

## Update on implementing EBM/EAF in the CLME+ region

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CLME+ PROJECT REPORT



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## Acronyms

AOSIS	-	Alliance of Small Island States
BE CLME+	-	Blue Economy (BE): Caribbean Large Marine Ecosystem Plus (CLME+): Promoting National Blue Economy Priorities through Marine Spatial Planning in the CLME+
BES	-	Bonaire, St. Eustatius, Saba
BEST	-	Voluntary scheme for Biodiversity and Ecosystem Services in EU Outermost Regions and Overseas Countries and Territories
CARICOM	-	Caribbean Community
CC4FISH	-	Climate Change Adaptation for the Eastern Caribbean Fisheries Sector Project
CCCCC	-	Caribbean Community Climate Change Centre
CERMES	-	Centre for Resource Management and Environmental Studies
CFMC	-	Caribbean Fishery Management Council
CFP	-	Common Fisheries Policy
CLME+	-	Caribbean and North Brazil Shelf Large Marine Ecosystems
COFI	-	FAO Committee on Fisheries
CRFM	-	Caribbean Regional Fisheries Mechanism
CROP	-	Caribbean Regional Oceanscape Project
CYAP	-	CARICOM Youth Ambassadors Programme
CYEN	-	Caribbean Youth Environment Network
EAF	-	Ecosystem Approach to Fisheries
EBM	-	Ecosystem Based Management
EBM-DSS	-	Biodiversity for Sustainable Development in the Caribbean through Ecosystem-Based Management Ecosystem-Based Management-Decision Support System (EBM-DSS) dissemination and application
ECMMAN	-	Eastern Caribbean Marine Managed Area Network
ECROP	-	Eastern Caribbean Regional Ocean Policy
EU	-	European Union
FAO	-	Food and Agriculture Organization of the United Nations
FAB	-	Fisheries Advisory Body
FAC	-	Fisheries Advisory Committee
FORCE	-	Future of Reefs in a Changing Environment
GEAF	-	Governance Effectiveness Assessment Framework
GEF	-	Global Environment Facility
ICZM	-	Integrated coastal zone management
IFREMER	-	The French Institute for Exploitation of the Sea

IWCAM	-	Integrating Watershed and Coastal Areas Management
IWEco	-	Integrating Water, Land and Ecosystems Management in Caribbean Small Island Developing States
MAR2R	-	Integrated Ridge to Reef Management of the Mesoamerican Reef
MarGov	-	Coastal and Marine Governance in the Eastern Caribbean
MPA	-	Marine Protected Area
MSC	-	Marine Stewardship Council
MSP	-	Marine Spatial Planning
MUN	-	Model United Nations Programme
NGOs	-	Non-governmental Organisations
NIC	-	National Intersectoral Coordination Mechanism
NRDS	-	National Resilience Development Strategy
OECS	-	Organisation of Eastern Caribbean States
OGC	-	Ocean Governance Committees
OR	-	Outermost Regions
OSPESCA	-	Central America Fisheries and Aquaculture Organization
PPI	-	Projects, Programmes and Initiatives
PROGOVNET	-	Strengthening Principled Ocean Governance Networks
REBYC-I	-	Reduction of Environmental Impact from Tropical Shrimp Trawling, through the Introduction of Bycatch Reduction Technologies and Change of Management
REBYC-II LAC	-	Sustainable Management of Bycatch in Latin America and Caribbean Trawl Fisheries
RSS	-	Real Simple Syndication
SAP	-	Strategic Action Plan
SDGs	-	Sustainable Development Goals
SOMEE	-	State of the Marine Environment and Associated Economies
SPAW-RAC	-	Specially Protected Areas and Wildlife- Regional Activity Centre for the wider Caribbean
UNDP	-	United Nations Development Program
UNOPS	-	United Nations Office for Project Services
UNEP	-	United Nations Environment Program
UWI	-	University of the West Indies
WECAFC	-	Western Central Atlantic Fishery Commission

## Abstract

The ecosystem approach to fisheries (EAF) and ecosystem-based management (EBM) have largely been adopted globally as good practices in living marine resource governance, yet implementation remains a challenge. Despite being core to an increasing number of global, regional, sub-regional and national agreements, policies, laws, plans and other instruments there are several interpretations and variations of these concepts. Their application can sometimes be met with resistance from diverse stakeholders (including those with the formal mandate for implementation) for many reasons. These observations apply to the Caribbean and North Brazil Shelf Large Marine Ecosystems (CLME+) region where operationalization of EBM/EAF is still in its early stages in many countries.

Literature that provides a country-level overview of the progress made to date on the integration of these socio-economic environmental concepts into national and transboundary marine policies and national legislation is unavailable. However, effective implementation of the CLME+ Strategic Action Programme (SAP) requires knowledge of the status of relevant fisheries, habitat, pollution, climate, disaster and other environmental policies and legislation in terms of their compatibility with, and support for enabling, EBM/EAF.

We conducted another desk study of the status in the CLME+ region to update the 2018 assessment.<sup>1</sup> Data were collected from online resources, and by internet communication with key persons in CLME+ countries and leading organisations. We found, from the limited information available, that most of the 40 states and territories assessed are making incremental progress towards the implementation of EBM/EAF at the national level. For example, in CARICOM, the countries of Belize, Jamaica, Saint Kitts and Nevis are where comprehensive EBM is being increasingly demonstrated.

Within non-English-speaking locations in the CLME + region, there are also many examples of marine incremental progress in the implementation of EBM/EAF, e.g. in Bonaire. Several locations in the CLME+ region share common features in how they are implementing EBM/EAF or components of it in the variations that are common. This summary report synthesizes findings from the latest desk study to update the 2018 assessment. This may inform and assist the comprehensive EBM/EAF required for CLME+ SAP implementation, monitoring and evaluation. However, such desk studies are not efficient, effective or sustainable. Similar to other knowledge products and assessments (National Intersectoral Coordination Mechanisms (NICs), Projects, Programmes and Initiatives (PPI), Governance Effectiveness Assessment Framework (GEAF)) we struggled with low response rates despite several solicitation methods. While useful, the results are neither complete nor representative. We recommend national intersectoral self-reporting and assessment built into the SOMEE or other regular reporting mechanisms as a more viable alternative.

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<sup>1</sup> Sabir, K., N. Simpson, S. Cox and P. McConney. 2018. A preliminary look at the implementation of EBM/EAF in the CLME+ region. Report to the UNDP/GEF CLME+ Project (2015-2020). Centre for Resource Management and Environmental Studies, University of the West Indies, Cave Hill Campus. Bridgetown: Barbados. 20 pp

## 1.0 Introduction

Marine and coastal ecosystems provide many goods and services that support livelihoods, food security, resources for economic growth (e.g. via fisheries, tourism, research, transport etc), recreation, culture and coastline protection. These ecosystems are threatened by key problems such as overfishing, pollution, habitat degradation and climate change that significantly affect the provision of these services. The Ecosystem Approach<sup>2</sup> lays out a series of principles to guide management towards long-term sustainability of marine and coastal ecosystems. Ecosystem-based management (EBM) regards marine and coastal ecosystems as units with many ecological and social links. These connections can be numerous and complex, with disruptions to any part of an ecosystem - such as changes to habitats or fluctuations in the population of a species - having many knock-on effects<sup>3</sup>.

### 1.1 Background

Employing EBM in fisheries management supports the concept of the ecosystem approach to fisheries (EAF). Ward and colleagues<sup>4</sup> define EAF as “an extension of conventional fisheries management recognizing more explicitly the interdependence between human well-being and ecosystem health and the need to maintain ecosystems productivity for present and future generations, e.g. conserving critical habitats, reducing pollution and degradation, minimizing waste, protecting endangered species.” EAF has been developed in response to the need to implement, in a practical manner, the principles of sustainable development<sup>5</sup>, the Convention on Biological Diversity<sup>6</sup> and the Code of Conduct for Responsible Fisheries<sup>7</sup>. EAF is consistent with all these principles and has been adopted by the FAO as the appropriate approach to implement these principles for the management of fisheries.

The principles of EAF and EBM have largely been adopted globally and regionally<sup>8</sup> in living marine resource management, yet implementation still remains a challenge. This stems largely from the fact that there are several interpretations of these concepts and the implementation is usually met with resistance from stakeholders. This is particularly so for countries in the Caribbean and North Brazil Shelf Large Marine Ecosystems (CLME+) region<sup>9</sup> where operationalization and implementation of EBM/EAF is still in its early stages. This region is regarded as one of the most geopolitically diverse and complex sets of LMEs in the world.<sup>10</sup> The culturally diverse countries and territories that border this maritime area range from among

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<sup>2</sup> UNEP CBD. 2004. The Ecosystem Approach

<sup>3</sup> UNEP (2011): Taking Steps toward Marine and Coastal Ecosystem-Based Management. - An Introductory Guide

<sup>4</sup> Ward, T., D. Tarte, E. Hegerl and K. Short. 2002. Ecosystem based management of marine capture fisheries. World Wide Fund for Nature, Australia. 80 pp.

<sup>5</sup> WCED, 1987

<sup>6</sup> CBD, 1992

<sup>7</sup> FAO. 1995. Code of Conduct for Responsible Fisheries Rome, FAO. 41 p.

<sup>8</sup> Fanning, L., R. Mahon and P. McConney. [Eds.]. 2011. Towards Marine Ecosystem-based Management in the Wider Caribbean. Amsterdam University Press, Amsterdam, 426 p.

<sup>9</sup> The CLME+ region consists of 26 Sovereign States and 18 Overseas Territories within the Caribbean and North Brazil Shelf Large Marine Ecosystems.

<sup>10</sup> Fanning, L., R. Mahon and P. McConney. 2009. Focusing on living marine resource governance: the Caribbean Large Marine Ecosystem and Adjacent Areas Project. Coastal Management 37: 219 – 234

the largest (e.g. Brazil, USA) to among the smallest (e.g. Barbados, St. Kitts and Nevis) and from the most developed to the least developed in the world.

## 1.2 Commitment to EBM/EAF

Countries of the Wider Caribbean have committed to EBM/EAF through several multilateral environmental and fisheries agreements at both the regional (e.g., the Cartagena Convention's SPAW Protocol) and international levels (e.g. Convention on Biological Diversity, United Nations Fish Stocks Agreement, the FAO Code of Conduct for Responsible Fisheries and Sustainable Development Goals (SDGs)). However, the ongoing challenge is to implement the measures needed to give effect to these principles at the local, national and regional levels<sup>3</sup>.

Despite these advances, there is limited literature or online information with a regional overview of the progress made to date on the integration of these socio-economic environmental concepts into national and transboundary marine policies and national legislation. Effective implementation of the CLME+ Strategic Action Programme (SAP) requires knowledge of the status of relevant fisheries, habitat, pollution, climate, disaster and other environmental policies and legislation in terms of their compatibility with, and support for enabling, EBM/EAF.

We conducted a desk study of the status in the CLME+ region using the EBM implementation spectrum as guidance to update a previous assessment<sup>1</sup>. Data were collected from online resources, and by internet communication with key persons in CLME+ countries and leading organisations. This summary report synthesizes the updated findings to inform and assist the comprehensive EBM/EAF required for CLME+ SAP implementation, monitoring and evaluation.

## 2.0 Methodology

Under Output 1.3 of the CLME+ Project results framework, a CLME+ region inventory-oriented review of the status of relevant fisheries and environmental policy/regulations and legislation in terms of their compatibility with and support for EBM/EAF was conducted through desktop research. For each of 40 states and territories within the CLME+ study area, an examination of available, national-level fisheries and environmental legislation, policies, plans, project reports, previous and on-going reviews of marine-related EBM/EAF instruments, was executed to determine progress made to date on integration of EBM/EAF at a national level (Appendix 1).

Over 800 documents, including grey and academic literature, were gleaned from the internet, libraries and personal collections of respondents contacted. The documents were stored in a cloud-based online [repository](#), and organised into country folders, to facilitate analysis by consultant team members. This repository is a resource available to the CLME+ Project.

We examined instruments mainly in relation to EBM/EAF mainstreaming including themes such as climate change, gender and youth. A checklist (Appendix 2) based on the EBM Implementation Spectrum (Figure 1) outlined elements supporting the implementation of EBM. These core elements are:

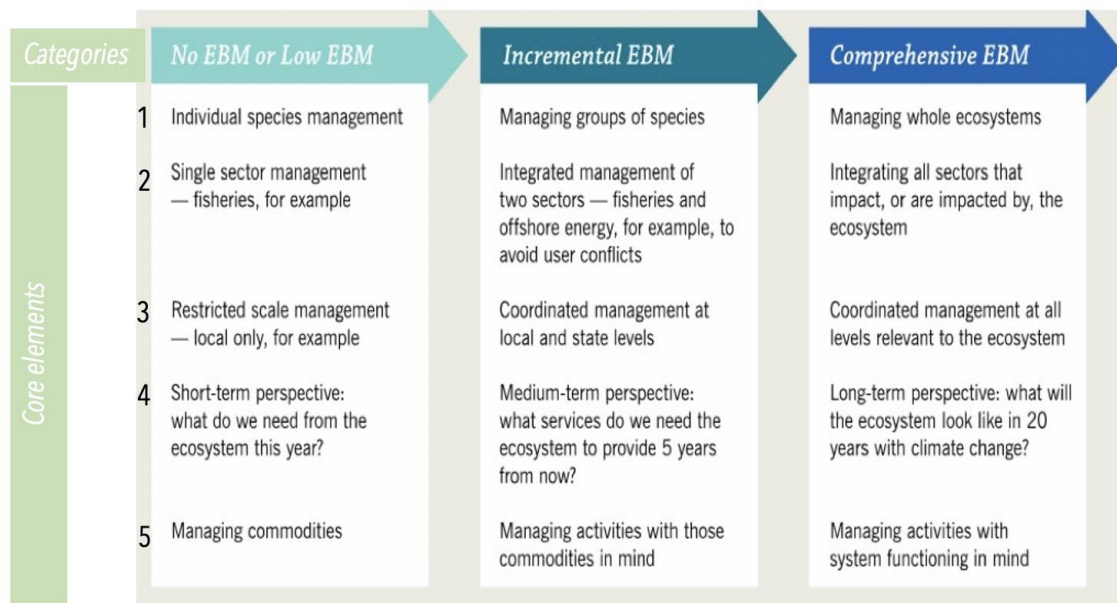
1. Species management;
2. Intersectoral integration;



3. Appropriate levels of governance;
4. Appropriate timescales and adaptive management; and
5. Broadening from commodity-centric management to whole system interventions.

The first stage compiled the inventory (Appendix 3). Countries were placed in one of three categories: (1) no or low, (2) incremental, and (3) comprehensive EBM based on the judgement of the consultants using the criteria checklist.

The categorisation of each country followed simple steps. First, each core element was given a rating [1 (red), 2 (yellow), 3 (green)] based on the supporting evidence gleaned from the document repository. On average, 25 documents were used to inform a rating. In most cases there was evidence for all elements to be rated. Media articles were used to supplement information not found in documents. Based on the ratings for each core element, an overall assessment was ascertained by first taking an average, then a final determination was made based on the evidence presented for the core element ‘whole system management’. Two trained consultants reviewed each other’s final assessment and offered feedback and suggestions for revising or accepting the final assessment outcome. This process resulted in a country table setting out a qualitative assessment of the state of marine EBM/EAF in the region. In all but two cases, the consultants agreed with the categories assigned. It is important to note that this subjective process can be greatly improved by including national focal points and experts in the deliberations using a Delphi or other more systematic technique for creating expert knowledge ratings.



**Figure 1: EBM Implementation Spectrum three categories and their core elements used for assessment (UNEP, 2011)<sup>11</sup>.**

<sup>11</sup> UNEP (2011): Taking Steps toward Marine and Coastal Ecosystem-Based Management. - An Introductory Guide

Persistent limitations to the methodology included the scarcity of online or electronic files of recent legislation and resource or habitat management plans for some countries. Document scarcity may also have been due in some cases to language barriers which made searching for environmental policies for non-English speaking countries a challenge despite using a set of multi-lingual key words or phrases<sup>12</sup>. It was also challenging to gauge the extent of implementation after the completion of EBM/EAF related projects without post-project evaluation reports on current conditions and operations at the local level. It was not always possible to contact key informants with such local knowledge. In general, response rates to emails and especially requests for interviews were low. Due to low engagement the assessment of only one country was validated by a highly cooperative respondent. This needs to be done for all. For these reasons, the results for all countries are preliminary, require further information and may change as countries supply more documentation.

### 3.0 Results - EBM/EAF inventory of CLME+ region

The CLME+ region (Figure 2) comprises the Caribbean Large Marine Ecosystem and the North Brazil Shelf Large Marine Ecosystem. This region is bordered by or contains around 40 States and Territories ( Table 1). This vast marine area (4.4 million km<sup>2</sup>) is a major contributor to regional economic development and is key to many globally relevant ecological processes.

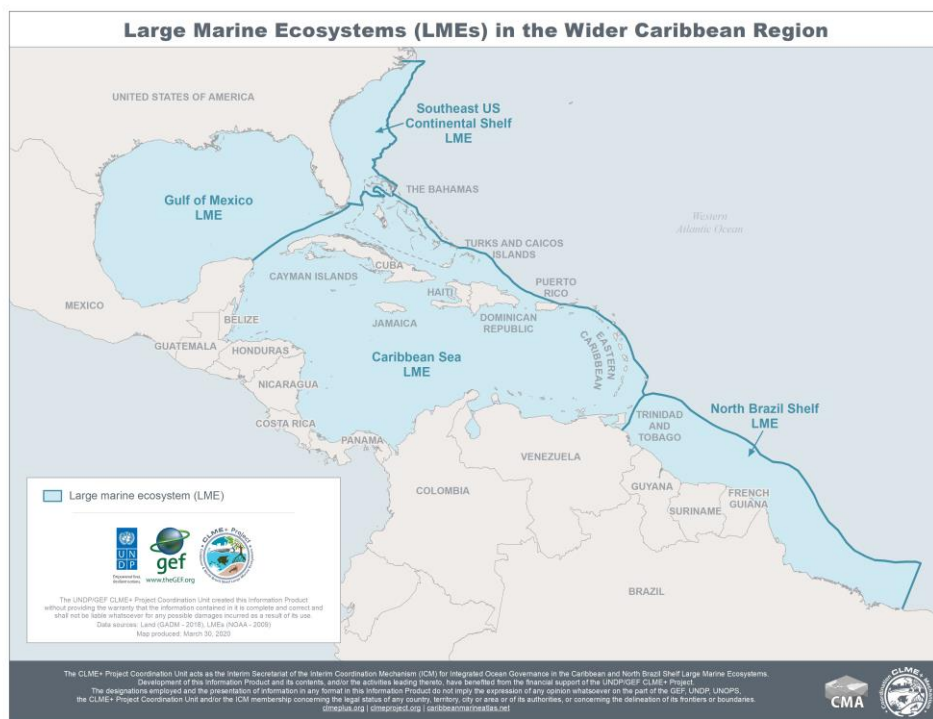


Figure 2: CLME+ region

<sup>12</sup> Keywords: Fisheries Act, Integrated Coastal Zone Management, Environmental Policy, Ecosystem Approach to Fisheries, Ecosystem based management, Fisheries Advisory Committees, marine managed areas.

**Table 1. CLME+ States, Territories, Associated States, Departments, Outermost Regions and Islands with a Special Status**

Independent Continental States	Independent Island States	Overseas dependent territories, associated states, outermost regions, departments and island with a special status <sup>13</sup>
Belize <sup>14</sup>	Antigua & Barbuda <sup>14</sup>	Anguilla <sup>14</sup> ( <i>United Kingdom</i> )
Brazil	Bahamas, the <sup>14</sup>	Aruba <sup>14</sup> , Curaçao, St. Maarten <sup>15</sup>
Colombia	Barbados <sup>14</sup>	British Virgin Islands <sup>14</sup> ( <i>United Kingdom</i> )
Costa Rica	Cuba <sup>14</sup>	Cayman Islands ( <i>United Kingdom</i> )
Guatemala	Dominica <sup>14</sup>	French Guiana <sup>16</sup> ( <i>France</i> )
Guyana <sup>14</sup>	Dominican Republic <sup>14</sup>	Guadeloupe <sup>16</sup> ( <i>France</i> )
Honduras	Grenada <sup>14</sup>	Montserrat <sup>14</sup> ( <i>United Kingdom</i> )
Panama	Haiti <sup>14</sup>	Martinique <sup>16</sup> ( <i>France</i> )
Mexico	Jamaica <sup>14</sup>	Puerto Rico <sup>14</sup> ( <i>United States of America</i> )
Nicaragua	St. Kitts & Nevis <sup>14</sup>	Bonaire, St. Eustatius, Saba <sup>17</sup>
Suriname <sup>14</sup>	Saint Lucia <sup>14</sup>	St. Barthélemy ( <i>France</i> )
Venezuela	St. Vincent & the	St. Martin <sup>16</sup> ( <i>France</i> )
United States of America	Grenadines <sup>14</sup>	Turks and Caicos ( <i>United Kingdom</i> )
	Trinidad & Tobago <sup>14</sup>	U.S. Virgin Islands <sup>14</sup> ( <i>United States of America</i> )

In the CLME+ region there have been several projects, initiatives and entities (many of which work in partnership and alliance with the CLME+ Project) that promote EBM/EAF. We highlight selected EBM/EAF related projects on a 22-year timeline in Figure 3 and Table 2.

<sup>13</sup> As of 10 October 2010, Holland, Aruba, Curaçao and St. Maarten are partners in the Kingdom of the Netherlands. The islands of Bonaire, Saba, and St. Eustatius have become "special municipalities" of Holland

<sup>14</sup> Low-lying coastal and/or Small Island Developing States (SIDS) as listed by the United Nations Department of Economic and Social Affairs; see <http://sustainabledevelopment.un.org/index.php?menu=1522>

<sup>15</sup> Kingdom of the Netherlands

<sup>16</sup> Outermost Regions (normally considered part of the European Union and subject to European law)

<sup>17</sup> Special Municipalities of Holland

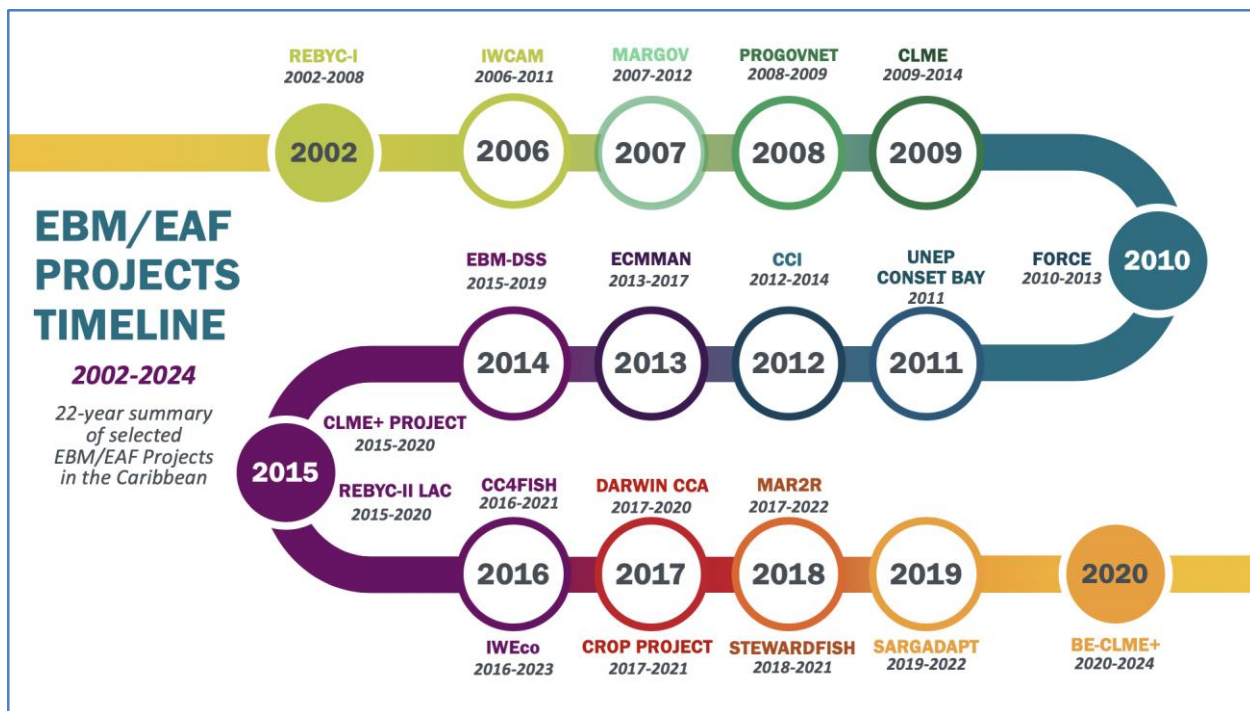


Figure 3: Timeline of Selected EBM/EAF Projects in the CLME+ Region over a 22-year period. Adapted from Hassell and Cox 2020<sup>18</sup>.

Table 2. Summary of Selected EBM/EAF Projects in the CLME+ Region over a 22-year period which provides online information.

	Project Acronym	Project Name
1.	REBYC-I	Reduction of Environmental Impact from Tropical Shrimp Trawling, through the Introduction of Bycatch Reduction Technologies and Change of Management <a href="http://www.fao.org/fishery/organization/24545/en">http://www.fao.org/fishery/organization/24545/en</a>
2.	IWCAM	Integrating Watershed and Coastal Areas Management <a href="http://cep.unep.org/iwcam">http://cep.unep.org/iwcam</a>
3.	MarGov	Coastal and Marine Resource Governance in the Eastern Caribbean <a href="https://www.idrc.ca/en/project/coastal-and-marine-resource-governance-eastern-caribbean">https://www.idrc.ca/en/project/coastal-and-marine-resource-governance-eastern-caribbean</a>
4.	PROGOVNET	Strengthening Principled Ocean Governance Networks

<sup>18</sup> Hassell, N. and S-A. Cox. 2020. Examination of Ecosystem Approach to Fisheries (EAF) related International Guidelines. CERMES report to FAO on Developing Organisational Capacity for Ecosystem Stewardship and Livelihoods in Caribbean Small-scale Fisheries (StewardFish) Project. 23 pp.

	Project Acronym	Project Name
		Major project output: <a href="https://www.amazon.com/Towards-Ecosystem-Based-Management-Caribbean-Publications/dp/9089642420">https://www.amazon.com/Towards-Ecosystem-Based-Management-Caribbean-Publications/dp/9089642420</a>
5.	CLME	Sustainable Management of the Shared Living Marine Resources of the Caribbean Large Marine Ecosystem (CLME) and Adjacent Regions  <a href="https://www.clmeproject.org/phaseone/">https://www.clmeproject.org/phaseone/</a>
6.	FORCE	Future of Reefs in a Changing Environment  <a href="https://climate-adapt.eea.europa.eu/metadata/projects/future-of-reefs-in-a-changing-environment-an-ecosystem-approach-to-managing-caribbean-coral-reefs-in-the-face-of-climate-change">https://climate-adapt.eea.europa.eu/metadata/projects/future-of-reefs-in-a-changing-environment-an-ecosystem-approach-to-managing-caribbean-coral-reefs-in-the-face-of-climate-change</a>
7.	UNEP Conset Bay	Up-scaling Sustainable Resource Management in Coastal Watershed Communities of Barbados' National Park and System of Open Spaces Project  <a href="https://www.cavehill.uwi.edu/cermes/projects/conset-bay-pilot-project.aspx">https://www.cavehill.uwi.edu/cermes/projects/conset-bay-pilot-project.aspx</a>
8.	EBM-DSS	Biodiversity for Sustainable Development in the Caribbean through Ecosystem-Based Management (EBM): Ecosystem-Based Management-Decision Support System (EBM-DSS) dissemination and application  <a href="https://www.cavehill.uwi.edu/cermes/projects/ebm-dss/project-home.aspx">https://www.cavehill.uwi.edu/cermes/projects/ebm-dss/project-home.aspx</a>
9.	CCI	Caribbean Challenge Initiative  <a href="https://www.caribbeanchallengeinitiative.org">https://www.caribbeanchallengeinitiative.org</a>
10.	ECMMAN	Eastern Caribbean Marine Managed Area Network  <a href="https://marineplanning.org/projects/caribbean/ecmman/">https://marineplanning.org/projects/caribbean/ecmman/</a>
11.	CLME+	Sustainable Management of the Shared Living Marine Resources of the Caribbean Large Marine Ecosystem (CLME) and Adjacent Regions Amendment  <a href="https://www.clmeproject.org/">https://www.clmeproject.org/</a>
12.	REBYC-II LAC	Sustainable Management of Bycatch in Latin America and Caribbean Trawl Fisheries <a href="http://www.fao.org/in-action/rebyc-2/overview/en/">http://www.fao.org/in-action/rebyc-2/overview/en/</a>
10.	CC4FISH	Climate Change Adaptation in the Eastern Caribbean Fisheries Sector  <a href="http://www.fao.org/in-action/climate-change-adaptation-eastern-caribbean-fisheries/en/">http://www.fao.org/in-action/climate-change-adaptation-eastern-caribbean-fisheries/en/</a>
11.	IWEco	Integrating Water, Land and Ecosystems Management in Caribbean Small Island Developing States  <a href="https://www.iweco.org/">https://www.iweco.org/</a>
12.	CROP	Caribbean Regional Oceanscape Project  <a href="https://projects.worldbank.org/en/projects-operations/project-detail/P159653">https://projects.worldbank.org/en/projects-operations/project-detail/P159653</a>
13.	Darwin CCA	Climate Change Adaptation in the Fisheries of Anguilla and Montserrat

	Project Acronym	Project Name
		<a href="https://canari.org/wp-content/uploads/2018/09/Darwin-CCA-Fisheries-OTs-Project-Brief-4.2019.pdf">https://canari.org/wp-content/uploads/2018/09/Darwin-CCA-Fisheries-OTs-Project-Brief-4.2019.pdf</a>
14.	MAR2R	Integrated Ridge to Reef Management of the Mesoamerican Reef Ecoregion (MAR2R) <a href="https://iwlearn.net/iw-projects/5765">https://iwlearn.net/iw-projects/5765</a>
15.	StewardFish	Developing Organizational Capacity for Ecosystem Stewardship and Livelihoods in Caribbean Small-Scale Fisheries <a href="https://www.thegef.org/project/developing-organizational-capacity-ecosystem-stewardship-and-livelihoods-caribbean-small">https://www.thegef.org/project/developing-organizational-capacity-ecosystem-stewardship-and-livelihoods-caribbean-small</a>
16.	SargAdapt	Adapting to a new reality: Managing responses to influxes of sargassum seaweed in the Eastern Caribbean as ecosystem hazards and opportunities <a href="https://www.cavehill.uwi.edu/cermes/docs/connections/cermes_connections_2019_12_19.aspx">https://www.cavehill.uwi.edu/cermes/docs/connections/cermes_connections_2019_12_19.aspx</a>
17.	BE-CLME+	Blue Economy (BE): Caribbean Large Marine Ecosystem Plus (CLME+): Promoting National Blue Economy Priorities through Marine Spatial Planning in the Caribbean Large Marine Ecosystem Plus <a href="https://iwlearn.net/iw-projects/10211">https://iwlearn.net/iw-projects/10211</a>

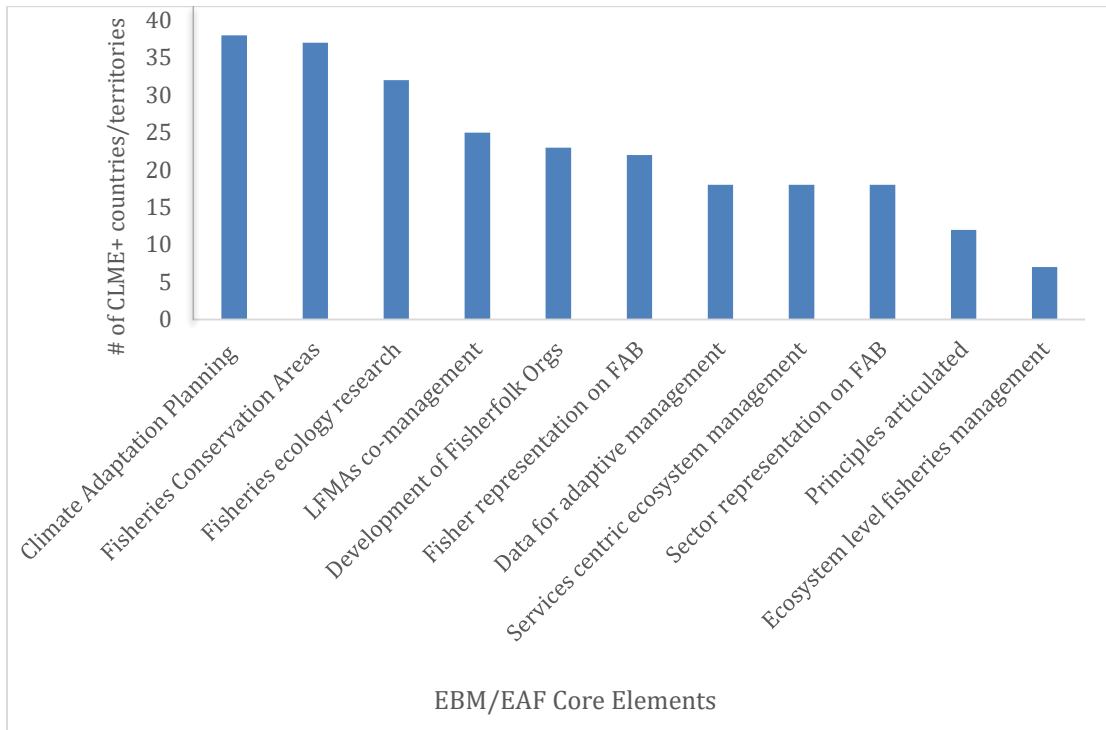
In addition to examining the constituent elements of EBM implementation, it was important to ascertain if an ecosystem-based, whole-system approach was deliberately and strategically articulated in legislation, strategies and management plans related to the fisheries sector and its related ecosystems. Of the documents available for review, 10 of the 19 CARICOM and Associate Member States examined articulated an ecosystem approach to fisheries management in fisheries development strategies or management plans as guiding principles (Figure 4). St. Kitts & Nevis went further to outline a precautionary approach, sustainability, and ecosystem approach as guiding principles in the update of its legal instrument<sup>19</sup>. Setting the strategic direction and guiding principles is critical regardless of whether the individual constituents of EBM are being implemented.

For the non-English speaking countries assessed, an ecosystem approach to fisheries management (EAFM) was articulated in some of the environmental instruments related to the fisheries sector. Of notable mention is OSPESCA's Fisheries and aquaculture integration policy (2015-2025)<sup>20</sup> which includes the countries of Belize, Costa Rica, Dominican Republic, Guatemala, Honduras, Nicaragua and Panama. This policy is based on principles including a precautionary approach and includes the implementation of a regional fisheries and aquaculture research plan which gives special attention to management measures based on the ecosystem approach. All of the OSPESCA countries have a fisheries act while some have

<sup>19</sup> *Fisheries Aquaculture and Marine Resources Act 2016*. Saint Christopher and Nevis.

<sup>20</sup> *Politica de integracion de pesca y acuicultura*, OSPESCA, 2015.

advisory fishery bodies. Below we highlight the number of CLME+ states and territories demonstrating the core elements of EBM/EAF (Figure 4).



**Figure 4: EBM/EAF core elements (see Appendix 1) demonstrated by CLME+ states and territories [total number of Territories and States (y axis) meeting each of the criteria devised (x-axis)].**

We found, from the limited information available, that most of the 40 states and territories assessed are making incremental progress towards the implementation of EBM/EAF at the national level. Most notably in CARICOM are Belize, Jamaica, Saint Kitts and Nevis where comprehensive EBM is demonstrated. Within non-English-speaking locations in the CLME + region, there are many examples demonstrating marine resource governance supporting low or incremental progress on the implementation of EBM/EAF. Bonaire serves as a good example where comprehensive EBM/EAF is manifested at the national level. Overall, evidence suggests that there have been strides at several locations in the CLME+ region to implement EBM/EAF or components of it in the variations that are common.

The section that follows offers some general statements and summarizes some of the supporting evidence under each core element heading and a separate heading for gender and youth. There are provided just as examples to illustrate the possible utility of the information. The [inventory](#) (Appendix 3) provides more details about the status of implementation at the national level. The overall assessment for each country is illustrated on a map of the CLME+ region (Appendix 4).

### 3.1 Species Management

EBM promotes understanding of species and environmental interactions and applies this understanding to management actions. Fisheries management has conventionally been focused on the target species as the only or main commodity to be harvested and traded. This approach was reflected in legal instruments, strategies and management plans as single-species management intervention. In transitioning to a management regime with greater ecosystem considerations, there is value in managing target species

reliant on a common ecosystem as a group, notwithstanding the need to apply further individual species management interventions on the most important target species.

Most of the fisheries legislation reviewed from non-English speaking countries, made provision for at least single - species management. Although ecosystem considerations were not deliberately outlined in most of fisheries legislation, these considerations were often mentioned instead in marine protected or managed areas or other ordinances and other national strategies and plans.

The Nature Policy Plan<sup>21</sup> for the BES islands and accompanying fisheries and environment ordinances, make provision for the establishment and management of conservation areas. There is an existing strong network of marine parks and sanctuaries throughout the Dutch Caribbean of which the Bonaire National Marine Park is well known for its active management of the island's marine resources and places conservation in public decision-making processes.

In 2009, the EU adopted a "Control Regulation" to establish general rules and principles governing the control of fisheries across its Member States. Upon entering into force in 2010, it placed a number of enforcement obligations on Member States' competent authorities including appropriate action for breaches of the rules of the EU Common Fisheries Policy (CFP). However, the current degree of implementation of this regulation is unknown. France has developed a national strategy for the sea and coasts with its implementation requiring an operational component directed at collecting data, informing various indicators (state of ecosystems, resources, changes and developments) and drawing up effective management measures. However, the level of implementation of this strategy is currently unknown.

The management of conservation areas appears to be well done within the French Caribbean under the French Strategy for the creation and management of marine protected areas. For example, the AGOA marine mammal sanctuary, the specially protected area of the Cartagena Convention created in 2012 in close collaboration with SPAW RAC demonstrates the French Caribbean's strength and effectiveness in using this management tool. The Sanctuary covers 152,809 km<sup>2</sup> of ocean with the aim of ensuring the conservation of marine mammals within the framework of a harmonious co-existence with human activities.

In IFREMER's Strategic Plan for 2020<sup>22</sup>, an ecosystem approach to fisheries science is taken into consideration, as well as, multidisciplinary integration within the sector. This Plan consists of elements which contribute towards strengthening EBM within these countries.

For many of the Central American countries including those within the Mesoamerican Barrier Reef System (Belize, Guatemala, Honduras and Mexico), there are many past and existing projects which have placed an integrated ridge to reef management approach at their forefront such as the MAR2R project.

OSPESCA's Fisheries and aquaculture integration policy (2015-2025) is based on principles including a precautionary approach and includes the implementation of a regional fisheries and aquaculture research plan which gives special attention to management measures based on the ecosystem approach.

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<sup>21</sup> Nature Policy Plan Caribbean Netherlands 2013-2017

<sup>22</sup> IFREMER, 2008.



Three CARICOM countries exhibited similar approaches to grouped species management intervention based on habitats: nearshore reef, coastal pelagics, sand banks, deep slope/bank reef, and ocean pelagics. Individual species such as conch, lobster and sea turtles have further management strategies given their commercial and/or conservation importance. The three countries (Belize, Jamaica and St. Kitts & Nevis) implementing habitat management actions to capture several species have all articulated the ecosystem approach in their respective fisheries strategies and plans.

Despite not being featured in legal instruments and plans as a deliberate approach, some management practices are already targeting the habitat and ecosystem level to benefit groups of species. Preventing the use of destructive fishing gear, reduction in by-catch, establishing mooring systems and zones of no-anchoring, and the establishment of marine reserves all are common place in the documents reviewed. Of the 19 CARICOM Members and Associates reviewed, 17 have provisions in their fisheries Acts for the fisheries administrator or Minister responsible for fisheries to establish marine reserves for conservation purposes and replenishment of fish stocks. Anguilla, for example, did not have this authority in its Fisheries Protection Act, 2000 but is able to designate Marine Parks through the Marine Parks Ordinance 1982.

Most of the countries and territories examined made provision for research in fisheries and marine-resources legislation (Figure ). The role of research took various forms in legal instruments across the region. Most instruments prohibit the harvest of resources for research purposes without expressed permission of the relevant authorities as a means of resource protection. Regarding increasing understanding of the complexities of species life cycles and ecosystem interactions, all countries examined highlighted the promotion of fisheries research either in general or specifically in marine reserves as a controlled environment. Fisheries policies and plans call for routine monitoring and reporting on the ecology and state of fisheries stock to support management decisions.

### 3.2 Intersectoral integration

Legal instruments, plans and policies were reviewed for the presence of mechanisms to promote intersectoral linkages and inclusive consultation for more integrated living marine resources governance. Apart from broad intersectoral linkages in marine resources, the checklist used here also focused specifically on fisheries advisory bodies and ocean governance committees for the presence of representation from other sectors such as tourism or offshore energy.

Although national fisheries bodies that include intersectoral linkages appear to be absent within the Dutch Caribbean, other national intersectoral advisory bodies exist. There appear to be positive partnerships between government and conservation groups. For example, the Caribbean Netherlands, in accordance with the request from the Dutch Parliament, the Minister of Economic Affairs stated that the new Nature Policy Plan had to be developed in close cooperation with a range of stakeholders in the Dutch Caribbean. These included the Island Governments, nature conservation organizations (such as the Dutch Caribbean Nature Alliance), the business sector, the tourist sector, the Ministry of the Interior and Kingdom Relations, and the Ministry of Infrastructure and the Environment.

For the BES islands, the non-governmental nature conservation organizations: the Bonaire National Parks Foundation (STINAPA), St. Eustatius National Parks (STENAPA) and Saba Conservation Foundation (SCF)

are responsible for the development and implementation of the island's management plans, as well as having enforcement authority.

Within the French Caribbean, focus is being placed on sustainable blue growth in the Caribbean - Amazonia basin. Through the implementation of the Integrated Maritime Policy<sup>23</sup> for the ORs and their related sea basins, the fisheries sector is considered an important part of the blue economy. From developing aquaculture in Martinique to taking into consideration the importance and impact of coastal and cruise tourism, shipping, marine renewable energy and blue biotechnology in the French Antilles and French Guiana, efforts are being made to allow the co-existence of as many sectors as possible in the sustainable development of these maritime based economic activities. One of the guiding principles of the French National Strategy<sup>24</sup> for the creation and management of marine protected areas places intersectoral integration at its' forefront by recommending utilization of an integrated approach in management as one of its' strategic areas.

Under Brazil's National Coastal Zone Management Plan<sup>25</sup>, there is cooperation of coordinating bodies with representatives from many sectors working to manage the ocean and coastal areas. For example, the executive group for the fishing sector has representatives from nine ministries and includes participation of these groups in decision making.

The Suriname Fisheries Advisory Committee consists of members representing a range of stakeholders including government, representatives from the fisheries sector from the shrimp trawl fishery and fish processing industry.

At the advisory decision-support level, most of the fisheries related acts reviewed in the CARICOM grouping mandated the establishment of a fisheries advisory body to provide expert advice to the Minister responsible for fisheries (or Governor in some cases). This includes policy input, setting of guidelines and standards, and input into management plans for the responsible development of fisheries and conservation of marine resources. The Acts of most countries stipulate a core membership of this advisory body and a basic mandate, allowing flexibility for the Administrator of the Act (usually the Chief Fisheries Officer) to propose the work programme and membership of the body. These advisory groups take the form of committees, councils or boards.

Six CARICOM countries have instruments which specified representation from other sectors on the fisheries advisory body. Typically, tourism and environment are specified to be represented for input in sustainability of marine resources and harmonizing resource use. Montserrat, for example, in its Fisheries Act (revised 2013) calls for representation from the Chamber of Commerce, Tourism Board and National Trust on the Fisheries Advisory Committee. Other national intersectoral advisory bodies may exist in the absence of a multisectoral fisheries body however. For example, the Council for Ocean and Coastal Zone Management in Jamaica, the Coastal Zone Management Advisory Council in Belize, and the Natural

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<sup>23</sup> European Commission, 2017.

<sup>24</sup> French strategy for the creation and management of marine protected areas, 2015. Ministry of Ecology, Sustainable Development and Energy.

<sup>25</sup> Brazilian National Plan for Coastal Management, 2001.

Resources and Environment Advisory Council (NREAC) in Guyana are fora for integrated marine resource management planning which would inevitably have fisheries representation and some focus on fisheries issues.

In the case of the Bahamas, the Fisheries Management Plan (1998) specifies that the Fisheries Advisory Committee should be reformed and streamlined to include only fisheries stakeholder membership since administration of a multi-sectoral FAC as it was in the past, became too cumbersome and inefficient even though the approach was sound in principle. This provides a valuable lesson for implementation whereby the FAC in the Bahamas Department of Fisheries has the latitude for multi-sectoral consultation rather than pursue permanent representation. A newly appointed FAC met in mid 2018 to review the draft Fisheries Act, with the aim of fine tuning the legislation before submission for the Minister's attention and onward submission for Parliamentary debate before coming into force.<sup>26</sup>

### 3.3 Appropriate levels of governance

An important element of EBM is management interventions that empower resource users to achieve sustainability through subsidiarity. Examining the level of inclusion of fishers in planning and decision-making is the focus here. The desktop study highlighted that most of the countries encourage representation of fisherfolk and other stakeholders to some extent for input in the planning and decision-making processes within the fisheries sector of the countries.

It appears that resource users, including fisherfolk are involved in management through decision making and planning within the Dutch Caribbean islands. For example, the STINAPA Bonaire National Parks Foundation Board has representatives from the local agricultural co-operative, fishing community, tourism industry, hoteliers and dive operators, which through their intersectoral linkages collaborate and cooperate on management decisions for the national parks.

The European Commission Maritime Policy for the French Outermost Regions (ORs) makes mention of the high rate of youth unemployment in the ORs and encourages youth into the industry by providing education and training through various funds and a Youth Employment Initiative.

Within Central and South America, some levels of co-management are seen and practiced. One of the better examples reviewed was the CoopeTárcoles R.L , a cooperative on the Pacific Coast of Costa Rica, which uses a community-based governance model for fishery management. This local and inclusive initiative has created gender balanced sources of employment and has become an engine for community sustainable development providing a relatively successful case study example of how fisherfolk are included in environmental policy making decisions.

In OSPESCA's regional governance model fisheries and aquaculture integration policy (2015-2025)<sup>27</sup>, citizen participation through input in decision making and collaboration of key actors is crucial to the success of the plan.

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<sup>26</sup> Bahamas Ministry of Agriculture and Marine Resources Website: <https://bit.ly/BahamasFAC>

<sup>27</sup> Política de integración de pesca y acuicultura, OSPESCA, 2015.

In 2013, the Cuban government initiated a community-based fisheries management project, SOS Pesca<sup>28</sup>. This international collaboration with the Environmental Defense Fund targeted two fishing communities to demonstrate how marine protected areas and rights-based fisheries management can work together to improve livelihoods, end overfishing and protect habitats.

Using Rare's Fish Forever Program in Brazil as an example in South America, there is community led governance, designated managed-access fishing areas, combined with no-take reserves as well as participation of fishers and community members in fisheries management and decision-making. The exclusive access and marine extractive areas have the potential to protect the livelihoods and culture of fishermen and make provision for co-management if established and operated well. Projects like this are increasing throughout the region and have contributed to strengthened governance placing fisherfolk in the decision-making process which is a core element of EBM. The desktop study highlighted that most CARICOM Members and Associate States encourage representation of fisherfolk and other stakeholders in the national fisheries advisory body as a platform for input in planning and decision-making. Likewise, it is typical for Acts and strategies to mandate that fisherfolk, commercial interests, processors and NGOs be afforded the opportunity to partake in preparation of fisheries management plans, fisheries reserves and marine management areas.

The second element of stakeholder inclusion in governance examined is the authority to divest fisheries management of specific areas solely or partially to stakeholder groups. While most fisheries Acts and plans reviewed allow for the establishment of Local Fisheries Management Areas (LFMA) with localized management actions, only 9 instruments reviewed specified that the management of the LFMA may be divested to a fisheries stakeholder via the approval of relevant authorities. Haiti on the other hand, does not have a legal framework to establish LFMA's but boasts strong fisherfolk organizations, some of which have implemented voluntary self-regulation for the sustainability of their local livelihoods (Mateo and Haughton 2003)<sup>29</sup>.

Regional stakeholders underwent a visioning and strategic planning workshop for ecosystem-based management of key marine ecosystems. Vision element 6 for EBM approaches for coral reef systems speaks to stakeholders being fully involved in resource management. Actions to bring this vision to fruition include sustained efforts to improve the capacity of fisherfolk organizations and cooperatives to be able to partake in policy development<sup>30</sup>. Eleven countries in CARICOM and Associate Member States mentioned capacity building of fisherfolk organizations and cooperatives as a management strategy in their fisheries acts, development strategies and plans. It must be noted however, that a plethora of programmes and initiatives have been implemented throughout the region involving public education, safety training, business development, alternative livelihoods development, microfinancing and other

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<sup>28</sup> SOS Pesca, 2013.

<sup>29</sup> Mateo, J and M. Haughton 2003. A Review of the Fisheries Sector of Haiti with Recommendations for its Strengthening. 54th Gulf and Caribbean Fisheries Institute. Belize City, Belize, 2003

<sup>30</sup> Mahon R. et al 2011. 'The Vision for EBM of Coral Reef Ecosystems in the Wider Caribbean' in *Towards Marine Ecosystem-based Management in the Caribbean*, eds. Fanning et al (Amsterdam University Press, 2011), pp 331.

aspects of capacity building for fishers and fishing communities. These initiatives lead to constructive participation in fisheries sustainability by fishers through policy input, poverty alleviation, resource efficiency, monitoring and report efforts and voluntary self-regulation. It is difficult however to gauge the level of implementation of these kinds of initiatives in the CLME+ region within the scope of this assignment.

### 3.4 Adaptive management

It was difficult within the scope of this study to ascertain clear indicators of adaptive management. Most legal instruments clearly outline that plans and strategies should be regularly reviewed and updated with the input of all relevant stakeholders. The framework nature of legislation did not lend itself to assessing the modalities for fisheries management monitoring and evaluation, or the frequency of strategic reviews. Some management plans and policies reviewed were either in draft or outdated. This could be simply what was readily available for online desktop review, or indicative of a need for increased nimbleness in the policy and planning cycles across the CLME+ region (including authorizing final documents).

Most legal fisheries and other marine resources-related instruments state that plans should be reviewed periodically and updated if necessary. However, the status of review and update is difficult to find for many countries. Regarding long-term considerations in legal instruments, climate change prevention, risk and adaptation measures are being included in updated instruments given the region's vulnerability to hydro-meteorological hazards and climate risks.

For the Nature Policy Plan (2013-2017) for the Caribbean Netherlands, an investigation was made to determine the effectiveness of its policy objectives and actions for 2000-2010. Limitations in terms of capacity, funding and political support were identified as the major challenges for implementation as well as factoring in new threats such as climate change and hurricanes which were incorporated into the 2013-2017 plan. Status of the update of the plan for the next five-year period (2018 - 2023) was not found.

The EU ORs Strategy states that it considers ORs needs and fostering policies that better suit their situation. Within the sustainable blue economy framework, climate change adaptation and disaster risk management including preparedness for extreme weather events as a new policy area for climate change adaptation under the 2018-2020 work programme of the strategy are being done.

The French Strategy for the creation and management of marine protected areas includes adaptive management as one of its' strategic areas through monitoring and assessing management. However, successful case study examples of the level of implementation and uptake are lacking.

Within the French Caribbean, through the BEST Initiative - the Voluntary Scheme for Biodiversity and Ecosystem Services in Territories of European Overseas<sup>31</sup>, there have been projects aimed at climate change adaptation as well as including components on monitoring and evaluation.

Through an FAO agro-environmental policy project in Brazil, Colombia, Mexico and Nicaragua (initial stage); and Costa Rica, Cuba, Panama (2nd stage), climate change adaptation as well as inclusive monitoring and analysis are included. The voluntary fisheries guidelines include guiding principles

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<sup>31</sup> BEST Initiative, European Commission, 2014.

including precautionary principle, social participation, gender, rural youth inclusion, ecosystem approach and adaptive management.

In OSPESCA's Fisheries and aquaculture integration policy (2015-2025)<sup>32</sup>, follow up implementation was conducted by a steering committee with the plan being updated based on the major challenges in the 2005-2015 period.

Several CARICOM examples exist such as 3 to 5-year sector planning cycles in Guyana, 10-year planning cycles for special fisheries conservation areas in Jamaica, and 10-year strategic planning in Saint Lucia. Likewise, flexibility and adaptive management within species management is already well established. Periodic stock assessments to inform catch quotas or closed seasons is one such example where changing conditions and management effectiveness requires periodic assessment and adjustment.

Regarding long-term considerations such as climate change, the CARICOM region has had various levels of intervention to support mainstreaming climate change issues in fisheries, including the current Climate Change Adaptation for Eastern Caribbean Fisheries Project (CC4FISH) and support in various forms from the Caribbean Community Climate Change Centre (CCCCC).

Another consideration of adaptive management and flexibility is the extent to which local communities/fisherfolk groups contribute to monitoring and knowledge-building in fisheries. No doubt their input is valued but the inclusion on codified and established pathways in policies and plans to harness local knowledge for adaptive management was worth exploring. There was little evidence of specific guidelines and procedures for validating and incorporating local knowledge (Figure ), however it is noted that other mechanisms such as the use of fisheries extension officers, and the policy input avenues previously discussed are all means of harnessing local knowledge.

### 3.5 Whole-system Management

An ecosystem approach to fisheries management necessitates a holistic outlook transitioning away from strictly commodity management. The notion of commodities management vs systems management is an encapsulation of all the elements explored previously. The culmination of ecological considerations, cumulative impact management, empowering stakeholder inclusion, and managing with gender and youth considerations all result in adding social and ecological complexity to the resource management regime. In this way, the ecosystem approach allows for a broader view to appreciate the complexities and manage accordingly. A common way this approach manifests in practice is the approach of ecosystem services valuation and prioritization as a means for improving area-based management tools such as MMAs and marine zoning plans. Coastal and marine habitats are often managed through the use of MPAs while taking into consideration services such as food, tourism and recreation as well as hazards. In addition, some of the projects set up within the region serve as pilots for achieving whole system management and contribute towards EBM.

Notably, the Dutch Caribbean Nature Policy Plan (2013-2017) was designed as an instrument to promote socio-economic and human wellbeing and encourage the integration of nature conservation in the various

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<sup>32</sup> Política de integración de pesca y acuicultura, OSPESCA, 2015.

public and socio-economic sectors, getting nature conservation into the mainstream of society. This plan is an example of one that prioritizes conservation nationally and appears to be working towards whole system management.

Through the BEST projects in the French Caribbean, there has been support to activities such as designation and management of terrestrial and marine protected areas, participative approach and integrated approach of ecosystem management, combating invasive alien species, valuing ecosystem services, creating synergies using ecosystem services for climate change adaptation and mitigation, endangered species protection, as well as networking, education, capacity building and outreach activities. This initiative appears to encompass whole system management placing focus on ecosystem management and could serve as a success case study to follow.

In the Dominican Republic, a global organization, Counterpart International is supporting coastal community livelihoods while improving climate resiliency and protecting marine resources through their active Fisheries and Marine Conservation 2015-2018 and Coastal Community Resilience projects. Although these projects do not form part of environmental policy instruments, it appears as though they contribute positively to supporting the implementation of EBM.

As a nation with Caribbean and Pacific coasts, Costa Rica faces both additional challenges and opportunities in managing its' natural resources in a more sustainable manner. Over the past 5 years, the country has made great progress in integrated management of more than two sectors, for example nature tourism and fisheries within their strengthened marine protected area network; managing groups of species within a medium-term perspective as well as looking towards management at a regional level.

Several initiatives have been undertaken in CARICOM and Associate Member States to identify and prioritize coastal and marine ecosystem services in a participatory way for the creation of zoning plans and MPA design. The Blue Halo Initiative supported by the Waitt Institute is one such example of support to the Governments of Montserrat, Antigua and Barbuda, and Curacao. A full suite of support services for marine sectors including fisheries is provided through this initiative. Both Belize and the Bahamas (Andros Island) implemented an ecosystem-based planning approach using ecosystem services valuation for formulation of ICZM plans and development plans respectively. In all these instances food provisioning, tourism and storm protection services of marine ecosystems featured as services of critical importance to economies and local communities.

### 3.6 Gender and Youth

Mainstreaming gender in fisheries is continuously gaining recognition throughout the region as more countries realize the crucial role women play in the marine environment and fisheries economies.<sup>33</sup> This section provides an overview of initiatives at the regional and national level that promote gender and youth mainstreaming in EAF/EBM.

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<sup>33</sup> GIFT. 2018. Gender Scoping Preliminary Report: Caribbean Fisheries in the Context of the Small-scale fisheries guidelines. Gender in Fisheries Team (GIFT), Centre for Resource Management and Environmental Studies (CERMES), The University of the West Indies, Cave Hill Campus, Barbados. CERMES Technical Report No. 86:60pp.

The 2012 Diagnostic Study to determine poverty levels in CARICOM fishing communities, undertaken by the CRFM, recommended strengthening the participation of unemployed women in the sector to alleviate poverty and reduce vulnerability.<sup>34</sup> This recommendation speaks to the opportunities that exist in the fisheries sector and potential for expansion, particularly in value-added postharvest activities.

At the national level, some countries are making progress in promoting gender equality and youth participation in the fisheries sector. In the Bahamas, the National Development Plan Secretariat has mainstreamed gender into the strategies and action steps of the National Development Plan by offering gender related solutions to correct imbalances that women, men, girls and boys face. Within this plan, actions are outlined to achieve gender equality and reduce gender based violence in the Bahamas. Training programmes on gender mainstreaming developed and launched within governmental bodies, private sector and civil society organisations are also suggested along with plans to strengthen representation of women in all decision-making levels.

For years the role of women in fisheries was undervalued placing fisherwomen at a disadvantage. In Brazil; women were not formally recognised as workers in the fishing industry, which was considered a male activity until the 1988 Constitution. It was only in 1988 that a presidential act abolished the prohibition on female labour in fisheries.<sup>35</sup> Other milestones which helped with the mobilization of Brazilian women came with the creation of the National Articulation of Women Fishermen 2006. This helped to broaden the concept of fisherfolk and allowed women's activities such as net mending, fish processing and others were considered as work.<sup>36</sup> Integrating the gender approach into national fishing law resulted in women's right to access compensation policies such as the Unemployment Insurance Scheme for Artisanal Fisherfolk.

The Government of Dominica has put in place a 'National Policy and Action Plan for Gender Equity and Equality in the Commonwealth of Dominica 2006'. The policy is guided by the Government's recognition that gender equality is a fundamental aspect of human development, and national development. The 2006 plan was followed by a draft Updated National Gender Policy and Action Plan 2014-2024 which puts forward policy measures and actions to address the gender-related disadvantages that women continue to face, as well as male gender gaps and vulnerabilities.

Gender equality is also a major national development objective for Dominica within the National Resilience Development Strategy (NRDS). The NRDS is a broad framework which provides the road map and guidelines for taking the country to where it ought to be by 2030. One objective under the NRDS is mainstreaming gender by creating an institutional framework for gender equality through well-

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<sup>34</sup> CRFM. 2012. Diagnostic Study to Determine Poverty Levels in CARICOM Fishing Communities - Policy Document. CRFM Technical & Advisory Document, Number 2012 / 3, Volume II. 25p.

<sup>35</sup> Salas, S., Chuenpagdee, R., Charles, A., & Seijo, J. 2010. Coastal fisheries of Latin America and the Caribbean. FAO Fisheries and Aquaculture Technical Paper. No. 544. Rome, FAO. 430 pp. <http://www.fao.org/3/a-i1926e.pdf>

<sup>36</sup> Alonso-Población, E. and Siar, Susana V. 2018. Women's participation and leadership in fisherfolk organizations and collective action in fisheries: a review of evidence on enablers, drivers and barriers. FAO Fisheries and Aquaculture Circular No. 1159. Rome, FAO.



established legislation, policy, strategy and action plan. Most mainstreaming statements are not sector specific.

Although gender was not mainstreamed in any of the fisheries policies examined, some policy statements spoke towards greater involvement of women and fisheries. For example, Dominica's fourth medium-term Growth and Social Protection Strategy (GSPS) 2014 – 2018 seeks to encourage the involvement of women and youth in the fisheries sector as part of their medium-term strategic framework for sustainable development over the next five years.

Goal six of Grenada's national strategic development plan seeks to develop and implement a gender policy and mainstream gender in national development. Other initiatives include the development of an awareness and development plan that supports the expansion of opportunities for women's participation and employment through education.<sup>37</sup>

In addition to the aforementioned policies, awareness on gender in fisheries has been facilitated through workshops and learning exchanges. In 2018, a fisheries learning exchange took place between Costa Rica, Barbados, St. Kitts, Grenada and Belize. This exchange was aimed at strengthening the capacities of fisherwomen from different Caribbean countries who expressed interest in learning about Costa Rican experiences, and at the same time wanted to contribute their knowledge of small-scale (artisanal) fisheries value chains. This learning exchange highlighted the major role fisherwomen play in the post-harvest sector and opportunities for increased participation in fishing cooperatives. Fisherwomen in Costa Rica play a lead role in the CoopeTárcoles R.L cooperative and use their traditional knowledge to help strengthen the sector<sup>35</sup>. In previous years, to become a member of the cooperative individuals were required to own a boat. Since many women did not own boats they were excluded. However, the General Assembly held on 11 November 1989 changed things for the better, people without boats such as women who untangle the nets and administrators have been granted membership. Although the bylaws were not modified to mainstream gender, the outcome helped to mobilize women and they have been accepted as members since 1989.

Projects designed to give communities a role in the management of their resources have also inadvertently increased the involvement of women in fisheries. By leveraging the government-created Extractive Reserves' (RESEXs) legal structure and working with government, local fishers' organizations, and communities, Rare's Fish Forever program in Brazil has 1) established community-led governance and authority over artisanal fisheries; 2) designated managed-access fishing areas, combined with no-take reserves; and 3) improved participation of fishers and community members in fisheries management and decision-making. In Brazil's Marine RESEX of Baía do Iguape, women from the community are heads of single headed households and play a major role in farming and harvesting shellfish from the mangroves.

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<sup>37</sup> CoopeSolidar, CNFO and CERMES. 2018. Caribbean women small-scale fisheries learning exchange with Costa Rica. Centre for Resource Management and Environmental Studies, The University of the West Indies, Cave Hill Campus, Barbados. CERMES Technical Report No.89. 21 pp.

By improving the livelihoods of women and their ability to provide for their families this project has helped to empower women and build community pride.<sup>38</sup>

Commendable efforts have been made towards gender mainstreaming, however there is still a lot of work to be done. As gender mainstreaming in fisheries continues to advance throughout the region, more examples of increased women involvement and empowerment need to be highlighted. The Gender in Fisheries Team (GIFT) established at UWI-CERMES strives to understand and assist with policy and practice concerning gender in Caribbean small-scale fisheries and can play a key role in documenting these advances and sharing lessons learned. Research into the issues faced by men and women in fisheries is essential to address gender gaps and to improve gender mainstreaming.

There is little evidence of youth mainstreaming within the reviewed legislation, policies and plans of countries in the CLME+ region. Although the long-term viability of the fisheries sector depends on promoting youth and establishing policies that facilitate their participation<sup>39</sup>, youth involvement in fisheries appears to be minimal. The existing gaps in policies made it difficult within the scope of this study to clearly identify youth participation within fisheries. Fisheries curricula in education were beyond the scope of this desk study.

Several national development plans aim to identify youth at risk for violence and prioritizes youth safety, but no specific plans to further engage youth in fisheries and maritime sectors were outlined. Guyana's Shell Beach Protected Area Management Plan 2015 takes youth education into consideration and strives to build awareness of the management plan and its benefits however youth involvement in execution of the plan was not highlighted. In Costa Rica, the improvement in local fisheries sustainability has attracted young fishers<sup>40</sup>. However, a major challenge remains in promoting collective organisation among youth, developing their leadership and creating space for youth within the CoopeTárcoles R.L cooperative.

Despite the absence of youth focused plans in fisheries policies and plans, several non-profit organizations provide opportunities for youth to become more involved in fisheries and other ocean related topics. At the international level, the Ocean and Climate Youth Ambassadors Programme<sup>41</sup> was launched at the United Nations Ocean Conference in 2017 and recognised by the COP23 Presidency Secretariat as an Endorsed Event of COP23 in the same year. The programme brings youth leaders from countries which are members of the Alliance of Small Island States (AOSIS) to travel onboard a Peace Boat's ship, engaging in capacity building and delivering presentations to citizens and government representatives through the voyage. Both the first and second edition saw participation from youth leaders in the Caribbean.

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<sup>38</sup> Blakely, J. 2017. Fish Forever in Brazil: Solutions for community-based fisheries management. Accessed from <https://panorama.solutions/en/solution/fish-forever-brazil-solution-community-based-fisheries-management>

<sup>39</sup> FAO. 2018. Leaving no one behind: How blue growth can benefit women, youth, indigenous groups and migrants. <http://www.fao.org/3/CA0274EN/ca0274en.pdf>

<sup>40</sup> Rivera, V.S., Cordero, P.M., Rojas, D.C. *et al.* Institutions and collective action in a Costa Rican small-scale fisheries cooperative: the case of CoopeTárcoles R.L. *Maritime Studies* 16, 22 (2017). <https://doi.org/10.1186/s40152-017-0077-1>

<sup>41</sup> The Ocean and Climate Youth Ambassadors Programme Website: <https://peaceboat.org/english/project/ocyp>

Representatives from Trinidad and Tobago and Belize participated in the first edition in 2017, while Barbados participated in the 2nd edition in 2018.

At the regional level, the Caribbean Youth Environment Network (CYEN) gives young individuals the opportunity to engage in fisheries. In 2019, CYEN Barbados attended a workshop on fish silage where they learnt about reducing waste and creating opportunities using fish by-products for animal feed and fertilizer. Across their 20 member states, CYEN continues to be involved in fisheries and climate change topics and take part in several outreach initiatives to educate and raise awareness among the youth. Similarly, stronger connections with youth and fisheries can be made within the CARICOM Youth Ambassador Programme (CYAP) and the Model United Nations (MUN) program. In 2019, the MUN in Barbados focused on exploring opportunities in the blue economy. Participants assumed the role of national ambassadors and articulated their views on the blue economy at the Grand Finale<sup>42</sup>.

Other initiatives which strive to engage youth on ocean and fisheries related topics include the 'Fish 'N Fins' club<sup>43</sup> in Montserrat and Barbuda. Fish 'N Fins is AQUA Montserrat's non-profit ocean club which engages young children in ocean focused activities that outline the importance of the ocean to global communities and identify threats to the marine environment. The Blue Halo initiative collaborated with AQUA Montserrat in 2016 to replicate the Fish 'N Fins camp in Barbuda. This gave students the opportunity to explore Barbuda's marine environment through ocean themed activities, lessons and field trips. Programmes like the Fish 'N Fins can help to foster stewardship for the marine environment in young minds who have the potential to become leaders in fisheries and ocean conservation.

There is an urgent need for greater involvement of youth within fisheries in the Wider Caribbean Region. Networks such as CYEN, MUN and CYAP should be used to educate and attract youth to the fisheries sector. This should be accompanied by opportunities that provide practical experience and blue growth policies that not only facilitate youth involvement but also fosters innovation. Providing platforms which allow youth to create solutions to the problems faced by fisheries while adopting new technologies and techniques can increase the resilience and sustainability of the sector.

## 4.0 Discussion

The CLME + states and territories reviewed using the EBM implementation spectrum reveal that marine resource management is mostly at the incremental level on the EBM spectrum (Appendix 3). Despite limited evidence of national mainstreamed EBM approaches in fisheries management, a suite of factors offers strengths and opportunities to catalyse the transition:

1. Legal frameworks are established in most instances as the basis for a transition to EBM. Most legislation speaks to the formulation of management plans, strategies and policies in a participatory way and kept under periodic review. Likewise, Fisheries Acts as well as other legal instruments including national policies and plans give the legal basis for implementation of area-based management tools such as MPAs and MSP.

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<sup>42</sup> Rotary in Barbados MUN Facebook page: <https://www.facebook.com/914553221970657/videos/394493174446081/>

<sup>43</sup> AQUA Montserrat Fish n Fins Club Website: <https://www.aquafishnfins.com>

2. Support has been available through various projects and initiatives for the review of legal and policy instruments with the view of modernizing and mainstreaming contemporary approaches such as EBM and Climate Change.
3. Several countries in the region have been in the process of establishing or improving their ICZM regimes.
4. Several countries are pursuing integrated ocean economies with ecosystem-based approaches which will help foster inter-sectoral collaboration.
5. There have been several pilot approaches in EBM, co-management, ecosystem services valuation and zoning, which have provided useful learning lessons in order to scale up to a national and regional level.
6. The concept of blue economy has been highlighted and the need to promote the sustainable use of ocean resources to support economic growth.

We found that an apparent difference between the CARICOM and non-English speaking countries within the CLME + region is the major role that NGOs in non-English speaking countries play in decision-making and influencing national EAF/EBM legislation and policies. This is evident in cases where protected area management is being led by NGOs as in the case of the BES islands, Dutch and French overseas territories.

Based on our desk study, many requirements have to be met if EBM/EAF is to be successfully implemented within the CLME + region. These include but are not limited to:

1. National intersectoral coordination mechanisms (NICs) clearly used for policy cycles within multi-level governance;
2. Active Fisheries Advisory Committees with multi-sectoral representation particularly to advance EAF with other agencies;
3. Updated fisheries management plans that integrate EAF, CCA and DRM and also use FACs and link to NICs for decisions;
4. National Climate Change Communications that address impacts on fisheries and offer both mitigative and adaptive measures;
5. Development of ICZM mechanisms to support holistic coastal resource management with benefits to nearshore fisheries;
6. Marine spatial planning for managing cumulative impacts of multiple activities from several sectors on ecosystem services;
7. Capacity building initiatives in support of EBM/EAF that mainstream rather than marginalise issues related to gender and youth;
8. Progress required to address legislative and policy gaps, including implementation gaps, particularly regarding functioning NICs;
9. Multi-ecosystem MPAs, networks of MPAs, or marine managed areas to accommodate ecological linkages of ecosystems; and
10. Initiatives aimed at strengthening cooperatives and NGOs for community planning and representation at decision-making level.

Within CARICOM, Belize and Saint Kitts and Nevis are worth highlighting for their advancement in fisheries management and ICZM as it relates to their management instruments. Belize has established an Ecosystem Management Unit (EMU) in its Fisheries Department to support the implementation of

ecosystem approaches to fisheries and conservation efforts. The positioning of the department in the Ministry also responsible for Environment and Sustainable Development is also quite telling about its fisheries approach. The establishment of the CZM Advisory Council, managed access fisheries zones, network of MPAs with inclusive management committees, and ecosystem services modelling to inform marine planning all point to a transition to comprehensive EBM fisheries management.

Likewise, the Saint Kitts and Nevis ecosystem-based fisheries reform process is worth a deeper examination to share the experiences and challenges regionally. Apart from updated fisheries legislation and fisheries institutions, one notable implementation feature is participatory marine zoning plan<sup>44</sup> where natural assets, services and conflicts were mapped to aid in developing the zoning plan. A key to success of this process was its delivery within a project context with dedicated financing and coordination so as not to place the burden on operational resources of agencies<sup>17</sup>. A steering committee was established to manage and drive participatory and comprehensive stakeholder engagement. Many methods were used to craft strategic objectives and visions for the zoning plan including informal interviews and facilitated workshops. Subsequently, participatory and scientific mapping of coastal/marine assets and resources uses in spatial context was conducted to facilitate a process of prioritization and tradeoffs. Fishers mapped activities according to ecosystem types (deep slope, coastal demersal etc.) as well as important individual species like lobster. Data collected fed into several decision support tools to develop a participatory zoning plan for the country<sup>17</sup>.

Another noteworthy initiative is the Eastern Caribbean Regional Ocean Policy (ECROP) and strategic action plan which was endorsed by the OECS Heads of Government in 2013. The ECROP informs the establishment of mechanisms and frameworks necessary for implementing an integrated Ocean Governance programme in the OECS. This policy aims to promote and guide the future sustainable use and development of the region's marine waters and resources. The policy document provides an outline of the key threats and challenges faced by policy makers and managers; the basis for such a national policy; a future Vision for the ocean; and a suggested set of principles, and goals for ocean governance in the Eastern Caribbean Region<sup>45</sup>

Upon examination of the status of relevant fisheries and environmental policy/regulations and legislation in terms of their compatibility with and support for EBM/EAF, the countries within the Dutch Caribbean can be categorized as having some elements of incremental EBM. Incremental EBM was defined as: managing groups of species, having integrated management of two sectors to avoid user conflicts, coordinated management at local and state levels, medium term perspective management and managing activities with commodities in mind. More specifically, using Bonaire as a fairly representative example for the Dutch Caribbean, there is management of groups of species through effective marine parks and sanctuaries as well as integrated management of more than one sector. Through collaboration between

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<sup>44</sup> Agostini, V. N., S. M. Margles, S. R. Schill, J. E. Knowles, and R. J. Blyther. 2010. Marine Zoning in Saint Kitts and Nevis: A Path Towards Sustainable Management of Marine Resources. The Nature Conservancy.

<sup>45</sup> Organisation of Eastern Caribbean States (OECS). 2013. Eastern Caribbean Regional Ocean Policy. Castries, St. Lucia: The OECS Secretariat.

a diversity of stakeholders such as fishers and divers as is shown in the management of the Bonaire National Marine Park, there have been efforts to avoid user conflicts and to coordinate management at local and state levels. With a very destructive 2017 hurricane season, the country has begun to look forward to medium term planning management, managing activities with climate change adaptation and risk resilience in mind.

For the French Caribbean countries within the CLME + region, there is a need for a stronger and renewed strategic partnership with the EU's outermost regions. In addition, adaptation of EU regulation to the specifics of the French island territories will make provision for better management.

Overall in the OSPESCA countries, there has been a commitment to some level of implementation of the EBM/EAF approach. For example, within the Caribbean spiny lobster fisheries, there are many projects that have been implemented that contain some of the principles of EBM such as the Marine Stewardship Council Certification in the Sian Ka'an Biosphere Reserve in Mexico. There has also been good progress on developing regional management strategies/plans for queen conch and lionfish. Work on queen conch has been led by the CFMC/OSPECA/WECAFC/CRFM working group. However, this is not reflective of each country at a national level. Further collaboration and regional management between the countries of the Mesoamerican reef system is needed.

For many of the Central American countries as well as Brazil, there appears to be effective management measures, marine conservation projects as well as monitoring and evaluation which contribute to these countries being well on their way to an important part of EBM - adaptive management.

In summary for all of the non-English-speaking countries within the CLME + region, there are examples that show that most fisheries mechanisms are at the level of low or incremental level on the EBM spectrum. Countries are practicing some elements of EBM through specific projects but for countries on a whole, there is still need for greater understanding of the approach as well as strengthened implementation and uptake by the relevant stakeholders and entities.

Following the exploration of the immediately available document inventory there could be a more comprehensive participatory review that engages national stakeholders in validating findings. Regional organisations such as the Caribbean Regional Fisheries Mechanism (CRFM) and the Organisation of Eastern Caribbean States (OECS) Commission should encourage member states to monitor and evaluate the implementation of EAF at local and national levels to offer insight about the interventions needed at regional and international levels.

Further data collection and analysis linked closely to CLME+ monitoring and evaluation (M&E) and status of the region reporting can be aimed at producing graphic and dashboard visualisations of the status and trends of EBM/EAF. CLME+ SAP monitoring, and both the ecological system and social system limbs of the Governance Effectiveness Assessment Framework (GEAF) will benefit from the EBM/EAF inventory. Once the above processes with their methods and indicators are finalised it will be feasible to continue the inventorying with specific outputs pre-determined. This is critical since the subject has a wide scope.

#### 4.1 Summary

Evidence suggests that there have been strides in the CLME+ region to implement EBM/EAF with the advent of new initiatives in the Caribbean. Most countries assessed are making incremental progress on

the implementation of EBM/EAF with the exception of Belize, Bonaire, Jamaica, and Saint Kitts and Nevis where comprehensive EBM/EAF is demonstrated. Success stories from these countries should be shared to provide practical guidance for implementation. Several barriers need to be overcome before successful implementation can be achieved. Creating the enabling environment for knowledge sharing and learning can support and sustain these efforts. This will contribute to achieving one of the project's objective which aims to capture and disseminate best practices and lessons learnt, for the replication and up-scaling of the EBM/EAF approach within and beyond the CLME+ region. All things considered, the implementation of EBM/EAF has to be 'evolutionary' to yield successful outcomes, going beyond conventional practices and finding creative ways to handle complexity.

## 4.2 Recommended next steps

Sustaining an EBM/EAF inventory for the CLME+ region with relatively current dashboard analyses of status and trends will only be feasible if there is a significant shift towards information sharing by countries and regional organisations. This would preferably use open data standards so that machine-readable online data harvesting replaces substantial human resource efforts at data collection. Based on current lack of progress towards open data this will be a medium to long term quest that engages only the more innovative countries and organisations.

In the short-term we propose the validation of the results at upcoming CLME+ project steering committee meetings before being published on the project's website. This offers the opportunity for partners such as CRFM, OSPESCA, WECAFC and UN-Environment to contribute to the ratings. After being published, the inventory may benefit from the integration of a Really Simple Syndication (RSS) feed crawler programmed to search for keywords and phrases that will provide alerts for new initiatives that promote EBM/EAF. These alerts can facilitate frequent updates to the inventory to be validated by an administrator. Alternatively, a self-assessment form may be provided for completion by national focal points to be updated every quarter. This validation process should prove beneficial in strengthening confidence regarding accuracy of reporting the level of EBM/EAF attained at the national level. It should reduce the administrative burden of countries and organisations reporting to multiple global assessments and goals.

The CLME+ Project Steering Committee may wish to consider the best way to reduce the risks, including progressing with partial EBM/EAF data and information in the absence of some countries signatory to the SAP actually activating their in-kind commitments.

## 5.0 Appendices

### 5.1 Appendix 1: Country EBM/EAF Implementation Status

Table A2: Countries and Territories in the CLME+ were scrutinized against the elements of EBM implementation (UNEP 2011) as it relates to fisheries and other marine resources instruments and initiatives (2018 assessment). Findings presented using spotlight indicator rating (red=low, yellow= incremental, and green= comprehensive EBM implementation)

	Species Management	Intersectoral Integration	Appropriate levels of governance	Adaptive Management	Whole-system Management	Overall Assessment		Species Management	Intersectoral Integration	Appropriate levels of governance	Adaptive Management	Whole-system Management	Overall Assessment		Species Management	Intersectoral Integration	Appropriate levels of governance	Adaptive Management	Whole-system Management	Overall Assessment
Antigua and Barbuda	Red	Yellow	Green	Yellow	Yellow	Yellow	Trinidad and Tobago	Yellow	Yellow	Yellow	Red	Red	Red	St. Barthelemy	Red	Yellow	Red	Red	Red	Red
The Bahamas	Yellow	Yellow	Green	Yellow	Yellow	Yellow	Anguilla	Red	Red	Red	Red	Red	Red	French Guiana	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Barbados	Red	Red	Green	Red	Yellow	Red	Bermuda	Red	Red	Red	Red	Red	Red	Brazil	Yellow	Yellow	Green	Yellow	Yellow	Yellow
Belize	Green	Green	Green	Green	Green	Green	British Virgin Islands	Yellow	Red	Red	Red	Yellow	Red	Colombia	Yellow	Yellow	Green	Yellow	Yellow	Yellow
Dominica	Yellow	Red	Green	Yellow	Red	Yellow	Cayman Islands	Red	Red	Red	Red	Yellow	Red	Costa Rica	Yellow	Yellow	Green	Green	Yellow	Yellow
Grenada	Green	Yellow	Green	Yellow	Yellow	Yellow	Turks and Caicos	Red	Red	Red	Red	Red	Red	Guatemala	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Guyana	Red	Yellow	Red	Red	Red	Red	Bonaire	Green	Yellow	Green	Yellow	Yellow	Yellow	Honduras	Red	Yellow	Yellow	Yellow	Red	Yellow
Haiti	Red	Red	Red	Red	Red	Red	St. Eustatius	Green	Yellow	Green	Yellow	Yellow	Yellow	Mexico	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Jamaica	Green	Yellow	Yellow	Yellow	Yellow	Yellow	Saba	Green	Yellow	Green	Yellow	Yellow	Yellow	Nicaragua	Red	Yellow	Yellow	Yellow	Red	Yellow
Montserrat	Green	Yellow	Green	Yellow	Yellow	Yellow	Aruba	Yellow	Yellow	Yellow	Yellow	Red	Yellow	Panama	Yellow	Yellow	Yellow	Yellow	Red	Yellow
St. Kitts and Nevis	Green	Green	Green	Yellow	Yellow	Green	Curacao	Yellow	Yellow	Yellow	Yellow	Red	Yellow	Venezuela	Red	Yellow	Yellow	Yellow	Red	Yellow
St. Lucia	Yellow	Red	Green	Yellow	Red	Yellow	St. Maarten	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Cuba	Yellow	Yellow	Green	Green	Yellow	Yellow
St. Vincent and The Grenadines	Yellow	Yellow	Green	Red	Red	Yellow	Guadeloupe	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Dominican Republic	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Suriname	Red	Yellow	Yellow	Red	Red	Red	Martinique	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow							



**Table A3: Countries and Territories in the CLME+ were scrutinized against the elements of EBM implementation (UNEP 2011) as it relates to fisheries and other marine resources instruments and initiatives (2020 update). Findings presented using stoplight indicator rating (red=low, yellow= incremental, and green= comprehensive EBM implementation)**

	Species Management	Intersectoral Integration	Appropriate levels of governance	Adaptive Management	Whole-system Management	Overall Assessment		Species Management	Intersectoral Integration	Appropriate levels of governance	Adaptive Management	Whole-system Management	Overall Assessment		Species Management	Intersectoral Integration	Appropriate levels of governance	Adaptive Management	Whole-system Management	Overall Assessment	
Antigua and Barbuda							Trinidad and Tobago							St. Barthelemy							
The Bahamas							Anguilla							French Guiana							
Barbados							British Virgin Islands							Brazil							
Belize							Cayman Islands							Colombia							
Dominica							Turks and Caicos							Costa Rica							
Grenada							Bonaire							Guatemala							
Guyana							St. Eustatius							Honduras							
Haiti							Saba							Mexico							
Jamaica							Aruba							Nicaragua							
Montserrat							Curacao							Panama							
St. Kitts and Nevis							St. Maarten							Venezuela							
St. Lucia							Guadeloupe							Cuba							
St. Vincent and The Grenadines							Martinique							Dominican Republic							
Suriname																					

## 5.2 Appendix 2: EBM/EAF implementation checklist

A suite of questions was developed into a checklist to aid in examining broad EBM approaches in marine resources management and more specifically its principles as it relates to fisheries management in the CLME region. The questions are based on the elements of EBM implementation presented in UNEP (2011)

### **Species management vs ecosystem management:**

1. Are guiding principles such as EBM, precautionary approach or ridge-to-reef concepts deliberately articulated in national fisheries Act/policy/development strategy?
2. Fisheries Act/policy/plan outline management measures at ecosystem level?
3. Fisheries Act/strategy/plan makes provision for fisheries research on ecology and life cycle of target species?
4. Fisheries Act/strategy/Plan makes provision for the establishment and management of conservation areas?

### **Sector Integration:**

5. Fisheries advisory body established with representation from other sectors (e.g. tourism, environment, energy, welfare etc.)

### **Scale of fisheries governance:**

6. Fisheries advisory body with NGO and/or Fisherfolk cooperative representation
7. Fisheries Act/strategy/plan makes provision for designation of Local Fisheries Management Areas with local management or co-management arrangements
8. Fisheries Act/strategy/plan promotes capacity development of cooperatives

### **Timescales/adaptive management:**

9. Fisheries stakeholders participated in national climate change adaptation planning processes
10. Routine environmental monitoring and analysis to support adaptive management
11. Include communities in environmental monitoring
12. Are policies/plans tested and revised in a dynamic process to facilitate learning?

### **Commodity vs Services Management:**

13. Are coastal/marine habitats managed (in MPAs or other tools) with all services considered? (food, recreation, culture, hazard protection etc.)

Coastal/marine ecosystem services valued and prioritized nationally

### 5.3 Appendix 3: Screenshot of the CLME+ EBM/EAF Inventory

1	COUNTRY	Species Management	Intersectoral Integration	Appropriate levels of governance	Adaptive Management	Whole-system Management	Overall assessment
2	<a href="#">Anguilla</a>	The fisheries act focuses on managing fishers and there is no mention of EBM/EAF, the designation of marine reserves or co-management (Fisheries Protection Act 2000). Single-species focus in Fisheries Development Plan 2015-2025.	There is a system of MPAs but no clear objectives, main beneficiaries are fisheries and tourism stakeholders (Marine Parks Management Plan 2001). Revised Regulations of 15 December 2010 includes in section 23 the reference to a Fisheries Advisory Committee to advise the Governor or the Minister on the exercise of their respective functions. To date, the FAC was never established.	No mention of local fisheries management areas (LFMAs) or promotion of cooperatives in fisheries act (Fisheries Protection Act 2000). Management of marine parks falls under the Department of Fisheries and Marine Resources (DFMR), DFMR assumes lead role and relies on input from other agencies and from stakeholders whose land fall within park boundaries (Adaptive Management Plan for Anguilla Marine Park System 2015-2025).	Climate change adaptation (CCA) for Fisheries project 2017-2020 by CANARI and Darwin project seeks to mainstream EAF and CCA considerations into an updated fisheries management plan. Long term perspectives observed with 10 year management plans for fisheries development and the marine park system management plan (Fisheries Development Plan 2015-2025; Adaptive Management Plan for Anguilla Marine Park System 2015-2025).	There are seven MPA established in Anguilla, 5 of which form the Anguilla Marine Park System, however no management plan has been adopted to ensure sustainable whole system management.	Low EBM: EBM/EAF concepts are not incorporated into management initiatives. There is a system of marine parks which could aid in whole system management however since development of the marine park management plan the Department of Fisheries and Marine Resources (DFMR) has assumed an ad hoc role in the management of these areas, working within the limited legislation as it currently stands (Adaptive Management Plan for Anguilla Marine Park System 2015-2025). Several barriers need to be overcome before successful implementation can be achieved.
3	<a href="#">Antigua and Barbuda</a>	Fisheries Act and regulations suggests species level fisheries management except for reef fisheries which group management of some target reef fish. Fisheries Act makes no mention of ecosystem approach to management although section VI provides for the designation of preservation areas (The Fisheries Act 2006). No recent Fisheries Management Plan or fisheries policy exist.	In the case of Barbuda, some initiatives to develop ocean zoning suggest coordinated, community-based, multi activity management through local council. However this appears to be in planning stages. Barbuda Fisheries Advisory Committee also sought to include a non-governmental tourism stakeholder in its membership (Barbuda Fisheries regulations 2014). There is an active Ocean Governance Committee chaired by H.E. Ambassador Dwight C. R. Gardiner (Commonwealth Marine Economies Programme, 2018). This committee was established as a recommendation under the Eastern Caribbean Regional Ocean Policy (ECROP).	Combination of national and local governance in case of Barbuda (Horsford and Lay 2012). Marine Ecosystem Protection Areas (MEPA) Trust established in 2015 to assist financing initiatives in protected areas for biodiversity, ecosystem services and local livelihoods (including fishing) and promoting community-level management (MEPA Trust 2016). The Eastern Caribbean Regional Ocean Policy (ECROP), approved in 2013, provides the framework for enhanced coordination and management of ocean resources within the Eastern Caribbean. It aims to guide the future sustainable use and development of the region's marine waters and resources (OECS 2013).	There is a new Environmental Protection and Management Act (2019) that outlines the need for protected areas. It also makes reference to the Physical Development Act 2003 and fisheries regulations. The Act also speaks towards building ecosystem resilience to the impacts of climate change however no planning cycles or timelines were observed in the reviewed documents. The Fisheries Development Plan (2006-2010) speaks to the development of management plans based on a co-management approach.	Legal provisions to implement options for area-based management exist. E.g. Codrington Lagoon National Park in Barbuda promotes preservation of the wetland along with its lobster and fisheries nurseries. There is a management plan for the The Northeast marine management area (NEMMA) dated 2008 that outlines a vision of "a self-financing, multiple use (yachting, fishing, tourism, conservation, recreation) protected area that maintains and enhances the natural beauty and unique biodiversity of the area, both terrestrial and marine, supported by an efficient legislative framework and ongoing awareness program". (NEMMA 2008)	Incremental EBM: A decent legal/institutional foundation to build an ecosystem approach upon (Environmental Law Institute 2014). Blue Halo Initiative, Codrington Lagoon National Park and a few other area-based measures are steps in the right direction, though multi-species fisheries management plans are still limited.
4	<a href="#">Aruba</a>	There is specific legislation that makes provisions for marine capture fisheries management activities at the national level, the regional/international level, (i.e. to facilitate fulfillment of member-country obligations to regional/international agreements/conventions) and the local level. In particular, there are three instruments of legislation that relate to fisheries management: the 1992 LV Vissersijverordening (AB 1992 no. 116), which is the Fisheries Ordinance; the 1992 LB Sleepnetten (1992 no. GT 17),	The Dutch Caribbean Nature Policy Plan had to be developed in close cooperation with a range of stakeholders in the Dutch Caribbean. These included the Island Governments, nature conservation organizations (such as the Dutch Caribbean Nature Alliance), the business sector, the tourist sector, the Ministry of the Interior and Kingdom Relations, and the Ministry of Infrastructure and the Environment (Sabir et al. 2018).	The legislation provides both legal and administrative frameworks for governing the management process at the national, regional/international and local levels. The legislation also identifies a single authority for marine capture fisheries management at all levels. It appears that resource users, including fisherfolk are involved in management through decision making and planning within the Dutch Caribbean islands (Sabir et al. 2018).	For the Nature Policy Plan (2013-2017) for the Caribbean Netherlands, an investigation was made to determine the effectiveness of its policy objectives and actions for 2000-2010. Limitations in terms of capacity, funding and political support were identified as the major challenges for implementation as well as factoring in new threats such as climate change and hurricanes which were incorporated into the 2013-2017 plan. Status of the update of the plan for the next five-year period (2018 - 2023) was not found.	The Dutch Caribbean Nature Policy Plan (2013-2017) was designed as an instrument to promote socio-economic and human wellbeing and encourage the integration of nature conservation in the various public and socio-economic sectors, getting nature conservation into the mainstream of society. This plan is an example of one that prioritizes conservation nationally and appears to be working towards whole system management (Sabir et al 2018).	Incremental EBM: Regional policies support the implementation of EBM/EAF. At the national level, initiatives that are guided by regional policies are in progress. Effectiveness of the initiatives implemented needs to be determined.

Click on the image above to access the inventory.

### 5.3 Appendix 4: Map of the CLME+ Region highlighting indicator ratings

