Report of the Workshop on Mainstreaming Climate Change Adaptation (CCA), Disaster Risk Management (DRM) and Stewardship into Fisheries Governance and Management of Montserrat, using an Ecosystem Approach to Fisheries (EAF)

under the
Climate Change Adaptation in the Fisheries of Anguilla and Montserrat Project

28-31 January 2019
Conference Room, Montserrat Cultural Centre, Little Bay, Montserrat
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Suggested Citation

Disclaimer
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<tr>
<td>CANARI</td>
<td>Caribbean Natural Resources Institute</td>
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<tr>
<td>CCA</td>
<td>Climate Change Adaptation</td>
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<td>CERMES</td>
<td>Centre for Resource Management and Environmental Studies</td>
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<td>CDEMA</td>
<td>Caribbean Disaster and Emergency Management Agency</td>
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<td>CRFM</td>
<td>Caribbean Regional Fisheries Mechanism</td>
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<td>CSO</td>
<td>Civil Society Organisation</td>
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<td>DMCA</td>
<td>Disaster Management Coordination Agency</td>
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<td>DRM</td>
<td>Disaster Risk Management</td>
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<td>DRR</td>
<td>Disaster Risk Reduction</td>
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<td>EOC</td>
<td>Emergency Operating Centre</td>
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<td>EAF</td>
<td>Ecosystem Approach to Fisheries</td>
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<td>EBM</td>
<td>Ecosystem-based management</td>
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<td>EU</td>
<td>European Union</td>
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<td>FAC</td>
<td>Fisheries Advisory Committee</td>
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<td>FAD</td>
<td>Fisher Aggregation Devices</td>
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<td>FAO</td>
<td>Food and Agriculture Organisation</td>
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<td>FFO</td>
<td>Fisherfolk organisation</td>
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<td>FMP</td>
<td>Fisheries management plan</td>
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<tr>
<td>GIS</td>
<td>Geographic Information System</td>
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<td>GPS</td>
<td>Global Positioning System</td>
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<td>ICT</td>
<td>Information and Communication Technology</td>
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<td>JNCC</td>
<td>Joint Nature Conservation Committee</td>
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<td>MATHLE</td>
<td>Ministry of Agriculture, Trade, Housing, Lands and Environment</td>
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<td>OECS</td>
<td>Organisation of Eastern Caribbean States</td>
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<td>SDG</td>
<td>Sustainable Development Goals</td>
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<tr>
<td>SSF</td>
<td>Small-scale fisheries</td>
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<tr>
<td>TURF</td>
<td>Territorial Use Rights for Fishing</td>
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<td>UWI</td>
<td>University of the West Indies</td>
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1 INTRODUCTION

The two Caribbean overseas territories of the United Kingdom (UKOTs), Anguilla and Montserrat, have fisheries sectors that contribute to livelihoods and national food security. In both UKOTs, the fisheries sectors are vulnerable to the impacts of climate variability and change. Increased sea surface temperatures, more intense storms and rising sea levels are expected to trigger a complex series of biophysical and socioeconomic impacts on fisheries. Mainstreaming climate change adaptation (CCA) in their fisheries sector is therefore crucial. Needs assessments led by the United Kingdom Department for International Development in 2012 (DFID, 2012) have highlighted weak planning and low adaptive capacity for both islands.

The University of the West Indies Centre for Resource Management and Environmental Studies (UWI-CERMES) conducted the workshop on mainstreaming Climate Change Adaptation (CCA), Disaster Risk Management (DRM) and Stewardship into fisheries governance and management of Montserrat, using the Ecosystem Approach to Fisheries (EAF) in collaboration with the Caribbean Natural Resources Institute (CANARI). The workshop is an activity under the Climate Change Adaptation in the Fisheries of Anguilla and Montserrat Project. This project is being implemented by CANARI under its Climate Change and Disaster Risk Reduction programme, in partnership with the Department of Fisheries and Marine Resources - Anguilla, Fisheries and Ocean Resources Unit – Montserrat, and UWI-CERMES. The project is funded by the UK Government from the Darwin Plus: Overseas Territories Environment and Climate Fund under the Darwin Initiative.

This training workshop was designed using the methodology and guidance outlined in the Food and Agriculture Organization of the United Nations’ (FAO) "EAF Toolbox: The Ecosystem Approach to Fisheries" (See http://bit.ly/EAFToolbox).

2 OBJECTIVES

The overall goal of the workshop was to strengthen the capacity of key policy makers, resource managers and resource users who are directly or indirectly involved in Montserrat’s fisheries sector, to mainstream CCA, DRM and stewardship in fisheries governance and management using the FAO’s EAF Toolbox. The specific objectives of the EAF training workshop were to:

1. Facilitate knowledge exchange between the project partners and workshop participants on lessons learned from previous fisheries management planning and stewardship initiatives.
2. Demonstrate how EAF, CCA, DRM and stewardship can be practically incorporated into fisheries/marine management plans of different types in Montserrat, drawing upon existing capacity.
3. Strengthen the capacity of fisheries officers, fisherfolk leaders and other stakeholders in EAF, CCA, DRM and stewardship to improve climate resilience and livelihoods.
4. Determine next steps for enhancing and implementing fisheries/marine management plans and related initiatives that incorporate EAF, CCA, DRM and stewardship in Montserrat.
3 APPROACH

The workshop was conducted over a four-day period from January 28-31, 2019. Days 1-3 focused on EAF integration into fisheries plans and policies and day 4 focused on discussions and participatory planning for stewardship-oriented small grants (incorporating EAF, CCA and DRM) that were available to fisherfolk organisations under the project.

The workshop agenda (see attached at Appendix 1) was designed to engage all participants in sharing their insights, knowledge and experiences in fisheries management and to determine how EAF, CCA, DRM and stewardship can be further integrated into plans and practices. The design allowed participants to consider the application of specific steps, actions and tools that can be realistically used based on the guidance provided by the FAO EAF Toolbox. The format of sessions included plenary presentations and discussions followed by hands-on group work based on the activities outlined in the EAF Toolbox. Hard copies of the EAF Toolbox (six in total) book were provided to predetermined organisations for their use after the workshop.

4 PARTICIPANTS

Twenty-five participants attended the workshop across the four days including facilitators from CANARI and UWI-CERMES. Participants included fisherfolk, representatives of fisherfolk organisations, civil society organisations with an interest in marine conservation and livelihoods, the Fisheries Authority, and public-sector agencies with an interest in CCA, DRM and coastal and marine management. The full list of participants is attached at Appendix 2.

5 WELCOME, OBJECTIVES, EXPECTATIONS AND INTRODUCTIONS

Following participant registration and the noting of their expectations, the workshop had a brief opening with remarks from Ms. Neema Ramlogan, Technical Officer, CANARI, who welcomed participants to the workshop and introduced the CERMES EAF training facilitator, Mr. Kerton Jobe. She also provided a brief overview of the Climate Change Adaptation in the Fisheries of Anguilla and Montserrat Project (see the project brief).

Participants introduced themselves and shared their expectations at the beginning of the workshop before engaging in a fisheries-themed icebreaker to introduce themselves. Expectations listed by participants included:

- To learn how climate change affects the fishers of Montserrat.
- To see Montserrat’s Draft Fisheries Management Plan being implemented.
- Increased education for departments outside of fisheries.
6 SETTING THE SCENE
This section sets out in more detail several of the key concepts used in the workshop.

6.1 Key Concepts of CCA, DRM, EAF & stewardship and their connections
The concepts of climate change adaptation and disaster risk management were briefly explained to participants (see attached at Appendix 3). Participants were reminded of the differences between climate change and its impacts, and climate change adaptation. It was noted that although CCA and DRM are different, there is an increasing zone of convergence that must be considered in future fisheries management planning.

Mr. Jobe continued by showing how fisheries resources have been impacted over the past 5 decades and the observance by fisheries managers and society of the need to evolve from conventional methods of fisheries management to an ecosystem approach to fisheries management in order to enhance the sustainability of a given fishery. He briefly reviewed the concept of EAF and its acceptance as the way forward by means of legal, environmental and management agreements and initiatives. He then noted the importance of ecosystem stewardship and stated that fishers as well as their dependents need to take more ownership over the preservation, management and sustainable use of the fisheries resources they utilise (see attached at Appendix 4).

6.2 Sharing knowledge and experience of Fisheries Management Planning, and incorporating CCA and DRM
The main aim of this session was to facilitate knowledge exchange among the workshop participants on notable steps/trends taken towards Fisheries Management Planning, CCA and DRM. Participants were each given adhesive tags on which they wrote their names and how many years of work experience they

Figure 1: Participants and facilitators from the workshop on mainstreaming Climate Change Adaptation (CCA), Disaster Risk Management (DRM) and Stewardship into fisheries governance and management of Montserrat
had in the fisheries sector (or relevant field). The wall adjacent to the participants’ seating area was pre-tagged 1980s, 1990s, 2000s and 2010s, respectively, and also labelled to record decadal timelines for Fisheries Management Planning, CCA and DRM. Participants assembled alongside the wall based on the number of years they had worked in or been associated with the fisheries sector, forming decadal working groups. Then each group highlighted key events which occurred during their decade (Figure 2). Drawing upon the collective content, participants were then asked to note the top five most notable events in their fisheries since the 1980s. The five most notable events for each decade, as given by participants, are underlined in Table 1 below.

Figure 2: Participants engaged in posting key events to the timeline of FMPs, CCA and DRM in Montserrat

Table 1: Participants’ recollection of key events from the 1980s to present day regarding Fisheries Management Planning, CCA and DRM as well as the 5 most notable events for each decade (underlined).

<table>
<thead>
<tr>
<th>Decade</th>
<th>FMP</th>
<th>CCA</th>
<th>DRM</th>
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<tr>
<td>1980s</td>
<td>Fisheries Act CAP 9:01 drafted. Fishery Management Plan drawn up however fisherfolk were not informed and therefore had no knowledge of its contents. Fishing Restrictions Implemented: turtle seasons, trap mesh size, berried lobster and seine net mesh size.</td>
<td>MATLHE was established as the lead agency for climate change.</td>
<td>Inter-agency collaboration developed. Stabits were deployed to protect harbour from storm surge.</td>
</tr>
<tr>
<td>Decade</td>
<td>FMP</td>
<td>CCA</td>
<td>DRM</td>
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<tr>
<td>1990s</td>
<td>CRFM harmonized fisheries management plan development. Adjusted to reflect each island's unique situation. Fisheries legislation reviewed and updated. Moratorium on turtle catching established.</td>
<td>Montserrat Volcano Observatory established. Establishment of Emergency Operating Centre (EOC) now called the Disaster Management Coordination Agency (DMCA). National Disaster Preparedness Response Advisory Committee (NDPRAC) established. Broad-based decision-making body (Governor to village representatives). Center Hill demarcated. Farmers restricted to occupy anything above 1200 ft (Center Hills Protected Area Management Plan).</td>
<td>Hurricanes - village councils and emergency supplies. Volcano- zoned, signage placed, and outreach done. Severe flooding occurred.</td>
</tr>
<tr>
<td>Decade</td>
<td>FMP</td>
<td>CCA</td>
<td>DRM</td>
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Participants reflected on the timeline activity and shared the following comments:

- There is greater awareness is needed by fisherfolk about the contents of the draft fisheries management plan.
- There is increased legislation in fisheries management, CCA and DRR
- There is an increase in disaster related events can introduce invasive species e.g. invasive fire ants.
- There are Increases in the level of marine pollution.
- There are increase in weather events such as storms and hurricanes.

### 6.3 Looking forward: future of fisheries management in Montserrat

Mr. Alwyn Ponteen, Chief Fisheries and Oceans Governance Officer, Fisheries and Ocean Resources Unit, Ministry of Agriculture, Trade, Lands, Housing and Environment (MATLHE), presented on ‘Strengthening Stewardship in the Caribbean’ with particular reference to Montserrat and its fisheries management (see attached at Appendix 5). His presentation included: an overview of Montserrat, the ministries with responsibilities for contributing to ocean management implementation and monitoring in Montserrat, challenges, a case study of a 3-step approach to improving governance, management and sustainable utilisation of Montserrat’s ocean resources to achieve Sustainable Development Goals 14 targets; conclusion and recommendations, and a vision for the future. He also noted that the intention of the
Fisheries and Ocean Resources Unit is to formulate and implement a Fisheries Management Plan that encompasses all the fisheries utilized in Montserrat using the EAF approach that incorporates CCA, DRM and stewardship.

6.4 Reflections of EAF
Mr. Jobe presented on the sections of Montserrat’s Draft Fisheries Development Plan (Updated/Revised April 2006) that showed its overall goal and objectives (see extract attached at Appendix 6). The purpose of this activity was to show how the key principles of the EAF: (1) appropriate scale, (2) increased participation; (3) cooperation of and coordination; (4) good governance; (5) the use of the precautionary approach; (6) multiple objectives; and (7) adaptive management (previously presented in plenary) are reflected (or not) in the overall goal and objectives of Montserrat’s Draft Fisheries Management Plan. This is consistent with EAF building upon and enhancing conventional management and initiatives rather than having to start from scratch. These provisions are essential in guiding EAF integration and are applicable to each of the four steps of the EAF planning process.

7 EAF PLANNING PROCESS
Since the formulation of the Code of Conduct for Responsible Fisheries (1995), FAO has led the way in developing EAF management planning and implementation through a system that involves completing a series of steps (Figure 3) and activities that are consistent with the application of any risk management system.

The FAO’s EAF Toolbox (http://bit.ly/EAFToolbox) was designed to guide users through each of the four main EAF management planning steps and activities using simplified text and clear instructions. The EAF
Toolbox was used as a main resource in the workshop as a guide for the development of a comprehensive Fisheries Management Plan for the country of Montserrat. The activities found in the EAF Toolbox were assigned as group work for consideration by participants.

Figure 4: Participants engaged during group activity

The first and second days of the workshop comprised mainly working group sessions (example shown in Figure 4). Participants were arranged into three groups (Group 1, Group 2 and Group 3) each consisting of representatives from the government, civil society and private sector in order to complete each activity under the EAF planning process. A brief PowerPoint presentation of each of the four steps of the EAF planning process (see presentation attached at Appendix 7) was given before working group activities. Group guidance notes and handouts were also provided to aid participants during each activity. A plenary discussion was facilitated after the completion of each activity to allow participants to share experiences and give feedback on their learning from the exercise. The outputs of group exercises and main discussion points are shared in Sections 8-11 that follow.

7.1 Step 1 – Initiation and scope

<table>
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<th>ACTIVITY</th>
<th>GROUP WORK</th>
<th>KEY LEARNINGS</th>
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| **1.1 Initial process planning and stakeholder support** | Group 1 answered all ‘Relevant questions’ on page 11 of EAF Toolbox and conducted a Strength, Weaknesses, Opportunities and Threats (SWOT) analysis of integrating EAF including CCA, DRM and stewardship into Montserrat’s Draft Fishery Management Plan (FMP). | • The importance of timing when drafting the section of a FMP.  
• Constraints due to limited financial resources can hinder the formulation of an effective FMP.  
• The need for more workshops to build the capacity and competencies of all relevant stakeholders to effectively participate in fisheries management planning. |
| **1.2 Defining the fishery, societal values and high level objectives** | | |

This activity involved drafting a roadmap to guide the EAF process and determining the level of agency, stakeholder and government support available. The EAF Toolbox provided relevant questions, key actions and tools.
This activity was designed to have participants agree on the scope of the main fishery in their EAF and what community and environmental outcomes are to be achieved. The EAF Toolbox provided relevant questions, key actions and tools.

Group 2 was encouraged to answer all ‘Relevant questions’ on fishery scope and values of Anguilla’s small coastal pelagic FMP using page 16 of the EAF Toolbox.

- The need for training in Information and Communication Technology (ICT), Global Positioning System (GPS) etc. among artisanal fishers in an effort to further build their technical capacities as well as aid improving personal safety at sea.
- The observance of coverage by the European Union (EU), the United Kingdom (UK) and the Organisation of Eastern Caribbean States (OECS).

**1.3 Finalise the scoping and background document**

This activity was designed to document all relevant information on the fishery in a scoping document by formulating the EAF Baseline Report. The EAF toolbox provided relevant questions, key actions and tools.

Group 3 was encouraged to prepare a draft EAF Baseline Report for Montserrat’s Draft FMP using page 63 of the EAF Toolbox.

- Participants learned the areas that are fished around the island of Montserrat.
- Learned the several types of legislation that are relevant to the EAF process.

![Figure 5: Written notes by working group participants from activities of Step 1 of the EAF planning process](image-url)
### 7.2 Step 2 – Identification of assets, issues and priorities

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<th>ACTIVITY</th>
<th>GROUP WORK</th>
<th>KEY LEARNINGS</th>
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<tr>
<td><strong>2.1 Asset and issue identification</strong></td>
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| This activity encouraged workshop participants to identify all of the relevant issues for Montserrat’s fishery and determine precisely which of these needed direct management interventions for the fishery to achieve its objectives. Each group was asked to address one of the three components of EAF namely: ecological well-being, social and ecological well-being and ability to achieve. | Group 1 identified issues related to the ecological well-being of Montserrat’s fishery using a component list tool found on page 110 of the EAF Toolbox. | • Siltation from terrestrial areas within and around Montserrat is negatively impacting the island’s fisheries.  
• The issue of the right size of catch various fish species within Montserrat’s fishery needs to be addressed to mitigate catching juvenile fish.  
• The lionfish species does a lot of damage to the coral reefs and marine species around the island. |
| | Group 2 identified issues related to the social and economic well-being of Montserrat’s fishery using a component list tool found page 110 of the EAF Toolbox. | • The need for fishers to continually meet the demand of community residents for various species of fish through adequate and sustained supply.  
• The conflicts among fishers and fishers with government needs to be addressed if co-management arrangements are to be successful.  
• The impact of Marine Managed Areas (MMAs) on fishers’ livelihoods needs to be thoroughly researched and included in fisheries management planning. |
| | Group 3 identified issues of Montserrat’s fishery related to the EAF component “ability to achieve” using a component list tool found on page 111 of the EAF Toolbox. | • The need for more harmonisation among departments and sectors. This would enhance cooperation, coordination and information sharing which may aid in more informed decision making as it relates to fisheries management planning.  
• The lack of implementation of existing plans can affect future FMPs. |
| **2.2 Issue prioritisation and risk assessment** | Group 1 prioritised issues related to the ecological well-being of Montserrat’s fishery. | • The lionfish species poses high risk to fish community structure.  
• The need for management as it specifically relates to reef species. |

This activity guided participants to prioritise the issues using risk assessment principles to help determine which ones need to be directly
managed. Systematic risk assessment and management are not typically paid much attention in FMPs, but they are fundamental to EAF, CCA, DRM and resilience science in general. Each group was encouraged to calculate the level of risk associated with their given EAF component using ‘Normal formal risk categories’ found on page 117 of EAF Toolbox.

Group 2 prioritised issues related to the social and economic well-being of Montserrat’s fishery.

- Conflicts among fishers and fishers with government disputes may lead to lead to violent acts.
- Certain species of fish have high cultural value to indigenous people.

Group 3 prioritised issues within Montserrat’s fishery as it related to the EAF component “ability to achieve”.

- The activity showed the legislation needs to be revised and updated if fisheries management planning for the island’s fishery is to be successful.
- Lack of resources significantly impacts proper enforcement which leads to greater levels of frustration among fishers and exploitation on fisheries resources.

Figure 6: Written notes by working group participants from activities of Step 2 of the EAF planning process

7.3 Step 3 – Development of Management System

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<th>ACTIVITY</th>
<th>GROUP WORK</th>
<th>KEY LEARNINGS</th>
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<tr>
<td>3.1-3.3 Determine operational objectives, Indicator and performance measure selection &amp; Management option evaluation and selection</td>
<td>Each group was encouraged to create a ‘logical framework’ using three priority issues (high and medium risk they would have identified in Activity 2.2), which would each have operational</td>
<td>Group 1 created a logical framework based on three priority issues identified as it related to the ecological well-being of Montserrat’s fishery.</td>
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<td></td>
<td></td>
<td>● The need to develop a management strategy to specifically reduce destructive lionfish populations.</td>
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<td></td>
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<td>● The exercise was very useful as it made one consider needed aspects</td>
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</table>
objectives, performance measures/limits and management measures.

| Group 2 created a logical framework based on three priority issues identified as it related to the social and economic well-being of Montserrat fishery. | • The need for medical insurance for fishers and their dependents in case of unforeseen events.  
• The need for a comprehensive assessment of Territorial Use Rights for Fisheries (TURF) within Montserrat’s Fisheries Sector.  
• The need for more extensive training of fishers in fishing related technologies to build their technical capacities as well as improving personal safety at sea. |
| Group 3 created a logical framework based on three priority issues identified within Montserrat’s fishery as it related to the EAF component “ability to achieve”. | • The need for the establishment of a cross sector stakeholder committee to address fisheries related issues. |

Figure 7: Written notes by working group participants from activities of Step 3 of the EAF planning process

**7.4 Step 4 – Implementation, Monitoring and Performance Review**

7.4.1 Activities 4.1 & 4.2- Develop an operational plan and monitor its progress & formalisation of the management plan

These activities involved developing a plan that outlines all the activities that need to be undertaken to implement the Management System and monitor its progress, with the intention of formalising the plan.
and drafting any new legal instruments. Each group answered “relevant questions” in the EAF Toolbox for these activities in a numbered format using flip chart paper.

### 7.4.2 Activities 4.3 & 4.4 - Review performance of the management system & reporting, communication and auditing of performance

These activities prompted participants to regularly review the performance of the management plan and occasionally review the entire management system. The final activity involved keeping stakeholders informed about the fishery performance and ensuring external oversight to assist with community confidence in the management system.

The final activity was supported by a short exercise that encouraged groups to create a simple communication plan and strategy and communicate one key message to a specific target audience in a creative way. Groups were given 15 minutes to make creative presentations in the plenary session. Group 1 called on all workshop participants to be a part of their presentation that targeted NGOs. Coupled with dance, participants were encouraged to say, ‘We are all in this together’. A brief verbal presentation followed which essentially explained to participants that for future FMPs to be successful, all relevant persons need to be involved. Groups 2 and 3 combined their efforts to tailor their presentation towards the public audience. The main message was presented with hand-drawn graphics complimented with a song which highlighted the importance of eating lionfish, the role of parrotfish in good reef health and resilience, and the dangers of plastic pollution to marine environments (Figure 8).

![Figure 8: Hand-drawn graphics by a participant belonging to group 2 used during activity 4](image)

The reflective discussion that followed all activities under step 4 of the EAF planning process outlined the following:

- Communication is an extremely important aspect in fisheries management planning.
- Messages must be carefully tailored to your audience if communication about the fishery is to be successful.
- The overall exercise was found to be useful.

### 7.4.3 Distribution of FAO EAF Toolboxes

Day two of the workshop ended with the distribution of the six FAO EAF Toolboxes to predetermined departments/organisations. These included the Fisheries and Ocean Resources Unit, the Department of Agriculture, the Department of Environment, the Montserrat National Trust, the Montserrat Fishers & Boaters Association and the Disaster Coordination Management Agency. The previously mentioned agencies were also encouraged to make the toolboxes available to other stakeholders for their use.
8 STewardship, CCA, DRM, & Field Trips

8.1 Stewardship in Montserrat fisheries

Mr. Jobe briefly reviewed the concepts of CCA and DRM which was followed by a short video presentation (and discussion with participants) of the impacts of sargassum on Caribbean marine fishers and how they are coping and adapting to its influxes. He then linked the previously mentioned discussion to importance of ecosystem stewardship among fishers and explained the process of ‘enhancing the stewardship’ which includes: information on how nature impacts fisheries (social-ecological system) and how fisheries impact nature; shared learning through participatory monitoring and evaluation; and decisions on responsible action taken (such as deciding which arrangements favour stewardship and how to make fisheries systems resilient). Mr. Jobe ended with examples of situations, strategies and expected outcomes in relation to fisheries impacts, monitoring and stewardship that could be taken at the regional, national and local levels and used to ultimately enhance ecosystem stewardship within Montserrat’s fishery.

Ms. Ramlogan continued by comparing the concepts of disaster risk reduction (DRR) vs climate change adaptation and highlighting where these terms, if at all, were used in Montserrat’s Draft Fisheries Management Plan. Her presentation (see attached Appendix 8) ended with a series on questions for participants to consider as it related to integrating DRM and CCA into Montserrat’s Fisheries Management Plan.

8.2 Field Trips

Day three of the workshop ended with field visits to various sites within and around Montserrat which showed applications of EAF with CCA, DRM and stewardship. These sites were Bransby Point, Isles Bay, Montserrat National Trust, Woodland Bay, Bunkum Bay, Carr’s Bay, Little Bay and the Participatory Three-Dimensional Model (P3DM) of Montserrat at the Montserrat Cultural Centre. Participants used their knowledge of the sites to give historical context and assisted in relating back to concepts discussed in the workshops. Where relevant, discussions included: climate change impacts and adaptation priorities including any recent impacts from Hurricanes Irma and Maria, Soufriere Hills Volcano and its impacts on fisheries, coastal erosion/deposition, fisheries work by the Joint Nature Conservation Committee (JNCC),
how P3DM and spatial planning support ecosystem-based approach, including EAF (Figure 10), and opportunities for stewardship.

![Participants having a discussion around the P3DM model of Montserrat](image)

**Figure 10: Participants having a discussion around the P3DM model of Montserrat**

### 9 SMALL GRANTS

The last day of the workshop primarily targeted fishers and fisherfolk organisations although relevant government agencies, private and civil society groups who participated in the first three days of the workshop were also invited to attend. Mr. Jobe recapped what had occurred during the prior three days of the workshop by highlighting key concepts used, EAF training activities and stewardship, and the role of fisherfolk.

Ms. Ramlogan continued by briefing newly joined participants about the project and then showed a screening of a participatory video (PV) created by fisherfolk of Anguilla which was followed by a discussion that included suggested additions to the video. Participants were then encouraged to come up with possible titles for their PV that would be created for the country of Montserrat and vote on the one they liked the most. The top voted title was ‘Montserrat Fishers Conquering Adversity’.

Discussion was then held with participants concerning potential stewardship-oriented small grant project ideas for EAF with CCA and DRM, how to go about writing a proposal to receive funding once a project/s have been decided by the fisherfolk organisation/s and the provision of technical assistance by CANARI throughout the process if needed.

### 10 WORKSHOP EVALUATION

An evaluation form (Appendix 4) was administered to workshop participants at the end of the workshop. Respondents (n=12) rated the overall benefits of the workshop highly with 100% (12) indicating that the workshop met its objectives and 100% (12) also noting that it lived up to their expectations. Additional questions asked, as well as a compilation of the responses, can also be found in Appendix 4.

### 11 NEXT STEPS

The workshop concluded with a discussion on next steps. Ms. Ramlogan outlined the next steps for the project which included:
• Updating of the draft National Fisheries Plan for Montserrat to mainstream CCA and DRM, using EAF;
• A call for all Montserrat fisherfolk and coastal and marine resource users to participate in a competition where individuals will be able to tell their story on climate change and what it means for Montserrat’s fisheries using videos and photos to complement the PV. The contest deadline was 28 February 2019; and
• Launch of small grants for two practical action projects on CCA and stewardship by fisherfolk organisations in Montserrat by March 2019. The intended deadlines for fisherfolk organisations to submit their small grant proposals is April/May 2019, with implementation from June to December 2019.
## Appendix 1: Summary Agenda

### Day 1: Monday 28 January 2019

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>08:30 – 09:00</td>
<td>Registration, social networking and distribution of workshop materials</td>
</tr>
<tr>
<td>09:00 – 09:30</td>
<td>Welcome, opening remarks, introductions, expectations and logistics</td>
</tr>
<tr>
<td>09:30 - 10:30</td>
<td>Sharing knowledge and experience of EAF, CCA, DRM and stewardship</td>
</tr>
<tr>
<td>10:30 – 11:00</td>
<td><strong>Break and group photo</strong></td>
</tr>
<tr>
<td>11:00 – 12:30</td>
<td>Introduction to EAF Toolbox and steps 1 &amp; 2 of EAF with CCA and DRM</td>
</tr>
<tr>
<td>12:30 – 13:30</td>
<td><strong>Lunch</strong></td>
</tr>
<tr>
<td>13:30 – 15:00</td>
<td>Group work: Step 1 -- Initiation and scope</td>
</tr>
<tr>
<td>15:00 – 15:30</td>
<td><strong>Break</strong></td>
</tr>
<tr>
<td>15:30 – 16:30</td>
<td>Group work: Step 2 -- Identification of assets, issues and priorities</td>
</tr>
</tbody>
</table>

### Day 2: Tuesday 29 January 2019

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>08:30 – 09:00</td>
<td>Registration and social networking</td>
</tr>
<tr>
<td>09:00 – 10:30</td>
<td>Recap of Day 1, lessons learned, insights and innovation</td>
</tr>
<tr>
<td>09:30 - 10:30</td>
<td>Continuation of EAF Toolbox with steps 3 &amp; 4 of EAF with CCA and DRM</td>
</tr>
<tr>
<td>10:30 – 11:00</td>
<td><strong>Break</strong></td>
</tr>
<tr>
<td>11:00 – 12:30</td>
<td>Group work: Step 3 – Development of a management system</td>
</tr>
<tr>
<td>12:30 – 13:30</td>
<td><strong>Lunch</strong></td>
</tr>
<tr>
<td>13:30 – 15:00</td>
<td>Group work: Step 4 – Implementation, monitoring, performance review</td>
</tr>
<tr>
<td>15:00 – 15:30</td>
<td><strong>Break</strong></td>
</tr>
<tr>
<td>15:30 – 16:30</td>
<td>Bringing it together: incorporating EAF with CCA and DRM in fisheries/marine management plans</td>
</tr>
</tbody>
</table>
### Day 3: Wednesday 30 January 2019

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
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</thead>
<tbody>
<tr>
<td>08:30 – 09:00</td>
<td>Registration and social networking</td>
</tr>
<tr>
<td>09:00 – 10:30</td>
<td>Recap of Day 2, lessons learned, insights and innovation. Stewardship and</td>
</tr>
<tr>
<td>10:30 – 11:00</td>
<td><strong>Break</strong></td>
</tr>
<tr>
<td>11:00 – 16:00</td>
<td>Field visits on application of EAF with CCA, DRM and stewardship (with lunch)</td>
</tr>
</tbody>
</table>

### Day 4: Thursday 31 January 2019

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>08:30 – 09:00</td>
<td>Registration and social networking</td>
</tr>
<tr>
<td>09:00 – 10:30</td>
<td>Recap of Day 3, lessons learned, insights and innovation. Screening and discussion of participatory video created by fisherfolk</td>
</tr>
<tr>
<td>10:30 – 11:00</td>
<td><strong>Break</strong></td>
</tr>
<tr>
<td>11:00 – 12:30</td>
<td>Discuss stewardship-oriented small grant ideas for EAF with CCA and DRM</td>
</tr>
<tr>
<td>12:30 – 13:30</td>
<td><strong>Lunch</strong></td>
</tr>
<tr>
<td>13:30 – 15:00</td>
<td>Participatory planning for stewardship small grants and other initiatives. Wrap-up, next steps and close</td>
</tr>
</tbody>
</table>
## Appendix 2: Participants List

<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>Organisation</th>
<th>Telephone (664)</th>
<th>Email</th>
</tr>
</thead>
<tbody>
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</tr>
</tbody>
</table>
Appendix 3: Concepts of climate change adaptation and disaster risk management

There are two kinds of climate change events:
- **Rapid onset** (extreme episodic disasters) e.g. hurricanes, tropical storms, flooding and
- **Slow onset** (chronic hazards) events e.g. ocean temperature changes, sea level rise

**Fishing and fishing dependent people are often located in places that are at particularly high risk of extreme events, which can:**
- Damage or severely damage infrastructure and events such as boats, landing sites, post-harvesting facilities and roads. This can result in a decrease in harvesting ability and access to markets, affecting both local livelihoods and the overall economy and
- Decrease safety at sea, and increase the prevalence of injuries and deaths. Loss of life in fishing communities can affect not only fishing households, but also potentially impact economic and social activities and systems outside the immediate family

**Rapid onset or extreme events**

**Slow onset events**

- **Disaster Risk Reduction (DRR) vs Climate Change Adaptation (CCA)**
- **DRR** is the concept and practice of reducing disaster risks through systematic efforts to analyse and manage the causal factors of disasters, including through reduced exposure to hazards, lessened vulnerability of people and properties, wise management of land and the environment, and improved preparedness for adverse events
- **CCA** is a process by which strategies to moderate, cope with and take advantage of the consequences of climatic events are enhanced, developed, and implemented
Is Montserrat experiencing any effects from slow onset climate impacts?

Both DRR and CCA are aimed at building resilience and reducing vulnerability to the impacts of Climate Change:

- **Exposure** is the degree to which people and the things they value could be exposed to climate variation or change;
- **Sensitivity** is the degree to which they could be harmed by that exposure; and
- **Adaptive capacity** is the degree to which they could lessen the potential for harm by taking action to reduce exposure or sensitivity.

So what do CCA and DRM actions include?

- Responding to crises that affect the fisheries sector and food and nutrition security by distributing high-quality inputs and tools to fisherfolk affected by crisis;
- Safeguarding livelihoods through early warning systems, timely and accurate assessments, and evidence-based planning, engaging fisherfolk in alternative livelihoods, value adding post-harvest technologies and community-based Disaster Risk Management;
- Applying risk and vulnerability reduction measures such as the introduction of aquaculture methods and alternative livelihoods.

But it also includes...

- Strengthening the institutional environment (e.g., governance arrangements and legislation) to mainstream risk and crisis management, and mainstreaming DRM and CCA into national and local plans [Focuses on this workshop]
- Taking actions to improve the resilience of habitats and targeted species to the adverse effects of climate change, including:
  - Solicit enforcement of existing marine pollution control protocols and abatement of contamination from land-based sources;
  - Monitoring and expansion of habitat protection and restoration programmes; and
  - Control of unsustainable practices such as overharvesting, and the use of inappropriate harvesting methods.

Priorities for CCA in Montserrat’s fisheries

- Promote participatory fisheries data collection and monitoring through training in CCA and reporting, GPS and vessel monitoring;
- Introduce measures to reduce other existing stressors affecting fisheries, particularly coastal and marine pollution from land-based sources, alien invasive species (e.g., lionfish) and promote public awareness and education on climate change, relevant to the fisheries sector.
- Deploy artificial reefs and low-cost FADs;
- Explore measures to climate proof and protect fisheries assets;
- Adopt a more holistic and integrated approach to fisheries management, such as integrated coastal zone management (ICZM) or EAR;
- Conduct a feasibility study to reintroduce mangrove areas to support migratory birds and fish nurseries.
Recommendations from vulnerability and institutional assessments for Montserrat’s fisheries sector

- Ensuring that the final action plans reflect stakeholder priorities and are aligned with, strategic priorities and commitments at the national, regional and international levels related to CCA, DRM and sustainable fisheries management.

- Using tools such as P3DM outputs for public engagement, awareness raising and communication of the impacts of climate change and natural disasters.

- Use of GIS maps and datasets for further spatial planning and analysis in the fisheries sector and other sectors.

- Engaging and strengthening of national fisherfolk organisations (e.g. fishing associations and co-operatives) to improve dialogue and knowledge exchange between different generations of fishers, amongst fishers’ representatives and with other key stakeholders, such as fisheries authorities and other government agencies and national CIOs.

- Mainstreaming CCA as well as DRM considerations into fisheries management plans and policies in Montserrat to effectively address extreme climate events and reduce losses from climate-related hazards.

- Supporting sustainable and resilient livelihoods within fishing and coastal communities in Montserrat through development of value added fish products and SMEs related to aquaculture, aquaponics and seagrass cultivation.

- Strengthening regional cooperation and partnerships to improve management of shared resources and exchange knowledge and experiences on climate change impacts, vulnerabilities and potential adaptation options for fisheries and coastal and marine resources more broadly.

- Utilising participatory video3 and other communication technologies (ICTs) to further document and share local and traditional knowledge, best practices and innovations.

- Empowering fisherfolk and coastal communities to address identified vulnerabilities to climate change and related hazards and promoting local stewardship of fisheries and coastal and marine resources through capacity building, including training, mentoring and access to grants to support implementation.
Appendix 4: Concepts of EAF and stewardship

Concepts of EAF & Stewardship

Climate Change Adaptation in the Fisheries of Anguilla and Montserrat Project Workshop on Implementing the ecosystem approach to fisheries (EAF), Climate change adaptation (CCA), disaster risk management (DRM) and stewardship in fisheries management planning. 26-31 January 2019. Montserrat Cultural Centre, Little Bay

The Prequel

Why Ecosystem Approach to Fisheries (EAF)?

- Poor performance of current management practices and lessons learnt from past FM failures
- Degradation of fishery resources and the marine environment
- Recognition of a wide range of societal interests in marine ecosystems and the need to reconcile these

Defining the ecosystem approach to fisheries (EAF)

An ecosystem approach to fisheries strives to balance diverse societal objectives, by taking account the knowledge and uncertainties about biotic, abiotic and human components of ecosystems and their interactions and applying an integrated approach to fisheries within ecologically meaningful boundaries.

The three components of EAF

- Habitat protection and restoration
- Resilience that leads to ecosystem resilience
- Sustainable fishery resource
- Good Governance
- Ecological Well-being
- Human Well-being
- Compliance and enforcement

- Increased and equitable distribution
- Good health, education, political voice, economic security and human safety
- Sustainable livelihoods
EAF Principles

- None of the principles that underlie the EAF are new. They can all be traced in earlier instruments, agreements, declarations.
- Implementation of these principles lags behind in relation to their formulation in agreed international instruments.
- The EAF highlights and reorganizes the principles of sustainable development making their application more imperative.

Development of EAF concept

EAF builds on conventional fisheries management

Common myths and realities about the EAF

- The EAF is not well defined; there are no existing principles and guidelines for implementing EAF.
- The EAF requires a paradigm shift in management institutions and science support.
- There is currently insufficient information available to answer ecosystem questions necessary for applying an EAF.
- It is very difficult, if not impossible, to establish the boundaries necessary to implement EAF.
- MPAs are essential components of EAF.
- EAF is only about the ecological impacts of fisheries and does not account for human dimensions of fisheries management.

Ecosystem approach

- Few objectives
- Sectoral
- Target / non-target species
- Stock / fishery scale
- Predictive
- Scientific knowledge
- Prescriptions
- Top-down
- Corporate
- Public / transparent
A process for enhancing stewardship in EAF
Building on information and shared learning

- Social-ecological impacts
- Monitoring systems
- Stewardship in SSF

information

shared learning

- interaction of SSF and the environment
- participatory monitoring & evaluation
- decisions on responsible action taken

stewardship

Considering stewardship in EAF

- Should have a sense of ownership over natural resources
- Need to exercise both individual and collective responsibility
- Demonstrate accountability in stewardship within society
- May anticipate some sort of reward for being good stewards (even just the anticipated gratification from future generations)
Appendix 5: Strengthening Stewardship in the Caribbean

1. Montserrat at a glance

- Geographically located in Eastern Caribbean
- United Nations Development Assistance
- Full CARICOM & OECM Membership
- 39,000 (2019 estimate) (14m, 11,000)
- The island is self-governing, however ties to the UK remains important for governance, education, and financial services
- Fully to maintain life connexions through UK
- 1 of 16 support UN peace operations
- Support bilateral & deep waters
- Data lead climate 3D and DFC 20k

2. Stewardship Implementation

Ministries with responsibilities for contributing to Ocean Governance Management and Implementation.

3. Challenges

Cross Sector Challenges of Implementation & Monitoring of SDGs in Montserrat

1. Cabinet appointed focal agency: NIP & alternative
2. Political & willingness will
3. Continuity of personnel, and staff
4. Ministries appear to be working in silos
5. National priorities
6. Limited capacity: existence, data, data sharing & finance to support policy
7. Updating NCEP to meet the 2030 SDGs agenda
8. Clarified legislation & policy framework to support implementation
9. Natural hazards
10. Appropriate partnerships (own agenda)
11. Information sharing and transparency
12. Status as a JKCI
13. Dedicated and adequately accredited staff

4. Case Study

A 3-step approach to improving Governance, Management & Sustainable Utilization of Montserrat's Ocean Resources to achieve SDG #4 Targets and other linking SDGs
Step One
- Accredited Institutional Capacity Development
  - Skills Gap Analysis
  - University of Portsmouth Marine Resource Management
  - International IOI Institutional Training
  - Dissertation

Step Two
- Developing an Execution Plan
- The Future of Fisheries in Montserrat
- “A proposed framework for management and governance reform”

Step Three
- Sustainable Use of Ocean Resources in Waters under National Jurisdiction
- Identifying the right strategic Development Partners with shared goals and values
- Integrated Approaches for Conservation and Commercial Benefits

Local, Regional & International Development Partners

**Results**

**GOAL 3.1**
- Expand and integrate infrastructure projects, methodology, training programmes for the sustainable management of fisheries and ocean resources

**GOAL 3.2**
- Strengthen the Fisheries Unit’s capability to operate its services

**GOAL 3.3**
- Modernize the legal framework for the sustainable management of fisheries and sustainable utilization of the fisheries and ocean resources sector

**GOAL 3.4**
- Collaborate with stakeholders to achieve the sustainable development of fisheries and ensure the conservation of marine biodiversity

**Partnership finance to by 20% over 3 years**
- Each year will see an increase in budget due to increased capacity
5. Conclusion and Recommendations:
Turning challenges into socio-economic opportunities

- Cabinet approval for the Fishery Unit
- Political & administrative will
- Continuity of policy makers and staff
- Technical support for monitoring
- National priorities
- Limited capacity, missing data
- Data sharing & analysis for support policy

5. Conclusion – recap
Turning Passion for the Ocean into Powerful Partnerships

2014
STEP 3
Identifying the right strategic partners with shared goals and values

2014 - present

2013
STEP 1
Developing an Execution Plan

2013
STEP 2
Accredited Institutional Capacity Development
**Focus for 2018 and beyond**

**Territory to territory partnership (T2T)**

- Development and implementation of MSP

- Improve legal framework for sustainable management, governance and use of the ocean resources

- Enhanced data collection and management infrastructure systems

- Transfer expertise and skills from the South Atlantic UK Overseas Territory to Montserrat

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**6. Vision for the Future**

Inspiring & supporting the future generation to build capacity in promoting sustainable governance, management & conservation of the ocean resources for economic growth in a changing climate.

---

**‘Looking forward not back’**

Thank you for listening
Appendix 6: Extract from Montserrat’s Draft Fisheries Development Plan

GUIDING PRINCIPLES

Mission Statement
To manage, regulate and promote the sustainable development of Montserrat’s fishery resources for the benefit of the stakeholders in the sector and the nation as a whole.

Goals of Fisheries Management

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>To manage the fisheries resources of Montserrat at or above the levels necessary to ensure their continued productivity for present and future generations (biological).</td>
<td>To ensure that the fishing industry is integrated into the policy and decision-making processes concerning the environment, protected areas and the wider development process.</td>
</tr>
<tr>
<td>To minimise the impacts of fishing on the physical environment (habitats, nursery, spawning areas) and on non-target (bycatch), associated and dependent species (ecological).</td>
<td>To increase the sector’s contribution to Gross Domestic Product by expanding production, through better management of existing fisheries on the basis of best available scientific information, and according to the precautionary principle, the promotion of new ones and the continued development of value added products for export.</td>
</tr>
<tr>
<td>To maximise the net incomes of the participants (e.g. fishers) in the respective fisheries (economic).</td>
<td>To promote and encourage the involvement and participation of stakeholders in the management of the fishery resources.</td>
</tr>
<tr>
<td>To maximise employment opportunities for those dependent on the fisheries for their livelihoods (social).</td>
<td>To ensure that the development of the fisheries sector is enhanced by regional and international cooperation (e.g. CRFM, FAO), and in keeping with international and regional obligations.</td>
</tr>
<tr>
<td>To promote job creation in the harvesting and processing, and non-consumptive use of underutilised and unutilised living marine resources.</td>
<td></td>
</tr>
</tbody>
</table>

1. These objectives are consistent with provisions of the Third United Nations Conference on the Law of the Sea (UNCLOS III); Agenda 21 of the United Nations Conference on Environment and Development (UNCED); United Nations Agreement on Highly Migratory Stocks and Shad/ding Stocks; the FAO Code of Conduct for Responsible Fishing; the Convention on International Trade in Endangered Species (CITES); the Specially Protected Areas and Wildlife (SPAW) Protocol; the International Convention on the Prevention of Pollution from Ships (MARPOL).
Appendix 7: EAF planning process

INITIATION AND SCOPE (STEP 1)
Mainstreaming CCA, DRM & Stewardship into EAF based FMPs

Climate Change Adaptation in fisheries of Anguilla and Montserrat Project
Workshop on implementing the ecosystem approach to fisheries (EAF), climate change adaptation (CCA), disaster risk management (DRM) and stewardship in fisheries management planning, 28-31 January, Conference Room, Cultural Centre, Little Bay, Montserrat

1.3 Overview of Key activities

1.1 Initial process planning and stakeholder support
Get set
• Ensure adequately preparation to apply EAF
• Be realistic about what it can deliver and when
• Seek formal support for the EAF FMP process

1.2 Defining the fishery, societal values and high level objectives
Output: definition of the scope of the EAF planning process, including the target fishery, societal values and objectives, decision to proceed with EAF management

1.3 Finalise a scoping (EAF baseline) document
Output: a baseline report that clarifies what fishing activities are to be managed, the community objectives to be achieved, social values to be observed and a summary of information about the fishery and its associated resources that may be useful for the remainder of the EAF process.

Stakeholders!
Systematically determine who needs to be a partner in the EAF FMP process, and whose interests and influence are too remote to make this necessary... stakeholder identification and analysis
• Examine power, conflict, influence, incentives and other relationships
• Key stakeholders, Primary stakeholders, Secondary stakeholders, combined?

Participation and good governance

Power and influence at science-policy interface

Institutions (e.g. policy cycles)
• Investigate how formal and informal social rules underpinning interactions (institutions) may shape EAF FMP policy cycle
• Determine what institutions are involved in policy cycles and within key parts of the fishery system
• Formal institutions typically have a legally defined role, structure, and procedures, as in state actors and cooperatives.
• Informal institutions such as those of civil society include business, social or family networks and fisherfolk associations.

Background information (EAF Toolbox relevant questions)
• Collate national policies and international agreements
• Identify information and expertise on fisheries system
• Investigate how formal and informal social networks and fisherfolk associations.
• Systematically determine who needs to be a partner in the EAF FMP process, and whose interests and influence are too remote to make this necessary... stakeholder identification and analysis

Scoping and Baseline Information
Background information (EAF Toolbox relevant questions)
• Collate national policies and international agreements
• Identify information and expertise on fisheries system
• Investigate how formal and informal social networks and fisherfolk associations.
• Systematically determine who needs to be a partner in the EAF FMP process, and whose interests and influence are too remote to make this necessary... stakeholder identification and analysis

Key stakeholders, Primary stakeholders, Secondary stakeholders, combined?

Enhanced Stewardship? But what policies guide this?

Levels of participation

Camouflage exposed

Avoid omitting critical stakeholders from the processes, which would lead eventually to problems with EAF implementation, but also avoid including too many “stakeholders”

Helps to promote good governance in the EAF planning process. Enhanced Stewardship? But what policies guide this?

Ensure that the many “actors” in the EAF FMP process are properly identified and characterized in terms of their interests and role in the particular circumstance.
1.2 Defining the fishery, societal values and high level objectives

To undertake EAF planning you need to have a clear and agreed definition of the fishery

Scope
• Explicitly determine what fishing activities, areas, groups will (or won’t) be included in the EAF process
Values
• Determine the key community values to be achieved

Scope, scale and levels of management

Addressing issues ... Be strategic!
• **MANAGE** - These come under your direct legislative responsibility. You can generate regulations/management plans etc to deal with these issues. The agency must take full responsibility for these issues
• **INFLUENCE** - These issues are not under your legislative responsibility so you cannot manage them, but as they are under other legislative responsibility (e.g., another agency) you can influence them
• **REACT TO** - These issues are generated by external environment - you cannot manage or influence them. You need to be ready to deal with these issues (e.g., natural changes in the oceanography, changes in currency exchange, market prices, fuel prices) as much as possible

Sustainable Development Goals  Societal values

• Ecological
• Social
• Economic
• Cultural
• Political
• Food security
• Avoiding waste

• Define the fishery, societal values and high level goals/objectives
• If you are not clear about what or why you are managing...it will not be a successful process

High level management objectives

• Agreement on a set of management objectives for the fishery that directly reflect relevant community and national values and signed international conventions.
• Examples include food and livelihood security; resource sustainability; economic performance; social amenity; and cultural values (including protection of iconic species).
• Important to reach agreement, or at least a degree of clarity on the high level fishery objectives and their relative priority because these will be essential for the remainder of the EAF planning process.
• The relevant questions and checklists provided in the EAF Toolbox assists with this

Always explicitly consider the trade-offs and choices to be made in all decisions
2.1. Identification of issues and assets

Overview of Key activities

2.2. Prioritization of assets and issues using risk assessment

Output: The relative level of risk and priority, plus the recommended level of direct management action or other specific activities, needed to deal with each of the issues.
What governance systems are in place or required to manage ecological impacts and generate social/economic outcomes?

- Should include fishery management, government, agencies, fishers and community
- What external drivers may be affecting the fishery performance that are not controlled by management?
  - includes other agencies, world drivers, natural

Risk/Priority should include fishery socioeconomic vulnerability of the latter system.

Risk Assessment enables understanding of risk/hazard that a chosen action or lack of action will lead to an undesirable outcome?

Therefore to assess risk you need to know what objectives you want to achieve and to realise that no-action is still a decision with consequent risk.

For an EAF FMP, a risk assessment asks:
"What is the risk that the FMP system will not meet agreed objectives for each of the identified issues?"
Knowledge and uncertainty

- There is a fundamental difference between uncertainty and no knowledge, as well as between knowledge and certainty.
- There are few issues for which we have NO knowledge.
- There are few (no) issues for which we have FULL certainty.
- So a risk assessment can be done with any available data or information since there is ALMOST ALWAYS uncertainty.
- Determining the most appropriate risk assessment method depends on available data and information, experience of the persons conducting the assessment, and the participation, etc.

Products

- All relevant issues for the fishery have been identified.
- All stakeholders were involved in the process.
- Issues were prioritized using risk assessment.
- The EAF FMP can now be developed and will deal efficiently with relevant issues including CCA and DRM.

Qualitative Risk Assessment

- This assessment concluded that it was unlikely that the fishery would generate a moderate level of consequence for the issue and the specific objective.
- This would be a LOW RISK.
- When assessing risk you must include what management arrangements are already in place – or are about to be put in place, unless no action is to be taken regardless of the risk.

Step 3 – Develop Management System

Overview of Key activities

1. Determining operational objectives
   - Output: development of a set of clear and appropriate operational objectives covering each of the issues that require direct management.

2. Selection of indicator and performance measures
   - Output: identification of one or more indicators and associated performance measures that can be used to monitor the performance of each operational objective.

3. Evaluation and selection of management options
   - Output: selection of the most cost-effective set of management arrangements designed to generate acceptable levels of performance for all operational objectives.

A Simpler Method of Calculation

<table>
<thead>
<tr>
<th>Risk Level</th>
<th>Risk Scoring (LS)</th>
<th>Low Management Response</th>
<th>High Management Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>7-10</td>
<td>None</td>
<td>Full justification</td>
</tr>
<tr>
<td>Medium</td>
<td>3-6</td>
<td>No specific management</td>
<td>Full justification</td>
</tr>
<tr>
<td>Low</td>
<td>1-2</td>
<td>No specific management</td>
<td>Full justification</td>
</tr>
</tbody>
</table>

Risk Assessment

- A risk assessment can be done with any available data or information.
- Increased management activities needed.
- Full Performance Report.

Confidence Assessment

- What is already happening.
- What could happen in the future.
- Level of agreement or consensus measured.
- Amount of evidence (theory, observation, model).

Knowledge and uncertainty

- There is a fundamental difference between uncertainty and no knowledge, as well as between knowledge and certainty.
- There are few issues for which we have NO knowledge.
- There are few (no) issues for which we have FULL certainty.
- So a risk assessment can be done with any available data or information since there is ALMOST ALWAYS uncertainty.
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   - Output: selection of the most cost-effective set of management arrangements designed to generate acceptable levels of performance for all operational objectives.
### 3.1 Operational Objectives – definitions differ

- **Outcome or goal** - A high-level statement of ‘how things should be’
- **General objective** - A high-level statement of what is to be attained
- **Strategy** - A linked collection of means or approaches to an objective
- **Outputs, activities and tasks** - A hierarchy of initiatives and their products from major to minor relevance and size within a strategy
- **Operational objective** - An objective that has practical interpretation, usually for a strategy to be implemented; often a SMART objective

**Indicators in action**

- Example of indicators:
  - Biomass of fish stock
  - Catch rates (CPUEs)
  - Income/fisher household

### 3.2 Indicator and performance measure definitions

- **Indicator** – Something that is measured, not necessarily numerically (e.g. number of fish, social unrest as an indicator of local attitudes to management) and used to track an operational objective. An indicator that does not relate to an operational objective is not useful in this context
- **Reference point** – A ‘benchmark’ value of an indicator, usually in relation to the operational objective. E.g. target reference point (where you want to be), limit reference point (where you do not want to be) and trigger/baseline reference point (where you have come from). A target reference point could serve as an operational objective
- **Performance measure** - A relationship between the indicator and reference point that measures how well intended outcomes are being achieved

### 3.3 Evaluation and selection of management options: Methods to assess benefits versus costs

- Benefit/Cost analysis
- Governmental Accounting
- Socio-economic Surveys
- Social Impact Assessment
- Rates of return on investment
- Contingent Valuation
- Evaluating options can be qualitative using expert judgment
- Or can be quantitative using simple or sophisticated methods
- More complex assessments demand more data, time, resources

**Toolbox**

**Products**

- We know what indicators we will examine to determine whether/how well we are meeting our operational objectives
- We have identified what management actions we will take to address our operational objectives
ICT is useful...work smart...e.g. mFisheries modules

Fisheries Early Warning and Emergency Response

• To fill gaps for specific needs of fishers while integrating with national EWS, processes & protocols
• Connects multiple sources & consumers via multiple channels

Learning by doing, monitoring, evaluating and adapting

Step 4 – Implementation and Monitor
Overview of Key activities

1. Formalization of the management plan
   Output: formal adoption of the EAF-based management plan.

2. Development of an operational plan and monitoring of its progress
   Output: elaboration of a detailed operational management plan (what, who, when, where)

3. Review of performance of the management system
   Output: regular reports on level of activities completed to execute the operational plan

4. Reporting and communication of performance
   Output: periodic reports on the performance of the entire management system in generating acceptable performance for each of the operational objectives and overall community outcomes

Developing a FMP document: Key elements

- A description of the fishery(ies) in its current status (social, ecological, economic, etc.)
  Where, what and who is this about?

- Key stakeholders
  What do we want to achieve?

- Institutional arrangements
  How will we achieve it?

- Management objectives
  How will we know if we are achieving it or not?

- Key assets and issues identified in relation to the objectives

- Plans to address assets and issues

- Implementation of the FMP with rules for review, including the consultation process

Beware scale mis-matches

ICT is useful...work smart...e.g. mFisheries modules
The specific activities that need to be done in relation to policy implementation requires knowing:

- The specific activities that need to be done in relation to policy
- Who will be responsible for each activity (persons/institutions)
- Whether there are enough resources (people and financial) to undertake each of the identified tasks
- The EAF, CCA and DRM measures within activities, issue by issue
- Monitoring performance regularly to see if the FMP is successful

These will usually be overseen by the primary management authority, but they can be undertaken by other groups that are involved in management planning and the policy cycle.

Approach to getting started

1. Develop a checklist of issues from the EAF management measures to ensure they are all covered by the FMP operational framework.
2. Keep potentially key issues separate until it is clear that activities to address them are identical (e.g. for catch and effort measurement).
3. It may be necessary to separate activities between different areas – inshore, offshore, whole EEZ, high seas, etc. – with different regimes.
4. Undertake consultation that may need to be different for different groups, so separate activities may therefore need to be generated.
5. Start with the most important issues identified as part of the EAF FMP, then move progressively to the least important prioritized.
6. Also identify activities outside the scope of the fisheries agency.
7. Advise other government departments of their issues to deal with (via NIC, FAC).
8. Review monitoring, evaluation and learning to adapt and reduce complexity.

Review performance

- EAF is adaptive: monitor if the plan is delivering acceptable outcomes
- Monitor outcomes (using indicators) against each operational objective
- Review is internal, but participatory external review should also be used
- If the FMP is not meeting objectives, identify reasons, learn and adapt
- Adaptation may be done within the scope of the plan, or it may require an amendment to the management plan (repeat all or most of the steps)
- Learning by doing assists all participants to advance via collaboration.
Timeframe for reviews

- Monitor performance of indicators regularly:
  - Large-scale fisheries: annually during stock assessment
  - Small-scale fisheries: can be less frequent (2-5 years)
- Strategic review of the entire management system should be undertaken after 5-10 years
- Complete review should also be undertaken after any major changes in the social-ecological system

Communication of performance

- Keep stakeholders informed about the fishery performance, and ensure external oversight to maintain confidence in FMP system
- Report outcomes of the management system to local and regional stakeholders, world organizations (UN), etc...
- Level and type of reporting will depend on type of fishery, markets, stakeholder attitudes, issues involved and legislative requirements
- Transparency will enhance stakeholder confidence in the fishery management
- Keeping stakeholders informed will maintain momentum and legitimacy of the FMP and stakeholders’ capacity to adapt to change
- Sometimes, more than reporting is needed…additional policy influence

Products

- A management plan that can be referenced and enforced
- But the process is not done…EAF is an adaptive cycle that will need to be continually monitored and modified
Appendix 8: Integrating DRM and CCA into Montserrat’s Fisheries Management Plan

Mainstreaming CCA and DRR into Montserrat’s Fisheries Management Plan using EAF

Disaster Risk Reduction (DRR) versus Climate Change Adaptation (CCA)

- **Disaster Risk Reduction** denotes both a policy goal or objective, and the strategic and instrumental measures employed for anticipating future disaster risk; reducing existing exposure, hazard, or vulnerability; and improving resilience. (IPCC 2013. Fifth Assessment Report)

- **Climate Change Adaptation** is a process by which strategies to moderate, cope with and take advantage of the consequences of climatic events are enhanced, developed, and implemented.

Montserrat’s fisheries sector is vulnerable to the impacts of climate change, including climate-related disasters (e.g. hurricanes, tropical storms, storm surges).

Are climate change adaptation and disaster risk reduction adequately mainstreamed into Montserrat’s Fisheries Development Plan?

Let’s take a quick look at Montserrat’s Fisheries Management Plan and see what it says about climate change and disasters!

Core Elements of Mainstreaming Processes

- Vulnerability risk and CCA resilience strategies are integrated in laws, policies, and strategies.
- Priority CCA Actions Appraised and Coordinated.
- Weather/Climate Information Systems for preparedness and institutional coordination mechanisms.
- Clear results & target indicators identified and effective M&E systems in place.
- "Resource mobilization" strategies (funding, knowledge, technologies).
Let’s do a quick assessment to see where Montserrat is in terms of mainstreaming CCA and DRR into its Fisheries Development Plan.

• Do policy-makers and natural resource managers know the climate and disaster impacts that Montserrat’s fisheries are vulnerable to?
• Was a vulnerability assessment done to determine this?
• Were stakeholders views included in the assessment?
• Did the assessment look at the ecological, social, economic and governance aspects of vulnerability (including poverty and gender)?

• Were climate change adaptation and disaster risk reduction actions identified for Montserrat’s fisheries sector?
• Were these actions identified based on the findings of a vulnerability assessment?
• Were these actions prioritised? Were stakeholders involved in the prioritisation process?
• Were stakeholders made aware of the findings of vulnerability assessments and identified priority actions?

• Were the needed resources (financial, skills, knowledge, technology etc.) to successfully address or implement priority adaptation and disaster risk reduction actions identified? This may also include capacity building of fisherfolk and institutional strengthening of key agencies.
• Were strategies put in place to acquire the needed resources to successfully address priority actions?

• Were clear results and target indicators identified for priority climate adaptation and disaster risk reduction actions?
• Was a system for monitoring and evaluating the success of actions taken developed?

• Are these climate change adaptation and disaster risk reduction actions, resource mobilisation strategies and monitoring and evaluation system included in Montserrat’s Fisheries Management Plan?
Entry points! – Where is the Montserrat FMP in the policy cycle?

- Analysis and aware
- Decision-making
- Implementation
- Review and evaluation
- Data and information

Stakeholders should be involved in all stages!

The five basic stages of a policy cycle
Appendix 9: Workshop Evaluation

Climate Change Adaptation in the Fisheries of Anguilla and Montserrat
Ecosystem Approach to Fisheries and Stewardship Workshop
January 28-31, 2019, Montserrat

Workshop evaluation form

1. Did the workshop meet its objectives?

   [12] Yes  [0] No.

   If no, please let us know why below:

   12 No response given

2. Did the workshop live up to your expectations?

   [12] Yes  [0] No.

   If no, please let us know why below:

   12 No response given

3. What did you like about this workshop?

   ● The activities, quizzes and regular breaks.
   ● Very interactive.
     It was a learning experience and very useful for my development.
   ● It was very informative.
   ● Presentations were interesting and informative. Facilitators were clear and interactive.
   ● The practical exercises where everyone had to be involved, brainstorming ideas and Interactive communication.
   ● New information alongside various strategies to cope with various issues, and effects of natural and human impacts on the environment.
   ● Activities.
   ● All elements related to fisheries + fish as an economic or revenue earner + development as product.
   ● It gives us a lot more knowledge.
   ● The facilitators were very friendly + explained everything.

4. What did you dislike about this workshop?
Nothing.
Disposable single use cutlery + plates provided @ lunch, NOT a very green/sustainable option.
NA.
Nothing.
NA. No participation from major invitation (invitees?).
It was cold.
Time.
Nothing.
Too long.

5. Please indicate which sessions you found particularly useful:

- The quiz.
- Collaboratively developing a management system.
- All.
- Session 3.
- Developing the management system.
- EAF-Steps + exercises Step 3.
- All.
- NA.
- Steps 2 of the EAF.
- All of them.
- All of the messages.
- The whole program.

6. How could the workshop have been improved?

- No response given.
- Better turnout, especially from fisherman.
- NA.
- More interactive seating arrangement circular!
- More visits.
- Reduce the timeframe.

7. Please describe one method, approach or tool that you will apply from the workshop when you return to your workplace or in your community.

- Brainstorming what is needed to implement the management plan.
- SWOT analysis.
- No response given.
- Development management system.
- Interactive approach.
- Agricultural strategies will be used to aid future laws and acts in my fisheries unit.
- Integrated community involvement.
- To document my projects more.

8. What might prevent you from applying the approaches or tools promoted in this workshop?

- Money.
• Take a very long time if not properly directed.
• No response given.
• Funding.
• Willingness of participants to be involved.
• People’s resilience to change.
• NA.
• Getting total buy-in but will use tools to get it done.
• Nothing.

9. Please rate the following areas of the course structure and delivery:

<table>
<thead>
<tr>
<th>Area</th>
<th>Very Good</th>
<th>Good</th>
<th>Fair</th>
<th>Poor</th>
<th>Missing response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clarity of objectives</td>
<td>8</td>
<td>2</td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Workshop content</td>
<td>5</td>
<td>5</td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Materials</td>
<td>5</td>
<td>4</td>
<td>2</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Facilitation</td>
<td>10</td>
<td></td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Relevance to your needs</td>
<td>5</td>
<td>4</td>
<td>2</td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

Any additional comments on the above:

12 no responses given

10. Please give feedback on the logistical arrangements made for the workshop:

<table>
<thead>
<tr>
<th>Area</th>
<th>Very Good</th>
<th>Good</th>
<th>Fair</th>
<th>Poor</th>
<th>Missing response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Workshop venue (s)</td>
<td>8</td>
<td>3</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Lunches and breaks</td>
<td>8</td>
<td>2</td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>General logistical arrangements</td>
<td>6</td>
<td>4</td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

11. Any other comments
• Facilitators must be commended for their innovative methods of delivery the material and keeping the interest of the participants.
• Thank you for coming to Montserrat.

Thank you!