

Diverse pathways for climate resilience in marine fishery systems

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There is broad consensus that fisheries need to be **climate-resilient**...



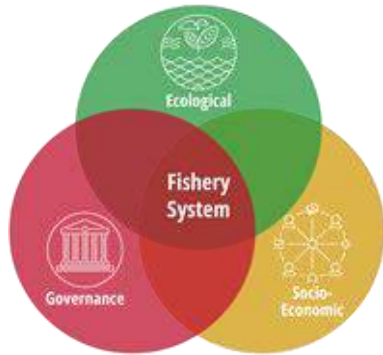
There is broad consensus that fisheries need to be **climate-resilient**...
but .. what does it *actually look like* for your fishery, the people, your institutions?



How do you move from *understanding climate impacts*
to building a resilience strategy?



Approaches: Multi-dimensional view of resilience

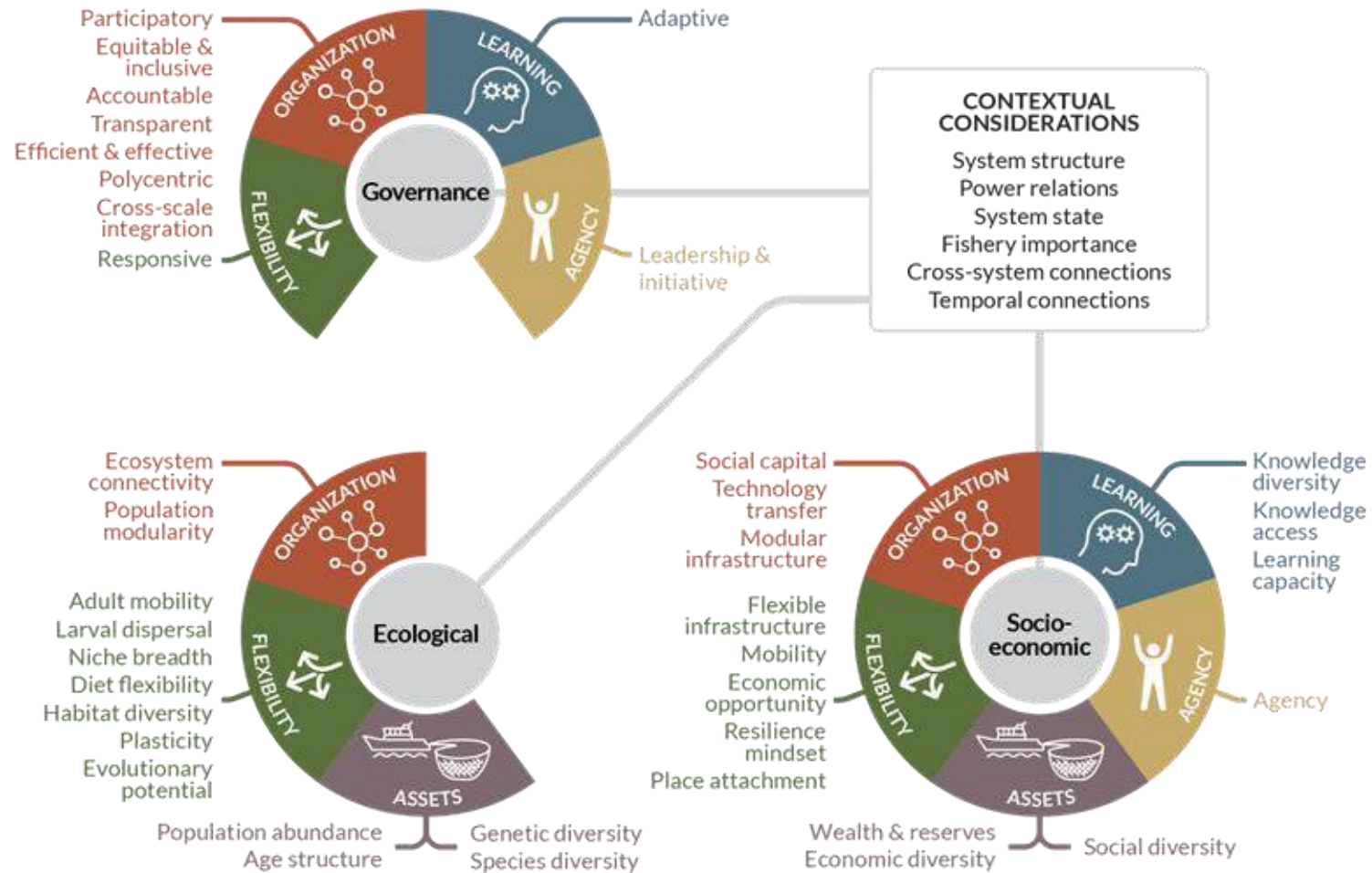


Resilience attributes

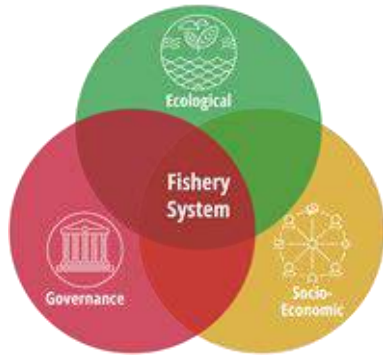


Approach: generate and refine attributes from literature and expert knowledge

6 recent review papers, expert working group, and an iterative review



Approaches: Multi-dimensional view of resilience



Resilience attributes

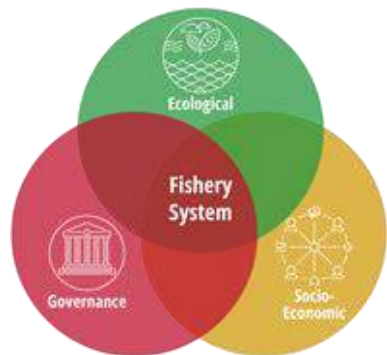


Pathways to resilience

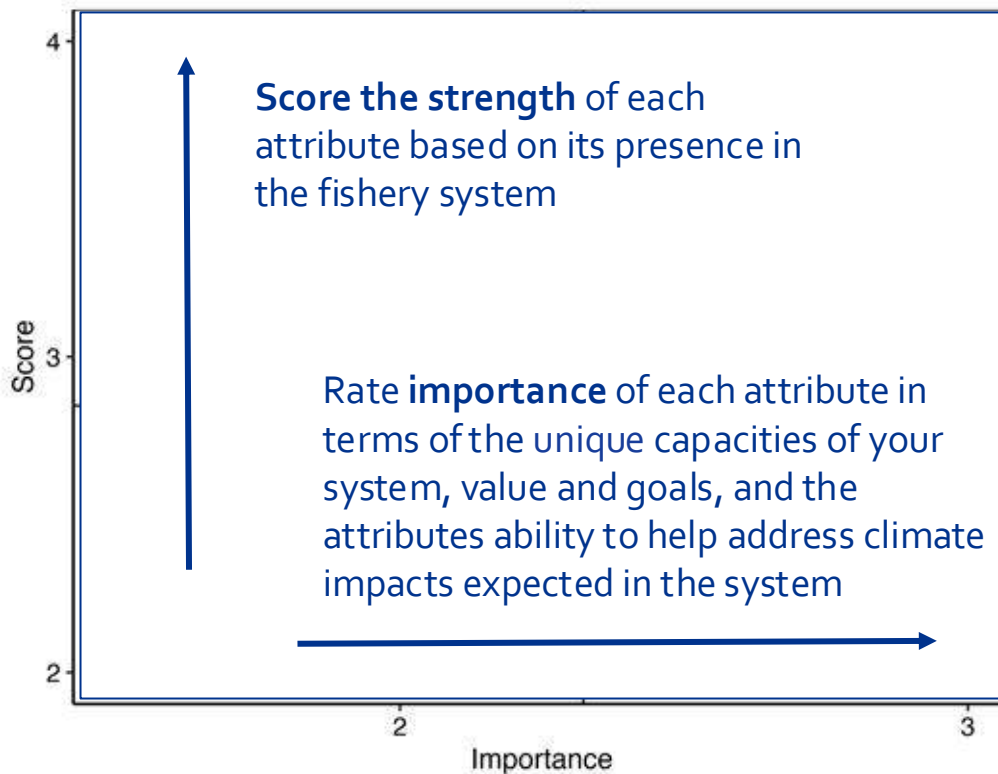


Eurich, Friedman, Kleisner, Zhao et al. 2024 *Fish and Fisheries*
<https://doi.org/10.1111/faf.12790>

Mason, Eurich, Lau et al. 2022 *Fish and Fisheries*
<https://doi.org/10.1111/faf.12630>

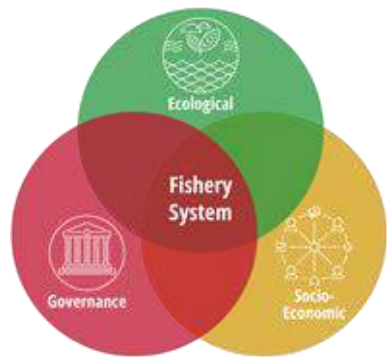


38 attributes
18 case studies

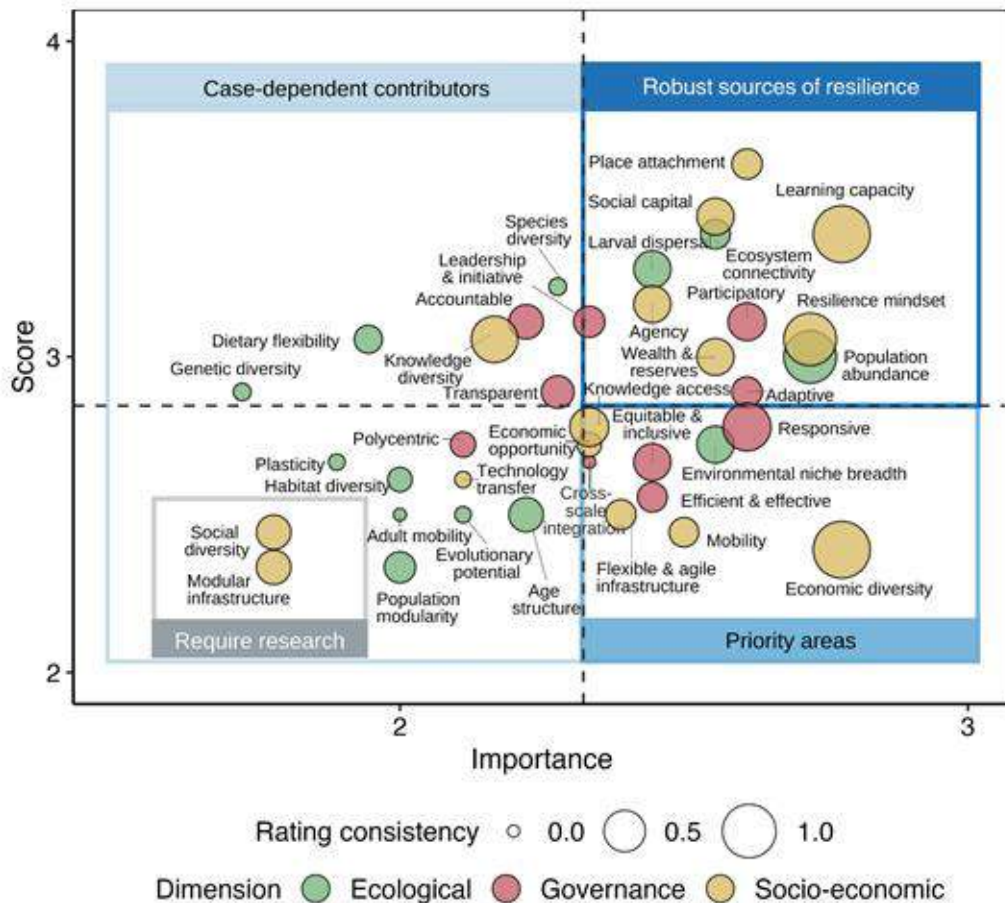


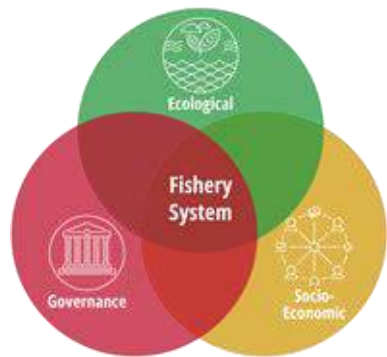
Rating consistency ○ 0.0 ○ 0.5 ○ 1.0

Dimension ● Ecological ● Governance ● Socio-economic

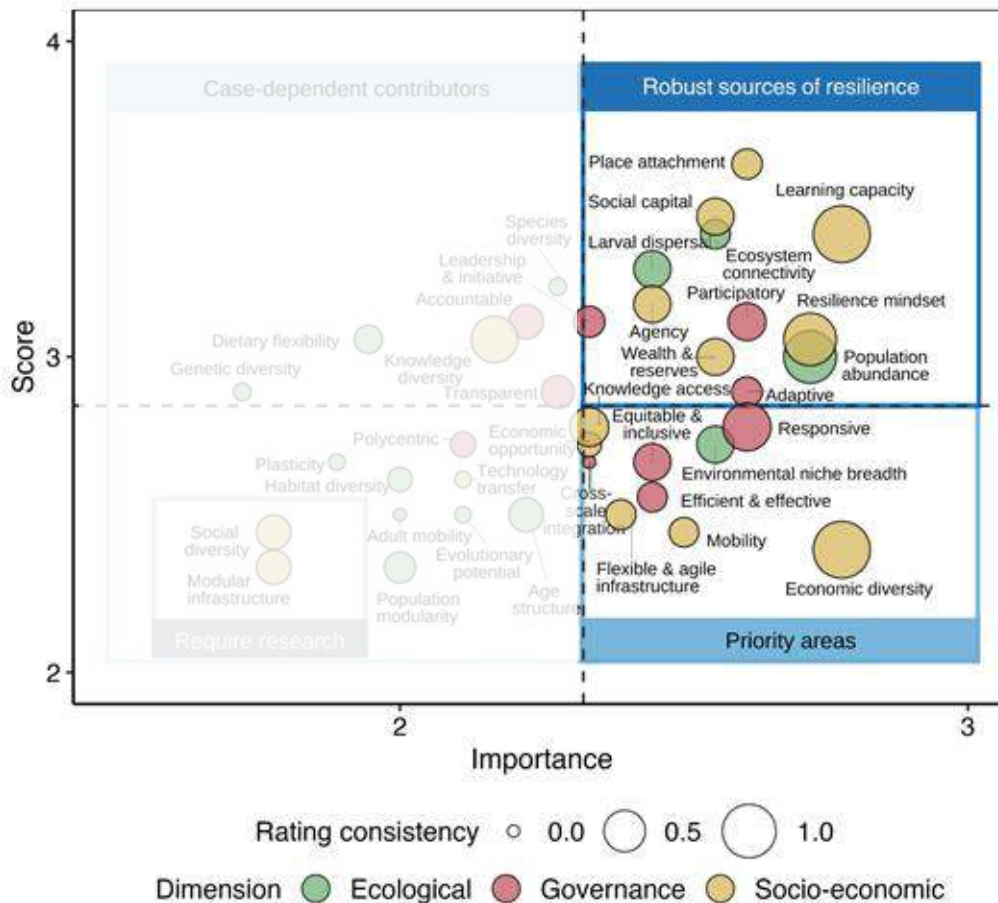


38 attributes
18 case studies





38 attributes
18 case studies



An aerial photograph of a tropical island. The island is surrounded by clear, turquoise water that transitions to a deeper blue as it meets the open ocean. A small boat is visible in the lagoon. The island is densely covered with green vegetation, including many palm trees. In the foreground, a village is visible with several buildings, some with corrugated metal roofs, and a large open field. The sky is bright with some light clouds.

Planning *for* change...

... requires a fishery
climate-resilience plan.

Climate-Resilient Fisheries Planning Tool



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

Components

- Climate hazards and risks
- Adaptation approaches and interventions to buffer climate impacts
- Capacities and limitations based on resilience attributes
- Climate resilience strategies

Climate-Resilient Fisheries Planning Tool

DEFINE

- 1 Specify the Fishery System
- 2 Set Long-term Goals

ASSESS

- 3 Identify Climate Impacts
- 4 Evaluate Climate-Resilience Attributes

PLAN

- 5 Brainstorm Climate-Resilience Actions
- 6 Identify Priority Actions

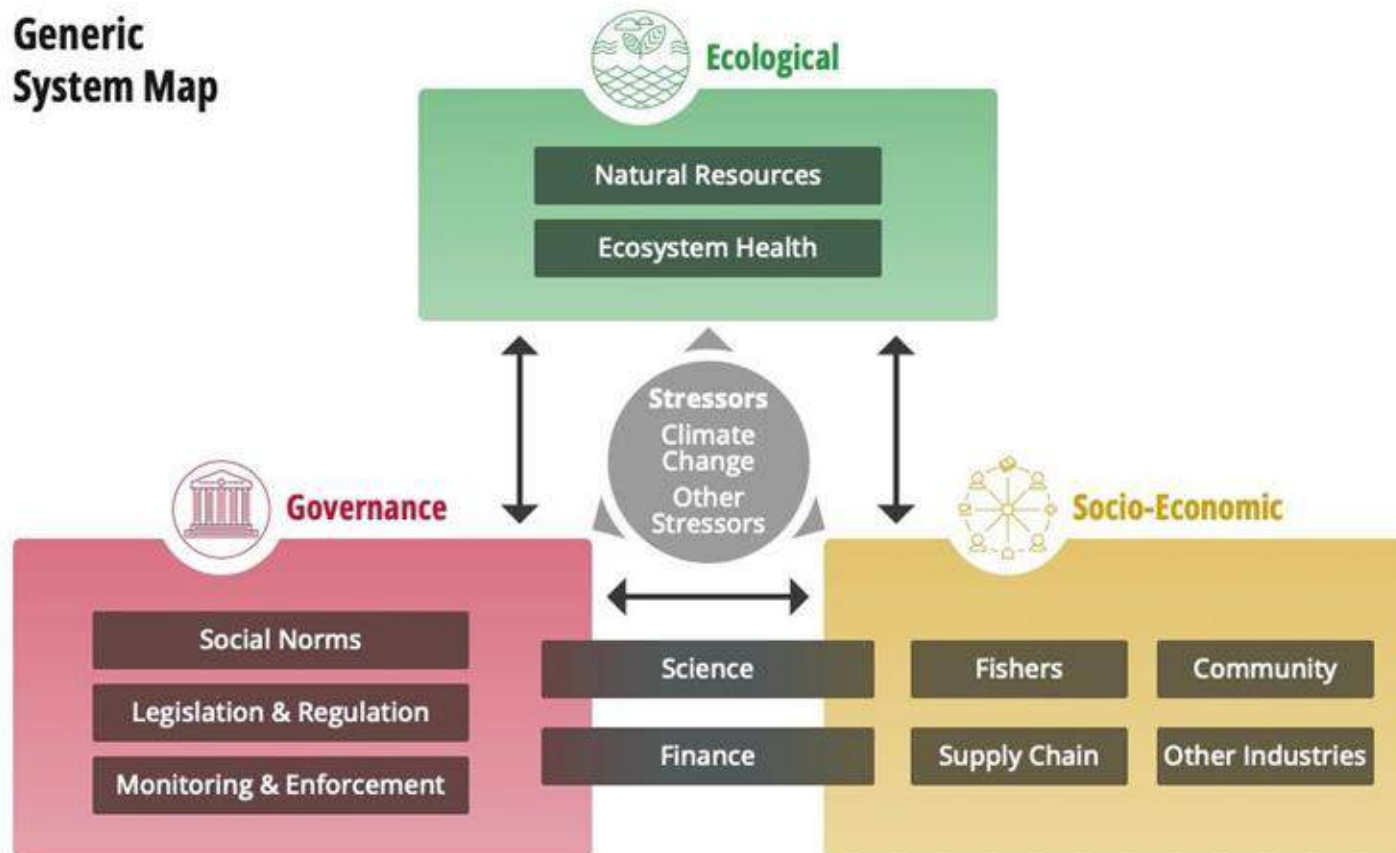
<https://climateresilientfisheries.net>

Climate-Resilient Fisheries Planning Tool

DEFINE

Specify the fishery system -- generic system mapping

Generic System Map

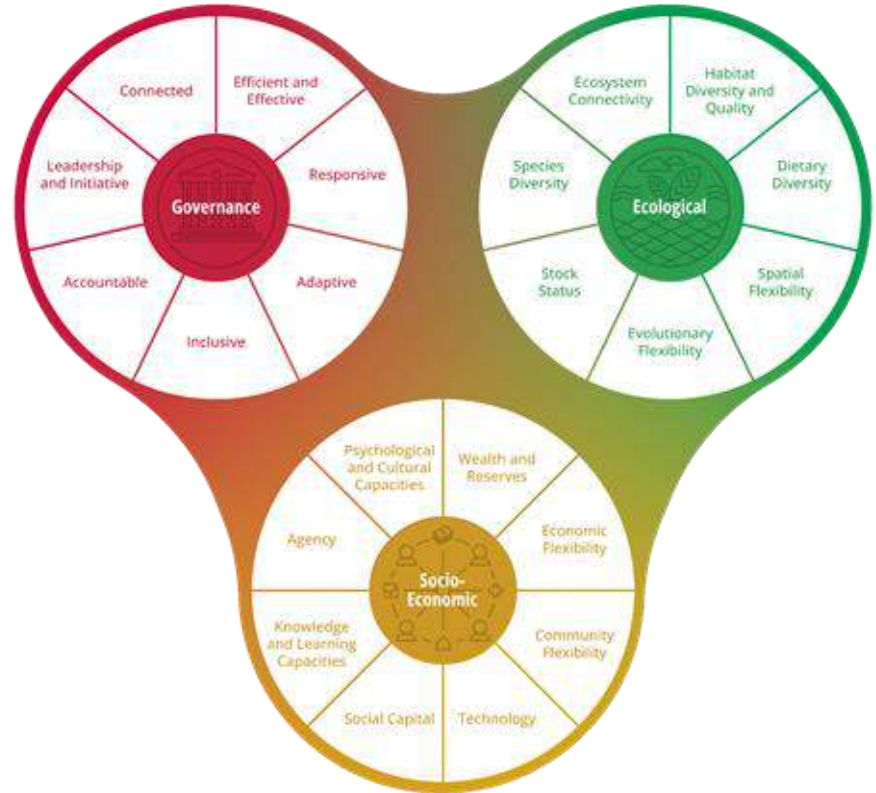


Climate-Resilient Fisheries Planning Tool

ASSESS

The tool facilitates an assessment of governance, ecological, socio-economic dimensions of a fishery system using the resilience attributes presented on earlier

22 recommended attributes score 'strength' and 'importance'



Climate-Resilient Fisheries Planning Tool

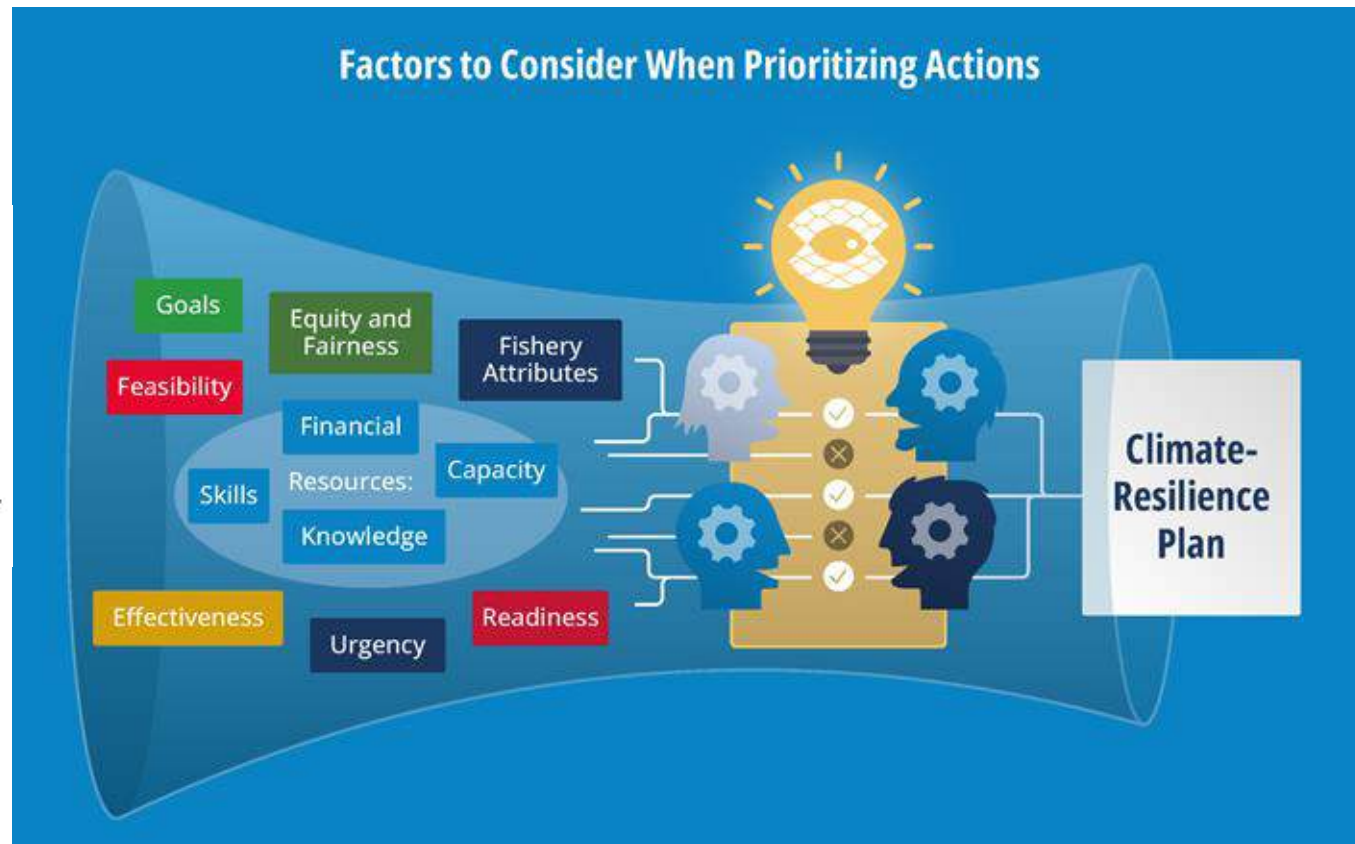
PLAN

STEP 6

Identify Priority Actions

In this step:

- Consider the feasibility of actions
- Prioritize actions for implementation and/or further planning efforts





**CLIMATE—
RESILIENT
FISHERIES**
PLANNING TOOL

ABOUT THE TOOL

STEPS 1-6 ▾

CRF CASE STUDIES

climateresilientfisheries.net

A young boy is sitting in a small boat on the water, holding up a small fish on a string. The background shows a tropical coastline with palm trees under a blue sky with scattered clouds. The text is overlaid on the bottom half of the image.

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



CLIMATE-RESILIENT FISHERIES PLANNING TOOL

Step 1: Specify the Fishery System

Instructions:

1. List the key types of ecosystem features and fishery actors in your system loosely as a brainstorm. We suggest considering the ecological, socio-economic, and governance.
2. Consider the boundaries of the system as defined above. Are there ecosystem features or actors you won't consider in this assessment and planning process? If so, you may list them here.
3. Organize the features and actors from the brainstorming exercise into groups using lists, visuals, symbols, or other approaches you prefer, and then describe or visualize them.
4. List external stressors that can influence or impact the system.

[Find more information and resources for this step on the tool website.](#)

Ecological	Socio-Economic	Governance	External stressors

Step 4: Evaluate Climate-Resilience Attributes

Instructions:

1. Become familiar with the definition, mechanisms, and examples from case studies of each climate resilience attribute.
2. Score the strength of each climate resilience attribute based on its presence and strength in the fishery system.
3. Rate the importance of each resilience attribute in terms of the unique capacities of your system, your values, and your goals.
4. Be sure to capture your sources and reasoning as Notes.

[Find more information and resources for this step on the tool website.](#)

Dimension	Climate Resilience Attribute Component Attributes (if present)	Brief Description	Example Questions to Consider	Score	Importance	Notes
Ecological	Habitat diversity and quality	The availability, variety, and caliber of suitable habitats.	Are diverse habitat types available? Are the habitats ecologically healthy?			
	Dietary diversity	The range of prey items a species can exploit.	Is the species a generalist feeder, or does it eat only a few types of prey?			
	Spatial flexibility: (1) Adult mobility (2) Environmental niche breadth	The ability of a population to tolerate changing conditions or move to new locations to find suitable conditions.	Can the species tolerate a range of environmental conditions and/or habitat types in one location? Can it easily move to track its preferred environmental conditions?			

Step 5: Brainstorm Climate-Resilience Actions

Instructions:

1. Revisit your goals from Step 2. If you would like to modify them or add new goals based on insights you have gained from earlier steps in this assessment and planning process, do so now.
2. Consider your goals, climate-related impacts, resilience attributes, values, and resources and brainstorm potential actions you might want to take. Examples are available on subsequent pages.
3. For each action, identify which goals it will support, climate-related impacts it will address, and/or resilience attributes it will enhance.

Modified Goals

#	Brainstormed Action	Goal(s) supported, Impact(s) addressed, Resilience Attribute(s) enhanced
1	<i>Example: Set up volunteer mangrove seeding program</i>	<i>Mangrove health; Helps reduce erosion; Habitat diversity and ecosystem connectivity</i>
2		
3		
4		
5		



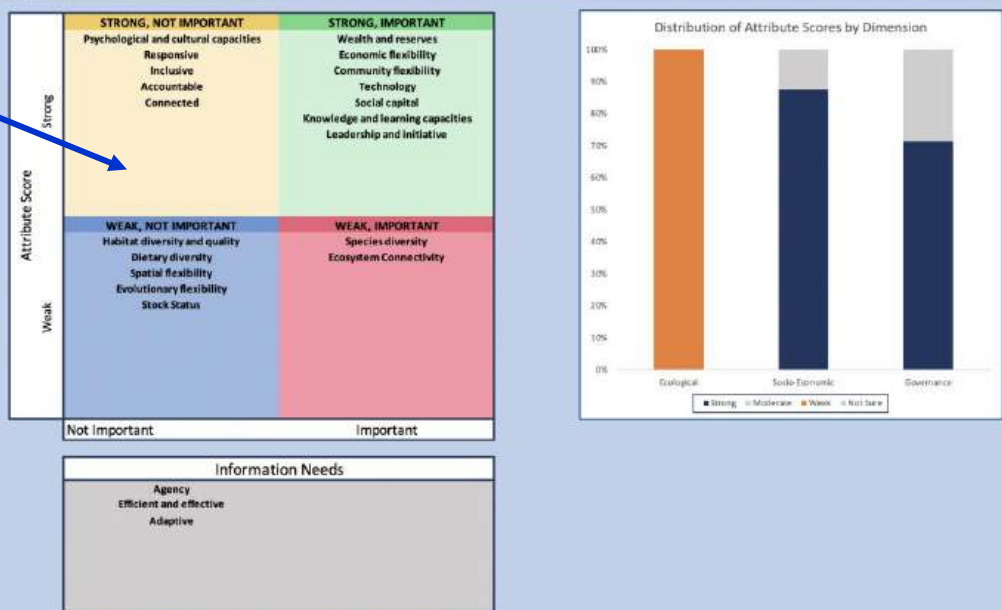
CLIMATE-RESILIENT FISHERIES PLANNING TOOL

Step 4 Results



Chilean fishery resilience assessment - Aristoteles Stavrinaky, May 2025

Step 4 Results





Video: Introduction to the CRF Planning Tool Workbook

A screenshot of a video player interface. The video content shows the "Overview" page of the Climate-Resilient Fisheries Planning Tool workbook. The text on the screen includes:

What does the Climate-Resilient Fisheries (CRF) Planning Tool do?
The Climate-Resilient Fisheries Planning Tool guides users through a six-step process to assess their fishery's climate resilience and identify approaches and priority actions to help build resilience in their fishery.

Who should use it?
The tool is designed for fishery participants, community leaders, managers, NGO partners, scientists, and others seeking to enhance climate resilience. The tool can be used by individuals and by groups, such as stakeholders in workshops. The tool was developed by Resilient Fisheries.

Why use the CRF Planning Tool?
Any initiative intended to increase the climate resilience of a fishery will be a complex, long-term, and multifaceted process. Climate-Resilient Fisheries Planning Tool helps users identify and focus their efforts on attributes of the fishery system that are most vulnerable to climate change. The tool is based on rigorous scientific research, analysis of case studies exploring climate resilience in fisheries, and identifying key actions for climate resilience. The tool can be used even when detailed data on current and projected climate information is available, the tool's value increases even further.

How is the CRF Planning Tool used?
The tool facilitates an assessment of ecological, socio-economic, and governance dimensions of a fishery system that enables users to identify and prioritize actions based on the planning goals, expected climate impacts, and resilience attributes present in the fishery. Through a six-step process, users in developing a set of actionable interventions and priorities to operationalize climate resilience in the fishery. The steps are presented on a series of worksheets with a downloadable Excel workbook providing a worksheet for each step. After completing Steps 1-4, tool users come away with a prioritized list of potential actions aimed at building climate resilience that can be used to build a fishery climate resilience plan. In many cases, it may be valuable to use the tool iteratively, such as by repeating Steps 3-6 annually, to help refine and adjust climate resilience actions over time.

How to use the Workbook?
This workbook contains worksheets for each step of the tool for users to record the relevant information about their fishery system, drawing on previous content where relevant. Each step contains instructions, however most steps can be approached however users are inclined to process and apply the information to their system. Throughout the workbook there are locked ranges to avoid any functionality being impacted by users, however users can unprotect these ranges at their own discretion using the password "snagaport".

At the bottom of the video frame, there is a navigation bar with tabs for "Overview", "Step 1", "Step 2", "Step 3", "Step 4", "Step 4-Results", "Step 5", "Step 6", "Example Actions for Impacts", and "Example Actions for Attributes". A "Climate-Resilient Fisheries Planning Tool" logo is also visible in the bottom right corner of the video frame.



Climate-Resilient Fisheries Planning Tool: Facilitators' Guide

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

Contact information: climateresilientfisheries@gmail.com

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.



CLIMATE— RESILIENT FISHERIES PLANNING TOOL

Download the Tool Workbook

Download Workbook (PDF format)

The PDF file is a printable version of the workbook. It does not offer auto-populating spreadsheets and other interactive features. However, it can be used in situations where computers are unavailable.

[Spanish Translation: Descargar libro de trabajo \(formato PDF\)](#) ←

[Bahasa Translation: Unduh Buku Kerja \(format PDF\)](#)

Download Facilitators' Guide (PDF format)

This guide supports users facilitating the CRF Planning Tool in a fishery or community setting. It outlines a collaborative, in-person approach to assess climate resilience and identify priority actions. Use alongside the CRF Planning Tool website and workbook.

[Spanish Translation: Descargar guía para instructores \(formato PDF\)](#) ←

[Bahasa Translation: Unduh Panduan Fasilitator \(format PDF\)](#)

[Slide and Image Bank for Facilitators \(format PPTX\)](#)

Paso 6: Determinar las acciones prioritarias

Instrucciones:

1. Para priorizar su lista de acciones identificadas en el paso 5, analice las condiciones existentes para apoyar la ejecución de cada acción, así como las condiciones que es preciso mejorar o desarrollar para avanzar en la ejecución ([Apoyo existente y necesario](#)).
2. Estudie un [cronograma](#) adecuado para cada acción en función de varios factores como la urgencia y la preparación.
3. Además de lo anterior, hay muchos otros factores que pueden determinar cómo priorizar sus acciones. Utilizando los ejemplos de preguntas para guiar su reflexión, anote cualesquier [otras consideraciones](#) para cada acción.
4. Indique las acciones prioritarias utilizando la función de resaltado, una nueva hoja u otros métodos que prefiera.

Acc.	Apoyo existente y necesario	Cronograma	Otras consideraciones
1	<i>Ya se conocen subvenciones para proyectos relacionados con los manglares, la comunidad los apoya y está implicada</i>	<i>Varios años</i>	<i>Beneficios generales para el ecosistema más allá de la mejora de los hábitos de cría</i>
2			
3			
4			
5			

Conclusions

- **Many pathways, shared principles:** co-development and local relevance are non-negotiable
- **Move from plans to action:** a resilience framework complements the ecological and socio-economic tools presented this week
- **The framework is flexible:** it can be tailored to IATTC's species, scales and management structures
- **Scaling requires equity:** least-resourced members need aligned support, policy and funding



Questions & discussion



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CRF Planning Tool – climateresilientfisheries.net