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

Table of Contents

Acronyms/Abbreviations iii

1 Introduction 1

2 Objectives 1

3 Approach 2

4 Participants 2

5 Welcome, objectives, Expectations and introductions 2

6 Setting the Scene 3

- 6.1 Key Concepts of CCA, DRM, EAF & stewardship and their connections 3
- 6.2 Sharing knowledge and experience of Fisheries Management Planning, and incorporating CCA and DRM 3
- 6.3 Looking forward: future of fisheries management in Montserrat 6
- 6.4 Reflections of EAF 7

7 EAF planning process 7

- 7.1 Step 1 – Initiation and scope 8
- 7.2 Step 2 – Identification of assets, issues and priorities 10
- 7.3 Step 3 – Development of Management System 11
- 7.4 Step 4 – Implementation, Monitoring and Performance Review 12
  - 7.4.1 Activities 4.1 & 4.2- Develop an operational plan and monitor its progress & formalisation of the management plan 12
  - 7.4.2 Activities 4.3 & 4.4 - Review performance of the management system & reporting, communication and auditing of performance 13
  - 7.4.3 Distribution of FAO EAF Toolboxes 13

8 Stewardship, CCA, DRM, & Field Trips 14

- 8.1 Stewardship in Montserrat fisheries 14
- 8.2 Field Trips 14

9 Small Grants 15

10 Workshop evaluation 15

11 Next steps 15

12 Appendices 17

- Appendix 1: Summary Agenda 17
- Appendix 2: Participants List 19
- Appendix 3: Concepts of climate change adaptation and disaster risk management 20
- Appendix 4: Concepts of EAF and stewardship 23
- Appendix 5: Strengthening Stewardship in the Caribbean 26
- Appendix 6: Extract from Montserrat's Draft Fisheries Development Plan 30
- Appendix 7: EAF planning process 31
- Appendix 8: Integrating DRM and CCA into Montserrat's Fisheries Management Plan 40

Suggested Citation

CANARI and CERMES. 2019. Summary Report of the Workshop on Mainstreaming Climate Change Adaptation (CCA), Disaster Risk Management (DRM) and Stewardship into Fisheries Governance and Management of Anguilla, using an Ecosystem Approach to Fisheries (EAF). Report submitted to Climate Change Adaptation in the Fisheries of Anguilla and Montserrat Project. Port of Spain: Trinidad. 47 pp.

Acknowledgements

This workshop report is an output of the ***Climate change adaptation in the fisheries of Anguilla and Montserrat*** project which is being implemented by the Caribbean Natural Resources Institute (CANARI) in partnership with the Department of Fisheries and Marine Resources - Anguilla, Fisheries and Ocean Resources Unit - Montserrat and the Centre for Resource Management and Environmental Studies of the University of the West Indies (UWI-CERMES). The project is funded by the Government of the United Kingdom through the Darwin Plus: Overseas Territories Environment and Climate Fund under the Darwin Initiative.

ACRONYMS/ABBREVIATIONS

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

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.

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

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

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).

Decade	FMP	CCA	DRM
1980s	Fisheries Act CAP 9:01 drafted. Fisheries 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.	MATLHE was established as the lead agency for climate change.	Inter-agency collaboration developed. Stabits were deployed to protect harbour from storm surge.

Decade	FMP	CCA	DRM
1990s	CRFM harmonized fisheries management plan development. Adjusted to reflect each island's unique situation. Fisheries legislation reviewed and updated. Moratorium on turtle catching established.	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).	Hurricanes - village councils and emergency supplies. Volcano- zoned, signage placed, and outreach done. Severe flooding occurred.
2000s	Barge ran aground. Market building constructed- envisaged for fish market initially. Tourist Board sponsored fisheries and protected areas workshop and plan. Department of Environment established as a separate entity (formally under Agriculture).	Impact of ocean temperature and sea level rise seen. Extreme weather events - heavier rainfalls and longer dry periods. 17 of the 18 warmest years on record have occurred since the 2000's. Department of the Environment developed Public Participation and Outreach Strategy. Three (3) terrestrial protected areas declared. Hurricane Earl caused severe flooding in Carr's Bay and affected the crossing at Runaway Ghaut.	Centre Hills Management Plan Developed. Volcano eruption continued. Disaster Risk Management Workshops initiated by Policy Planning and Financial Ministry. Department of the Environment participated in Regional Disaster Risk Reduction workshops. Flash floods and volcanic activity affected Killie Crankie Spring.

Decade	FMP	CCA	DRM
2010s	A marine spatial plan in the works - will also aim to address marine pollution especially plastics. Fish trap escape hatch/door for juveniles established. Aquaculture and pelagic mariculture started. Catch quotas implemented. 'Floating Seaweed' entrepreneurship for composting and food purposes. Pipers Pond land reclamation leading to no fish nursery on island.	Coral gardening increased coral bleaching and disease, Paris Agreement, and Climate Change Policy and Action Plan drafted. Conservation and Environmental Management Act drafted.	Break water systems, EIAs more important. Aerial photographs captured activities on land which impact the marine environment (2010). Mooring safely/ship surveillance enhanced. Pipers Pond land reclamation causing flooding.

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 utilised 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.

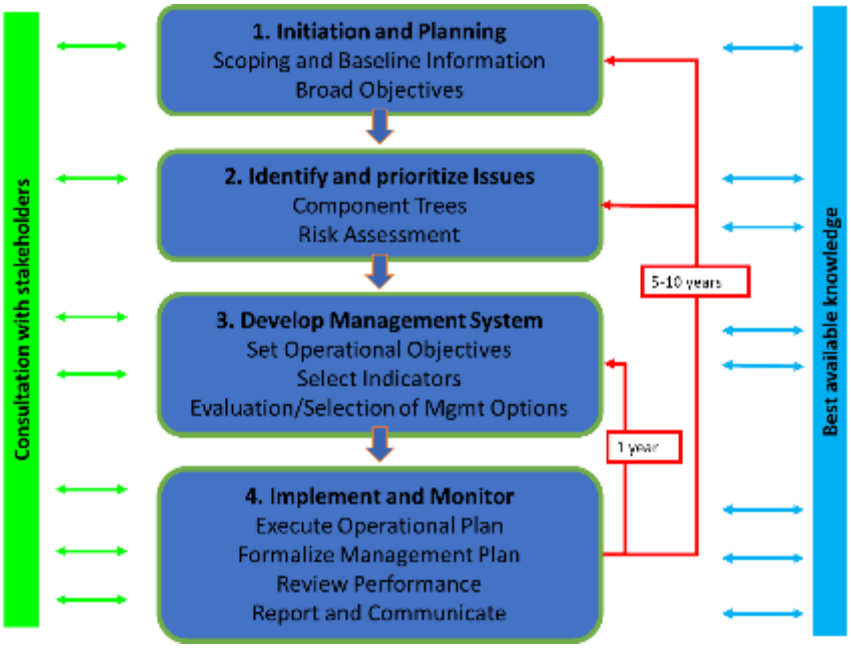


Figure 3: EAF process (Source: FAO)

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

ACTIVITY	GROUP WORK	KEY LEARNINGS
1.1 Initial process planning and stakeholder support		
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.	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 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.

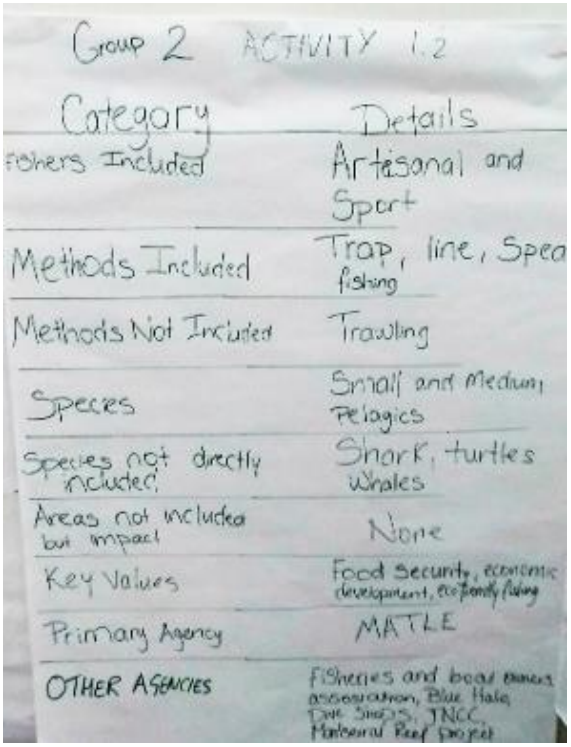


Figure 5: Written notes by working group participants from activities of Step 1 of the EAF planning process

7.2 Step 2 – Identification of assets, issues and priorities

ACTIVITY	GROUP WORK	KEY LEARNINGS
2.1 Asset and issue identification		
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		
This activity guided participants to prioritise the issues using risk assessment principles to help determine which ones need to be directly	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.

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.

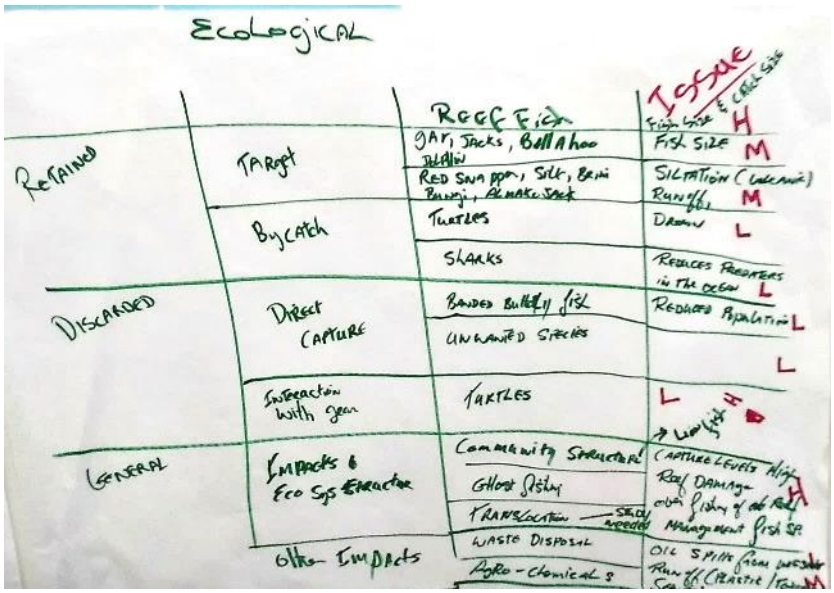


Figure 6: Written notes by working group participants from activities of Step 2 of the EAF planning process

7.3 Step 3 – Development of Management System

ACTIVITY	GROUP WORK	KEY LEARNINGS
3.1-3.3 Determine operational objectives, Indicator and performance measure selection & Management option evaluation and selection		
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	Group 1 created a logical framework based on three priority issues identified as it related to the ecological well-being of Montserrat's fishery.	• The need to develop a management strategy to specifically reduce destructive lionfish populations. • The exercise was very useful as it made one consider needed aspects

objectives, performance measures/limits and management measures.		of fisheries management planning that were not considered before.
	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.

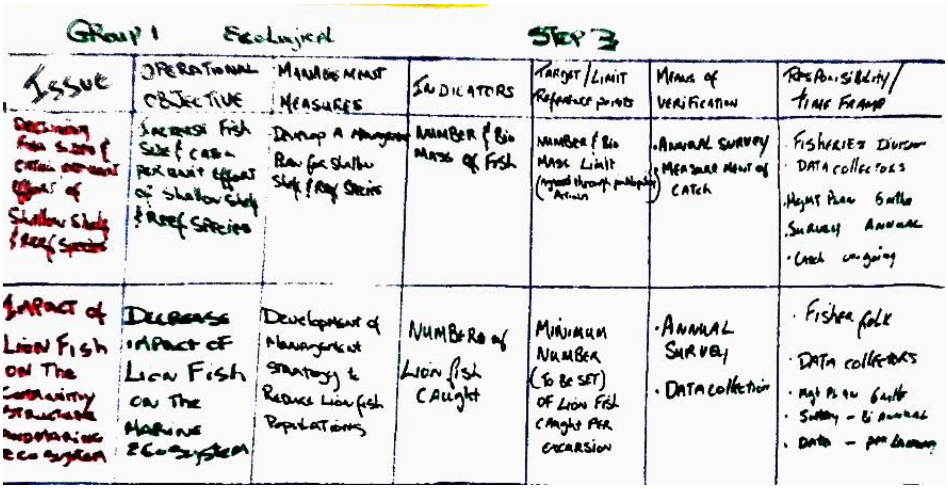


Figure 7: Written notes by working group participants from activities of Step 3 of the EAF planning process

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

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.

Figure 9: Ms. Melissa O'Garro (Department of Agriculture) receiving an EAF Toolbox (centre Mr. Kerton Jobe, right Mr. Alwyn Ponteen)

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.

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.

12 APPENDICES

Appendix 1: Summary Agenda

Day 1: Monday 28 January 2019	
08:30 – 09:00	Registration, social networking and distribution of workshop materials
09:00 – 09:30	Welcome, opening remarks, introductions, expectations and logistics
09:30 - 10:30	Sharing knowledge and experience of EAF, CCA, DRM and stewardship
10:30 – 11:00	**Break and group photo**
11:00 – 12:30	Introduction to EAF Toolbox and steps 1 & 2 of EAF with CCA and DRM
12:30 – 13:30	**Lunch**
13:30 – 15:00	Group work: Step 1 -- Initiation and scope
15:00 – 15:30	**Break**
15:30 – 16:30	Group work: Step 2 -- Identification of assets, issues and priorities
Day 2: Tuesday 29 January 2019	
08:30 – 09:00	Registration and social networking
09:00 – 10:30	Recap of Day 1, lessons learned, insights and innovation Continuation of EAF Toolbox with steps 3 & 4 of EAF with CCA and DRM
10:30 – 11:00	**Break**
11:00 – 12:30	Group work: Step 3 – Development of a management system
12:30 – 13:30	**Lunch**
13:30 – 15:00	Group work: Step 4 – Implementation, monitoring, performance review
15:00 – 15:30	**Break**
15:30 – 16:30	Bringing it together: incorporating EAF with CCA and DRM in fisheries/marine management plans

Day 3: Wednesday 30 January 2019	
08:30 – 09:00	Registration and social networking
09:00 – 10:30	Recap of Day 2, lessons learned, insights and innovation. Stewardship and stakeholder engagement in EAF with CCA and DRM
10:30 – 11:00	**Break**
11:00 – 16:00	Field visits on application of EAF with CCA, DRM and stewardship (with lunch)
Day 4: Thursday 31 January 2019	
08:30 – 09:00	Registration and social networking
09:00 – 10:30	Recap of Day 3, lessons learned, insights and innovation Screening and discussion of participatory video created by fisherfolk
10:30 – 11:00	**Break**
11:00 – 12:30	Discuss stewardship-oriented small grant ideas for EAF with CCA and DRM
12:30 – 13:30	**Lunch**
13:30 – 15:00	Participatory planning for stewardship small grants and other initiatives. Wrap-up, next steps and close

Appendix 2: Participants List

No.	Name	Organisation	Telephone (664)	Email
1	Adrienne Needham	Montserrat Island Dive Centre	496-4995	islanddivecentre@gmail.com
2	Ajhermae White	Department of Environment		whitea@gov.ms
3	Alwyn Ponteen	MATLHE	496-1996	ponteena@gov.ms
4	Chase Buffonge	Agriculture/Fisheries	496-1799	purkle15@hotmail.com
5	Cynthia Dyett	Office of the Premier	491-3378	dyettc@gov.ms
6	Danny Sweeney	Bar Owner/ Pres. of Fisher Coop	496- 0574	dsweeney@
7	Jasmine Ina Baptiste	Statistics Department	491-3797	baptistej@gov.ms
8	Javiere Adams	Department of Agriculture		adamsj@gov.ms
9	John Howes (Capt.)	John Howes Fishing NAMCAS	415-5229	safe500@hotmail.com
10	Lavern Ryan	GIS Centre- MATLHE	491-6795	rogers@gov.ms
11	Leon White	Port Authority	491-2791	leon.white@mpa.ms
12	Lisa Needham	Island Dive	496-4995	lisa.v.needham@gmail.com
13	Lyandre Lee	Agriculture/Fisheries	493-1693	leel@gov.ms
14	Melissa O'Garro	Department of Agriculture	491-2600 492-2755	ogarrom@gov.ms
15	Rose Willock	Civil society	491-6652	rosewillock@hotmail.com
16	Rosetta West-Gerald	Tourism Division	491-4702 49- 4703	rosetta.west@montserrattourism.ms
17	Shawn Daniel	Scuba Montserrat	491 7807	scubamontserrat@gmail.com
18	Sheldon Carty	Montserrat Boat and Fishing Association	493 1671	sheldoncarty@hotmail.com
19	Stephen Mendes	Department of Environment	491 9278	mendess@gov.ms
20	Thiffanie Williams	Department of Environment	491 9278	williamst@gov.ms
21	Thomas Christopher (Dr.)	Montserrat Boat and Fishing Association	492 1816	thomas@mvo.ms
22	Vachel Murrain	Fire and Rescue	393-3317	murrainv@gmail.com
23	Veta Wade	Fish 'n' Fins	392-9255	aquamontserrat@gmail.com
24	Neema Ramlogan	CANARI	1-868-638-6062 1-868-674-1558	neema@canari.org
25	Kerton Jobe	CERMES - EAF Workshop Facilitator	1-868-759-5855	kerton.jobe3@gmail.com

Appendix 3: Concepts of climate change adaptation and disaster risk management

CLIMATE CHANGE ADAPTATION IN THE FISHERIES OF ANGUILLA AND MONTSERRAT

Ecosystem Approach to Fisheries and Stewardship Workshop

Montserrat

January 28th – 31st 2019

Climate Change Adaptation and Disaster Risk Reduction Overview

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

Fisheries and fishing-dependent people are often located in places that are at particularly high risk of extreme events, which can:

destroy or severely damage infrastructure and assets 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 surviving household members but also potentially upset economic and social activities and systems outside the immediate family

Rapid onset or extreme events

Impacts of climate change on Montserrat (extreme events)

- More extreme weather, including hurricanes, tropical storms and storm surge. Stakeholders noted they also felt the effects of Category 5 Hurricane Maria in September 2017, although not as severe as in other islands, and highlighted the devastation caused by past events such as Hurricane Hugo in 1989 which resulted in erosion of shorelines and damage to corals.
- Flooding and coastal erosion related to extreme weather and to sea level rise, especially in low-lying coastal areas such as the proposed new capital, Little Bay, and the Carr's Bay area (i.e. where the already limited fishing activity on the island is concentrated).
- Intense rainfall events, which have also contributed to secondary hazards such as flash floods – as storm water rushes down through ghauts (ravines running down hillsides), and mudflows or lahars as volcanic debris is picked up and washed down from slopes (e.g. Belham Valley and Trants/Farms areas).
- Coral bleaching is thought to be limited currently but expected to increase if sea temperatures continue to warm. This is a concern for coral reefs already degraded by other anthropogenic stressors, such as land-based sources of pollution, and volcanic activity.
- Influx of sargassum, which was noted to be of concern for all coasts, hindering fishing activity and also impacting turtle nesting sites and recreational beaches (e.g. Carr's Bay beach and Marguerite Bay).

Reference: Report on the assessment of vulnerability to climate change in the Anguilla and Montserrat fisheries sector: Montserrat country report, CANARI, September 2018

Slow onset events

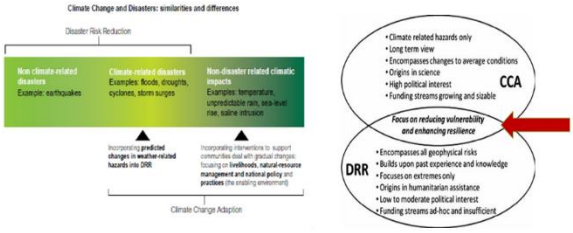
Climate hazard	Potential impacts on fisheries (ecological)	Potential impacts on fisheries (socioeconomic)
• Rising sea levels • Increased ocean acidity • Increased air and sea temperature • Variability in rainfall • Increased intensity of tropical cyclone activity	• Habitat alteration and loss e.g. coral bleaching • Reduced abundance and diversity of marine plants and animals • Shifts in distribution and size of fish species as a result of changes in ocean currents and temperature • Alteration of length and timing of spawning seasons • Alteration in seasonal migration patterns of many pelagic species	• Loss of livelihoods • Reduced income for fisheries dependent households • Loss of coastal lands and displacement of fishing communities • Increased poverty • Inadequate nutrition (notably protein intake) • Reduced food security • Reduced foreign exchange earnings • Reduced access to freshwater

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 property, 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?

Comparing CCA and DRR



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

There are three dimensions of vulnerability to climate change: exposure, sensitivity, and adaptive capacity.

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), improving risk and crisis management, and **mainstreaming DRM and CCA into national and local plans [Focus of this workshop!]**
- Taking actions to improve the resilience of habitats and targeted species to the adverse effects of climate change, including:
  - ✓ strict enforcement of existing marine pollution control protocols and abatement of contamination from land-based sources;
  - ✓ reactivation 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 EAF.
- 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.

- 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.

- 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 CSOs.
- 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 seamoss 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.

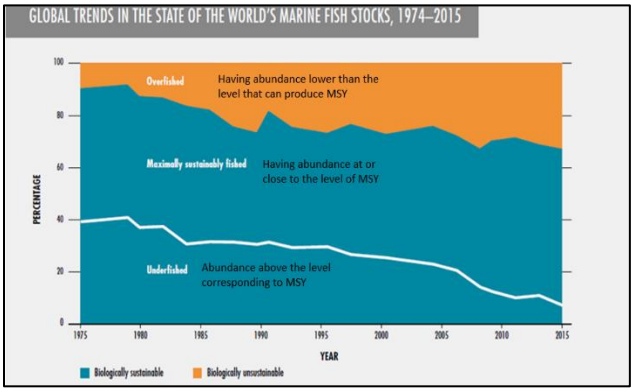
Appendix 4: Concepts of EAF and stewardship

Concepts of EAF
&
Stewardship

Climate Change Adaptation in the Fisheries of Anguilla and Montserrat Project

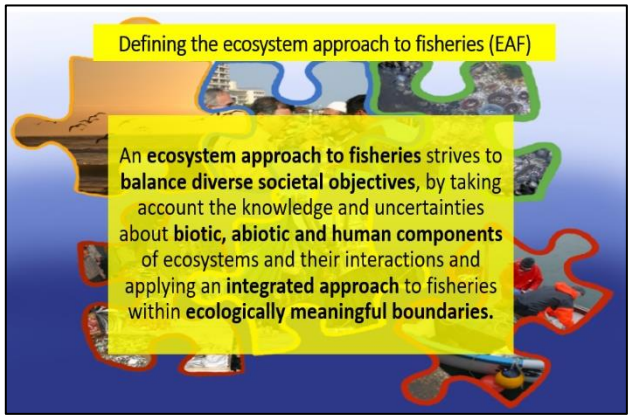
Workshop on implementing the ecosystem approach to fisheries (EAF), climate change adaptation (CCA), disaster risk management (DRM) and stewardship in fisheries management planning, 28-31 January 2019, Montserrat Cultural Centre, Little Bay

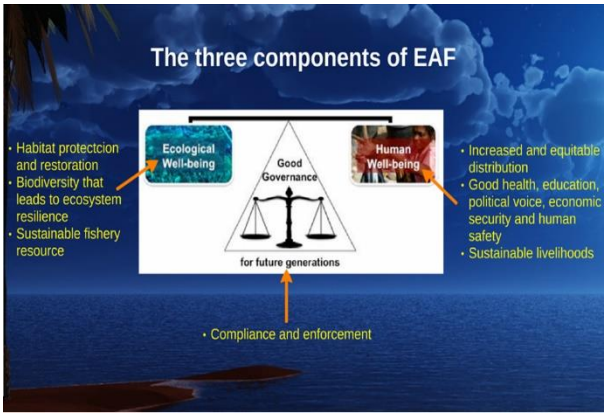
The Prequel



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



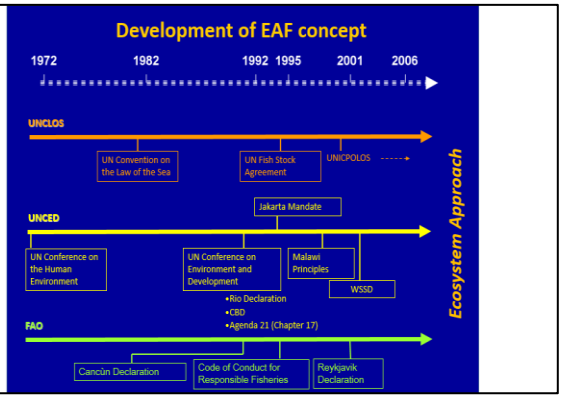


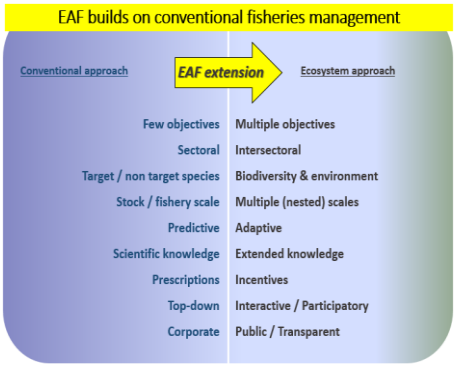
EAF Principles

- **Appropriate scale** of social-ecological systems.
- **Increased participation** of key stakeholders in management process.
- **Cooperation of and coordination** (both vertically and horizontally) amongst various institutions.
- **Good governance**...PANTHER: **P**articipation, **A**ccountability, **N**on-discrimination, **T**ransparency, **H**uman dignity, **E**mpowerment and **R**ule of law
- The use of **the precautionary approach** when there is the existence of uncertainty.
- Management of **multiple objectives**.
- **Adaptive management** that embraces change through "learning by doing".

EAF Principles

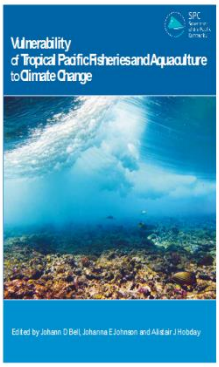
- None of the principles that underlie the EAF are new. They can all be traced in earlier instruments, agreements, declarations.
- Implementation of these principles lags behind in relation to their formulation in agreed international instruments.
- The EAF highlights and reorganizes the principles of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





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



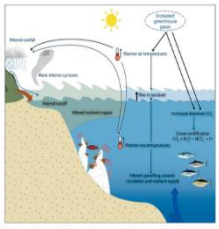
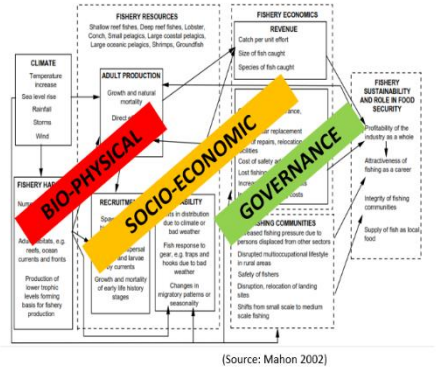


Figure 1.11 Generalised effects of increased greenhouse gases on oceanic and coastal ecosystems in the tropical Pacific.

Pacific millions of dollars mega-study concludes that if fisheries managers did what they know to do from EAF, then climate and other hazard risks are reduced

Not business as usual ... but business as it should be
Not rocket science ... but the tough decisions remain

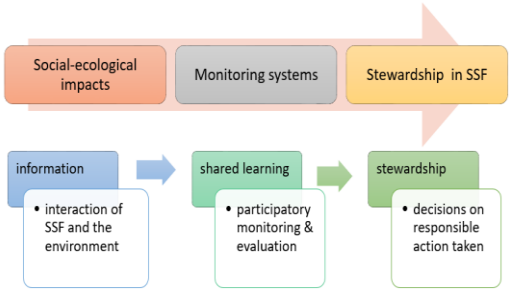


(Source: Mahon 2002)

CRFM countries do **NOT** have a good FMP track record

Consider the entire fisheries value chain, which is more of a social network than a linear chain in reality

A process for enhancing stewardship in EAF
Building on information and shared learning



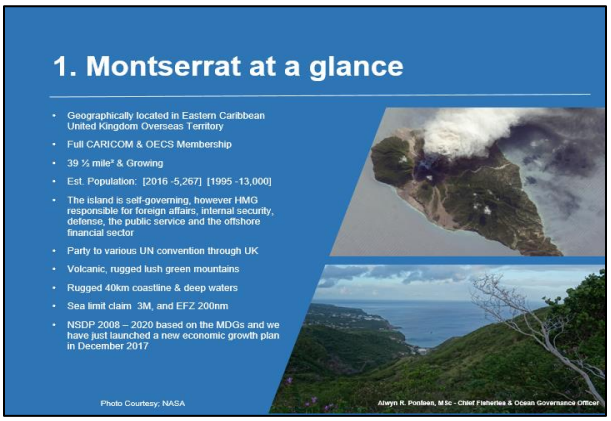
Considering stewardship in EAF

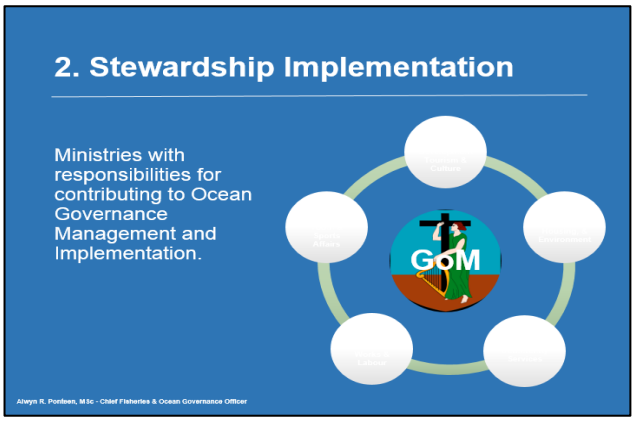
- Should have a sense of **ownership** over natural resources
- Need to exercise both individual and collective **responsibility**
- Demonstrate **accountability** in stewardship within society
- May anticipate some sort of **reward** for being good stewards (even just the anticipated gratification from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

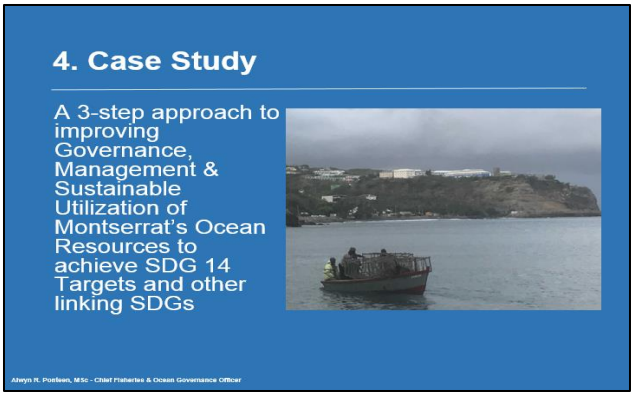
Abundant guidance on FMPs, EAF, Stewardship, CCA, DRM

FAO. 2012. *EAF Toolbox. The ecosystem approach to fisheries*. Rome. 172 pp.

Appendix 5: Strengthening Stewardship in the Caribbean







Step One

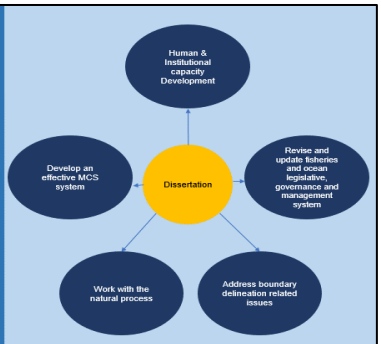
Accredited Institutional Capacity Development

- Skills Gap Analysis
- University of Portsmouth MSc Coastal and 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

Identifying the right strategic Development Partners with shared goals and values

Sustainable Use of Ocean Resources in Waters under National Jurisdiction

Integrated Approaches for Conservation and Commercial Benefits

Local, Regional & International Development Partners

Results

3.0 Fisheries & Ocean Resources

GOAL 3.1
Expand and modernize infrastructure projects and capacity building programmes for the management of fisheries and ocean resources

GOAL 3.2
Strengthen the Fisheries Unit's capacity to execute its Mandate and deliver services

GOAL 3.3
Modernize the legal framework for the Governance, management, Conservation and sustainable utilization of the Fisheries and Ocean Resources sub-sector

GOAL 3.4
Collaborate with stakeholders and strategic partners to promote increased consumption of local fish and other marine products

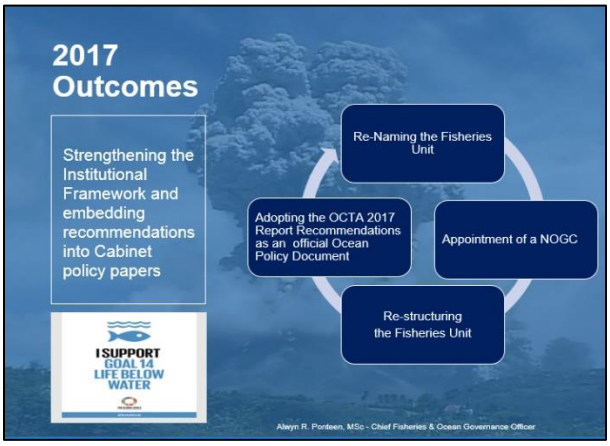
Results

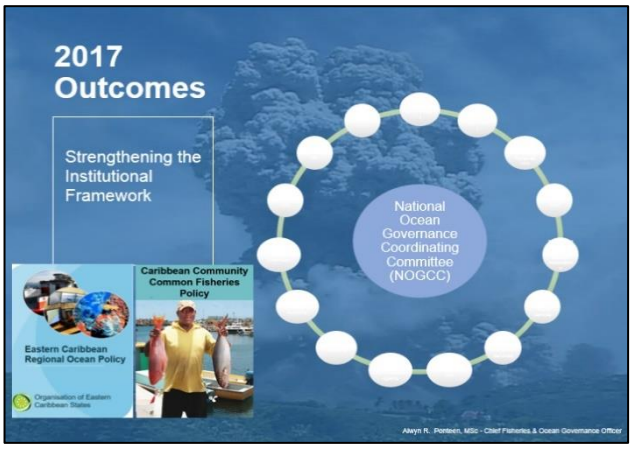
Partnership finance to by 90% over 5 years, without which we would not have been able to achieve results due to limited budget.

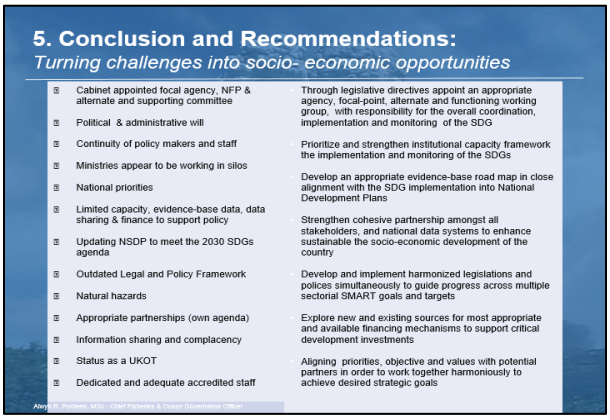
Turning the eradication of the invasive lionfish into a sustainable fishery & delicacy	Capacity Development	Strengthen Partnerships
Stakeholder awareness and sensitization of community ocean related issues	Agree in principle to protect 10% to 30% of Montserrat's marine environment	Development of new legislative framework, revising and updating existing policies
Socio-economic valuation and qualitative analysis of the fisheries sector	Development of new sustainable fishery (FAD)	CCA Project in the fisheries of Anguilla and Montserrat
Comprehensive Review of the Fisheries in December 2016	Geothermal exploration, completion 2 of 3 wells	Economic Growth Strategy and Delivery Plan for Montserrat 2017

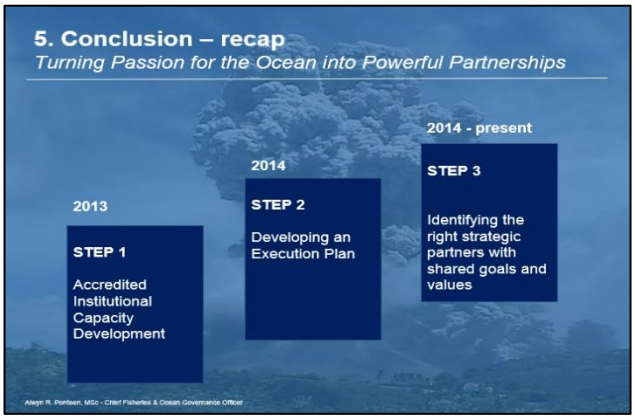

JNCC
The Solution: SC Infinity
SUCCORFISH
Succorfish IVMS
Results: A technological revolution in Montserrat's Ocean Governance
Integrating vessel movement and improving fisheries data collection for marine management, MSP and valuing ecosystem goods and services
Alwyn R. Ponteen, MSc - Chief Fisheries & Ocean Governance Officer


ADOPT A DIVESITE
Results: Monthly Beach clean up campaign
Alwyn R. Ponteen, MSc - Chief Fisheries & Ocean Governance Officer


2017 Outcomes
Strengthening the Institutional Framework and embedding recommendations into Cabinet policy papers
Re-Naming the Fisheries Unit
Appointment of a NOGC
Re-structuring the Fisheries Unit
Adopting the OCTA 2017 Report Recommendations as an official Ocean Policy Document
I SUPPORT GOAL 14 LIFE BELOW WATER
Alwyn R. Ponteen, MSc - Chief Fisheries & Ocean Governance Officer


2017 Outcomes
Strengthening the Institutional Framework
National Ocean Governance Coordinating Committee (NOGCC)
Caribbean Community Common Fisheries Policy
Eastern Caribbean Regional Ocean Policy
Organisation of Eastern Caribbean States
Alwyn R. Ponteen, MSc - Chief Fisheries & Ocean Governance Officer


5. Conclusion and Recommendations:
Turning challenges into socio- economic opportunities
Cabinet appointed focal agency, NFP & alternate and supporting committee
Political & administrative will
Continuity of policy makers and staff
Ministries appear to be working in silos
National priorities
Limited capacity, evidence-base data, data sharing & finance to support policy
Updating NSDP to meet the 2030 SDGs agenda
Outdated Legal and Policy Framework
Natural hazards
Appropriate partnerships (own agenda)
Information sharing and complacency
Status as a UKOT
Dedicated and adequate accredited staff
Through legislative directives appoint an appropriate agency, focal-point, alternate and functioning working group, with responsibility for the overall coordination, implementation and monitoring of the SDG
Prioritize and strengthen institutional capacity framework the implementation and monitoring of the SDGs
Develop an appropriate evidence-base road map in close alignment with the SDG implementation into National Development Plans
Strengthen cohesive partnership amongst all stakeholders, and national data systems to enhance sustainable the socio-economic development of the country
Develop and implement harmonized legislations and polices simultaneously to guide progress across multiple sectorial SMART goals and targets
Explore new and existing sources for most appropriate and available financing mechanisms to support critical development investments
Aligning priorities, objective and values with potential partners in order to work together harmoniously to achieve desired strategic goals


5. Conclusion – recap
Turning Passion for the Ocean into Powerful Partnerships
2013
STEP 1
Accredited Institutional Capacity Development
2014
STEP 2
Developing an Execution Plan
2014 - present
STEP 3
Identifying the right strategic partners with shared goals and values
Alwyn R. Ponteen, MSc - Chief Fisheries & Ocean Governance Officer

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

Funded by UK Government

JNCC Joint Nature Conservation Committee

Focus for 2018 and beyond
Territory to territory partnership (T2T)

National Ecosystem Assessment for Montserrat

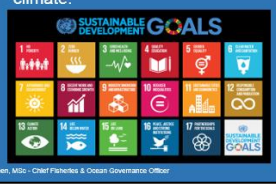
- Earth Observation based mapping and interpretation
- Natural capital assessments, mapping and monitoring methods
- Identify priority Natural Capital Assets & develop metrics to monitor change over time
- Development of a GIS based value maps for Montserrat

Funded by UK Government

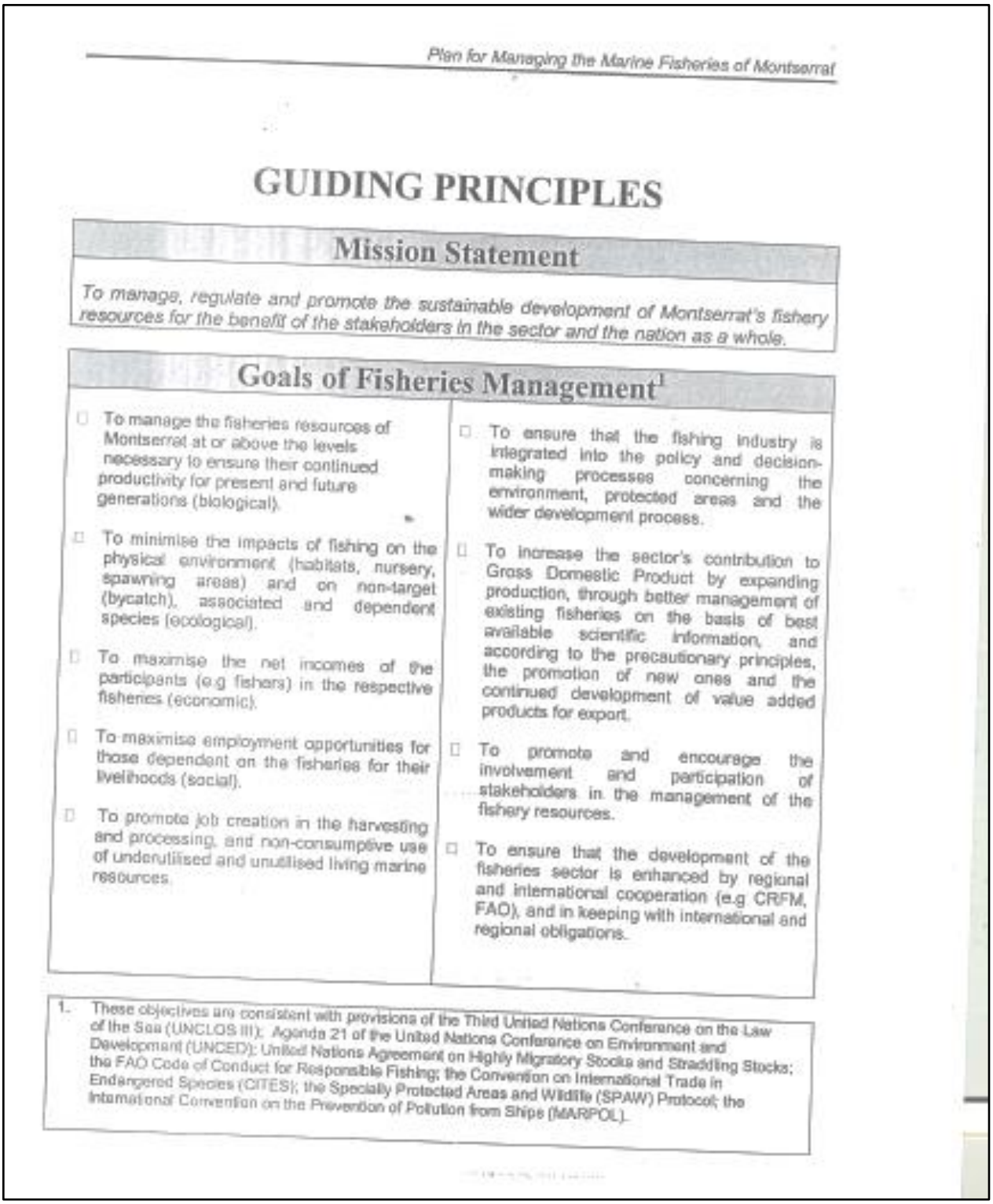
JNCC Joint Nature Conservation Committee

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.



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[1]

- To manage the fisheries resources of Montserrat at or above the levels necessary to ensure their continued productivity for present and future generations (biological).
- To minimise the impacts of fishing on the physical environment (habitats, nursery, spawning areas) and on non-target (bycatch), associated and dependent species (ecological).
- To maximise the net incomes of the participants (e.g fishers) in the respective fisheries (economic).
- To maximise employment opportunities for those dependent on the fisheries for their livelihoods (social).
- To promote job creation in the harvesting and processing, and non-consumptive use of underutilised and unutilised living marine resources.
- 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.
- 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 principles, the promotion of new ones and the continued development of value added products for export.
- To promote and encourage the involvement and participation of stakeholders in the management of the fishery resources.
- 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.

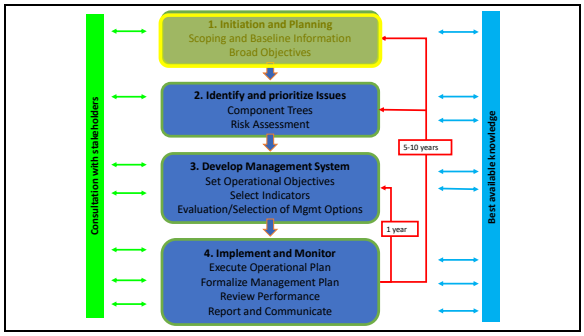
1. These objectives are consistent with provisions of the Third United Nations Conference on the Law of the Sea (UNCLOS III); Agenda 21 of the United Nations Conference on Environment and Development (UNCED); United Nations Agreement on Highly Migratory Stocks and Straddling Stocks; the FAO Code of Conduct 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



Step 1 – Initiation and Scope
Overview of Key activities

1.1 Initial process planning and stakeholder support
Output: roadmap defining specific methods and tools to be used during the planning process; identification and mobilization of stakeholders

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, the 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.

1.1 Initial process planning and stakeholder support

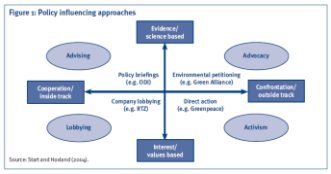
Get set
- Ensure adequately preparation to apply EAF
- Be realistic about what it can deliver and when
- Seek formal support for the EAF FMP process

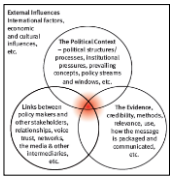
Background information (EAF Toolbox relevant questions)
- Collate national policies and international agreements
- Identify information and expertise on fisheries system (stakeholder and/or institutional analysis needed?)
- Summarise relevant climate and disaster information

the Initial decisions are critical

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?





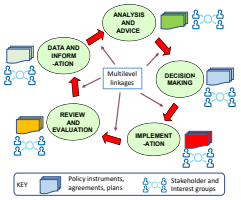
Power and influence at science-policy interface

Source: Start and Hovland. 2004. *Tools for Policy Impact: A Handbook for Researchers*. Available at: www.odi.org.uk/rapid/Publications/Documents/Tools_handbook_final_web.pdf

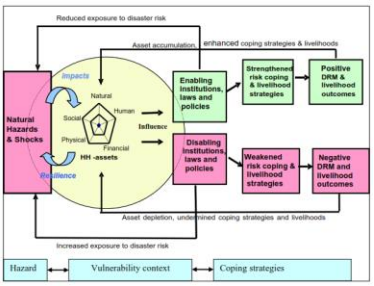
Participation and good governance

- 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.
- 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 FMP process. Enhanced Stewardship? But what policies guide this?

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.



- Institutional analysis examines both structures and processes
- Without institutional analysis a clear understanding of the complex interactions and relationships among the actors in fisheries systems is not likely to be achieved.
- This understanding is important in EAF that encompasses CCA and DRM, as it includes many stakeholders from other sectors.



(Source: Baas and others 2008)

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

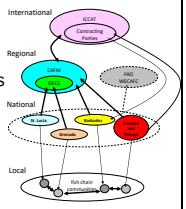
- Explicitly determine what fishing activities, areas, groups will (or won't) be included in the EAF process

Values

- Determine the key community values to be achieved

Scope, scale and levels of management

- Clearly outline what fishing activities, fishing groups, target species, geographic regions will be included within the EAF FMP
- Identify other key activities, groups, agencies that need to be included in this system (directly or indirectly) with CCA and DRM to enable the management system to operate
- Clarify who has legislative and/or policy control for the activities, areas and people



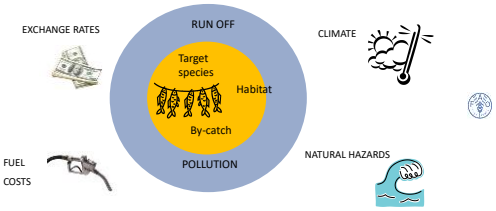
Scope

Disasters Climate Fisheries

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

Example: Investigating influence – what you can manage, what you need to adapt to, who are your boundary partners among the stakeholders, etc.



Sustainable Development Goals

Societal values

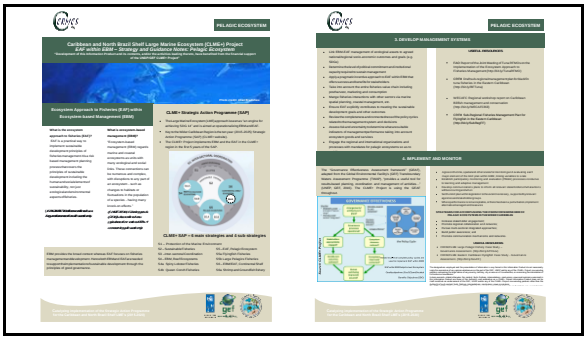
- Ecological
- Social
- Economic
- Cultural
- Political
- Food security
- Avoiding waste

- 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

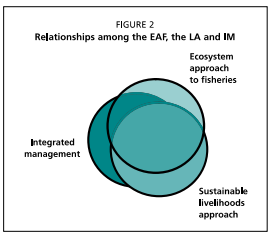
15

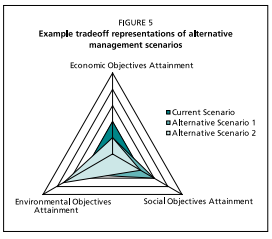
High level management objectives

- 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

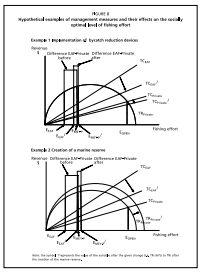


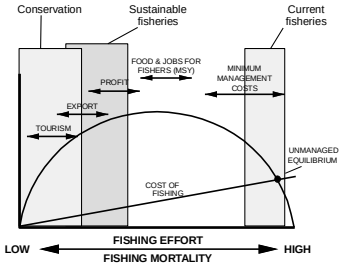
Always explicitly consider the trade-offs and choices to be made in all decisions





Need to understand policy influence and trade-offs





Toolbox

- Many books and guides available for scoping, planning
- EAF Toolbox has 'personalized' tools proven to be useful

Tools and information sources	Page	Selection criteria					
		Difficulty	Cost	Capacity	Know.	Participation	Time
Consultation tools	50						
Description for completing an EAF Baseline Report	63	Easy	L	L	L	M	S–L
EAF roadmap template	66	Easy	L	L	L	L–M	S
Stakeholder analysis	69	Moderate	L–M	M	L	M–H	S–M
Institutional analysis	73	Moderate	M	M	M	L–M	S
SWOT analysis	76	Moderate	L	L–M	L	M–H	S
Cost-benefit analysis	80	Fairly Hard	M	M	M	L	M

Tools and information sources	Page	Selection criteria					
		Difficulty	Cost	Capacity	Know.	Participation	Time
Consultation tools	50						
Participatory Rapid Community Assessment	85	Moderate	M	M	M	M	M
Visioning exercises	88	Moderate	L	L–M	L	M–H	S–M

L: Low or Long;
S: Short;
M: Medium;
H: High

1.3 Finalization of the scoping and background document

- Document all relevant EAF, CCA, DRM fishery-related information:
  - current fishing policies, management documents, status reports, stock assessments, broader ecosystem issues, community social/economic info
  - Can be informal information, use traditional and local knowledge
- Review entry point and roadmap for FMP and amend if needed
- We *create a basis* upon which we can build an EAF management plan
- We've gathered relevant *background information*, identified *key stakeholders* and defined the *fishery, scope and* values
- Stakeholders are *informed, support* has been gathered and *authority* over different parts of the fishery has been distributed
- Serves as a *negotiating text* and foundation for the first draft FMP

EAF Baseline report

Table of Contents

Introduction

Summary of main motivations for introducing EAF

Part 1. Overview of the fishery and resources exploited

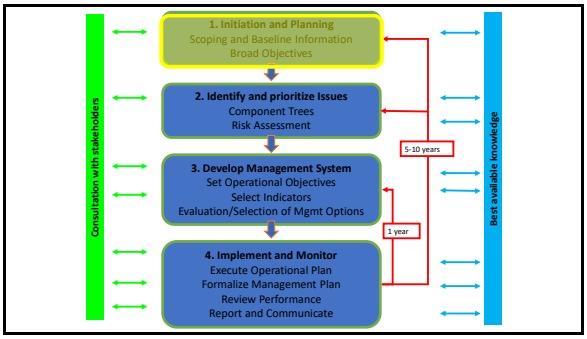
1.1. Fishing gear used and areas fished.
1.2. Importance of the fishery to local/national/regional economy
1.3. Available knowledge on the status of fisheries resources
1.4. Legal and administrative frameworks
1.5. Management measures
1.6. Main stakeholders

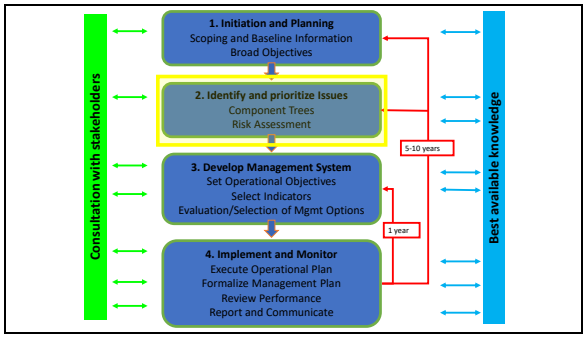
Part 2. Threats to fisheries sustainability

2.1. Threats to Ecological Wellbeing
2.2. Threats to Community (human) Wellbeing
2.3. Threats to Fisheries Governance (including external drivers)

References

Annexes





Step 2 – Identification of assets & their priority

Overview of Key activities

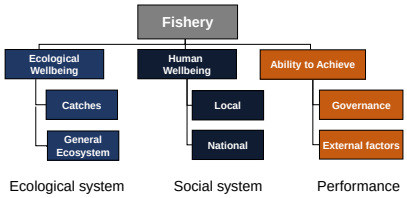
2.1. Identification of assets and issues

Output: A complete set of EAF-related issues sorted into ecological assets, social and economic outcomes, governance systems and the threats, drivers and impacts relevant to the fishery.

2.2. Prioritization of assets and issues using risk assessment

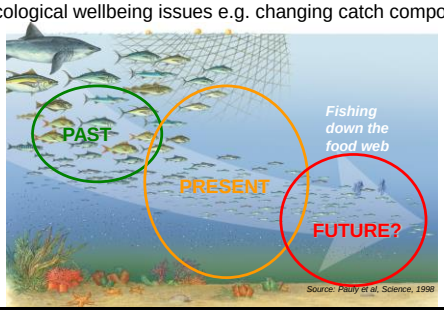
Output: The relative level of risk and priority, plus the recommended level of direct management action or other specific activities, needed to deal with each of the issues.

2.1 Identification of issues and assets

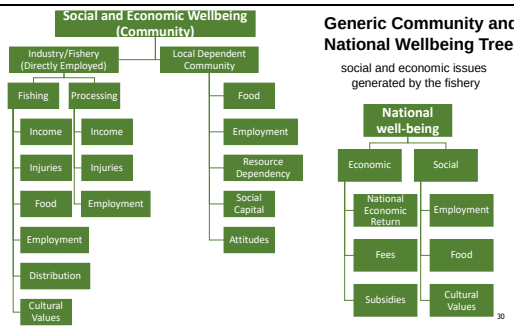


Based on the scope and values of the fishery, the next step, which is central to the entire EAF process, is to identify all the relevant issues (assets, outcomes, systems and drivers) associated with the fishery across each of the EAF components (ecological well-being, human well-being and ability to achieve).

Ecological wellbeing issues e.g. changing catch composition



29



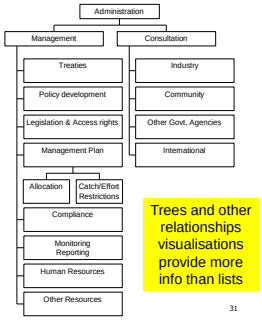
Generic Community and National Wellbeing Trees

social and economic issues generated by the fishery

30

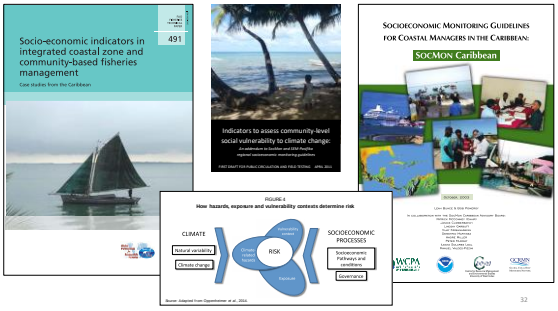
Ability to achieve – performance issues

- 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*



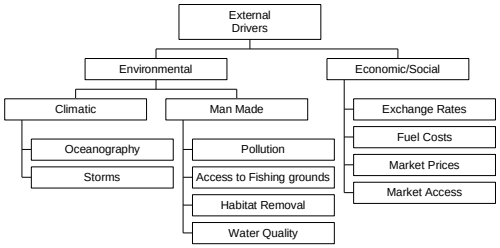
Trees and other relationships visualisations provide more info than lists

31



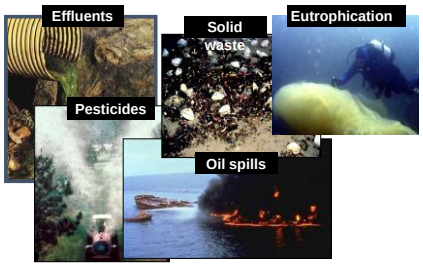
32

External driver tree particularly useful for CCA and DRM issues



33

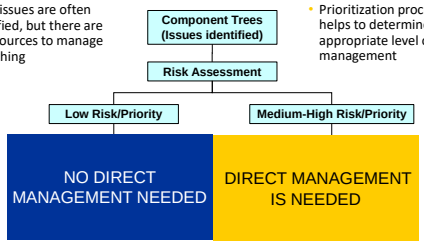
Examples of other human-induced driver interactions with climate and hazards



34

2.2 Issue prioritization (choices) via risk assessment

- Many issues are often identified, but there are no resources to manage everything



- Prioritization process helps to determine an appropriate level of management

What is Risk?

Risk is defined as:

- *potential 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?"

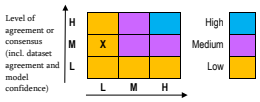
CARIBBEAN MARINE CLIMATE CHANGE REPORT CARD: SCIENCE REVIEW 2017
Science Review 2017, pp 83-114.

Impacts of Climate Change on Fish and Shellfish in the Coastal and Marine Environments of Caribbean Small Island Developing States (SIDS)

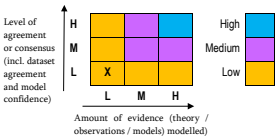
Hazel A. Oxenford and Iris Monnereau
Centre for Resource management and Environmental Science (CERMES), University of the West Indies, Cave Hill, Barbados

Confidence Assessment

What is already happening



What could happen in the future



37

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.

Step 2.2 Risk Assessment

A Simpler Method of Calculation

Risk Level	Risk Categories	Risk Scores (CxL)	Likely Management Response	Likely Reporting Requirements
Negligible	1	1-2	None	Brief Justification
Low		3-4	No Specific Management	Full Justification needed
Medium	2	6-8	Specific Management/Monitoring Needed	Full Performance Report
High	3	9-16	Increased management activities needed	Full Performance Report

LOW – levels of impacts are expected to remain low or the chances of a major impact are very small – highly likely to meet objective even without direct action

MEDIUM – Issue is at an acceptable level at the moment and should meet the objective but only if directly managed

HIGH – Major problems are already happening or will occur in the near future. Objectives will not be met unless additional actions are undertaken.

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.

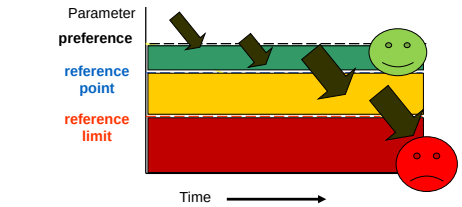
This would be a LOW RISK

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

Likelihood		Consequence: Minor 1	Moderate 2	Major 3	Extreme 4
Remote	1	1	2	3	4
Unlikely	2	2	4	6	8
Possible	3	3	6	9	12
Likely	4	4	8	12	16

What is acceptable?

- Be very clear on what is considered an acceptable outcome for each objective
- What is acceptable in one case may not be so elsewhere, or at another time



Conflict among stakeholders can often be due to them assessing different objectives, and from different perspectives and interests. So what one thinks is acceptable will differ from another.

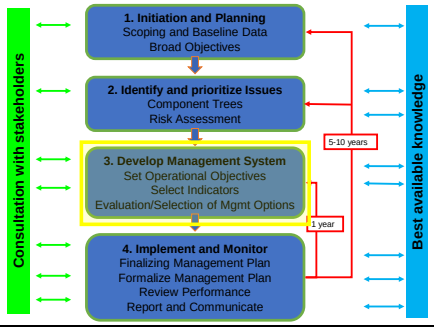
Products

- 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.

Tools and information sources	Page	Selection criteria: Difficulty	Cost	Capacity	Know.	Participation	Time
Consultation tools	50						
Non formal risk categories	117	Easy	L	L–M	L	H	S
Qualitative risk analysis (C x L)	120	Moderate	L–M	L–M	L	M	S
Quantitative risk analysis	130	Very Hard	H	H	H	L	L
Dot based ranking and prioritisation methods	132	Easy	L	L	L	H	S
Multi-criteria decision analysis	134	Moderate	L–M	M	L–M	L–M	S–M

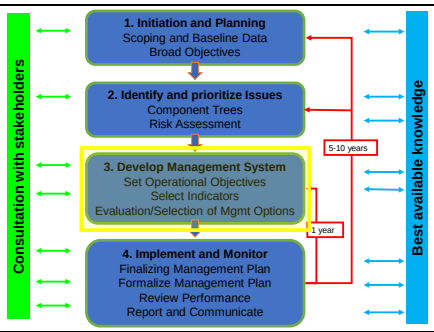
L: Low or Long; S: Short; M: Medium; H: High

43



Management system

51



Step 3 – Develop Management System

Overview of Key activities

3.1. Determining operational objectives

Output: development of a set of clear and appropriate operational objectives covering each of the issues that requires direct management.

3.2. Selection of indicator and performance measures

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

3.3. 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..

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

Asks: What specifically for each priority issue do you want the fishery to achieve and why?

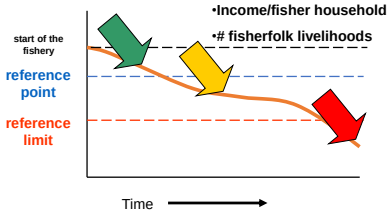
3.2 Indicator and performance measure definitions

- **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

Indicators in action

Example of indicators:

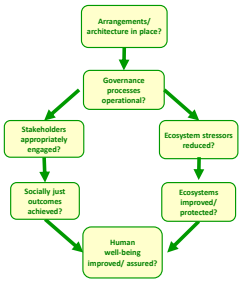
- **Biomass of fish stock**
- **Catch rates (CPUEs)**
- **Income/fisher household**
- **# fisherfolk livelihoods**



Step 3.2 Indicator and Performance

Using indicators helps

- Support management decision making within policy cycle, etc.
- Track progress towards meeting management objectives, hence also management effectiveness
- Communicate effects of impacts of use and of management to a non-specialist audience of stakeholders



Many indicator tools

- Challenge is to select indicators that are affordable and match the sophistication of the management system and capacity to achieve

Tools and information sources	Page	Selection criteria					
		Difficulty	Cost	Capacity	Know.	Participation	Time
Consultation tools	50						
Reviews and summaries of indicators and performance measures for use in EAF	144	Easy	L–M	M	L–M	L–H	S
Community based monitoring	151	Easy	L	L	L	M–H	S–M
Harvest strategies and control rules	153	Fairly Hard	M	M	M	L–H	S

L: Low or Long; S: Short; M: Medium; H: High

Step 3.2 Indicator and Performance

Box 7.2 EXAMPLE OF OPERATIONAL MANAGEMENT SYSTEM FOR HIGH PRIORITY ISSUES IN THE SMALL PELAGIC FISHERIES OF SOUTH AFRICA

Issue: impacts of removal of forage fish species on land-based seabirds.

- **Operational objectives**
  Need to maintain viable population size and structure for African penguins, Cape cormorants, Cape gannets and swift terns.
- **Indicator**
  Population size/trend and breeding success of each seabird species.
- **Performance measure/limit**
  Avoid classification as threatened (i.e. including vulnerable, endangered, etc.)
- **Data requirements/availability**
  Need annually to estimate population size, diet and breeding success.
- **Fisheries Management Response**

CURRENT

Management of pelagic fish does not explicitly account for dependent species e.g. seabirds.

FUTURE

Identify target population levels for seabirds, establish extent of food escapement to meet seabird objectives.

- **Actions if performance limit is exceeded**
  Possibly enforce closed areas and/or TAC.
- **External drivers (factors outside fisheries control that may affect performance against the objective)**
  Major oil spills, climate change, increasing seal population, increasing human activity, poaching and tourism.

Source: FAO (2007)

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
- Travel Cost
- Attitudinal Surveys
- Stated Preference Methods
- Bio-economic Models
- Asset Mapping
- National Systems of Accounts

- 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

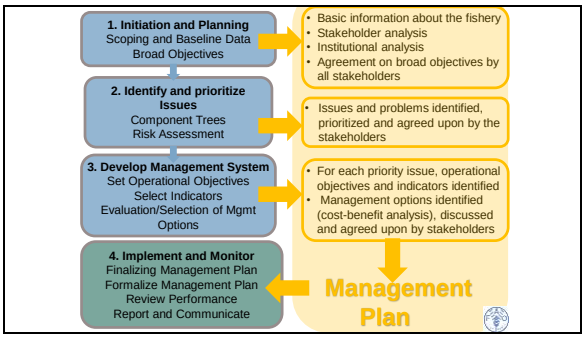
Toolbox

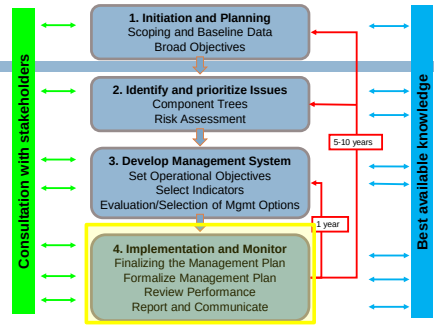
Products

- 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

Tools and information sources	Page	Selection criteria					
		Difficulty	Cost	Capacity	Know.	Participation	Time
Option identification							
Consultation tools	50						
SWOT analysis	76	Moderate	L	L–M	L	M–H	S
Management manuals and reviews	155	Moderate	L	M	L	L–M	S–M
Fisheries enforcement and compliance	158	Moderate	M–H	M–H	M	L–M	M–L
Summaries of possible EAF based management responses	*	Easy	L	M	L	L–M	S
Community based techniques	*	Easy	L	M	L	M–H	M
Root cause analysis	*	Moderate	L	M	M	L–M	M
Evaluation							
Consultation tools	50						
Cost-benefit analysis	80	Moderate	L–M	M	M	L	M
Social and economic assessment methods	91	Fairly Hard	M–H	H	H	L	L
Quantitative stock assessment methods	99	Fairly Hard	M–H	H	H	L	L
GIS based and related decision support tools	101	Fairly Hard	M–H	M–H	M–H	L–M	M–L
Multi-Criteria analysis	134	Moderate	L	L	L	L–M	S–M
Management Strategy Evaluation (MSE)	159	Very Hard	M–H	H	H	M–H	L
Review of quantitative ecosystem models	161	Very Hard	H	VH	VH	L	L
Expert judgement or analysis	*	Easy	L	L–M	L–M	M–H	S

L: Low or Long; S: Short; M: Medium; H: High





Learning by doing, monitoring, evaluating and adapting

64

Step 4 – Implementation and Monitor

Overview of Key activities

4.1. Formalization of the management plan

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

4.2. Development of an operational plan and monitoring of its progress

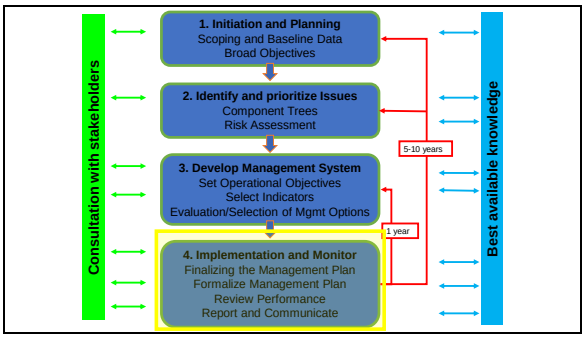
Output: elaboration of a detailed operational management plan (what, who, when, where).

4.3. Review of performance of the management system

Output: regular reports on level of activities completed to execute the operational plan.

4.4. Reporting and communication of performance

Output: periodic reports on the performance of the entire management system in generating acceptable performance for each of theoperational 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.)
- Key stakeholders
- Institutional arrangements
- Management objectives
- 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

Where, what and who is this about?

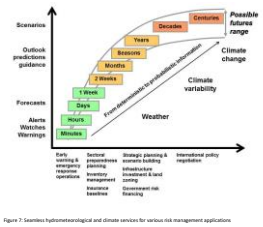
What do we want to achieve?

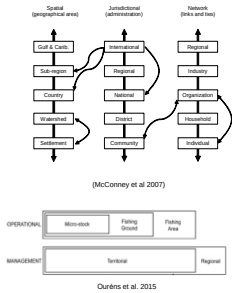
How will we achieve it?

How will we know if we are achieving it or not?

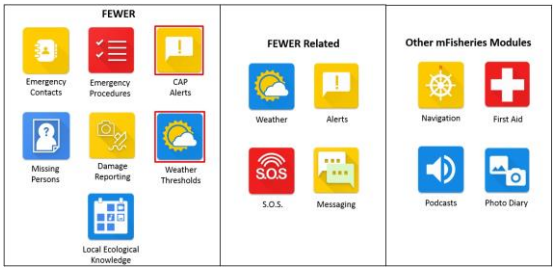
68

Beware scale mis-matches

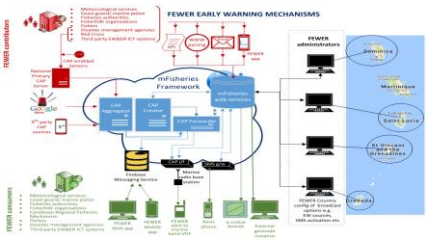




ICT is useful…work smart…e.g. mFisheries modules



Fisheries Early Warning and Emergency Response

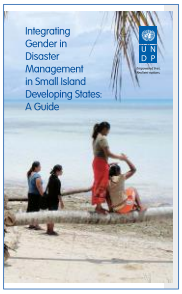


- To **fill gaps** for specific needs of fishers while integrating with national EWS, processes & protocols
- Connects multiple sources & consumers via multiple channels

Fisheries and aquaculture emergency response guidance

Common best practice

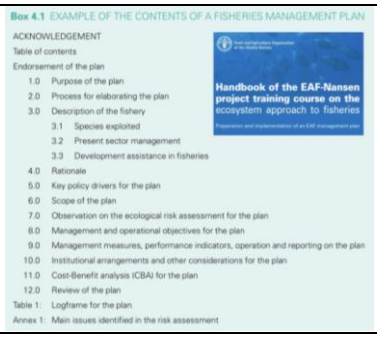
- Preparedness
- Supporting responsible fisheries and aquaculture
- Flexibility and responsiveness
- Inclusiveness
- Gender mainstreaming



Gender

- Gender norms foster more "risk taking" among men and "risk avoidance" among women, with implications for preparedness and safety in disasters. Women tend to seek out information regarding disasters and pay greater attention to warnings.
- Men and women's roles dictate how they use resources that impact on the environment, how environmental impacts affect their livelihoods differently, and what their risks might be during a natural hazard.

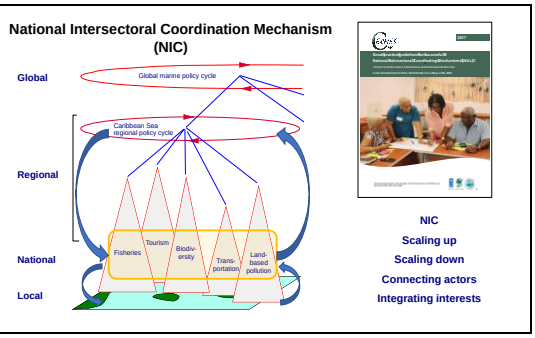
- Women are often found in much smaller numbers in formal and informal decision-making bodies and consultations on disaster risk management and climate change adaptation. They are therefore less likely to receive critical information for emergency preparedness and less likely to participate in decision making and policy development in these fields.



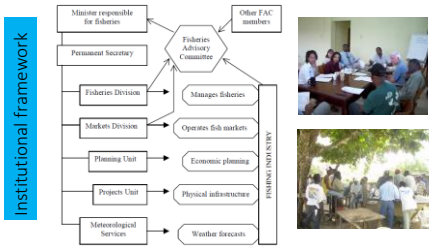
FMP implementation requires knowing

- 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



Statutory Fisheries Advisory Committees for participatory fisheries (co)management



Approach to getting started

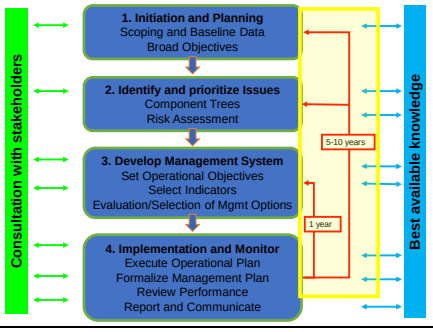
1. Develop a checklist of issues from the EAF management measures to ensure they are all covered by the FMP operational framework
2. Keep potentially key issues separate until it is clear that activities to address them are identical (e.g. for catch and effort measurement)
3. It may be necessary to separate 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

Formalization of the management plan

- **To implement it effectively a FMP may need to be formalized**
- The key is to have the FMP both legally and socially enforceable
- The level of formalization will depend upon jurisdiction and fishery:
  - May need to be a formal, legal document requiring parliamentary approval
  - Could be a simple list of rules agreed to and maintained by fisher leaders
- **Expect low success if the FMP is not endorsed by those who 'police' it**
- Stakeholder and politician support will be helpful in getting approval
- Enabling policy and a supportive legal-institutional framework needed
- Intersectoral linkages may include agriculture, tourism, energy, mining, forestry, wildlife, environment, transportation, etc.

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

83

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

84

Products

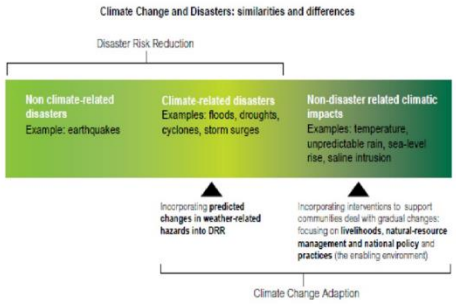
- A management plan that can be referenced and enforced
- But the process is not done... EAF is an adaptive cycle that will need to be continually monitored and modified

85

Appendix 8: Integrating DRM and CCA into Montserrat's Fisheries Management Plan

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

CLIMATE CHANGE ADAPTATION IN THE FISHERIES OF ANGUILLA AND MONTSERRAT

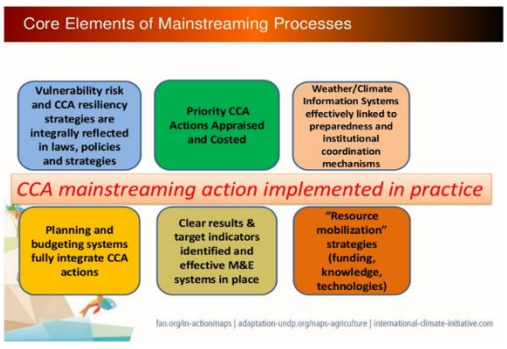


Disaster Risk Reduction (DRR) versus Climate Change Adaptation(CCA)

- **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 2015. 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!



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)?

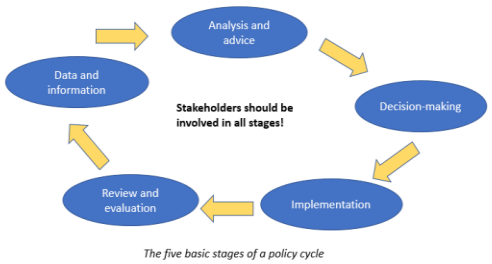
- Were climate change adaptation and disaster risk reduction actions identified for Montserrat's fisheries sector?
- Were these actions identified based on the findings of a vulnerability assessment?
- Were these actions prioritised? Were stakeholders involved in the prioritisation process?
- Were stakeholders 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 adaption 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?



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:

	Very Good	Good	Fair	Poor	**Missing response**
Clarity of objectives	8	2	1		1
Workshop content	5	5	1		1
Materials	5	4	2		1
Facilitation	10		1		1
Relevance to your needs	5	4	2		1

Any additional comments on the above:

12 no responses given

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

	Very Good	Good	Fair	Poor	**Missing response**
Workshop venue (s)	8	3			1
Lunches and breaks	8	2		1	1
General logistical arrangements	6	4	1		1

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!