Climate-Resilient Fisheries Planning Tool: Facilitators' Guide

Decision support for fishery managers, stakeholders, and communities seeking to increase resilience to climate change

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I. Introduction

This document is the Facilitator's Guide companion for the Climate-Resilient Fisheries Planning Tool (CRF Planning Tool). The guide is not intended as a stand-alone product, but rather to concisely provide guidance to participants who are bringing the CRF Planning Tool to a fishery or community and facilitating a climate resilience assessment and planning process.

The purpose of this guide is to outline an in-person collaborative approach that engages a selection of fishery participants, community members, or other partners in (1) understanding and assessing their current fishery system, (2) considering the current and anticipated effects of climate change, and (3) brainstorming and prioritizing actions they can take to improve the climate resilience of their system and interventions to address immediate climate risks. While this guide is intentionally non-prescriptive, it draws on case studies and external resources to present a broad set of tools.

The CRF Planning Tool is available as a website with instructions geared for multiple fishery or community participants to work through together; it is also available as a downloadable PDF for offline environments. Along with this companion document, the tool has a worksheet, provided both as an Excel document and a PDF. The worksheet will help participants record the outcomes of each step, along with thoughts and considerations that arise along the way. Its use throughout the assessment and planning process is highly recommended.

II. Preparation

Before you bring your community together to work through the CRF Planning Tool, it will be best if you try to take the following steps to make the process as smooth and successful as possible.

Ideally, two facilitators will be involved to help implement the CRF Planning Tool process. One facilitator would focus on leading the group, facilitating the conversation, and answering questions, while another facilitator would take notes and record in the worksheet. It may be possible to record the workshop via audio or video, however all members must agree to it and you should consider whether the conversations may be more productive if they are not recorded.

1. Review the Climate Resilience Attributes

It is recommended that the facilitator(s) familiarize themselves with the climate resilience attributes before they introduce them to participants and ask participants to score them. As the facilitator(s), you will be looked to for clarity and answers to questions, and it will be helpful if you have read the paper titled *Attributes of Climate Resilience in Fisheries: From Theory to Practice*. You may also consider bringing a copy of this paper to the workshop to refer to if needed.

The CRF Planning Tool website also provides case studies as examples of climate resilience attributes in fisheries and different actions certain fisheries have taken to address climate resilience. These case studies, the resilience attributes, and information on the development of the CRF Planning Tool has been documented in the paper *Diverse Pathways for Climate Resilience in Marine Fishery Systems*. It is recommended that you familiarize yourself with this paper as well and bring a copy to refer to at the workshop if needed.

The CRF Planning Tool takes a modified approach to scoring resilience attributes that are discussed in the papers linked above. The tool seeks to simplify some of the concepts by clustering individual attributes into groups that can be scored collectively, as a way of reducing effort associated with the scoring process. Review the clustered attribute list in Step 4 of the CRF Planning Tool and consider if this clustering is accurate and representative for your system. If there are clustered attributes that you believe are very different from one another in your fishery system, it may be better to score them separately. For example, the modified CRF Planning Tool attribute 'Psychological and Cultural Capacities' includes the i) Resilience Mindsets and ii) Place Attachment attributes from the two academic papers. The clustering process was completed by the SNAPP Climate-Resilient Fisheries Working Group.

2. Plan for Equitable Participation

The whole participant group for the tool will be led through a system mapping exercise to ensure there is equity in the goals and outcomes of the actions developed through this tool. It's ideal to try to have a group that represents the key stakeholders and community members. To that extent, it may be helpful for you to consider the equitable system definition prompts from Step 1 of the tool to make sure you reach out to and include key representatives and leaders who are well respected contributors to the fishery and its management, as well as marginalized groups who are involved in the fishery yet may not routinely engage in management and decision processes. This guidance, of course, must also be balanced with keeping the group small enough that all voices can be heard, and consensus can be reached. In some contexts, it may be appropriate to conduct separate sessions with different groups, such as men and women, youth and elders, or others, if cultural norms or power dynamics could prevent some participants from speaking openly in a mixed group. Part of your role will be to ensure there is active listening and balanced participation by the participants in the room.

While scientists may not be among your target stakeholders for this process, they may be very helpful when it comes to discussing and understanding climate risks in Step 2. Consider interviewing scientists before the workshop or possibly inviting them as participants, depending on your system's needs. As part of your preparation, you may also begin compiling a list of stakeholders or sketching a draft system map (See Step 1) based on your outreach efforts, while leaving space for additional contributions and revisions from participants during the workshop.

3. Pre-Work: Assemble Necessary Information and Materials

Some aspects of the CRF Planning Tool can be researched and populated in advance of a workshop, which can be particularly helpful if you anticipate knowledge gaps among participants or are limited in time. Any pre-work done by the facilitator(s), of course, should be presented to the participants and receive consensus to ensure there is transparency and agreement throughout the process.

System Mapping

As part of Step 1, it may be helpful to develop a simple visualization of the fishery system ahead of the workshop. Many participants find it easier to add or adjust elements than to start from a blank page. In this pre-work, consider outlining the key actors (e.g., fishers, traders, government agencies), sectors (e.g., harvesting, processing, marketing, regulation), and linkages (e.g., flows of fish, money, or information). If you anticipate that the group may overlook certain components of the

system, such as marginalized actors, ecological inputs, or informal governance structures, this is a good opportunity to ensure those elements are represented.

Setting Goals

In preparation for Step 2, it may also be helpful to review existing policies, laws, management plans, customary practices, or institutional frameworks that long-term goals will need to align with. Bringing in this context during the workshop will help anchor discussions in what is possible and ensure that goals represent a reality and are actionable. Consider preparing a short summary or reference sheet to share during the session.

Climate Change Risks

In Step 3 of the CRF Planning Tool, participants are asked to consider climate risks to their fishery system. This step contains links to some external resources that may provide important context for your fishery or region. However, the linked resources may not cover or reflect more in-depth knowledge about your fishery or region of interest, and additional research may be needed in advance of the workshop to synthesize relevant climate risk information. Prior to the workshop, it will be helpful to create a summary of risks and climate change impacts for your system; you can then ask your participants if they have any reactions or additions. Ensure the sources you use to generate this summary (including interviewing scientists, as mentioned above) are well documented and remain clear in the document.

Scoring Resilience Attributes

In Step 4, participants will evaluate the status and importance of a set of resilience attributes in the fishery system. You may consider doing research ahead of time to develop a preliminary score for several attributes, particularly those that are technical in nature (like some of the ecological resilience attributes that require detailed knowledge of specific species). As with any pre-work, make sure to present these scores as a starting point to reach consensus with the entire group, and make sure you can explain the rationale behind the preliminary score you provide. Not only will this demonstration speed up the scoring step if time is a concern, but it will also serve as a useful example to familiarize the participants with the scoring process.

As part of your pre-work and depending on time and resources, you could also consider engaging with scientists to review and condense the attributes into a list that aligns with your fishery system or you feel your participants will be able to speak to best. If you decide to condense the attributes, it is important to document this process to note why

certain attributes were kept or removed and to consider the potential risks or consequences of ***not*** considering certain attributes within the assessment.

Consider reviewing a few of the case studies available on the CRF Planning Tool website in advance to get a sense of which ones might resonate most with your group. Reviewing a handful of relevant examples can help you guide discussion and highlight resilience attributes and interactions that may inspire your group. You can use the filtering tools or your own notes to help connect the case studies to attributes your participants care about.

Brainstorming Actions

When participants get to Step 5, it may be helpful to already have compiled information on actions previously taken in your system (or nearby/similar systems) and the outcomes, if any, of those actions. If you reviewed case studies for Step 4, look through the actions highlighted in those fisheries. These actions may not have been taken for the purpose of climate resilience but may provide examples of actions that *could support* climate resilience. Consider preparing a short summary or reference sheet to share during the session.

Create Visuals

Where it is possible, it will be helpful to develop visuals in advance or anticipate visual exercises for your participants. If a projector will be available, slides with system map examples, climate change science and risk information, and resilience attribute definitions will be helpful in navigating all of the topics that are integrated into the assessment and planning process facilitated by the CRF Planning Tool.

Facilitator(s) may also find it helpful to bring supplies to the workshop to engage participants in visualization activities. Such supplies could include large paper pads, wall-sized sticky notes, notecards, and/or a whiteboard. Subsequent portions of this guide will have suggestions for visuals at relevant steps.

III. Guidance for Facilitating Each Step

Step 0

Before you begin the process guided by the CRF Planning Tool with your participant group, make sure your participants are already familiar with why they are being asked to participate and what your goal is for bringing this tool to your fishery. Reiterate these

points when your participants are convened and ensure they are clear on the expected outcomes from the process.

Background

When we define a *fishery*, descriptors commonly include information about geography (e.g., fishing grounds, country, sub-country region, oceanic region), species (e.g., species name, species group), intended purpose of the catch (e.g., subsistence, artisanal, commercial, recreational), and fishing methods (e.g., primary gear, equipment, techniques).

It may also be useful to bring everyone together with a common definition of resilience. We define *resilience* as the capacity to prepare for, resist, cope with, recover from, or adapt to a given stressor to ensure the sustainability of marine ecosystems, fishery resources, and human benefits. You could also develop a resilience definition together that captures community values, experiences, and histories, but this may require additional time or preparation.

If additional resources are requested we recommend:

- Wayfinder: A Resilience Guide for Navigating Towards Sustainable Futures
- U.S. Climate Resilience Toolkit: Steps to Resilience

Step 1: Define your System

In this step, participants will learn:

- ❖ About the importance of understanding who and what is in their fishery system
- ❖ Why equity and inclusion is important in this process
- ❖ How to develop a system map of their fishery
- ❖ How to identify and understand factors and conditions that influence their fishery system

In the worksheet, participants will:

- ❖ Map out their system in lists or diagrams
- ❖ Identify key contextual factors and conditions that are important for understanding climate change in their system

Background

Six Principles for Equitable and Inclusive Civic Engagement - Pre-reading to help prepare you for equitable engagement with your participants.

Kumu mapping program - If you will have access to computers and a projector, a systems mapping tool like Kumu may be a helpful visualization guide.

Fishery Systems Mapping Tool - This tool developed by the Environmental Defense Fund walks users through filling out a very thorough system map. This may be too complex to fill out the day of a workshop, but it could be valuable pre-work by you as well as a resource for information and further sources.

Instructions

Using lists, a diagram, post-its, or any method you can refer back to easily through this process:

1. List the parts of your fishery system.
    a. It may be easiest to approach this task by starting with the dimensions of the system: Ecological, Socio-economic, and Governance. You may also need to think about influences beyond the fishery system (e.g., if agricultural run-off can or does impact your fishery) and consider how broad a system you want to (and are able to) include in the climate resilience assessment and planning process.
    b. Some potential questions to start the process of identifying parts of the system include: Where are changes to your fishery felt the hardest? What types of changes can impact your fishery?
2. Consider the people or groups of people in the different parts of your system and add them to your system map.
    a. Make sure you are specific enough to capture important differences in larger groups. For example, identifying fishers as a group may not reflect the nuance that there are different types of fishers, such as shore-based anglers, artisanal fishers, or a specific cultural group that has distinct practices.
    b. A question to start with is: Who is impacted by changes to your fishery?
3. Consider the history of your system.
    a. Are there people that used to be a part of your system but aren't anymore? Is it important to include them?
    b. What is the management history of your system as it pertains to the identified groups in the system?
4. Consider the future of your system.

a. Do you anticipate new people in your system? For example, if the range of your fish stock is changing, will new participants become part of the fishery?

Know that it is possible to return to this step and add to or modify your system definition as you move through other steps if needed.

Step 2: Set Long-term Goals

In this step, participants will:

- ❖ Identify the benefits people value from the fishery system
- ❖ Develop long-term goals to guide climate resilience planning

In the worksheet, participants will:

- ❖ Brainstorm goals
- ❖ Identify main goals based on consensus

Background

How to write SMART goals - This is just one method for guiding goal setting, but it does provide guidance for ensuring your goals serve your system and are set appropriately.

Instructions

During goal setting, it may be helpful to first agree upon a time frame(s) for achieving goals (e.g., What do we want to have achieved in 5 years? 20 years?). It is also important to distinguish for your participants that these goals are for the outcomes of the resilience planning process, not the process itself. So, a goal should be focused on what the actions developed by this process will achieve and not what the participants will have achieved by the end of the planning process.

Example Goal-setting Method(s)

1. Individually consider the following questions. You can do this via discussion and note-taking, post-its, or other formats.
    a. What do you value in your system?
    b. What do you want to protect in your system or community?
    c. What do you want your fishery to look like in 5 years? 20 years? Align with the agreed upon time frame(s) noted above.

2. Cluster or group the individual responses to the above questions based on commonalities or themes.
3. Using these themes, develop statements of goals for the fishery system. Discuss and revise these goals to understand which ones have consensus support from the group.
4. Finalize your list of goals into 5 or fewer clear statements and ensure there is agreement.
5. Refer back to these goals as you move forward in this process.

Tips for the Room

If possible, display your system mapping work AND your goals prominently in the workshop space. It will be helpful for participants to very easily refer back to both of these things to keep their goals and whole system in mind throughout the process. For example, you can write goals on a large sheet of paper hung on one of the walls, use a white/blackboard already in the space, or provide individual copies of the system and goals for each participant.

Step 3: Identify Climate Impacts

In this step, participants will:

- Assess the climate impacts that are already occurring and expected to occur in the fishery system

In the worksheet, participants will:

- List stressors and impacts that are being seen now
- List stressors and impacts that are expected to occur in the future
- Consider how these impacts may affect the ability to achieve fishery goals

Background

A variety of resources related to climate model projections, fisheries information, and traditional knowledge are provided as part of Step 3 on the CRF Planning Tool website.

Instructions

This step focuses on deepening participants' understanding of how climate change and other stressors are already affecting their fishery system, and what changes and impacts might be expected in the future. As the facilitator, you can begin by asking participants to list the climate and non-climate stressors they are already seeing in their

system, followed by a discussion of the impacts these stressors are creating in the fishery. Participants should then look ahead to consider climate changes and fishery impacts they expect will occur in the future. Encourage participants to draw from a wide range of knowledge sources, including scientific literature, Traditional Ecological Knowledge from elders, and lived 'on-the-water' experience from fishers and community members. The goal is not to generate perfect predictions, but to help participants identify meaningful trends, changes, and risks that may shape the future of their fishery and how they may react to potential changes.

Participants will be prompted to: (1) list current stressors and impacts, (2) list expected future stressors and impacts, and (3) reflect on how these changes could affect their ability to achieve fishery goals. These tasks can be completed through full-group discussion or breakout groups, depending on time and group size. You might want to have summary materials or visual aids on hand if useful climate science or local knowledge has already been compiled during the pre-work phase.

Remind participants that the goal of this step is to build a shared understanding, not consensus or precision. Participants should begin thinking about the kinds of changes they may need to prepare for, either as a direct result of climate change through interactions between climate and other stressors. As with other steps, it may help to take good notes so you can revisit the impact list later when identifying actions.

Step 4: Evaluate Climate Resilience Attributes

In this step, participants will:

- Learn about climate resilience attributes
- Score the fishery system's climate resilience attributes
- See the big picture of climate resilience attributes in the fishery system

In the worksheet, participants will:

- Review the definitions, mechanisms, and case study examples associated with each climate resilience attribute.
- Score attributes based on their current status in the fishery system.
- Rate the importance of each attribute for influencing climate resilience in the fishery.
- Review the scoring results quadrant.

Background

Attributes of Climate Resilience in Fisheries: From Theory to Practice – Provides an explanation of the development of the attributes, as well as definitions and mechanisms for how each attribute may support climate resilience in marine fisheries.

Diverse Pathways for Climate Resilience in Marine Fishery Systems – Demonstrates how attributes were used and rated for case studies of marine fisheries around the world.

Instructions

If you did pre-work on the climate resilience attributes, start the group off by presenting the attributes you scored one-by-one with your reasoning and sources, and then ask if your participants would like to modify any of them.

During this step, it is particularly valuable to have two facilitators. As your participants are discussing a certain attribute, it is possible that they will touch on important aspects of a different attribute that you have yet to score. Having a second facilitator take notes and highlight these points will allow already discussed and agreed upon information to be quickly revisited and applied to the correct attribute. It may even be possible for the facilitators to use the group's discussion to propose scores for attributes that have not yet been discussed as a starting point for review and deliberation among the group. If you do not have a second facilitator, it may be useful to set up a white board or poster paper to capture these points to come back to. Asking for a notetaker from your audience may be helpful.

Consider ordering the attributes so that the participants start with easy-to-score attributes for your system, which builds confidence in the process.

The goal of this step is not to be strictly quantitative. This tool does not perform any analysis on the scores and thus it is not important to fixate on the numbers. While the outcomes of this tool can help you visualize the relative strengths and weaknesses of resilience in your system, it may be necessary to remind participants that this step is most important for developing a deep understanding and familiarity with the resilience of your system, so the actual numerical outcomes are less important.

If there are major disagreements about an attribute's score, as this is a non-quantitative tool, it is possible to record both scores and move on or agree upon the precautionary approach to accept the less resilient score for the attribute.

The facilitator's role in this step will be to keep the participants moving through the attributes, using good time management. Avoid spending too long discussing a single

attribute (consider a timer) and move them along if they get stuck. This pace can be assisted by arranging the order of attribute scoring as mentioned above.

Step 5: Brainstorm Climate Resilience Actions

In this step, participants will:

- Brainstorm actions to enhance climate resilience and achieve goals set for the fishery

In the worksheet, participants will:

- Consider modifications or additions to goals for the fishery.
- Brainstorm potential actions to enhance climate resilience in the fishery
- Evaluate how actions address climate impacts or enhance resilience attributes to achieve goals for the fishery.

Background

Encourage participants to think broadly about two types of actions: those that respond directly to climate impacts and those that enhance underlying ecological, socio-economic, or governance conditions that help the system adapt and thrive over time. Actions and pathways are discussed here:

Diverse Pathways for Climate Resilience in Marine Fishery Systems – Demonstrates how attributes were used and rated for case studies of marine fisheries around the world.

Instructions

Before beginning the brainstorm, revisit the group's goals and bring them to the forefront. Ideally, they will be visually present in the workshop space. Ideas that are brainstormed at this step should clearly support the main goals.

Make sure your participants are prepared to be active listeners and participants. Also, establish norms such that this process does not result in ideas being excluded from the brainstorm for being deemed 'unrealistic' or 'not good.'

Refer back to the pre-work suggested to start brainstorming actions. Set the bounds of this exercise. It should not be limited by funding or money. However, it may not be helpful to spend too much time focused on actions that would require, for instance, national-level systemic change if that is not a realistic accomplishment.

Encourage your participants to think outside of the box and to work together. Depending on the culture of your group and the size, it may be helpful to split participants into small teams tasked with coming up with several ideas, or to ask each participant to spend quiet time developing their own list of ideas and then share and collaborate in a subsequent discussion.

Step 6: Identify Priority Actions

In this step, participants will:

- Consider the feasibility of actions brainstormed in Step 5
- Prioritize actions for implementation and/or further planning efforts

In the worksheet, participants will:

- Consider conditions that support or limit implementation of each action.
- Consider an appropriate timeframe for each action.
- Evaluate other considerations that may influence prioritization of an action.
- Select prioritized actions based on their overall implementation potential.

Background

Prioritization of actions will be influenced by both their importance in achieving goals as well as their implementation feasibility. In addition, the urgency of the need and status of enabling conditions will influence which actions are prioritized for near-term or longer-term implementation.

Instructions

Now is an excellent time to revisit the climate impacts and resilience attribute scores (Steps 3 and 4), including making copies of the attribute scoring table for each participant or posting or projecting them on a wall so they are visible throughout the prioritization process.

For each brainstormed action, participants should consider if the system has strong resilience attributes for the action to be successful (e.g., highly responsive governance systems may be necessary to support dynamic management actions).

The group can either work through each action to discuss its feasibility and priority together, or you could take the approach of asking participants to consult the list and

then propose which actions they believe should be prioritized and why. The approach you take depends on which will work best with your participants and the time you have available.

By the end, your goal is consensus on a short list of prioritized actions, with general timelines associated with each action. Ideally all participants should feel confident in expressing why the actions serve the goals and support or enhance resilience of the fishery system.

IV. After the CRF Planning Tool Process

Make sure all the participants have a copy of the worksheet and any other relevant notes, and that they feel confident sharing the final list of actions with others in their community and fishery. In most cases, it is helpful to develop a report to document the process and its results, providing a thorough reference for participants and others. Next steps may include further consultations to develop plans for carrying the prioritized actions forward to implementation.

We are very interested in hearing about how the CRF Planning Tool served you and your fishery system or community, and the outcomes of it. If you can share back with us your entire worksheet, we would be grateful. We'd also value an email sent to <climateresilientfisheries@gmail.com> with feedback, thoughts, and any actions or outcomes from the tool.

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