenses and the ability to ensure that funds are ultimately used for fishery management as agreed.

# **Recreation User Fees**

### Description of the Mechanism

Protected areas in the Philippines, including marine protected areas (MPAs), are under municipal ordinance and therefore under Barangay authority.<sup>33</sup> The Barangay charges user fees that are used to finance, among other things, MPA management and enforcement (including fisheries management within the protected area). User fees include entrance fees and are also associated with activities like snorkeling or diving. Entrance fees range from US\$0.25 - \$3 for a day entry pass, though some well-established areas change more. For example, whale shark watching tour agencies charge nationals approximately US\$11 and foreigners US\$22 to enter the protected area. There are additional fees for underwater camera use (US\$3), video camera use, and SCUBA diving. MPAs with established areas might raise only US\$5,000.

#### Flow of Funds

Each Barangay has an ordinance to collect user fees. A Barangay representative (who may also be a member of the MPA's management body) is assigned to collect the fees – which visitors pay in cash at the entrance – and note how many visitors entered the area. In some instances, tourism businesses, for example, purchase books of receipts directly from the LGU and reimburse themselves with the paid fees they collect from their clients. In either case, the Barangay representatives generally remit fees to the LGU's treasury, though some may stay with the Barangays and local fishers.

An estimated 30 - 40% of the user fees go to support Barangays' natural resource management initiatives within the MPA, vessel registration activities, capacity building, awareness raising, and law enforcement. In some MPAs, additional funds are awarded to POs and Barangays working with non-governmental organizations (NGOs) on conservation research initiatives including reef monitoring and mangrove restoration projects to further support these local conservation projects. They also transfer some of the funds to the Barangay's general fund to cover operating expenses. Barangays and POs submit workplans and

<sup>&</sup>lt;sup>33</sup> National park entrance fees are separate from local protected area user fees and go directly to the national park office and not to the municipality.

proposals to the LGU. The FARMC then reviews these proposals and decides which resource management projects it will fund. The LGU uses the remaining percentage of user fees to support infrastructure improvements, local government staff salaries, and other expenses. Figure 3 shows the flow of funds from MPA user fees.



# Successes and Challenges

The user fee funding mechanism has successes as well as challenges. Below are several of these aspects mentioned by interview informants.

# <u>Successes</u>

**Curtailment of IUU fishing**: IUU fishing has declined significantly in MPAs where user fees support MCS activities (primarily in popular tourist areas).

**Development of additional funding mechanisms**: In many areas, Barangays or tourism businesses charge additional fees for MPA-specific activities (e.g., diving, underwater photography), increasing the amount of funds available for management activities.

**Reduced dependence on national government**: User fees allow MPA management bodies and fisher organizations to depend less on appropriations from the central government.

**Creation of matching funding**: Local organizations use user fees as matching funding when developing larger management proposals to national and international organizations/agencies and companies' corporate social responsibility offices.

# <u>Challenges</u>

**MPA carrying capacities surpassed**: Promotion of tourism activities within MPAs has, in some cases, led to exceeded carrying capacities.

**Little oversight of funding allocations**: In some municipalities, there is little control over the flow of user fees; therefore, some fees are misappropriated and not invested in protected area management activities. Additionally, because managers collect fees in cash, there could be leakage, where collectors do not deposit all funds the LGU treasury.

**Delays in funding allocations**: Decision-making delays at the municipality level can cause lags in MPA management project implementation.

# Possible relevance to Caribbean flyingfish

Protected area user fees for popular tourism sites could contribute significant funding towards Eastern Caribbean fisheries management. A system that charges individuals on a per-activity basis, in addition to an entrance fee, would further capitalize on protected areas visitation. Similar fee systems are in place in various locations around the Caribbean, including Saint Lucia and The Bahamas, where user fees contribute

to a national conservation trust fund or support the work of a protected area management organizations. Some countries do allocate user fees into a general fund and then reallocate for fisheries and protected area management, including marine reserves. Like the license fee mechanism, important implementation steps include pre-determining the percentage of funds that will be invested in fishery and/or protected area management efforts and defining which activities they will support. Managers would need to perform an evaluation of what tourists are currently paying to visit Eastern Caribbean countries and MPAs, and their willingness to pay more to support sustainable fisheries management activities.

# **Government Appropriations and Grants**

# Description of the Mechanism

Government appropriations account for approximately two-thirds of LGU budgets. Allocation of these funds varies based mainly on municipality land area, and coastal LGUs receive additional funds from BFAR for managing marine resources up to 15km offshore. Municipalities whose mayors prioritize marine resource management activities, as well as municipalities with high coastal ecotourism potential, commonly receive more funding from BFAR than others. MLGUs draft a municipal fishery management program and business plan that contains provisions for patrol boat equipment, diving equipment, on-the-water safety trainings, biophysical habitat monitoring, enforcement activities, personnel, etc.

BFAR stages annual contests and issues cash prizes to outstanding local government aquatic and coastal resource management projects. They award winning projects, for example the best managed MPA, between US\$400 - \$2,000, which comes with recognition of community members for their efforts. Additionally, the Department of Trade and Industry provides up to US\$5,000 to POs and MPA management bodies to support qualified fisher livelihood projects. The Department of Energy also provides financial benefits to communities that host powerplants. They use these funds to maintain the local MPA and livelihood development projects.

The government provides grants to LGU projects that focus on alternative forms of employment for coastal residents and sustainable resource use. These include aquaculture development initiatives and mangrove conservation projects.

# Flow of Funds

During the third and fourth quarters of the year, POs and Barangays develop and submit project proposals to their LGUs that address fishery management needs and concerns. The FARMC then provides recommendations to the LGUs' MAO, CMR, and MENRO offices, whose staff select the fishery management projects the LGUs will support in the coming year. The FARMC signs off on all project funding decisions made by the CMR, MAU, or MENRO. BFAR then approves the LGUs' budgets and deposits national appropriation funds into their treasuries.

Like the funds distributed through the annual appropriations process, the national government transfers awarded grant funds directly to LGU treasuries. LGUs then disperse the funds to POs, Barangays, and LGU departments (CMR, MAU, MENRO) in accordance with the proposal. Figure 4 illustrates the flow of funds from these government appropriations and grants.

#### Figure 4. Flow of funds from government appropriations and grants



# Successes and Challenges

Government appropriations and grants achieve successes and experience challenges in the Philippines municipal fishery. Below are the aspects mentioned by interview informants.

# <u>Successes</u>

**Coastal resource conservation**: LGUs and POs designed and implemented successful resource conservation projects in many municipalities.

**Healthy competition over cash awards**: Local governments take pride in outperforming their neighbors seek opportunities to be recognized for their efforts by the country's president, including at events that garner media attention.

# <u>Challenges</u>

**Local mayors influence funding preferences**: POs that support the mayor's political agenda typically receive more financial support than ones that do not. In the case of fishery organizations, their visibility and the amount of financial support they receive is often at the mayor's discretion.

# Possible relevance to Caribbean flyingfish management

There could be the opportunity to implement a competitive award process like the Philippines government grants. An award system might be best implemented through a regional body such as the CRFM or WECAFC, where Eastern Caribbean countries submit grant proposals and the regional body selects those to receive funding. This system could supplement support for basic fishery management activities, for example by calling for research proposals to learn more about the flyingfish resource. It could also bolster promising livelihood projects and habitat restoration work. A grant structure could draw on the Philippines' model of rewarding communities that prioritize sustainable resource management and transferring more of the on-the-ground activities to the local scale (or in the case of the Caribbean, national).

Regarding government appropriations, this structure exists in most Eastern Caribbean countries already, where Fisheries Divisions receive an allocation of funding through their parent Ministry each year. There could be opportunities, however, to augment central government funding with other funding streams that do not pass through the General Fund.

# **International Aid and NGO funding**

# Description of the Mechanism

International aid organizations have provided significant support to the Philippines municipal fishery in the last two decades, primarily through USAID and the Asian Development Bank (ADB). USAID's ECOFISH

project invested in fisheries management projects throughout the country up through 2017. Seventy percent of this work was focused on LGU capacity building, development of efficient fisheries management planning systems, and staff motivation strategies that create excitement around municipal fishery management. Thirty percent of the project extended to the national level, where it worked with BFAR to improve communication and integration capacity at the national and municipal levels. International aid organizations also partner with NGOs and universities to implement training and capacity building strategies, collect fishery data, develop management strategies based on the data, communicate these strategies to fishers, and educate fishers about the importance of science-based decision-making. The Meloy Fund, an impact investment fund owned and funded by the conservation organization Rare, incentivizes sustainable fishery management strategies by making debt and equity investments in municipal fishery-related businesses.<sup>34</sup> The goal of the impact investments is to create market-based livelihood incentives that drive resource management and protection efforts.

# Flow of Funds

USAID invested US\$50 million in the ECOFISH project, of which 70% went to support LGUs and 30% went to BFAR. The ADB devoted around the same amount to municipal fisheries management improvements in the Philippines. USAID contracted Philippine companies and NGOs (national and international) to run the project in-country. In this regard, no ECOFISH funding went directly to LGUs or BFAR.

The Meloy Fund makes investments directly to fishery-related businesses. Figure 5 depicts the flow of funds from international aid organizations and NGO funding, including NGO-backed impact investments through the Meloy Fund.



Figure 5. Flow of funds from international aid and NGO funding

# Successes and Challenges

Below are some aspects of this funding mechanism that work well, as well as some challenges.

#### <u>Successes</u>

**Long-term capacity building**: International aid and NGO funding focus on building LGU and BFAR staff administrative capacity. Investing in training and capacity is a long-term strategy for improving fisheries management, and there have been positive impacts throughout the projects' lifespans.

**Development of systems**: Local partners used international aid to develop effective management systems, including operational, market, and administrative aspects.

<sup>&</sup>lt;sup>34</sup> The Meloy Fund. (2018). *Financing the transition to sustainable fisheries*. [online] Available at: <u>https://www.meloyfund.com/</u> [Accessed 26 November 2018].

# **Challenges**

**Funding is not long-term**: While international aid organizations and NGOs seek long-term fishery management improvements, their funding and support is not indefinite. For example, USAID's ECOFISH project ended in 2017 and there is uncertainty about the organization's future activities in the Philippines. **Mission drift:** Localities seeking outside funding may be tempted to shift their priorities based on the priorities of the funding organization, leading to "mission drift," or de-emphasizing important activities.

### Possible relevance to Caribbean flyingfish management

The majority of international aid and NGO funding provided to the Philippines municipal fishery is used to strengthen municipality and national government staff capacities and develop efficient fisheries management planning systems. The Eastern Caribbean is no stranger to the work of NGOs and the positive impact that international aid organizations have in the region. Therefore, the CRFM and partners may continue to seek international funding, prioritizing sources that are complementary and reducing duplicated efforts. Additionally, NGO contributions and impact investments in sustainable fisheries are growing in popularity and importance. A tool like the Meloy Fund could support new market development in the Eastern Caribbean by providing investment capital to sustainable fishing enterprises.

# South Pacific Islands Offshore Tuna Fisheries

### Fishery background

Numerous countries in the South Pacific fish for various species of tuna, guided by the United Nations Convention on the Law of the Sea, which grants coastal nations rights to the resources in their territorial seas within their 200-mile Exclusive Economic Zones (EEZs).<sup>35</sup> Countries participating in South Pacific tuna fisheries include Kiribati, the Solomon Islands, Marshall Islands, Fiji, Tuvalu, the Federated States of Micronesia, and more. The locally-based offshore tuna fisheries in the region target small tuna species including bigeye, yellowfin, skipjack, and albacore, among others. The three main gear types used to target tuna in the region are purse seines, pole and line, and longlining.<sup>36</sup> As of 2018, the Overview of Stocks of Interest to the Western and Central Pacific Fisheries Commission (WCPFC) did not deem any of these species as overfished.<sup>37</sup> The annual average tuna harvest from the Pacific Islands region has been in the range of 1 million metric tonnes, with landed value near US\$1.7 billion.<sup>38</sup> However, only a small proportion of this catch is taken by South Pacific Islands themselves, with the lion's share taken by distant-water fishing fleets from countries including Japan, Taiwan, Korea, and the United States.<sup>39</sup>

Offshore tuna fisheries in the South Pacific are categorized as locally-based and foreign, based on the flags of the participating vessels. In 2008, about 1,170 Pacific Islanders were employed on the region's approximately 320 locally-based offshore tuna fishing vessels. Catch from the locally-based fleet across 14 Pacific countries amounted to about over 393,000 tonnes. In contrast, in the same year there were about

<sup>&</sup>lt;sup>35</sup> United Nations Convention on the Law of the Sea (UNCLOS). (1982). *United Nations Convention on the Law of the Sea*. New York: United Nations, p. 40. [online] Available at: <u>http://www.un.org/Depts/los/convention\_agreements/texts/unclos/unclos\_e.pdf</u>. [Accesses 27 November 2018].

<sup>&</sup>lt;sup>36</sup> Petersen, L. (2001). *Governance of the South Pacific tuna fishery*. Pacific Economic Bulletin, [online] 16(2) p. 63-72. Available at: <u>https://core.ac.uk/download/pdf/156664756.pdf</u> [Accessed 20 November 2018].

<sup>&</sup>lt;sup>37</sup> Western & Central Pacific Fisheries Commission (WCPFC). (2018). *Overview of stocks of interest to the WCPFC*. [online] Available at: <u>https://www.wcpfc.int/doc/00/overview-stocks-interest-wcpfc</u> [Accessed 20 November 2018].

<sup>&</sup>lt;sup>38</sup> Ibid.

<sup>&</sup>lt;sup>39</sup> Ibid.

1,200 foreign tuna vessels operating in the waters of South Pacific countries, employing an unknown number of foreign crew. The foreign fleet caught nearly 820,000 tonnes.<sup>40</sup>

Each country has national legislation regarding fishery management in their country. For example, the Marshall Islands Marine Resources Act of 1997 governs fishery conservation, management, and development issues including foreign and domestic fishing; licensing; and monitoring, control, and surveillance. The national Fisheries Act of 2002 governs fishing in Fiji, and several sets of regulations exist pursuant to the Act. These regulations cover licensing and registration, prohibited fishing methods, mesh limitations, size limits, and exemptions. Other South Pacific countries have similar national fisheries management arrangements.

The Pacific Islands Fisheries Forum Agency (FFA), a Pacific regional organization based in Palau, helps the 17 member countries sustainably manage tuna fisheries within their EEZs. The FFA is "an advisory body providing expertise, technical assistance and other support to its members who make sovereign decisions about their tuna resources."<sup>41</sup> With support from its 80 staff members, one of the key decision-making bodies is the Forum Fisheries Committee (FFC or Committee), which is composed of one representative from each of the 17 member countries and meets annually at a minimum.<sup>42</sup> Figure 6 illustrates the advisory relationship between the FFA and Pacific Island nations.

#### Figure 6. Regional Governance of Pacific Tuna Fisheries<sup>43</sup>



Role of the FFA is to support member countries and territories on the following:

- Governance and corporate administration
- Fisheries management
- Fisheries operations
- Fisheries development

Pacific Island Nations Roles of the member countries and territories are to:

- Secure resources for effective operation
- Value services provided by the Secretariat
- Engage in dialogue and secure
  appropriate domestic mandates for
  collaborative management
- Support operations of the FFA such as through information sharing and responding to requests

Each year, the FFC develops an annual budget based on the amount of funding available for the following year. The Committee then proposes the budget to the Governing Council for approval. Of the FFA's total income of approximately US\$17 million in 2016, approximately US\$1.8 million went directly to fisheries management. Another US\$7 million went to fisheries development and operations. The FFA used the

<sup>&</sup>lt;sup>40</sup> Fisheries and Resources Monitoring System. (2018). *Pacific Islands Region Marine Fisheries*. [online] Available at: <u>http://firms.fao.org/firms/fishery/815/en</u> [Accessed 20 November 2018].

<sup>&</sup>lt;sup>41</sup> Pacific Islands Forum Fisheries Agency (FFA). (2018). *Welcome to the Pacific Islands Forum Fisheries Agency*. [online] Available at: <u>https://www.ffa.int/about</u> [Accessed 20 November 2018].

<sup>&</sup>lt;sup>42</sup> Pacific Islands Forum Fisheries Agency (FFA). (2018). *About FFA: governance by FFC*. [online] Available at: <u>https://www.ffa.int/ffc</u> [Accessed 20 November 2018].

<sup>&</sup>lt;sup>43</sup> Pacific Islands Forum Fisheries Agency (FFA). (2014). *Strategic Plan 2014-2020*. [online] Honiara, Solomon Islands. p. 20. Available at: <u>https://www.ffa.int/system/files/FFA%20Strategic%20Plan%20to%202020\_0.pdf</u> [Accessed 20 November 2018].

remaining budget to provide high-level advice to participating countries sand support corporate services.<sup>44</sup> The FFA's Fishery Management Division administers funds destined for fishery management purposes. The Fisheries Management Division provides policy and technical advice in non-FFA fisheries management meetings; prepares expert briefings on meetings; convenes workshops; assists member countries in developing proposals for regional conservation and management measures; performs consultations; assists member countries in developing fishery management plans (FMPs), operational procedures, and legal frameworks; and assists members in monitoring performance and addressing gaps. Blue Earth selected the South Pacific offshore tuna fishery as a case study for the following reasons:

- The FFA is a regional fisheries advisory body representing multiple nations, similar to the CRFM.
- The fishery takes place almost entirely in the waters of SIDS.

Tuna is a pelagic fishery like flyingfish; tuna are even more akin to dolphinfish, which are rising in socioeconomic importance in the Eastern Caribbean and lessons could be transferred to management of that fishery.

### **Financing Mechanisms**

Below, we describe five funding mechanisms used to support management of the South Pacific offshore tuna fishery. The FFA, which plays a strong role in regional tuna management, administers four of these mechanisms. Overall, the vessel day scheme, which the FFA oversees, brings in the most funding of any mechanism through payments by distant-water fleets to individual Pacific countries; however, these fees generally go into national general funds, so are not necessarily used to support fishery management. Donor funds provide the largest proportion of funding to the FFA, followed by vessel registration fees and member country contributions. The non-FFA funding mechanism described below – national-level taxes and fees on fishing activities – also provides funding at the national level, but it is hard to know whether those funds ultimately support fishery management.

# FFA Vessel Day Scheme

#### Description of the Mechanism

The vessel day scheme (VDS) is a system aimed to constrain the amount of tuna fishing within the waters of several Pacific states (Solomon Islands, Tuvalu, Kiribati, Marshall Islands, Papua New Guinea, Nauru) and increase returns from tuna fishing in those nations. The participating countries are referred to collectively as the Parties to the Nauru Agreement (PNA), and the PNA office administers the VDS. The PNA sets a total annual number of fishing days allowed in the waters of the PNA. , and allocates those days among the countries based on factors including the most recent stock assessment information and economic information.<sup>45</sup> Most PNA countries then sell the majority of the vessel days directly to distant water fishing nations in bilateral transactions, such as with Japan and the United States. Some countries choose to allocate some of their vessel days to a "pool," where fishing nations can purchase days to fish in the waters of any country contributing to the pool.

Vessel days correspond to both longlining and purse seining, where nations can sell longline days for around US\$175 each and purse seine days in the range of US\$10,000 - \$12,000. The large discrepancy relates to the markets for the species caught and products resulting from the two fisheries. In Palau alone, the roughly 700 available fishing days bring in around US\$6.3 million. License fees contribute significantly to overall

<sup>&</sup>lt;sup>44</sup> Pacific Islands Forum Fisheries Agency (FFA). (2017). *Annual Report 2016-2017*. [online] p. 50. Available at: <u>https://www.ffa.int/system/files/FFA%20Annual%20REport%202016-2017%20-%20low%20resolution.pdf</u> [Accessed 20 November 2018].

revenue of some smaller countries, including Kiribati, Tuvalu, and Federated States of Micronesia .<sup>46 47</sup> In 2016, fees collected in Kiribati amounted to more than US\$105 million. Overall revenue from fishing in Kiribati's waters amounted to about US\$115 million in the same year and accounted for more than 70% of national GDP.<sup>48</sup> There is relatively less dependence on fishing revenues in the other PNA countries.

# Flow of Funds

The flow of funds collected from the sale of vessel days differs between the bilateral transactions and pooling schemes. In bilateral transactions, fishing countries pay Pacific nations directly. In the pooling scheme, fishing countries pay the PNA, who allocates the funds to the participating national government general funds. National governments distribute funds from their general coffers to various causes in the country, including fisheries and other issues. Figure 7 shows the flow of funds from the VDS financing mechanism.

# Successes and Challenges

Successes and challenges associated with the VDS include the following:



#### <u>Successes</u>

**Resource sharing:** The FFA's coordination of the VDS takes advantage of existing capacity and experts to benefit tuna fisheries in the whole region. Each individual country might not have the local expertise necessary to analyze scientific and socioeconomic fisheries data for use in VDS calculations.

**Negotiating power:** By cooperating on the VDS across the region, the coalition of Pacific countries has significantly stronger leverage in negotiations with distant water fishing fleets than they would have individually.

# <u>Challenges</u>

**Decision-making by consensus:** Given the collaborative nature of the FFA, it is necessary for all member countries to negotiate internally before making decisions regarding the VDS. The group strives for consensus, which can at times be difficult to achieve.

**Balancing national sovereignty with regional cooperation:** Each nation has sovereignty over its EEZ, and it is important to remember this, and that the FFA is an advisory body, when discussing among member nations. A close working relationship among countries and strong trust are imperative.

<sup>48</sup> Ministry of Fisheries and Marine Resource Development and Ministry of Finance and Economic Development, (2017). *Fishing License Revenues in Kiribati*. [online] Republic of Kiribati. p. 16. Available at:

<sup>&</sup>lt;sup>46</sup> Petersen, L. (2001). *Governance of the South Pacific tuna fishery*. Pacific Economic Bulletin, [online] 16(2) p. 63-72. Available at: <u>https://core.ac.uk/download/pdf/156664756.pdf</u> [Accessed 20 November 2018].

<sup>&</sup>lt;sup>47</sup> Fisheries and Resources Monitoring System, (2018). *Pacific Islands Region Marine Fisheries*. [online] Available at: <u>http://firms.fao.org/firms/fishery/815/en</u> [Accessed 20 November 2018].

http://www.mfed.gov.ki/sites/default/files/Fishing%20License%20Revenues%20in%20Kiribati%20Report%202017.pdf [Accessed 20 November 2018]

# Possible relevance to Caribbean flyingfish management

Eastern Caribbean nations could consider coordinating to develop a scheme to gain revenue from outside fishing nations. There might not be potential for such a system of fishing access rights for flyingfish specifically, given that few foreign fleets target Eastern Caribbean flyingfish; however, it could be more feasible in other, higher-value fisheries that attract interest of foreign fishing nations. Alternatively, given that there is some conflict over fishing rights among Eastern Caribbean nations and overseas territories, the CRFM could facilitate an agreement among nations whereby one Eastern Caribbean fishing nation pays another nation to fish for flyingfish (or other fish species) in their waters.

# **FFA Member Contributions**

# Description of the Mechanism

The FFA collects annual contributions from each member country. In 2015 and 2016, member contributions totaled around US\$1.6 million (of the US\$17 million total income).

# Flow of Funds

Member countries pay their annual contribution directly to the FFA. The FFA then distributes the funding among its various functions, including fishery management support provided by the Fishery Management Division. Figure 8 illustrates the flow of these contributions.

### Figure 8. Flow of FFA member contribution funds



#### Successes and Challenges

# <u>Successes</u>

**Stable revenue:** Although it constitutes a relatively small proportion of the FFA's income, annual member contributions provide a relatively stable financing mechanism.

**Straightforward flow of funds:** The transfer of funds is relatively straightforward, moving between individual countries and the FFA. This setup provides little room for leakage, does not require a large amount of resources to administer and does not involve national government agency accounts.

# <u>Challenges</u>

**Establishing contribution levels:** There are difficulties determining the level of required member contributions, such as whether each country should pay the same amount vs. different amounts based on their population, etc. and whether the contributions should change through the years.

**Burden on member countries:** Although the functions of the FFA provide benefits to member countries, a mandatory fee can strain finances for some of the smaller, more developing member states.

### Possible relevance to Caribbean flyingfish management

The CRFM could consider setting a membership contribution fee, as the agreement establishing the CRFM allows. This could be a cost-effective way to build general support for the CRFM's operations. This would help the CRFM provide fishery management functions that benefit from being regionally centralized. For example, if there are functions such as development of national FMPs that an expert at CRFM could spearhead and assist multiple countries, this could offer more efficiency than each country developing individual FMPs. Countries would have even more incentive to pay these fees if the CRFM coordinated a fishing access rights revenue scheme (previous mechanism) for flyingfish and other pelagics that would ultimately support individual countries.

### **FFA Donor Contributions**

### Description of the Mechanism

Donor contributions typically account for more than half of the FFA's annual income; in 2016, donor funds totaled more than US \$10.5 million, in comparison the total income of approximately US\$17 million.<sup>49</sup> The Australian and New Zealand governments provide about 30% and 20% of the donor funds respectively, while the GEF and European Union each provide about 10%. In addition to direct funding, the government of Australia provides in-kind donations (patrol aircrafts and vessels) that support surveillance activities.

### Flow of Funds

Foreign governments and multi-lateral organizations provide funding directly to the FFA. Based on the FFC's annual budgeting decisions, a certain amount goes to the Fishery Management Division to support member countries on fishery management activities. Figure 9 below illustrates the flow of funds into the FFA.

#### Figure 9. Flow of FFA donor contributions



#### Successes and Challenges

The following are successes challenges mentioned by interview informants.

<sup>&</sup>lt;sup>49</sup> Pacific Islands Forum Fisheries Agency (FFA). (2017). *Annual Report 2016-2017*. [online] p. 50. Available at: <u>https://www.ffa.int/system/files/FFA%20Annual%20REport%202016-2017%20-%20low%20resolution.pdf</u> [Accessed 20 November 2018].

### <u>Successes</u>

**Strong working relationship**: Donor contributions allow the FFA to provide a high level of management support to its member countries. This strategy supports a close working relationship and strong levels of trust between the FFA and its members.

**High level of staff capacity**: Donor funding alleviates budget pressures and allows the FFA to hire and train talented staff members.

### **Challenges**

**Balancing donor contributions with member obligations**: Influence from large foreign government grants for tuna management activities can weaken the FFA member nations' sovereignty over the management of their individual EEZ resources. Therefore, participants must balance foreign assistance with member governments' management obligations.

### Possible relevance to Caribbean flyingfish management

A donor contribution mechanism could support the CRFM's role as an Eastern Caribbean flyingfish management advisory body. Its current work with the GEF and other multilateral funding organizations places it in a favorable position to solicit funds that support flyingfish regional decision-making strategies. Bolstering capacity at the CRFM, such as by hiring field officers in member countries, could contribute greatly to the implementation of the Eastern Caribbean Flying Fish Fishery Management Plan (ECFF-FMP) and other fishery management initiatives in the region. Donor contributions could also provide matching funding when applying for funding from other NGOs, development banks, and international aid programs.

# FFA Vessel Monitoring System

#### Description of the Mechanism

The FFA, with support from the PNA, oversees a vessel monitoring system (VMS) that tracks all fishing vessels within the member countries' EEZs. VMS is satellite-based and monitors the position, speed, and direction of all registered fishing vessels. All vessels fishing for tuna in the FFA countries must register and pay a fee, which funds administration of the VMS. In 2016, there were more than 1,100 vessels registered in good standing with the FFA.<sup>50</sup> Vessel fees can be in the vicinity of US \$500; total registration fees in 2015 and 2016were in the range of US\$2.5 - 3.5 million.

# Flow of Funds

As part of the online registration system, vessel operators remit a fee to the FFA via wire transfer along with some key information about the vessel. The FFA's Finance Department manages the funds. Informants indicated that all funding collected through VMS fees is directed back to maintaining the registry and other monitoring, control, and surveillance activities. Figure 10 shows the VMS flow of funds.

<sup>&</sup>lt;sup>50</sup> Chand, R. (2017). *Pacific Islands Forum Fisheries Agency (FFA)*. [online] Available at: <u>https://ffa.int/node/42/</u> [Accessed 20 November 2018].

### Figure 10. Flow of funds from VMS registration



#### Successes and Challenges

A few of the successes and challenges with the VMS are described below.

### <u>Successes</u>

**Centralized, comprehensive registration system:** Registration required to fish in the FFA region, and thus there is a large pool of vessels that pay every year, generating a substantial funding stream. The structure of one centralized body overseeing the fund collection and management could lead to more consistent fee collection and more efficient use of funds than if each country managed its own system. **Revenue from outside sources:** When countries assess fees on foreign vessels, this results in net revenue for the South Pacific nations.

### <u>Challenges</u>

**Restricted coverage:** The VMS monitors vessels only when they are in the EEZs of member countries, not when they are operating on the high seas. This allows room for fishing vessels to operate illegally outside of national waters.

**Possible leakage:** It is possible that vessels are avoiding registration and fishing illegally within the EEZs of FFA countries, leading to missed potential revenue to the FFA and unsustainable harvesting.

#### Possible relevance to Caribbean flyingfish management

A large-scale VMS for the Eastern Caribbean may not be a likely investment in the near term; however, one aspect of this mechanism that the CRFM or member countries could apply to flyingfish is the online registration and payment systems. An electronic system could streamline vessel and fisher registration, reduce the burden on fisheries division staff to input and clean data, and reduce any leakage of funds.

# National Taxes and Fees

#### Description of the Mechanism

Several South Pacific countries collect taxes and fees on tuna fishing activities. For example, vessel operators landing tuna in Palau pay a tax of approximately 13 cents per kilo at the time of export. Taxes and charges on purse seine tuna fishing vessels can generate around US \$250,000 per year in Papua New

Guinea.<sup>51</sup> In the Marshall Islands, authorities levy license fees, fishing violation fines, transshipment fees, and more, for a total of more than US \$3.8 million per year.<sup>52</sup>

# Flow of Funds

Collectors generally deposit fishing taxes and fees into the relevant country's national General Fund; it is therefore unclear whether the national government ultimately deploys any of those funds to support tuna fisheries management. As one possible exception to this rule, the Marshall Islands in 1997 determined that it would use fishing access revenues to fund the activities of the Marshall Islands Marine Resources Authority (MIMRA). This may be occurring to some extent, yet MIMRA continues to transfer at least some of its revenue to the national General Fund. Figure 11 illustrates the general pathway of funds collected from national fees and taxes.

# Figure 11. Flow of funds from national fishing licenses and fees



### Successes and Challenges

Below are several examples of successes and challenges encountered through the implementation of national taxes and fees.

# <u>Successes</u>

**Significant revenue potential:** Fishing fees and taxes can generate substantial sums of money in relatively large fisheries. In nations where fishing is a large portion of the national GDP, revenue from fishing fees and taxes can have a significant impact on the funds available for all government entities, including fisheries divisions.

**Revenue from outside sources:** When foreign vessels pay fees, this results in net revenue for the South Pacific nations and does not require additional fees on domestic fishers.

# <u>Challenges</u>

**Limited traceability:** The main challenge with this approach is the lack of traceability of the funds at the national level and the fact that they are not directly channeled back into fishery management.

<sup>&</sup>lt;sup>51</sup> Profil de la Pêche par pays. (2002). *Papua New Guinea Fisheries Data*. [online] Available at: <u>http://www.fao.org/fi/oldsite/FCP/en/PNG/profile.htm</u> [Accessed 20 November 2018].

<sup>&</sup>lt;sup>52</sup> Deloitte. (2017). Marshall Islands Marine Resources Authority: Financial Statements and Independent Auditors' Report. [online]. Tamuning, Guam: Marshall Islands Marine Resources Authority. p. 32. Available at: http://documents.worldbank.org/curated/en/445061533022424545/pdf/MIMRA-fs17-Final-June-27-2018.pdf [Accessed 20 November 2018].

### Possible relevance to Caribbean flyingfish management

This mechanism could be applicable to Eastern Caribbean countries where taxes and fees may stay within the division or ministry that collects them without being transferred to the national General Fund. Alternatively, this could be feasible in countries with adequate transparency of the flow of funds through the General Fund to ensure that funds are directed back to fishery management.

However, given that local fleets do most of the flyingfish fishing in the Eastern Caribbean, there would likely be push-back from the fishing community on an additional tax or fee. Therefore, CRFM nations could consider a tax or fee for a different fishery where foreign fleets have interest, thus bringing in revenue from outside the country or region.

### The North Pacific Fishery

# Fishery Background

The North Pacific Fishery's (NPF) 900,000 square mile fishing grounds are located entirely within the EEZ of the US state of Alaska. The area includes the Gulf of Alaska, Bearing Sea, and the Aleutian Islands. The North Pacific Fisheries Management Council (NPFMC), headquartered in Anchorage, Alaska, manages fishing activity in the area, with oversight from the National Oceanic and Atmospheric Administration (NOAA) and the National Marine Fisheries Service (NMFS). Figure 12 shows the hierarchy of authority in the fishery. The NPFMC manages five fishery management plans covering 47 groundfish species, 10 crab stocks, a scallop fishery, and state-managed salmon fisheries. The majority of NPF fishers utilize trawl or hook and line gear, and some pot gear for groundfish and crab. Fishers use dredge gear exclusively in the scallop fleet.<sup>53</sup> The Fishery supports a large variety of fishers including commercial, recreational, and charter, for an overall fleet of 1,646 vessels in 2010.<sup>54</sup>

# Figure 12. Hierarchy of management authority in the North Pacific Fishery



We selected the NPF due to the commonalties it shares with the flyingfish fishery, including the following.

- Both the flyingfish fishery and NPF are composed of small, rural, island-based populations.
- For 30 years, NPF managers have used fishery governance strategies that support fishers' and local community members' economic livelihoods.
- The NPF's size and economic importance provided a testing ground for unique funding mechanisms, components of which CRFM may consider.

# Financing mechanisms

The NPF uses annual catch limits, or Total Allowable Catch (TAC), to regulate the harvest of each fished species. Additionally, the NPF has multiple fishing quota systems to determine how much of the TAC an

<sup>&</sup>lt;sup>53</sup> North Pacific Fishery Management Council (NPFMC). (2012). Fishing Fleet Profiles. p.8.

<sup>&</sup>lt;sup>54</sup> North Pacific Fishery Management Council (NPFMC). (2012). Fishing Fleet Profiles. p.1

individual fisher or group of fishers may harvest. Much of the funding for management of the NPF comes from US government appropriations. However, there are significant cost recovery schemes that self-fund management efforts including congressionally mandated onboard observers. The NPF has more recently attracted the attention of international conservation organizations that seek to fund management efforts leading to sustainable conservation outcomes.

# **Observer Program Cost Recovery**

### Description of the Mechanism

The North Pacific Observer Program (Observer Program) provides data for management and conservation by training, deploying, and managing a data collection team of more than 450 certified observers. The Observer Program provides managers with impartial data on fishing activity, marine mammal intersections, and fish specimens.<sup>55</sup> Managers utilize the data to monitor and evaluate quota systems, measure stock assessment accuracy, enforce management mandates, and monitor interactions with protected marine species.

The Observer Program requires having an observer onboard every boat, either full-time or part-time. This requirement applies to all fishers that participate in the US federally managed groundfish fisheries in the NPF. All processors and vessels fall into two Observer Program categories – Partial Coverage or Full Coverage – depending on multiple variables including specific fishery and vessel size. The Full Coverage category is made up of primarily large commercial vessels over 20 meters and utilizes a pay-as -you-go strategy for observers, in which fishers directly contract and pay to have an observer present whenever the vessel is at sea. The Full Coverage fleet does not participate in the Observer Program fee recovery program. The Partial Coverage category is composed of smaller vessels that are not required to have an observer onboard at all times. The NPFMC coordinates a randomized coverage rate (percentage of trips an observer is onboard) of 30% for the Partial Coverage fleet.

To create an equitable cost structure for vessels in the Partial Coverage fleet, vessel operators do not pay the observers directly, but rather pay a percentage fee on the value of all their ex-vessel landed catch. This fee recoups 100% of the costs of implementing the Observer Program. Those vessels within the Partial Coverage category pay a 1.25% fee on all their landed groundfish and halibut. NPFMC determines the level of the fee by analyzing and projecting previous years' data on the cost of managing the Observer Program, and projects future costs based on a scientifically sound randomized methodology. The NPFMC fee level is published in the US public register. The fee is authorized by the US Magnuson-Stevens Fishery Conservation and Management Act and is limited to a maximum of 2%. The NPFMC is currently analyzing data and considering raising the fee in 2019 to accommodate growing costs and expanding the observer coverage percentage beyond 30%. Beginning in 2019, the fee will also cover the costs of deploying electronic monitoring to replace or expand Observer Program coverage; NPFMC is currently designing the framework for deploying electronic monitoring.

# Flow of Funds

Responsibility for the Observer Program fee is split between the processor (or registered buyer) and the vessel operator (or vessel owner). The vessel operator remits 50% of the total fee to the processor at the time of landing and the processor amasses all payments throughout the year from various boat operators.

<sup>&</sup>lt;sup>55</sup> U.S. Department of Commerce (2017). *NOAA Tech. Memo, NMFS-AFSC-379. Deployment performance review of the 2017 North Pacific Observer Program.*[online] Available at: <u>https://www.afsc.noaa.gov/Publications/AFSC-TM/NOAA-TM-AFSC-379.pdf</u> [Accessed 11 November 2018].

The processor then submits them annually, along with the processor's 50% of the fee, to NMFS via an online system called e-fish. E-fish is a proprietary US government electronic payment system that provides a secure method to electronically transfer funds from processors to NMFS. Figure 13 below shows the flow of funds in this system.



# Figure 13. North Pacific Fishery observer program fee flow of funds

# Successes and Challenges

Below are several successes and challenges associated with the Observer Program cost recovery.

### <u>Successes</u>

**Ownership:** A fisher fee-based approach helped build ownership by local fishers and engage them in thinking about sustainable practices.

**Real-time data:** Observer programs provide the opportunity to collect high-value data on the fishery in real time.

**Transparency:** An observer program is helpful in creating a culture of following the rules of a management plan, identifying bad actors, and establishing a framework for enforcement.

# <u>Challenges</u>

**Uncertainty in costs:** The NPFMC estimates the annual cost of implementing the Observer Program based on prior year actuals and modeled costs, which can cause issues if costs rise after the fee level is established or if the value of the catch the fee is levied against decreases. The costs of a scientifically sound randomized data collection effort can be highly variable and difficult to forecast, due to variable costs of trip duration and travel distance from observer home base to vessel to be monitored.

**Safe reporting:** If a framework for reporting issues is not built into the program, the observers may be pressured into conflicts of interest or subject to harassment.

Allocation of cost burden: Some vessel operators in the Partial Coverage program occasionally complain that, due to the randomized distribution of observer trips, some years they pay for more trips than they have observers onboard.

#### Possible relevance to Caribbean flyingfish management

Although a full-scale observer program is likely infeasible in the Eastern Caribbean at present, CRFM could draw from the lessons in the North Pacific for financing its own monitoring and data collection systems. For example, mobile observers could travel between boats in the fishery. If boats are not large enough for observers to be onboard, observers could bolster on-share data collection at landing sites. CRFM could also implement an electronic monitoring system for fisher observation, which could include both active and passive video monitoring methods.

Improving Eastern Caribbean fisheries monitoring could begin to aid in sustainable practices and traceability, both of which could drive an increase in economic value of the fishery and build a foundation

for larger-scale practices in the future. Heightened accountability could serve as a precursor to multinational agreements for export and marketing of flyingfish abroad and help build the value of the artesian brands of Caribbean flyingfish. Programs such as Fair Trade often seek well-structured traceability programs for products they take to market. It should be noted, however, that some fishers may not see value in the program and not want to pay an observer fee, so a careful education program would be needed to secure their buy-in.

# Cost Recovery for an Individual Fishing Quota (IFQ) Program

# Description

NMFS administers the Individual Fish Quota (IFQ) Cost Recovery Program to distribute the annual fishery TAC. In 1996, the US government established legislation allowing fishery managers to administer a fee to recover the costs of implementing management programs like the IFQ.<sup>56</sup> The fee is variable but set by federal legislation to not exceed 3%. To annually calculate the fee percentage, NMFS divides the total value of all landings made the previous year by the sum of all costs incurred directly managing, collecting data, and enforcing the IFQ during the previous year. NMFS levies the fee on individual fishers, where each fisher pays the percent fee based on the value of their total landings for the year.

# Flow of Funds

Fishers individually pay the annually-determined fee to NMFS at the end of the calendar year in which the fish was landed. The Funds go directly to the US treasury to repay the funds the Treasury has already spent on IFQ expenses. Figure 14 shows the flow of funds for this mechanism.

### Figure 14: Flow of funds from the IFQ cost recovery program



# Successes and Challenges

Below are several successes and challenges encountered in implementing the IFQ cost recovery program.

# <u>Successes</u>

**Direct support for management:** The program fee allows the fishery, via a direct financial payment, to support responsible management efforts by NMFS that help to build durable fisheries.

**Fishermen engagement:** The specific purpose of the fee provides transparency on how fishermen's contributions are being used, thereby encouraging them to become engaged with fishery management and seek outcome-based decision-making in the management process.

<sup>&</sup>lt;sup>56</sup> Federal Register. (2016).*Fisheries of the Exclusive Economic Zone Off Alaska; North Pacific Halibut and Sablefish Individual Fishing Quota Cost Recovery Programs*. [online] Available at: https://www.federalregister.gov/documents/2016/12/13/2016-29879/fisheries-of-the-exclusive-economic-zone-off-alaska-north-pacific-halibut-and-sablefish-individual [Accessed 11 November 2018].

# **Challenges**

**Cost burden:** Fishermen pay the fee annually, which can cause financial stress for fishers who have limited cash flow or cash reserves.

**Narrow scope:** The cost recovery fee, by law, can only cover those costs accrued by terrestrial operations, whereas other financial sources must support all at-sea costs—such as the observer fee program.

**Communication with fishermen:** Fishers often seek more clarity on the exact nature of the expenses their fee goes to cover. This requires managers to maintain consistent awareness of data availability and communications methods.

### Possible relevance to Caribbean flyingfish management

CRFM could implement a landings-based fee structure to support fisheries management activities. Tying the fee to the actual value of landed catch allows the fee structure to work with market and broader economic forces and avoid placing higher relative burden on smaller-scale fishers. Fishers may resist the additional fee, so careful outcomes-based socio-economic modeling of the fee's impacts would be needed. Cost Recovery for the Community Development Quota (CDQ)

### Description of the Mechanism

North Pacific Fishery managers established the Western Alaska Community Development Quota (CDQ) in 1992. The CDQ is not a direct management funding mechanism, but rather drives economic growth within the fishery by distributing the potential to generate revenue. The CDQ provides economic opportunity to western Alaska Communities, many of whom cannot enter commercial fisheries due to the high capital costs. The CDQ program, via NFMS, annually allocates quota to eligible community groups as a fixed percentage of the TAC for groundfish, crab, prohibited species, and halibut. When the CDQ program was established, foreign fishers dominated commercial fishing in NPF waters. The CDQ aims to achieve the following goals:

Provide eligible western Alaska villages with the opportunity to participate and invest in fisheries in the Bering Sea and Aleutian Islands Management Area

- Support economic development in western Alaska
- Alleviate poverty and provide economic and social benefits for residents of western Alaska
- Achieve sustainable and diversified local economies in western Alaska

Six nonprofit organizations (here called CDQ organizations), which together represent a constituency of 65 communities along the Alaskan coastline, facilitate the CDQ program. The 2006 Magnuson-Stevens Act Reauthorization sets the CDQ percentage of the TAC at 10.7%; each CDQ organization is allocated a portion of this amount. In 2016, the six CDQ organizations harvested nearly 250,000 tons of seafood, which had a total market value of \$120m.<sup>57</sup> The CDQ organizations also process seafood caught by other fishers and in 2016 processed more than 196,000 tons of seafood with a market value of \$213.9m.<sup>58</sup>

The CDQ allocations provide multiple forms of revenue to the communities they support, including through direct harvesting and leasing of quota to other fishers in exchange for royalty revenue. Royalty revenues encourage sustainable fishery-based economic development and social initiatives including employment, skills training programs, and infrastructure. Many CDQ organizations use the funds to diversify the fishery, such as by building processing facilities.

<sup>&</sup>lt;sup>57</sup> NOAA, (2018). The Western Alaska Community Development Quota Program [online] Available at:

https://alaskafisheries.noaa.gov/sites/default/files/cdq-program-summary-1018.pdf [Accessed 11 November 2018]. <sup>58</sup> Ibid

NMFS administers the CDQ program and pays for administration through a fee recovery program. The direct costs of managing the CDQ program are defined as those costs that would not have been incurred by managers if the CDQ program did not exist. These costs include data collection, management, and enforcement of the CDQ program by NMFS and the Alaska Department of Fish and Game. The Magnuson-Stevens Act mandates the types of allowable costs and a NOAA cost recovery accounting policy accounts the allowable costs. In 2017, the direct program costs of implementing the CDQ Program totaled more than \$447,500, which was 0.55% of the total value of ex-vessel landings in the fishery.<sup>59</sup> To annually calculate the fee percentage, NMFS divides the total value of all landings made the previous year by the sum of all costs incurred directly managing, collecting data for, and enforcing the CDQ during the previous year.

# Flow of Funds

NMFS publishes the annual fee via the US federal register by 1 December for the year the fee applies. Fishers have until 31 December of the same year to remit the fee to NMFS. The funds go directly to the US treasury to repay the money the treasury has already spent on managing the CDQ program. Figure 15 shows the flow of funds in this process.

# Figure 15: Flow of funds from the CDQ fee cost recovery program



# Success and Challenges

Below are several successes and challenges in the implementation of the cost recovery program for CDQ.

# <u>Successes</u>

**Diversity of impacts:** The CDQ organizations not only provide direct financial gains to the communities via employment and revenue; they also invest in financial services industries to help support micro-finance for small fishing operation startups in the region, helping to grow the domestic fishery market.

**Benefits to less developed communities:** The CDQ organizations provide social benefits to the western Alaska region by investing in infrastructure, environmental programs, and medical clinics that support the wellbeing of local populations. Stronger communities help to engage residents in building sustainable, well-managed fisheries.

# <u>Challenges</u>

**Significant costs:** The program depends on an established quota system, which itself can have high costs to implement.

**Bycatch:** There is a risk of capturing bycatch when fishers target quota species. For example, king salmon bycatch from the CDQ fisheries could have negative impact on those Alaskan communities that rely on king salmon for sustenance and/or employment.

**Impacts on non-CDQ organizations:** The program can cause difficulties for startup fishers or processors who are not identified as eligible CDQ organizations to work in the region, as competing with a subsidized organization can be difficult.

<sup>&</sup>lt;sup>59</sup> Ibid

**Quota allocation:** There are debates about how to distribute quota among CDQ groups. Currently, the split between CDQ groups is a set percent, not updated based on per capita figures or other dynamics in the region.

# Possible relevance to Caribbean flyingfish management

Though CRFM is unlikely to adopt a quota system in the near future, they can begin think about methods to tie economic prosperity and local community improvements to fisheries management. For example, CRFM could institute a bycatch program in which fishers retain bycatch and deliver it to a processor who then passes it on to a community partner to sell. The proceeds from such an operation could fund local microfinance loans for fishery expansion or community projects. Alternatively, CRFM could develop a public-private partnership and use international aid and social capital investments to fund the startup of a nonprofit processor network that could employ local populations and provide revenue for local management programs.

# **Community Quota Entity Program and Philanthropic Support**

# Description of the Mechanism

The NPF Community Quota Entity Program (CQE) authorizes the formation of specialized communitybased nonprofit organizations in Western Alaska with the express purpose of purchasing commercial sablefish and halibut quota shares at no cost, to allow lease to residents. This program provides limited access programs for eligible Alaskan communities, offering them special privileges to enhance fisheriesbased economic gains. The program provides low-cost access to fisheries in hopes of supporting lowincome communities and new entrants to the fishing market, thereby building a sustainable economic base for the community and growing the fishery. The CQE also contributes to the attractiveness of the NPF for international philanthropic aid. For example, the North Pacific Fisheries Trust (NPFT), a US based 509(a)(3) nonprofit support organization, distributes funds to organizations that have been vetted via the CQE program.

# Flow of Funds

The CQE program does not directly distribute or collect any funds. However, the criteria used to determine whether a group is eligible for the CQE program is used as pre-selection criteria for philanthropic support. An example of this kind of partnership is with NPFT. The CQE program focuses on startup organizations in low income communities, and to aid in that process NPFT focuses its resources on micro-finance with favorable rates for financial services, credit lines, and startup capital costs of new fishery-based organizations. This approach allows the NPFT to support fisheries that are conservation-based, sustainable, and locally owned. This can help to support local culture, economic opportunities for remote communities, and encourage the development of small fishing and processing operations. Figure 16 shows the flow of funds from the CQE program.

#### Figure 16: Flow of funds from the CDQ fee cost recovery program



### Success and Challenges of the CQE program include the following

Below are successes and challenges encountered regarding the CQE program.

#### <u>Successes</u>

**Multiple benefits:** By helping link social and environmental outcomes, the NPF promotes multiple societal benefits and creates collective impact and entrepreneurial opportunities for rural populations.

### <u>Challenges</u>

**Risk level for investments:** The NPFT and similar organizations require funding from donors (individual, corporate, or NGO) that are comfortable with the risk profile of startup ventures and rates of return that may not competitive with other retail offerings in the fixed income market.

#### Possible relevance to Caribbean flyingfish management

CRFM could establish of a vetting system that would pre-identify communities and organizations as potential recipients of targeted international aid. CRFM could establish certain data collection requirements or fishery management standards to be upheld for eligibility in the program. This would incentivize fishers to engage in sustainable management practices and allow outside aid or markets to indirectly provide funding for desired management outcomes. Public-private partnerships could help link funding for social and economic programs to fisheries management. The fishery and the communities could help scale and support one another.

# Additional Fishery Financing Mechanisms to Consider

The case studies described above provide a snapshot of a number of mechanisms currently in use for generating funding for fishery management around the world. However, the case studies do not provide a comprehensive view of all possible financing mechanisms. Below, we briefly outline a selection of additional funding mechanisms that may be informative to CRFM. Where possible, we include an example of where the mechanism is implemented. The mechanisms are organized by the type of funding they represent, including market finance, permitting processes, philanthropic support, and tax-based revenue. Many of these mechanisms would best function in connection to other mechanisms, and each would require further research to determine whether it could be modified to be feasible in the Eastern Caribbean.

# **Market Finance**

### International Investment

International groups invest directly in developing economies to help increase sustainability practices as a method to increase global fishery durability. An example of such a collaboration is SeaPact, a collaborative of North American seafood companies that fund global seafood projects that support sustainable global fisheries. SeaPact's 2018 goals include supporting fisheries management. They draw funds from members and social finance organizations like the New Venture Fund and Ocean Outcomes and invest those funds in developing fisheries.

# Sustainable Fisheries Practices

Some international NGOs assess the demand for a specific product, for example an artisanal fishery, in major markets like the US and then assess the supply potential in origin countries where the good is produced. The organizations seek goods that have a balanced demand and supply curve and that could support increased retail value by adding sustainability and traceability guarantees to the product. Organizations build supply chain agreements that distribute the extra retail value to all participants including fishermen. This process increases acceptance of management processes and fees, as fishers see the potential additional value created by sustainable practices. Additionally, increasing revenue to fishers and processors increases the market base for fees or taxes. An example of this functioning in a fishery is the Gulf Wild Partnership in the Gulf of Mexico, in which a conservation NGO supports US fishermen operating in the Gulf of Mexico. Gulf Wild is setting the standard for responsibly caught, traceable, and reliable wild seafood.

### Social Impact Bonds

Social impact bonds are a method of pay-for-success funding, in which a government works with an innovative service provider to achieve specific outcomes that will reduce costs or increase a revenue stream for the public sector. Investors put up the capital required for the project and the government only pays them a return if they achieve the outcome and reduce costs or create a revenue stream for the public sector. The expected public sector savings are used as a basis for raising investment capital. CRFM could utilize this model to fund restoration projects that increase fishery sustainability or to build an observer program that would later support a fee-based repayment scheme.

# Fishery Certification

Fair Trade USA's Capture Fisheries Standard offers fishing organizations a community development price premium on all certified seafood sales. The premium is managed by a Fair Trade committee comprised solely of fishers. The committee decides what livelihood development and / or fishery management activities the premium will support. Fair Trade certification of the flyingfish fishery and other Eastern Caribbean fisheries, while a lengthy process, could open doors to new markets and a sustainable source of income that the fishery could use for a multitude of different activities depending on its needs.

#### Non-profit impact investments

Private foundations are increasingly searching for new ways of using their assets to enhance the impact of their missions. A program related investment (PRI) is one such tool that allows NGOs to increase the scope of their work by making investments in activities that involve the potential return of capital within an established time frame. Done correctly, PRI making allows foundations to increase the amount of money available to the social sector, while simultaneously building stronger and more socially-minded entities

(e.g., businesses). PRIs, unlike grants, are instruments that generate financial returns, allowing foundations to support social entrepreneurs with debt and / or equity capital. Much like The Meloy Fund is doing in the Philippines, non-profit foundations that traditionally support sustainable fishery and coastal development work in the Caribbean are developing PRIs and making low interest loans (for example) to responsible small-medium enterprises, including emerging ones in the fisheries sector.

# **Permitting Processes**

### Authorized Buoy System

A country can implement a system by which the country charges a fee to use a provided resource, which can result in both income and prevention of habitat damage. An example is the British Virgin Islands (BVI) buoy system, where the BVI National Park Service installed a network of 200 buoys to be used by charter boats, recreational divers, and private yachters, which are the only allowable anchorage points in the islands outside of marinas. The program aims to generate revenue for natural resource management and protect against anchoring damage to reefs.

# Mineral Exploration Fee

Countries can build a permit-based fee system that regulates and/or draws revenue from the exploration of ocean-based resource extraction. A country or group of countries can assess a remediation fee on firms conducting exploration in their EEZs. The fee can go toward offsetting environmental impacts and/or resource management. Often these structures are built into regional ocean plans.

### Artificial Reefs

Decommissioned ships, oil rigs, and other ocean infrastructure can become artificial reefs. Other means of disposal of such infrastructure can be costly to the organization that owns it. Countries can develop programs in which they promote the use of sites within their EEZ as locations for artificial reefs. These countries can levy fees on the processes and due diligence involved in decommissioning the infrastructure and creating the reef in their waters. If set at the appropriate level, the fee can be less costly than other disposal options. Fisheries benefit from the creation of extra habitat, and if political conditions are right a portion of the fee could go toward sustainable management of ocean resources. An example of this kind of collaboration is the Gulf of Mexico program called Rigs to Reefs, which is a partnership between local government, the oil and gas sector, and conservationists who are creating artificial reefs from decommissioned oil platforms.

# Philanthropic Support

# Specialized International Aid

There are many large international funds focused on climate change in countries that are most vulnerable to its impacts, including Small Island Developing States. Often, there is an overlap between climate change mitigation and fisheries management. For example, rebuilding estuaries, which serve as a barrier to sea level rise, also creates habitat to strengthen local fisheries. An example of this kind of philanthropic entity is the Green Climate Fund (GCF) a new global fund of the United Nations created to support the efforts of developing countries to respond to the challenge of climate change. GCF helps developing countries limit or reduce their greenhouse gas emissions and adapt to climate change. It seeks to promote a paradigm shift to low-emission and climate-resilient development, considering the needs of nations that are particularly vulnerable to climate change impacts. In another example, the Cook Islands recently received the first grant

from the United Nations Adaptation Fund, which is part of the Kyoto Protocol and grants funds to sustainable adaptation projects that combat the impacts of climate change.

# Voluntary Contributions by Tourists and Tourism Operators

Many countries and regions have built philanthropic entities either based in-country or in the home country of their largest tourism base, to allow monetary donations toward conservation and sustainability in-country. Often, willingness to donate increases while tourists are enjoying a local ecological destination or atmosphere.

### **Tax-Based Revenue Generation**

#### Conservation Departure Tax

Countries can create specific fee structures that fund environmental protection and management. An example of this type of fee is in Belize. In addition to an airport departure fee, Belize charges a BZ\$7.50 protected areas conservation trust fee. This fee, administered by the in-country Protected Areas Conservation Trust, distributes the revenue throughout the National Protected Areas System by funding projects that support conservation and promote environmentally sound management of Belize's natural and cultural resources.

### Cruise Ship Tax

Many countries impalement a cruise ship tax, by which all ships or passengers pay a fixed fee for visiting a country. There is the potential for some or all of this funding to be deposited into conservation accounts, such as national conservation trust funds, which then distribute grants to projects with conservation and management goals.

#### Hotel Stay Impact Tax

Countries can build a fee system that aims to pay for management, conservation, and repair of ecologically important tourist attractions. An example of such a fee is in Spain's Beleric Islands, where the government implements a tax on guests of hotels and cruise ships. The fee pays to repair areas of ecological importance that are damaged by tourism.

# Recommendations for Financing Eastern Caribbean Flyingfish Fishery Management

Based on the findings on the case study fishery financing mechanisms, below are several recommendations for the CRFM to consider for fishery management financing. We first mention several funding mechanisms that could initially be worth investigating further, then highlight several considerations that will need to play into the decisions of what options to pursue. Finally, we provide several steps that the CRFM and partners could take to begin prioritizing and pursuing new financing mechanisms for fishery management.

#### **Possible Mechanisms for Further Investigation**

Though some of the funding mechanisms used for other fisheries would be relatively large undertakings for the CRFM to implement and may not be feasible to develop at the same scale as the case study fisheries, there are several funding mechanisms described in the case studies that are worth investigating further.

**Member contributions:** If not already collected, annual financial contributions to the CRFM – like the FFA collects in the South Pacific – from member countries could significantly boost the amount of baseline

funding available to the CRFM. To implement such a program, there would need to be a strong case for why it is in member countries' best interest to commit financial resources to the CRFM. This would likely require expanding the pitch to encompass all fisheries the CRFM addresses, and likewise distributing member contribution funding among fisheries as well.

**User fees:** The Eastern Caribbean boasts a wealth of activities for tourists to engage in and places to enjoy, many of which are water-based and depend on a healthy natural environment. There could be opportunities to levy increased or additional fees on access and activities to help support fisheries management. This could occur on the local or national scale, such as through park access fees or fees assessed on activities like scuba diving or sportfishing. If there is a high level of coordination among countries, regional initiatives like implementing a head tax on cruise ship tourists could provide another funding mechanism.

**Public-private partnerships:** Fishery-focused nonprofits can provide valuable contributions to fishery management, even if not from a monetary standpoint. Given that one of the key needs in the Eastern Caribbean for fishery management is increased staff capacity, there could be NGOs that would partner with the CRFM or member country fisheries divisions to provide capacity building trainings at no cost to the CRFM or the countries.

**Community development quota:** While not a direct management funding mechanism, community development quotas provide economic opportunities and/or livelihood opportunities to fishing community members. A modified system based on the Western Alaska Community Development Quota could be applied to the flyingfish fishery. In each flyingfish fishing country, individual fishers could pay a small landing fee to a fund managed by a local fisher organization. The organization could then use the funds to support development projects, fisher assistance programs, management activities, etc. This type of scheme would re-invest a portion of fisher earnings back into the community and involve fisher organizations to a greater extent in management and livelihood development activities.

# Considerations

There are several themes highlighted by the case study findings that represent issues that the CRFM and/or Eastern Caribbean countries would likely face with implementing many of the possible revenue streams.

**Traceability of funds:** In many cases, funds gathered through fees, taxes, etc. are likely to be channeled directly to national general funds. Once money enters a general fund, it can be nearly impossible to trace how they are allocated and there is no guarantee that any of them will be allocated to fisheries management. CRFM may therefore need to prioritize revenue streams that do not involve collection by government entities.

Allocation of cost burden: Many revenue streams rely on fishers to contribute via fees, taxes, etc. Many flyingfish fishermen already pay fees and taxes to operate and would likely be resistant to further financial burdens. Unless there is a clear value to fishermen paying additional fees or taxes, CRFM may prioritize revenue streams that draw from sources other than fishermen themselves, such as foreign fleets, visitors, wealthy second-home owners, etc.

**Involvement of fishers:** When developing new revenue streams, there will likely be opportunities to involve fishers and / or fishermen's organizations, such as in decisions for how funding is allocated. There could also be opportunities to utilize funding to support fishermen's organizations, drawing from the North Pacific CDQ organization model. Fishermen's organizations in the Caribbean hold great potential for assisting both fishers and fisheries divisions with the management process and financial support would help realize that potential.

**Fisheries addressed:** Flyingfish is not of great socioeconomic importance in all Eastern Caribbean countries, so it may be necessary to develop funding streams that benefit fisheries management more generally. This will be especially the case for mechanisms that depend on building a case for why to prioritize the management of specific fisheries.

**Harmonization of multilateral projects:** Multilateral and international funding have provided large sums of funding to the Eastern Caribbean for improving flyingfish and other fishery management. Over the years, many funded projects have addressed similar issues (e.g., monitoring, fishery data collection and management, etc.) and created various iterations and in some cases overlapping and duplicative initiatives. CRFM will likely need to continue engaging in these large-scale grant projects to sustain adequate funding. A thoughtful and holistic approach to how the projects can complement one another and build on past work would enable more efficient use of funds.

**Competitive grants:** Given enough funds, CRFM could draw from the model in the Philippines to develop a competitive grant program for member countries. Member countries could submit simple applications for research projects and adhere to a project reporting schedule. Grant selection criteria could give preference to projects that involve international coordination and support the ECFF-FMP management measures. While this does not represent a new funding mechanism for the CRFM, it would provide new funding to member countries.

These considerations, as well as the financing options described in this document, can serve as a platform for discussion on potential financing streams to support Eastern Caribbean flyingfish – and potentially other fishery – management. CRFM may lead a process to refine selection criteria for new financing streams to pursue and perform further due diligence to assess their feasibility.

# Next Steps

Below are several steps that the CRFM and partners could take to begin acting upon the information in this report:

- **Develop criteria:** Develop a list of fishery financing selection criteria that prioritizes mechanisms to pursue. CRFM should consider using a participatory process when developing these criteria that includes, when appropriate, regional technical level organizations, fishery divisions, national focal points, and local stakeholders. At the onset of this process, the CRFM should look at defining financing mechanism goals and make sure that participants in the development activities are committed to these goals. We recommend that CRFM incorporates the following themes and considerations into its fishery financing mechanism selection criteria:
- Adaptability: Can the mechanism be adapted to suit the social, political, and economic context of Eastern Caribbean fisheries?
- **Geographical scope**: Is the mechanism geographically limited regarding its impact, activities, and implementation?
- **Governance**: Are the Eastern Caribbean Member States' fisheries management structures capable of administrating the mechanism, in a transparent manner?
- **Experience**: Do Member States have financing mechanism development experience and the financial resources available to implement it?
- **Performance**: At what level of funding and for how long can the mechanism potentially contribute to fisheries management initiatives in the Eastern Caribbean?
- Allocation: Can Member States allocate funding from the mechanism fairly among themselves? If not, do States agree with a disproportionate allocation scheme?

- Select mechanisms to investigate: Using the examples in this document, as well as any other potential financing mechanisms known to CRFM and partners, apply the selection criteria to prioritize a short list for further investigation. The performance of some mechanisms on some criteria may be unknown until the next step. Involve stakeholders in the selection process for their insight on the criteria and to gain buy-in.
- **Investigate priority mechanisms:** Learn more about how each of the mechanisms prioritized in the previous step is expected to perform against each of the selection criteria. Eliminate any mechanisms that are not likely to perform well, narrowing to a list of 3 5 for potential implementation. Try to select diverse mechanisms that do not all depend on the same enabling conditions.
- **Develop an implementation plan:** Develop a time-bound plan, with key participants identified for each step, on how to create enabling conditions and begin implementation of each of the 3 5 selected mechanisms. Some will be on shorter and some on longer timeframes for fruition. All 3 5 mechanisms might not be successful in the end, which is why a diverse mix of mechanisms is preferable. Involve all those who are named in the implementation plan in its development.
- **Facilitate adoption:** In most cases, it will be necessary to develop the critical enabling conditions for new financing mechanisms. For example, specific Ministers might need to support the mechanism, or a special fund might need to be created to receive and allocate fees. Follow the process set out in the implementation plan for creating those enabling conditions. For some mechanisms, this step might require long-term engagement and relationship-building with political or business leaders. If a specific enabling condition turns out to be infeasible to achieve, table the associated funding mechanism until enabling conditions are present and focus resources on those that are currently feasible.
- **Implement:** When the necessary enabling conditions are in place, move forward with mobilizing the revenue stream. Assign a point person to oversee the implementation process and keep participants accountable. Hold regular update calls or meetings to discuss progress and roadblocks. Celebrate successes together.

With this guidance, the CRFM may take steps to identify new financing mechanisms for fishery management. Building revenue streams requires dedication of time and other resources, so it will be necessary to work efficiently and leverage the connections and expertise of partners and stakeholders throughout the process.

The CRFM is an inter-governmental organization whose mission is to "Promote and facilitate the responsible utilization of the region's fisheries and other aquatic resources for the economic and social benefits of the current and future population of the region". The CRFM consists of three bodies – the Ministerial Council, the Caribbean Fisheries Forum and the CRFM Secretariat.

CRFM members are Anguilla, Antigua and Barbuda, The Bahamas, Barbados, Belize, Dominica, Grenada, Guyana, Haiti, Jamaica, Montserrat, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Suriname, Trinidad and Tobago and the Turks and Caicos Islands.

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