

Comisión Interamericana del Atún Tropical
Inter-American Tropical Tuna Commission



Climate-resilient fisheries: Available tools and a proposed workplan for IATTC

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15ª Reunión del Comité Científico Asesor – 10-14 de junio de 2023
15th Meeting of the Scientific Advisory Committee – 10-14 June 2024

INTER-AMERICAN TROPICAL TUNA COMMISSION

101st MEETING

Victoria, B.C., Canada

7-11 August 2023

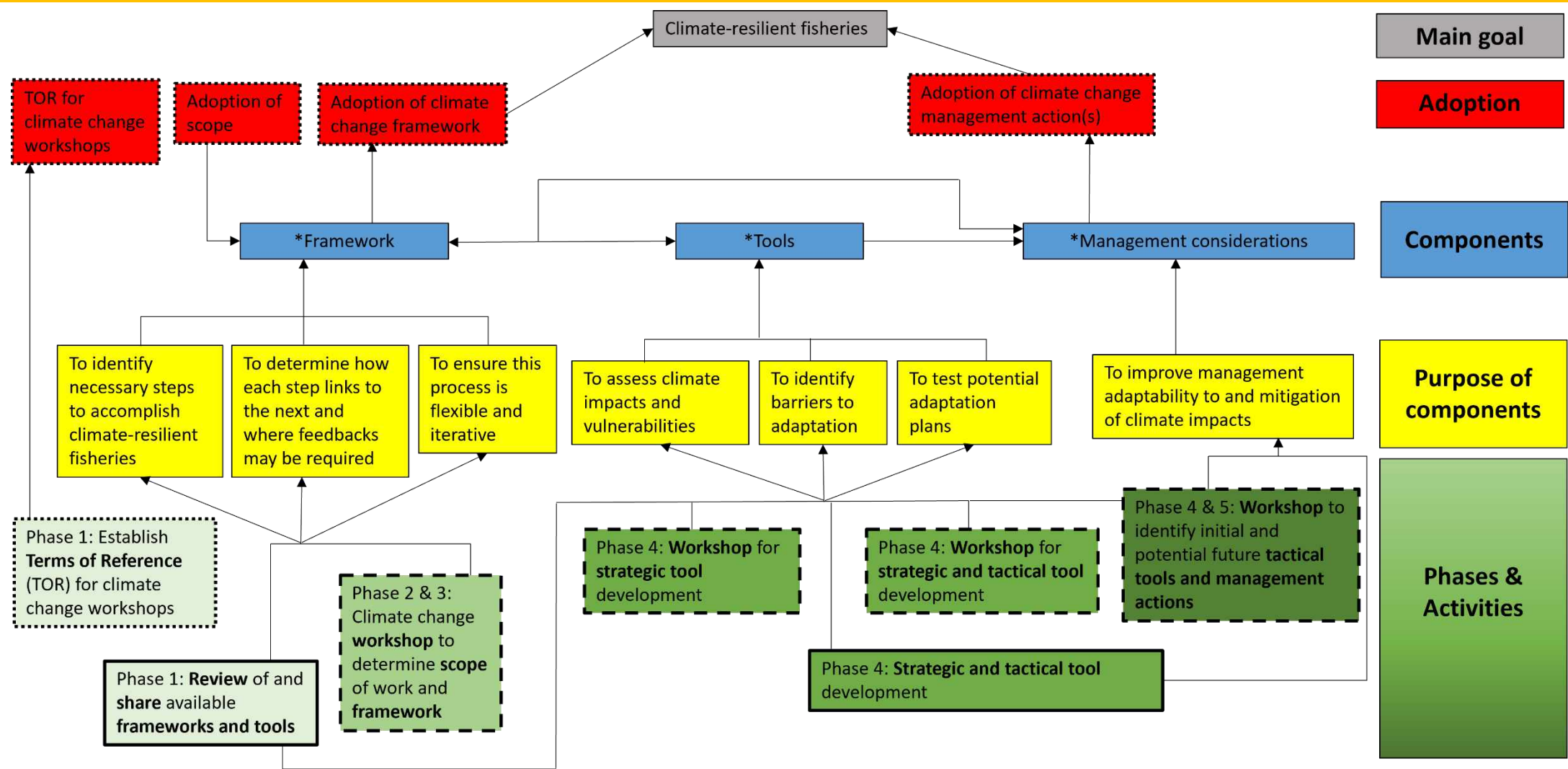
RESOLUTION C-23-10

ON CLIMATE CHANGE

1. The IATTC scientific staff will *highlight and consider the best scientific information available on the relationships between climate change, target stocks, non-target species, and species belonging to the same ecosystem or associated with the target stocks.*
2. The scientific staff shall incorporate in the next edition of the science strategic plan the issue of climate change and its impact on target species, non-target species, and the EPO ecosystem in general.
3. The Commission in 2024 and annually thereafter shall include climate change as an agenda item at the ordinary annual meeting of the IATTC.

Aim: to develop a workplan and framework to investigate these effects

Climate change proposed workplan



Legend: box boundary definitions

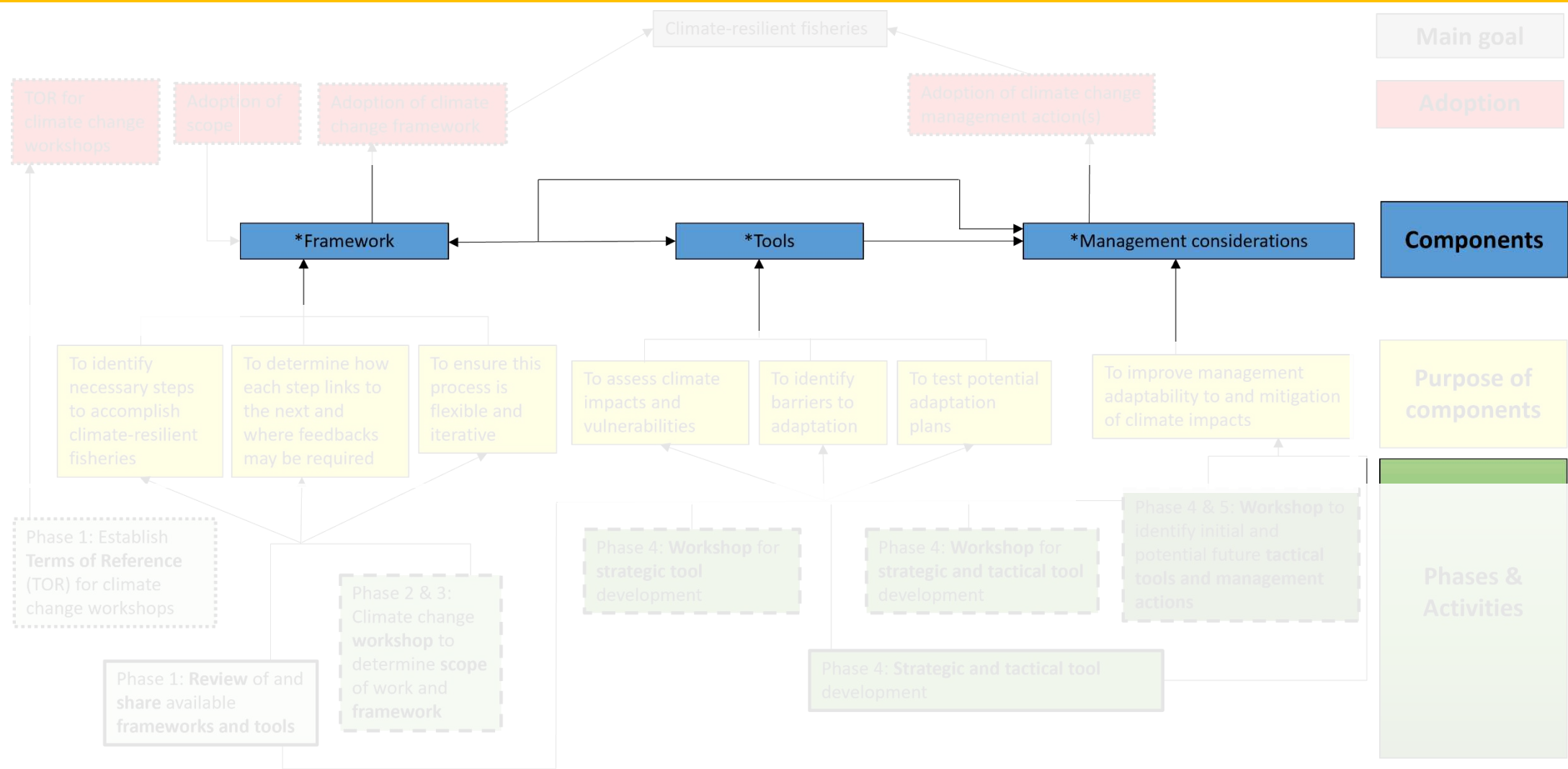
Involving the IATTC scientific staff

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Climate change proposed workplan



Legend: box boundary definitions

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Tools

Oceanographic & climate data

Species distribution models

Indicators

Climate-informed stock assessments

Flexible management systems

Climate vulnerability assessments (CVA)

Climate change scenario planning

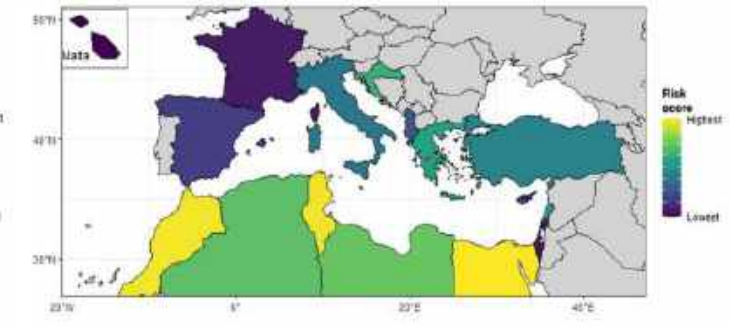
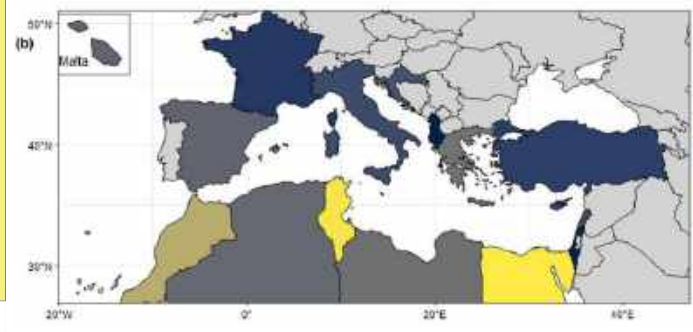
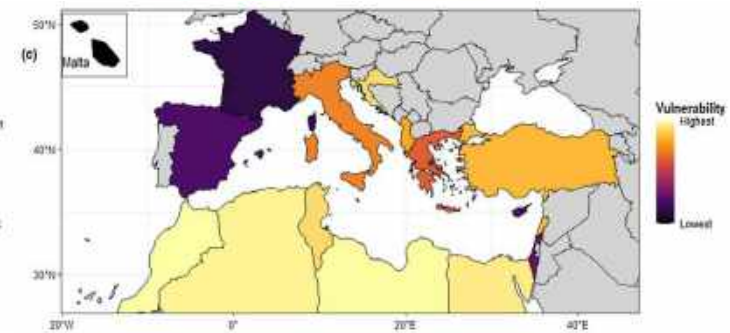
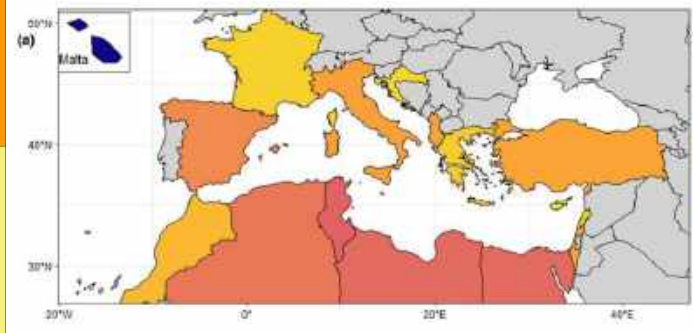
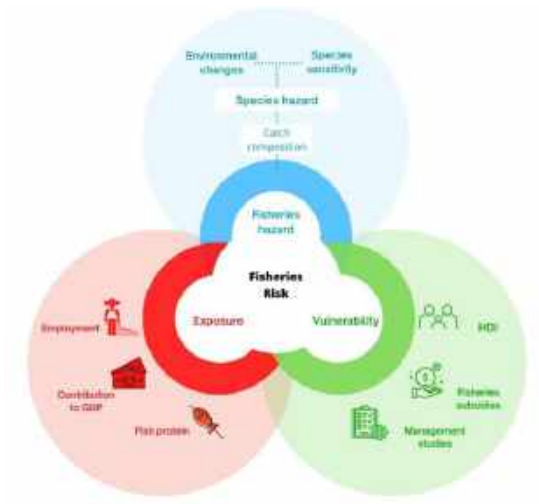
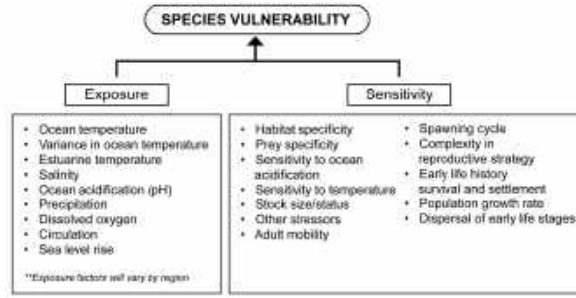
Management strategy evaluation

Tools: Climate Vulnerability Assessments

Very high, High, Moderate, Low

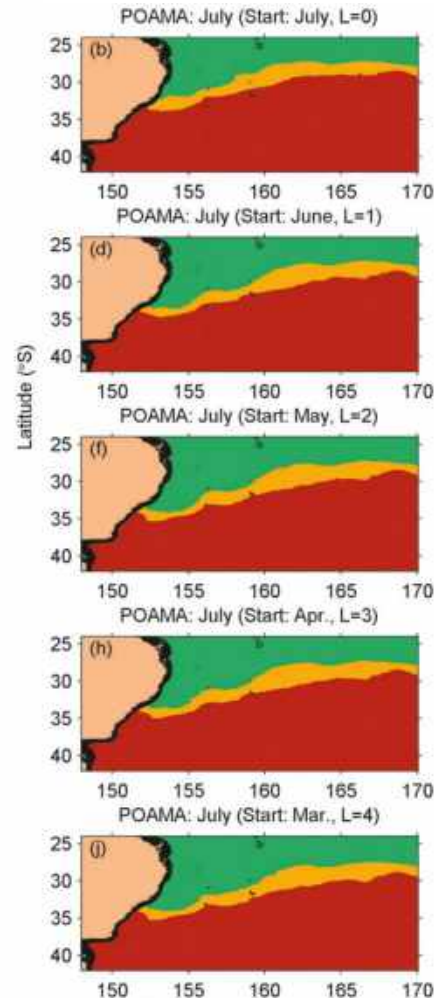
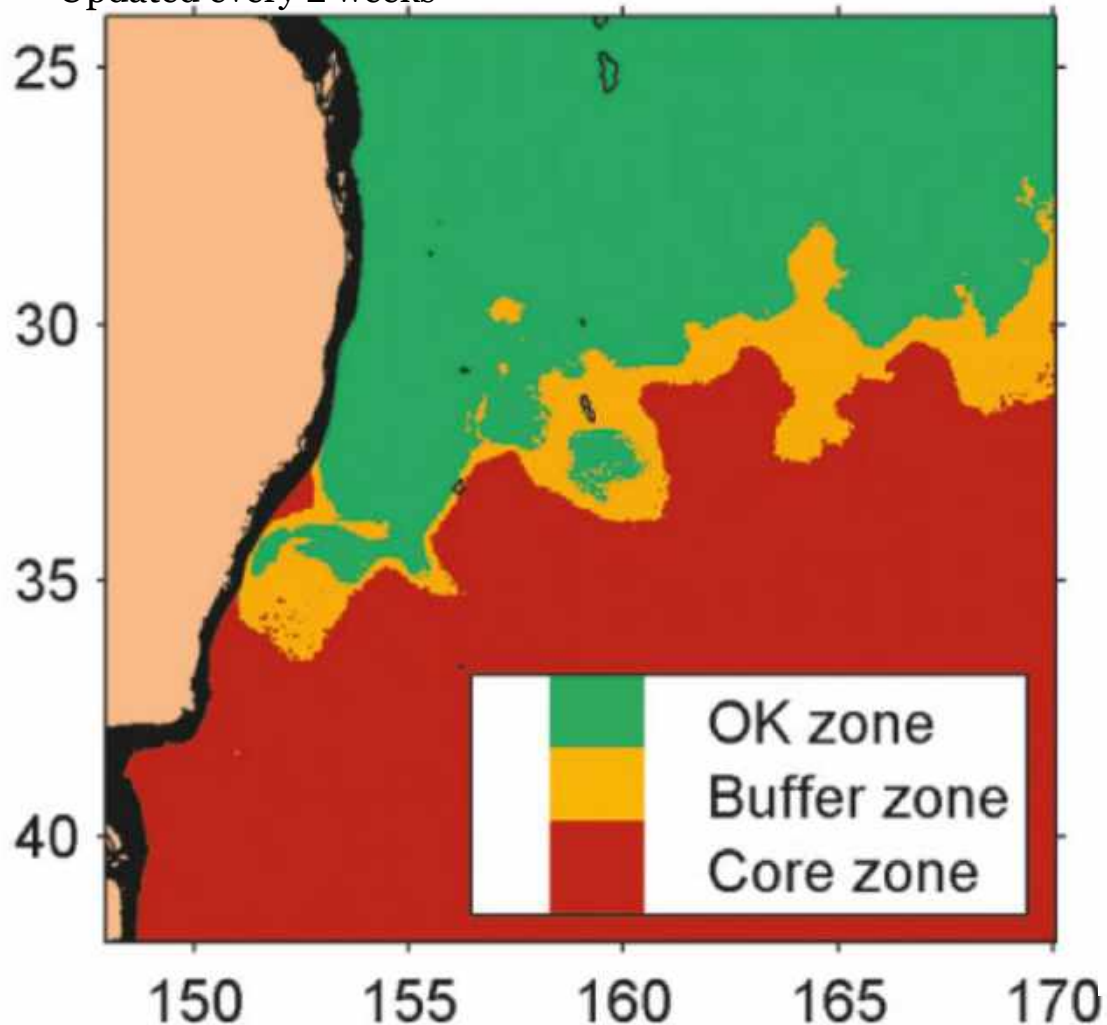
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Biological Sensitivity	Climate Exposure			
	Low	Moderate	High	Very High
Very High				Atlantic bonnethead shark Caribbean reef shark Dusky shark Oceanic whitetip shark
High				Sandbar shark <i>Atlantic sailfish</i> <i>Great hammerhead</i> <i>White marlin</i> <i>Blue marlin</i>
Moderate		<i>Basking shark</i> Bluefin tuna <i>Porbeagle shark</i> <i>Shortfin mako shark</i>		Gulf of Mexico bonnethead shark Nurse shark Scalloped hammerhead Silky shark Whale shark <i>Finetooth shark</i> <i>Lemon shark</i> <i>Sand tiger shark</i> <i>Smooth hammerhead</i>
Low		Blue shark Skipjack tuna North Atlantic swordfish <i>Albacore tuna</i> Bigeye tuna <i>White shark</i>		Angel shark Atlantic blacknose shark - Gulf of Mexico Atlantic blacktip shark Atlantic sharpnose shark - Atlantic Atlantic sharpnose shark - Gulf of Mexico Atlantic Smooth dogfish - Atlantic Bigeye thresher shark Thresher shark <i>Bull shark</i> <i>Night shark</i> <i>Yellowfin tuna</i> Atlantic blacknose shark - Atlantic Bluntnose sixgill shark Spinner shark Sharpnose sevengill shark Tiger shark <i>Gulf of Mexico blacktip shark</i> <i>Longfin mako shark</i>



Tools: Flexible management systems

- Multispecies longline fishery
- Southern bluefin habitat preference
- Habitat nowcasts/3 zones
- Updated every 2 weeks
- Seasonal forecasts 3-4 months out



Mismatches caused by climate change

Assessed abundance & actual abundance

- Climate-informed stock assessment
- Dynamic harvest control rules

Location of harvesters & stock

- Support new entrants by lowering barriers to entry
- Recognize small-scale fishers are less mobile and flexible

Right holders & active fishers

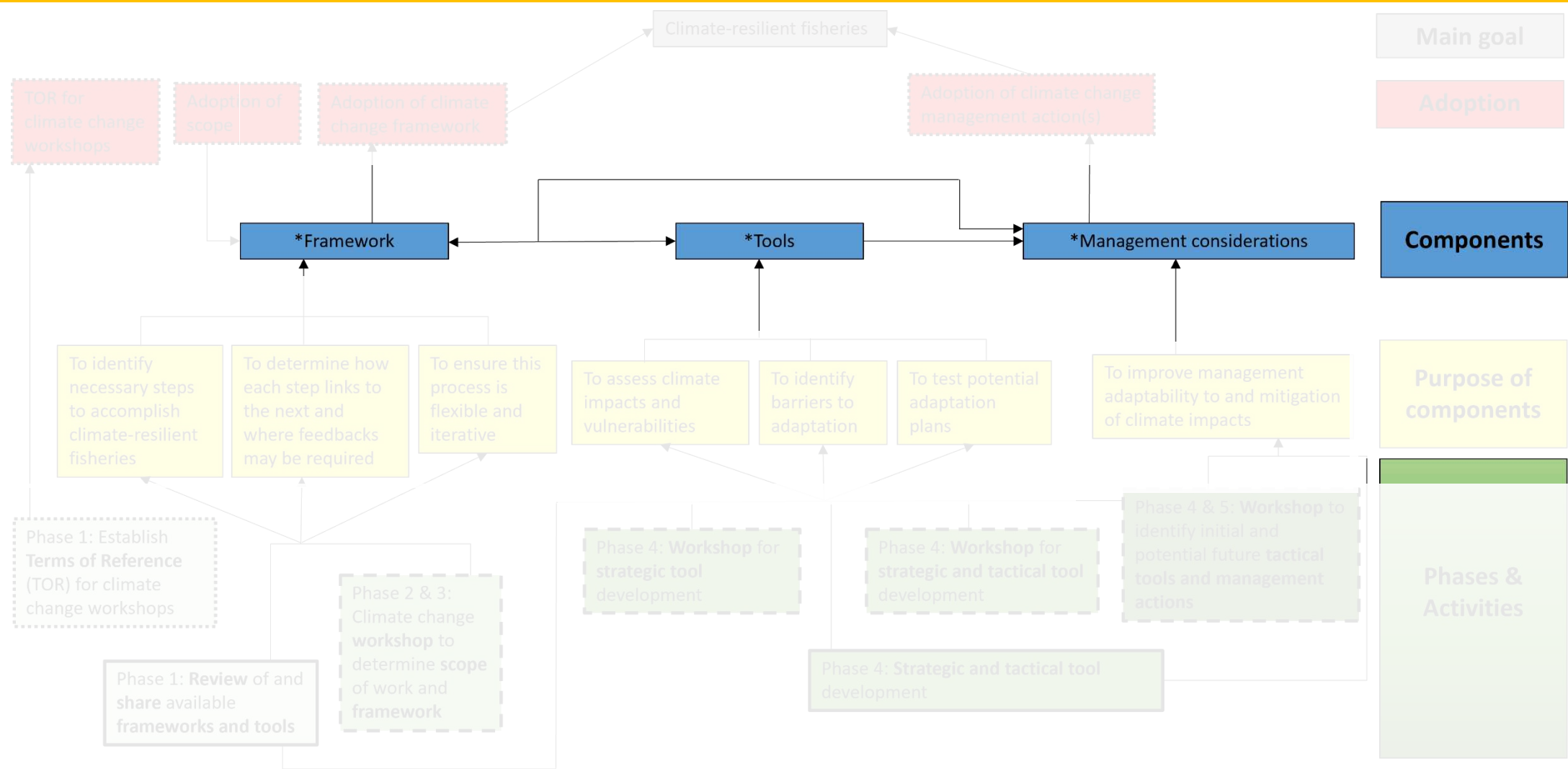
- Support access by active fishers
- Restrictions on who can own quotas

Management objectives & realities

- Use multiple management instruments



Climate change proposed workplan



Legend: box boundary definitions

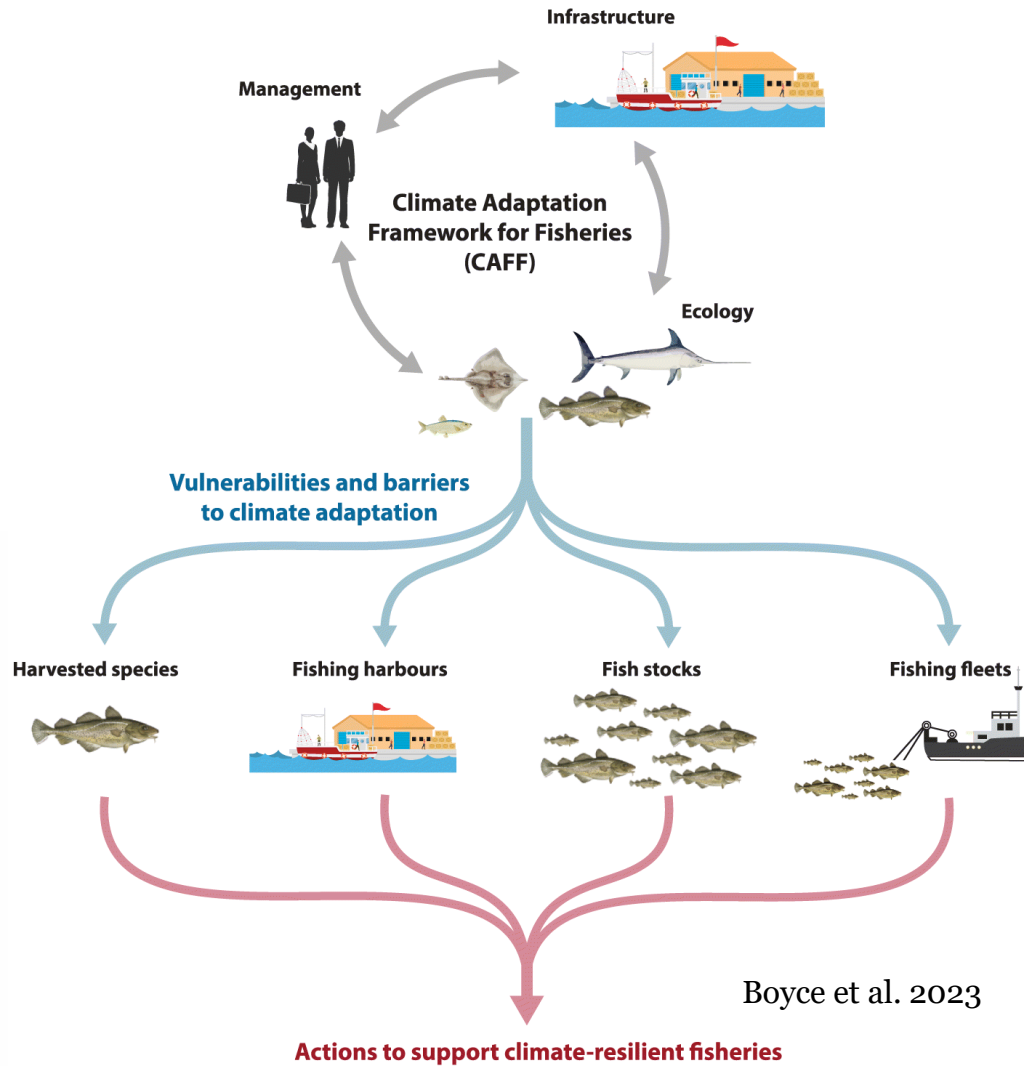
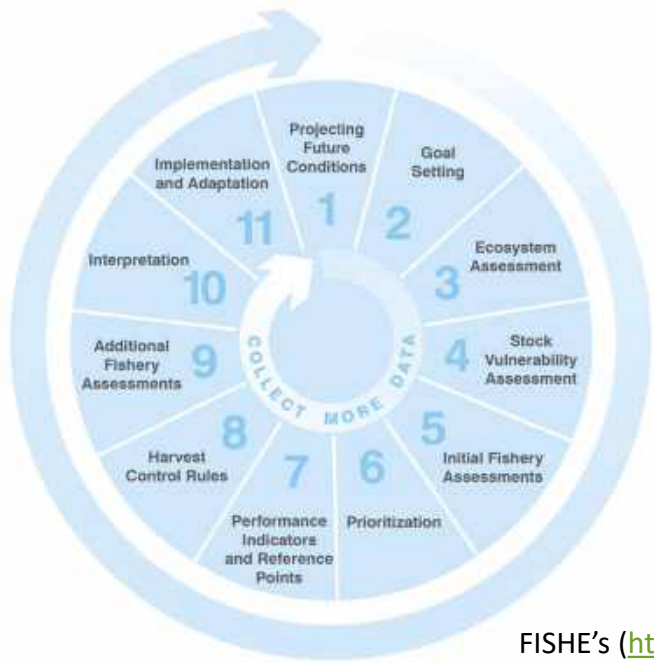
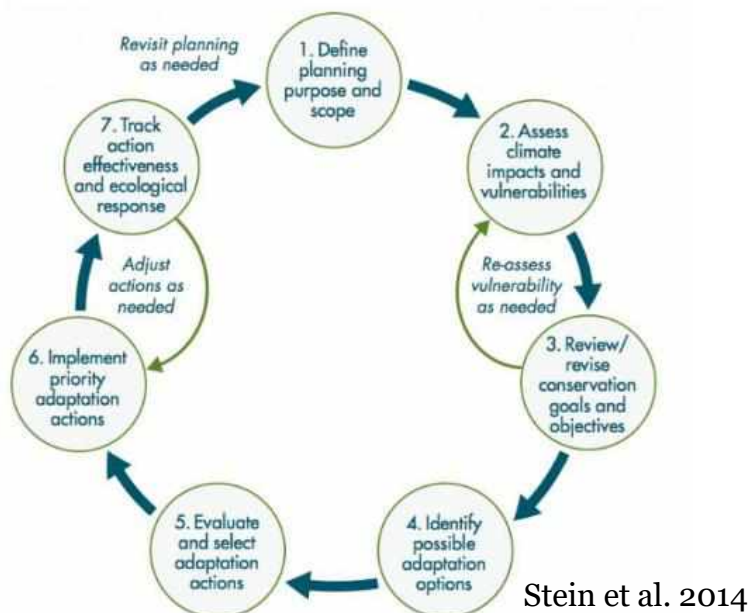
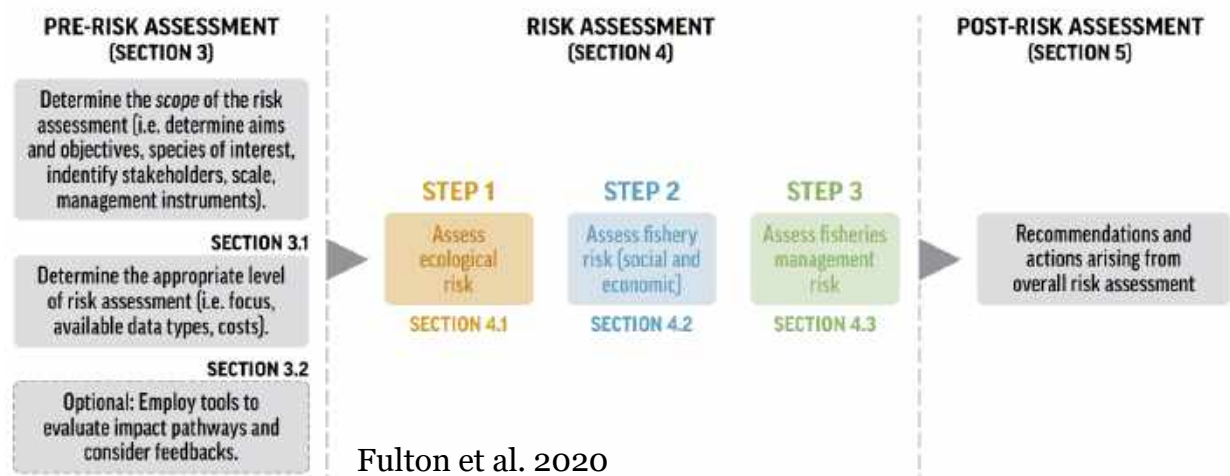
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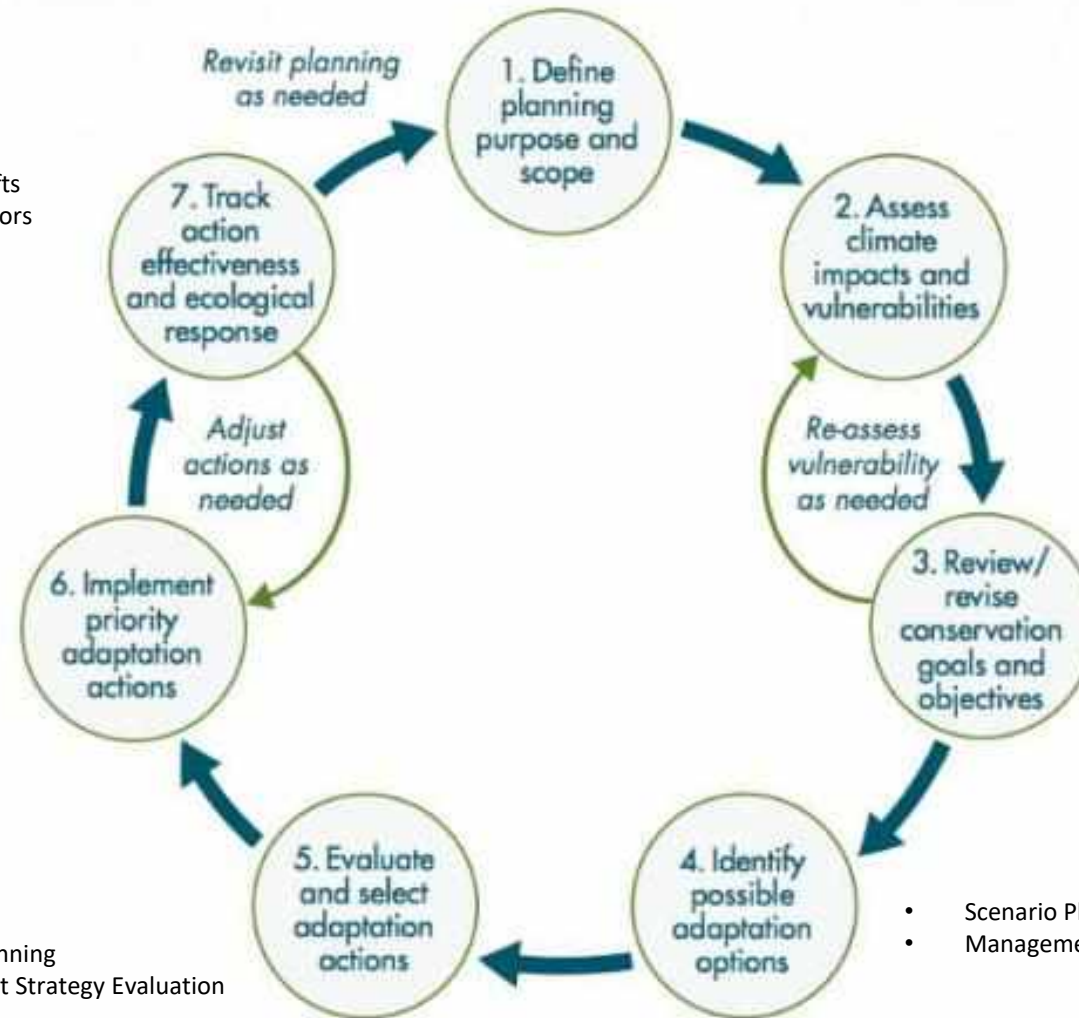


Frameworks



Framework

- Species distribution models/range shifts
- Climate, Ecosystem, and Social Indicators
- Ecosystem Status Reports
- Climate integrated stock assessments



- Species distribution models/range shifts
- Climate, Ecosystem, and Social Indicators
- Ecosystem Status Reports
- Climate Vulnerability Assessments (on species and habitats)
- Scenario Planning
- Risk Assessments

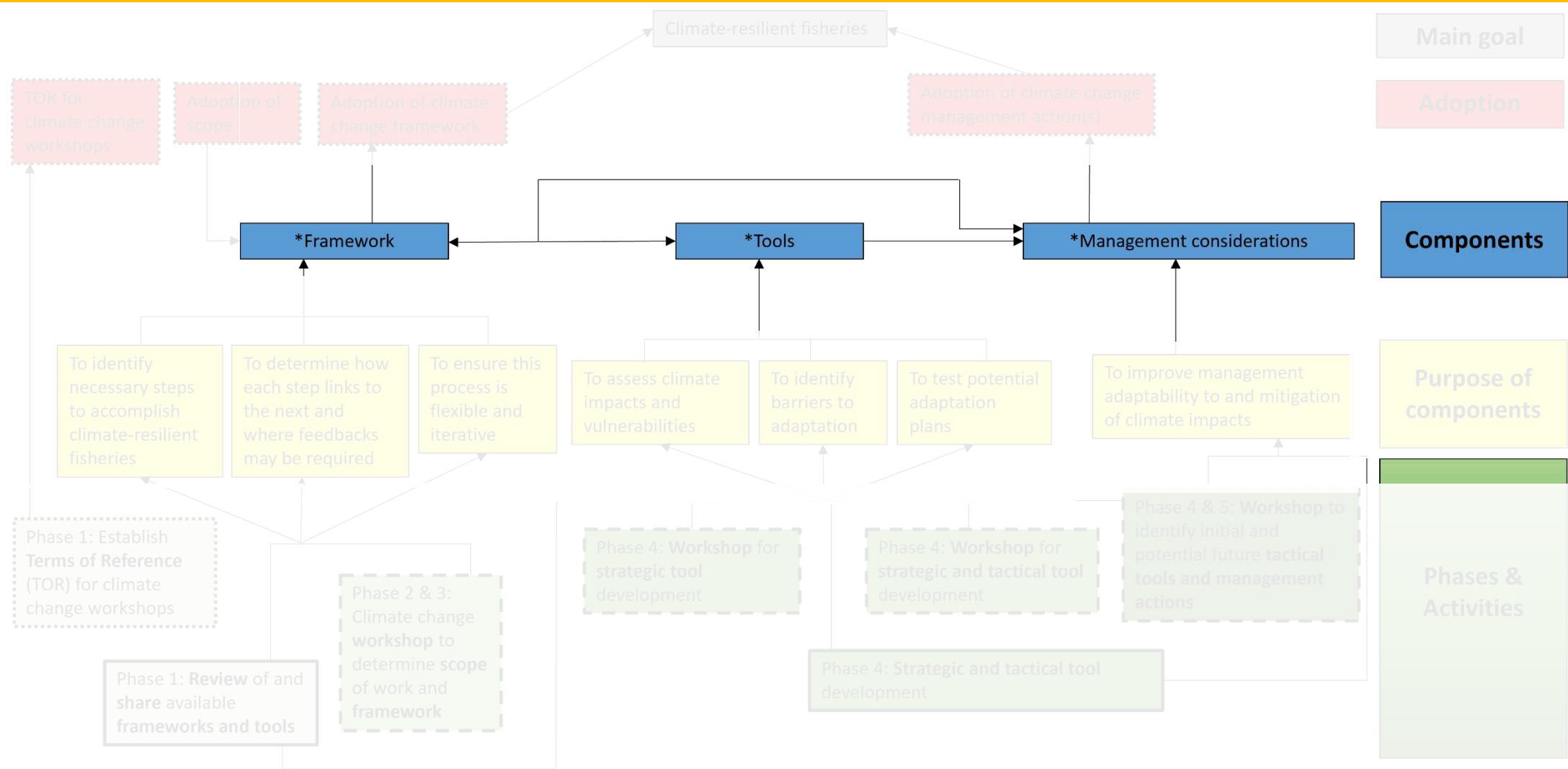
- Climate integrated stock assessments
- Climate informed reference points
- Modify harvest control rules
- Revise spatial and temporal management tools (i.e., dynamic closed areas, quota allocation, fishing seasons)
- Flexible management and permit systems
- Tools to help fishermen adjust to change
- Access rights: Transboundary stock management

- Scenario Planning
- Risk Assessments
- Management Strategy Evaluation

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Climate change proposed workplan



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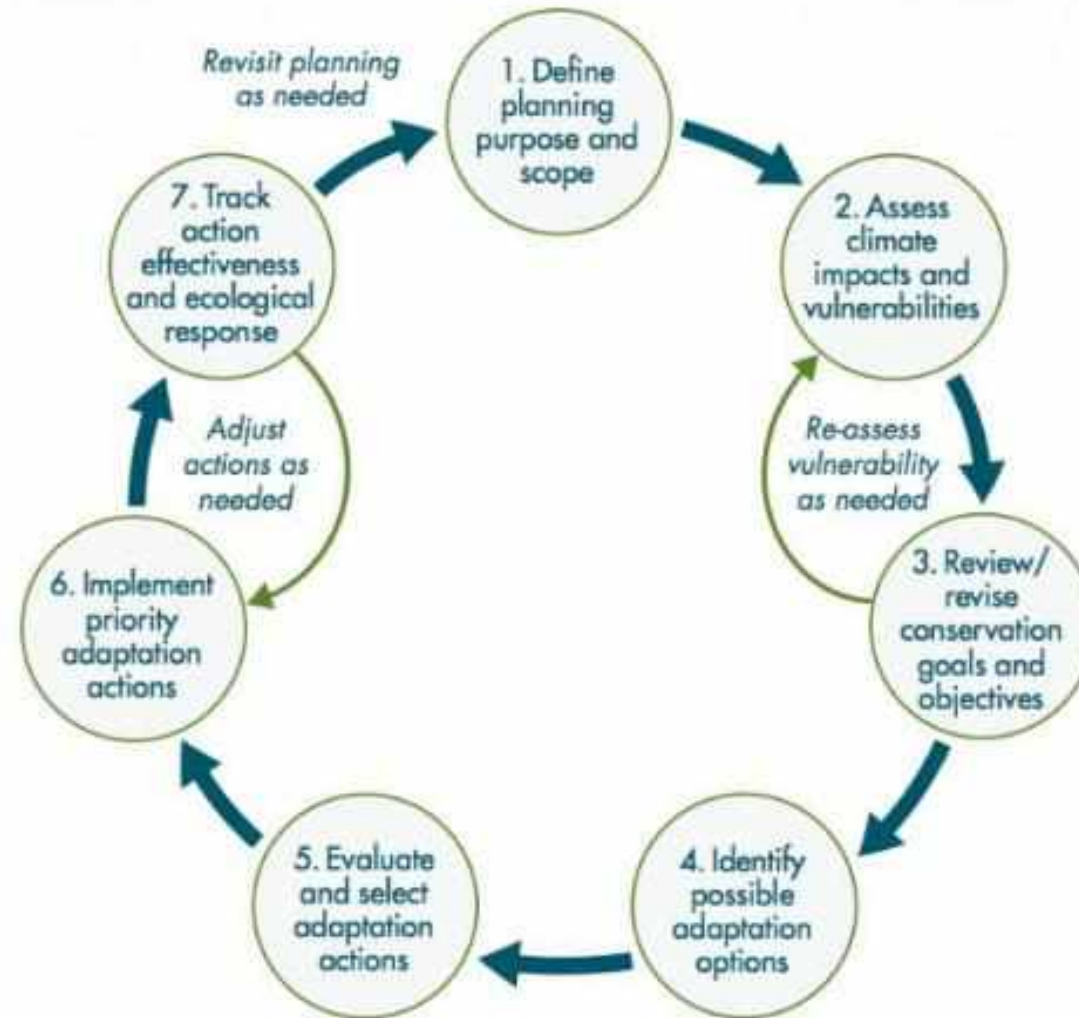
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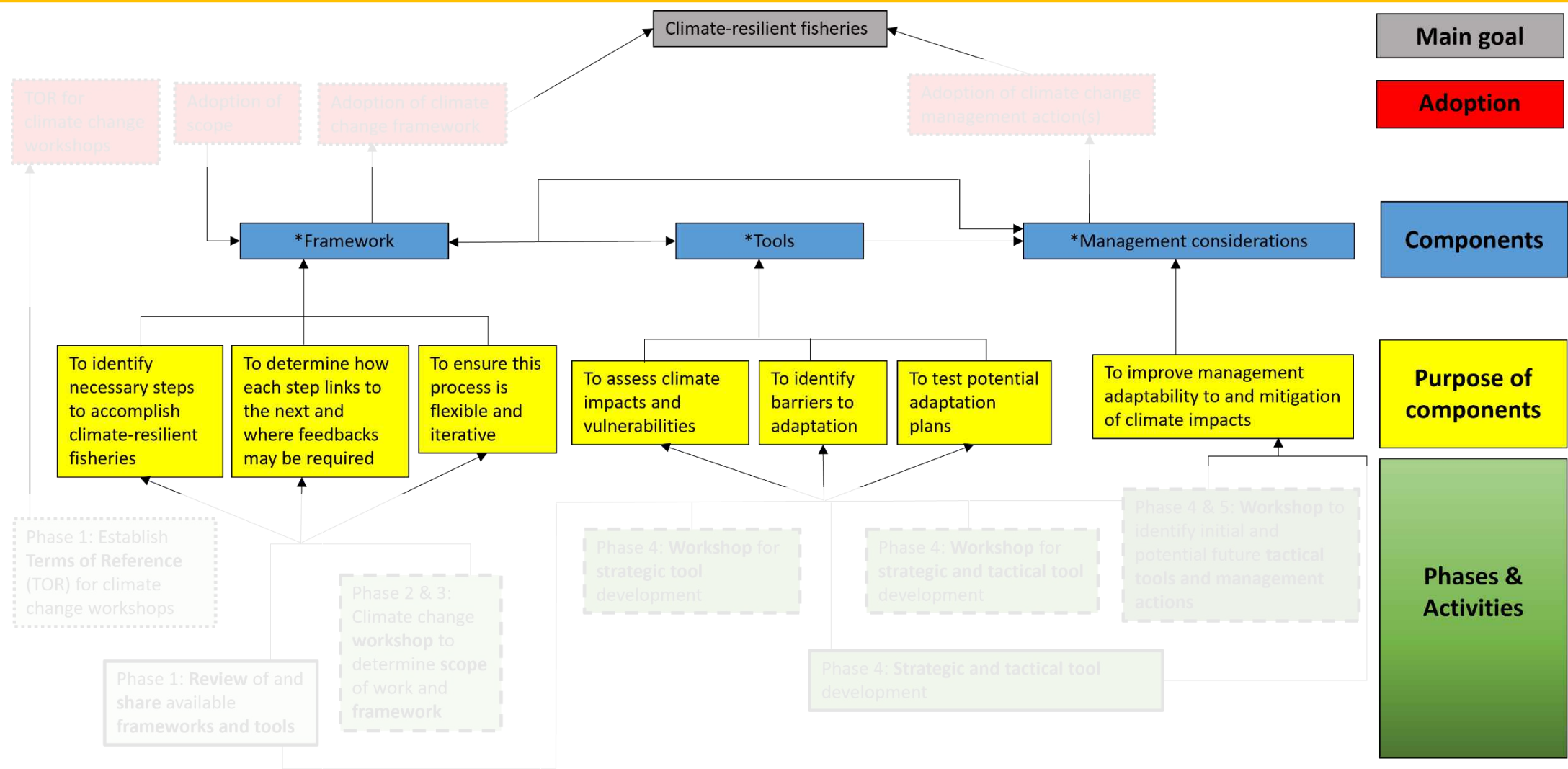


Management considerations



- Climate integrated stock assessments
- Climate informed reference points
- Modify harvest control rules
- Revise spatial and temporal management tools (i.e., dynamic closed areas, quota allocation, fishing seasons)
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Proposed Timeframe

Phase	Activities	2024				2025				2026				2027				2028				2029			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1) Planning	Review of and share available frameworks and tools																								
	Develop white paper of review and workplan proposal																								
	SAC/Comission Meeting: Share climate change resources and proposal with members																								
	Establish Terms of Reference (TOR) for climate change workshops																								
2) Decide on scope and goals	Workshop to develop scope																								
	SAC/Comission Meeting: Share/adopt scope																								
3) Develop framework	Workshop to develop framework																								
	SAC/Comission Meeting: Share/adopt framework																								
4) Creating tools	Strategic tool development																								
	Workshop for sharing and developing strategic tools																								
	Tactical tool development																								
	SAC/Comission Meeting: Share newly developed strategic tools																								
	Workshop for sharing and developing strategic and tactical tools																								
	SAC/Comission Meeting: Share newly developed strategic and tactical tools																								
	Workshop to identify tactical tools and management action																								
Tool Implentation & Action	SAC/Comission Meeting: Recommend tool implementation/ management action																								
	Implementation																								



Questions

