

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

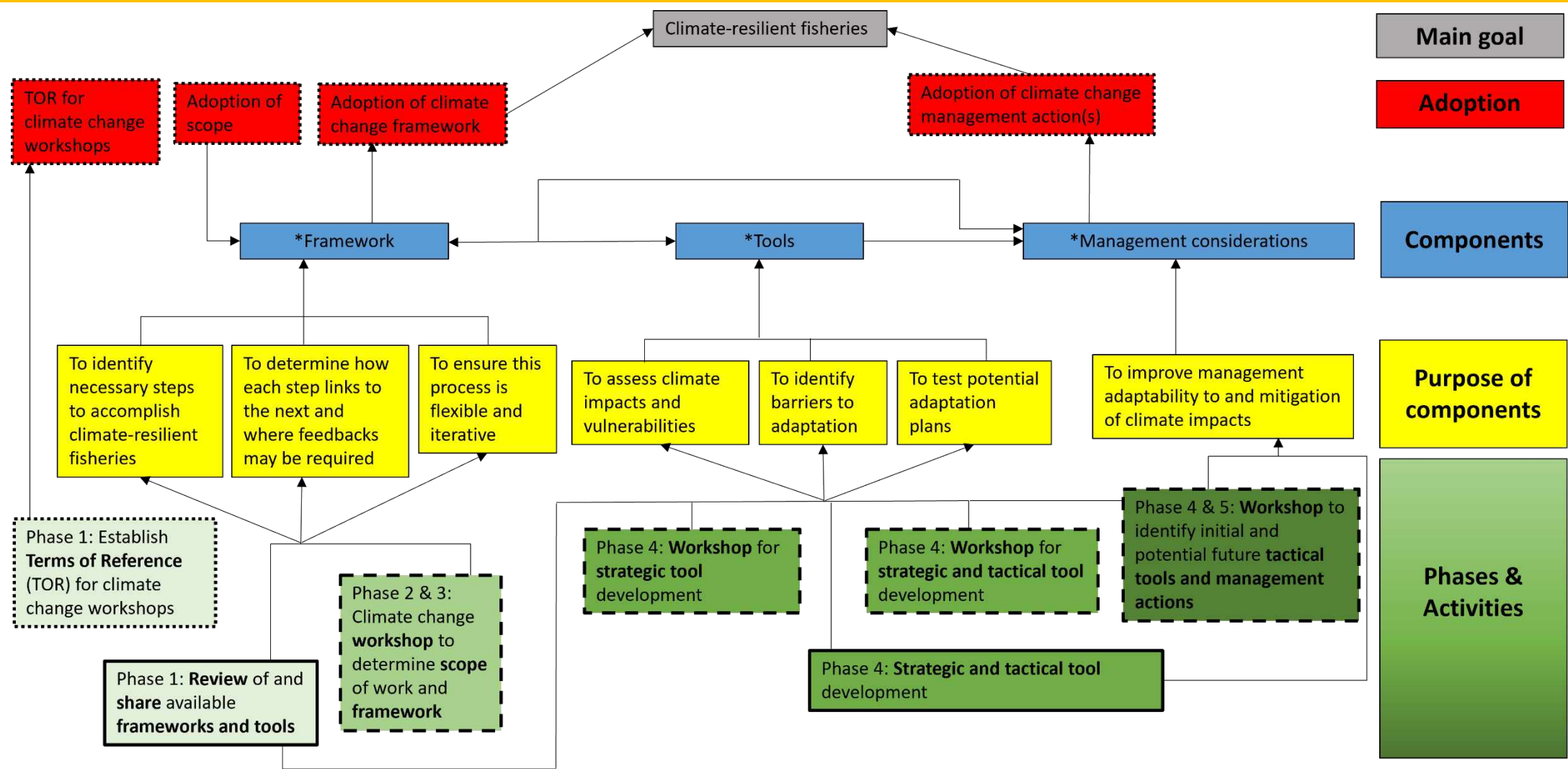
RESOLUTION C-23-10

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

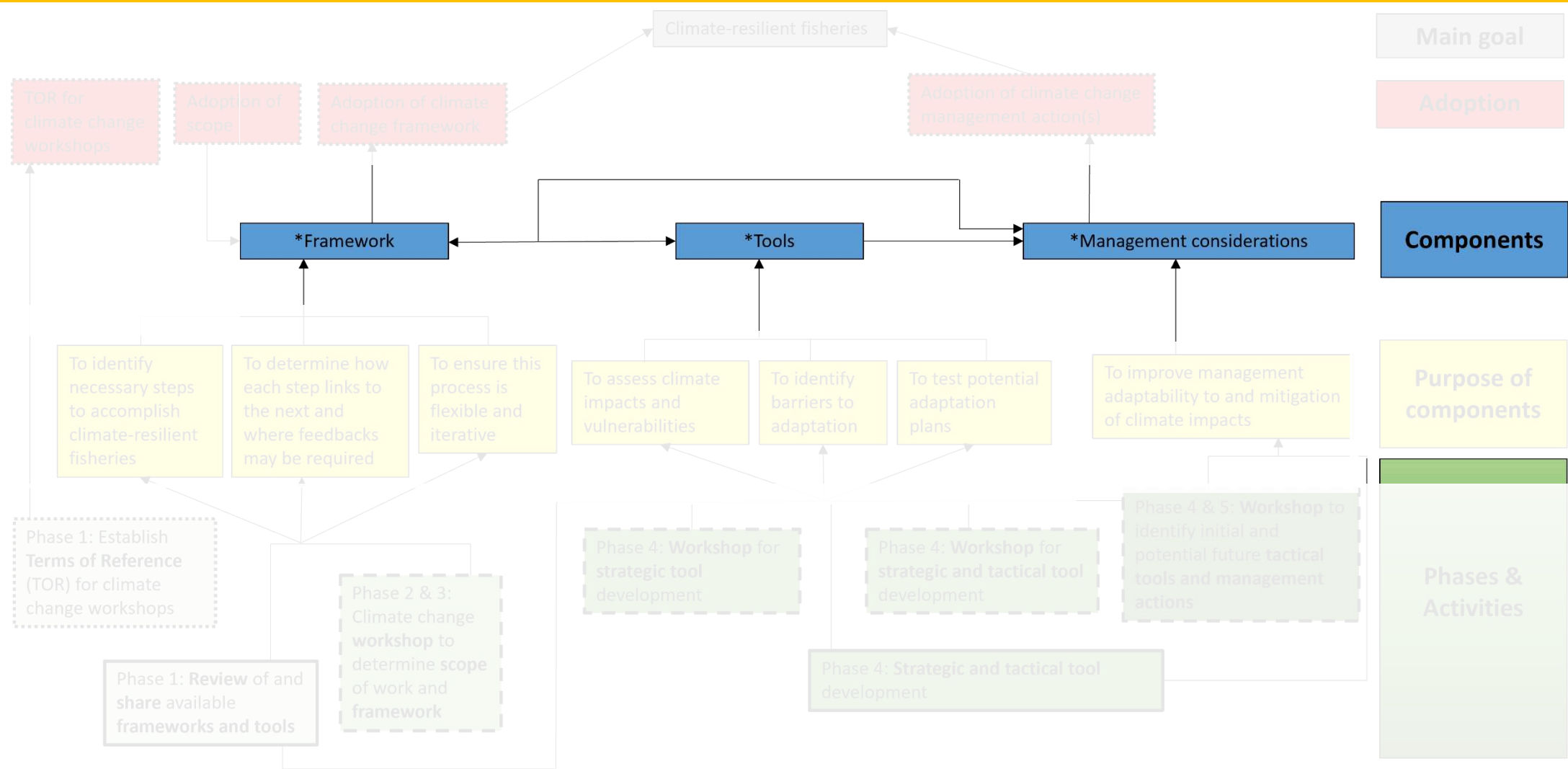


Legend: box boundary definitions

- Involving the IATTC scientific staff
- Involving the IATTC scientific staff, Commission, and stakeholders
- Involving the Commission



Climate change proposed workplan



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Tools

Oceanographic & climate data

Species distribution models

Indicators

Flexible management systems

Climate-informed stock assessments

Climate vulnerability assessments (CVA)

Climate change scenario planning

Management strategy evaluation

Tools: Climate Vulnerability Assessments

Very high, High, Moderate, Low

2a

Biological Sensitivity	Very High	High	Moderate	Low
Very High				
High				
Moderate				
Low				
	Low	Moderate	High	Very High

Climate Exposure

Very High

Atlantic bonnethead shark
Caribbean reef shark
Dusky shark
Oceanic whitetip shark

High

Sandbar shark
Atlantic sailfish
Great hammerhead
White marlin
Blue marlin

Moderate

Basking shark
Bluefin tuna
Porbeagle shark
Shortfin mako shark

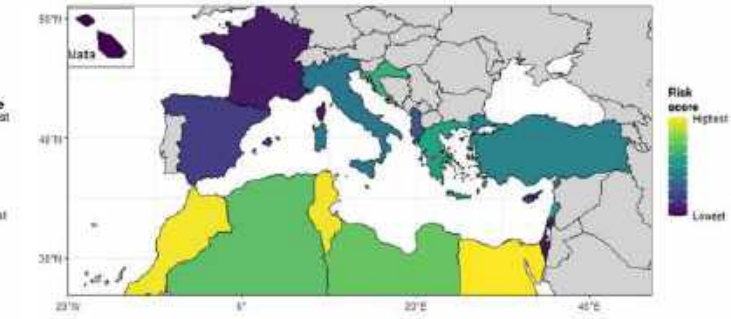
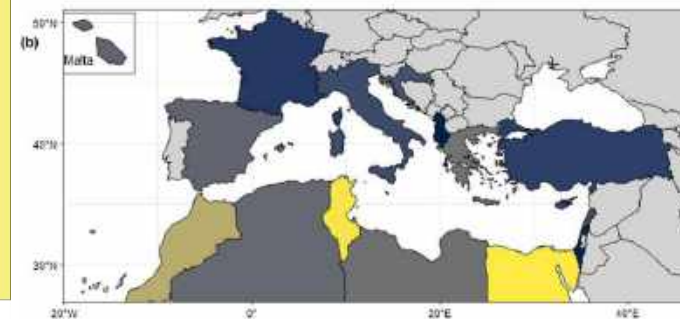
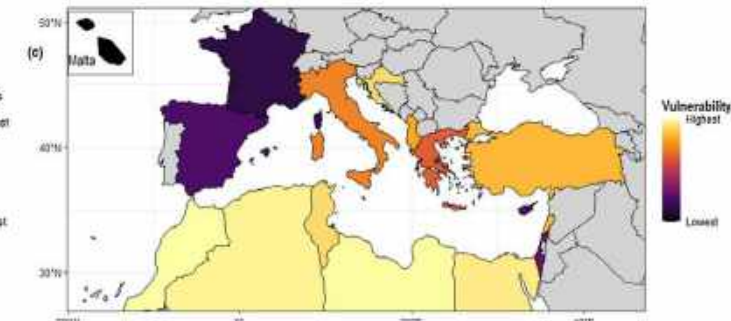
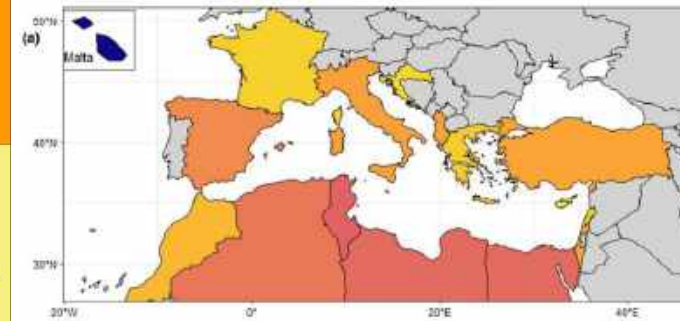
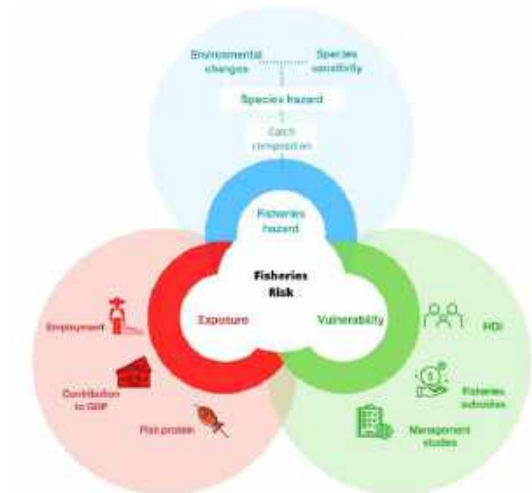
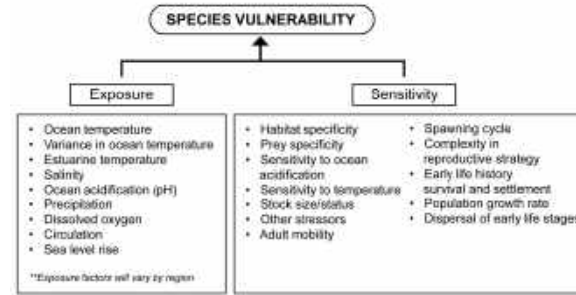
Gulf of Mexico bonnethead shark
Nurse shark
Scalloped hammerhead
Silky shark
Whale shark
Finetooth shark
Lemon shark
Sand tiger shark
Smooth hammerhead

Low

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
Bull shark
Night shark
Yellowfin tuna

Blue shark
Skipjack tuna
North Atlantic swordfish
Albacore tuna
Bigeye tuna
White shark

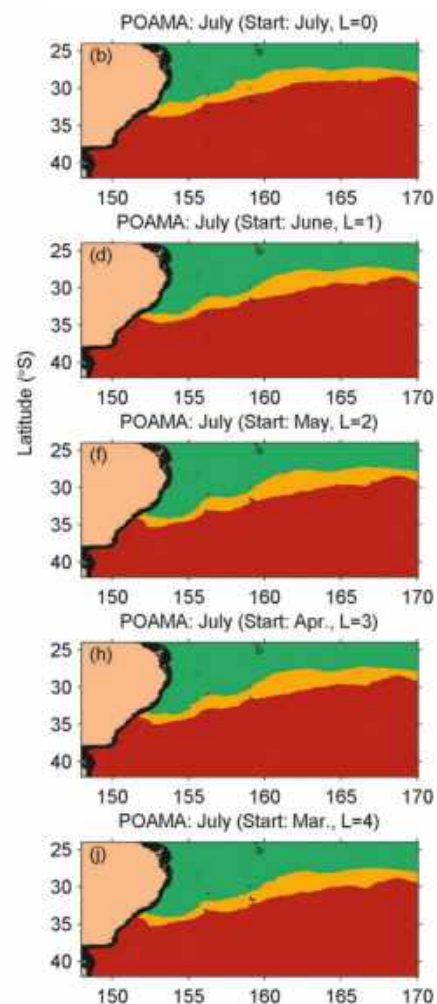
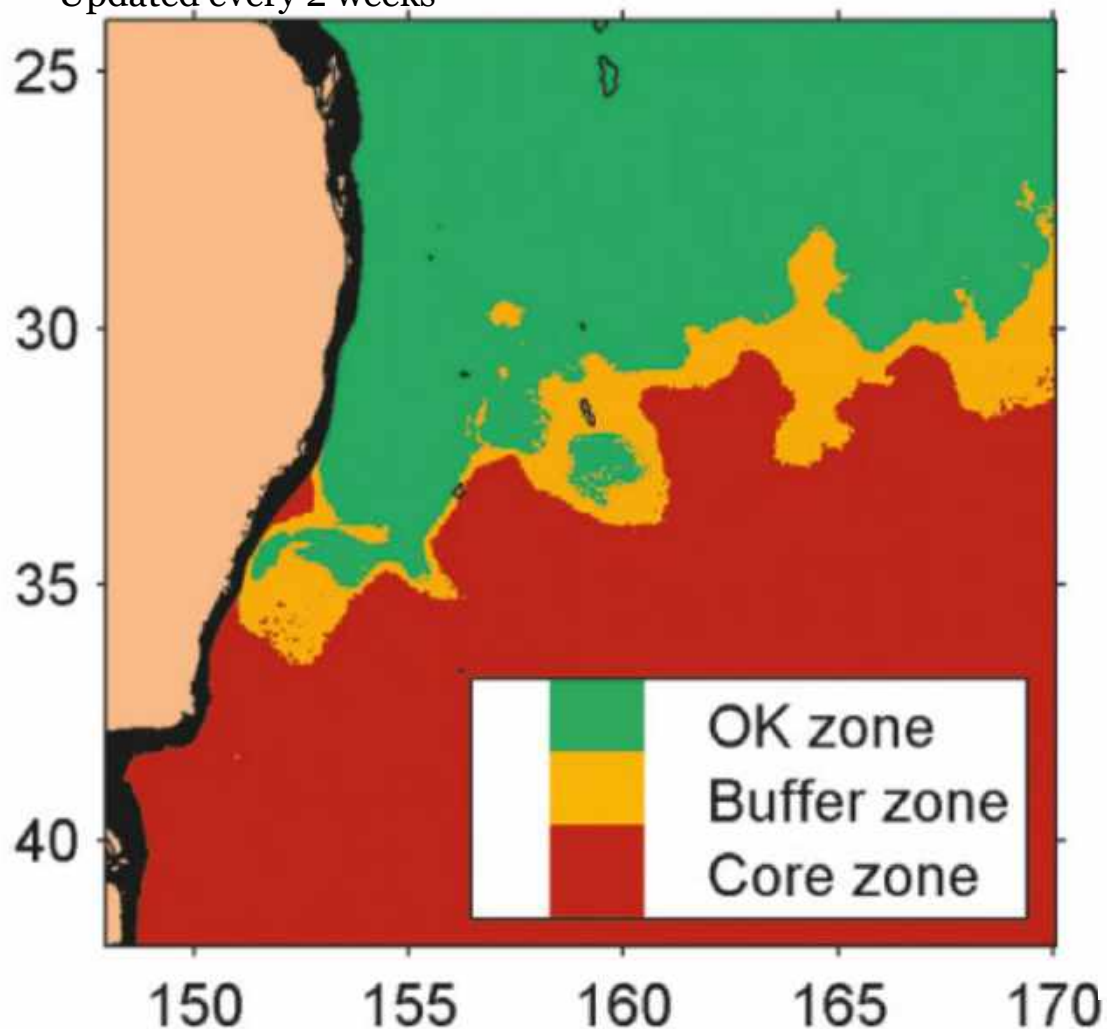
Atlantic blacknose shark - Atlantic
Bluntnose sixgill shark
Spinner shark
Sharpnose sevengill shark
Tiger shark
Gulf of Mexico blacktip shark
Longfin mako shark



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

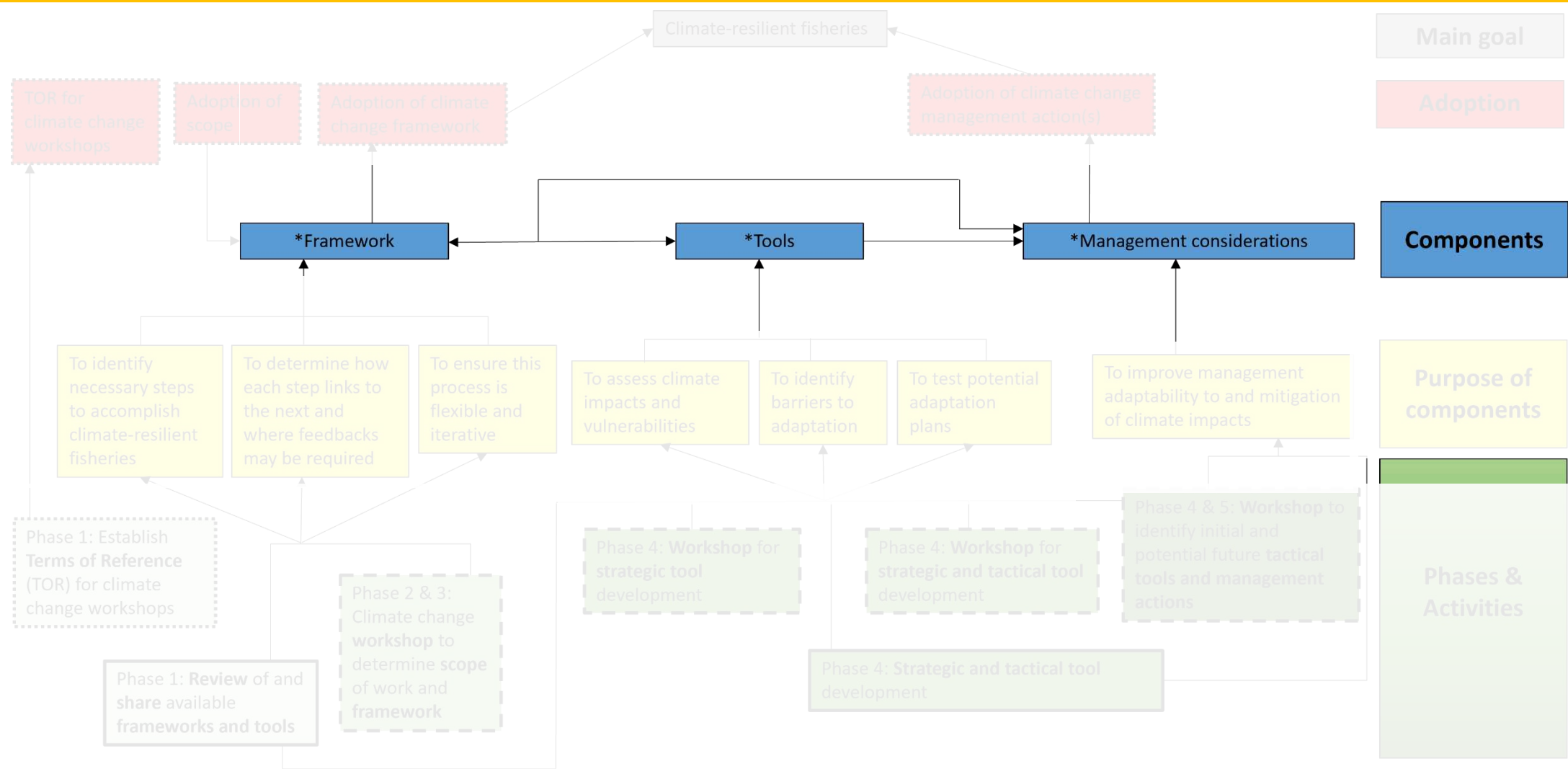
- Support access by active fishers
- Restrictions on who can own quotas

Management objectives & realities

- Use multiple management instruments



Climate change proposed workplan



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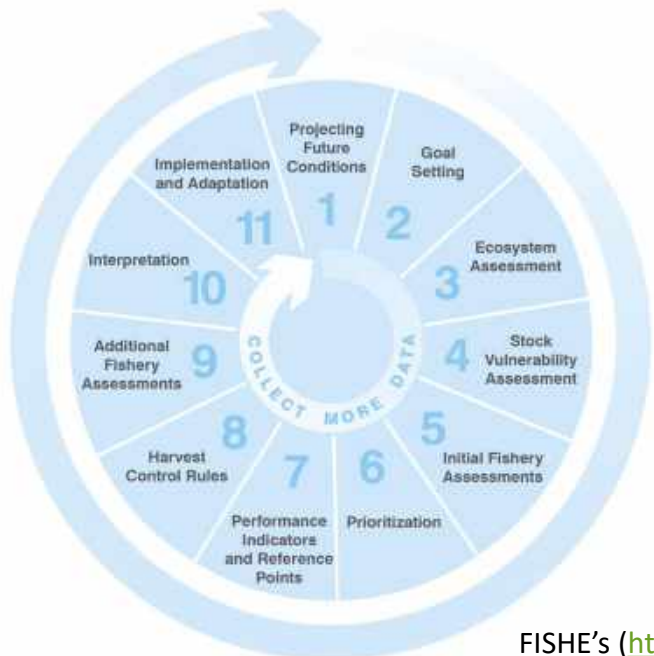
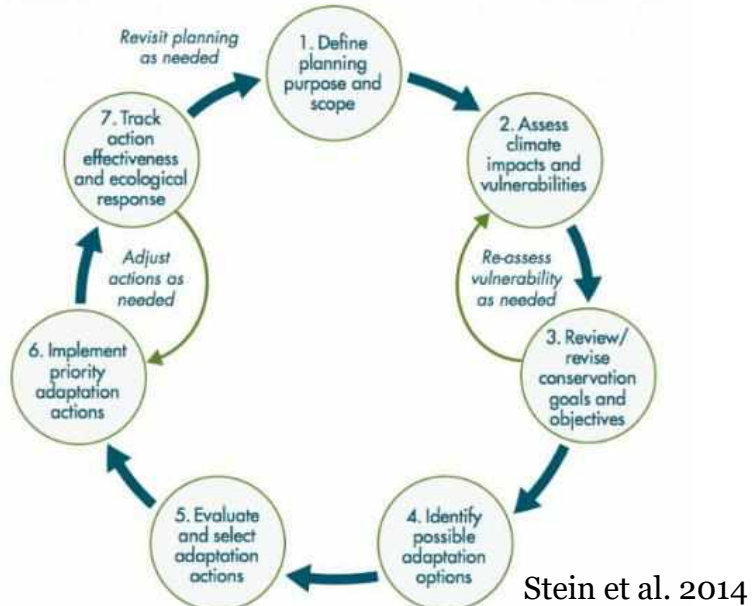
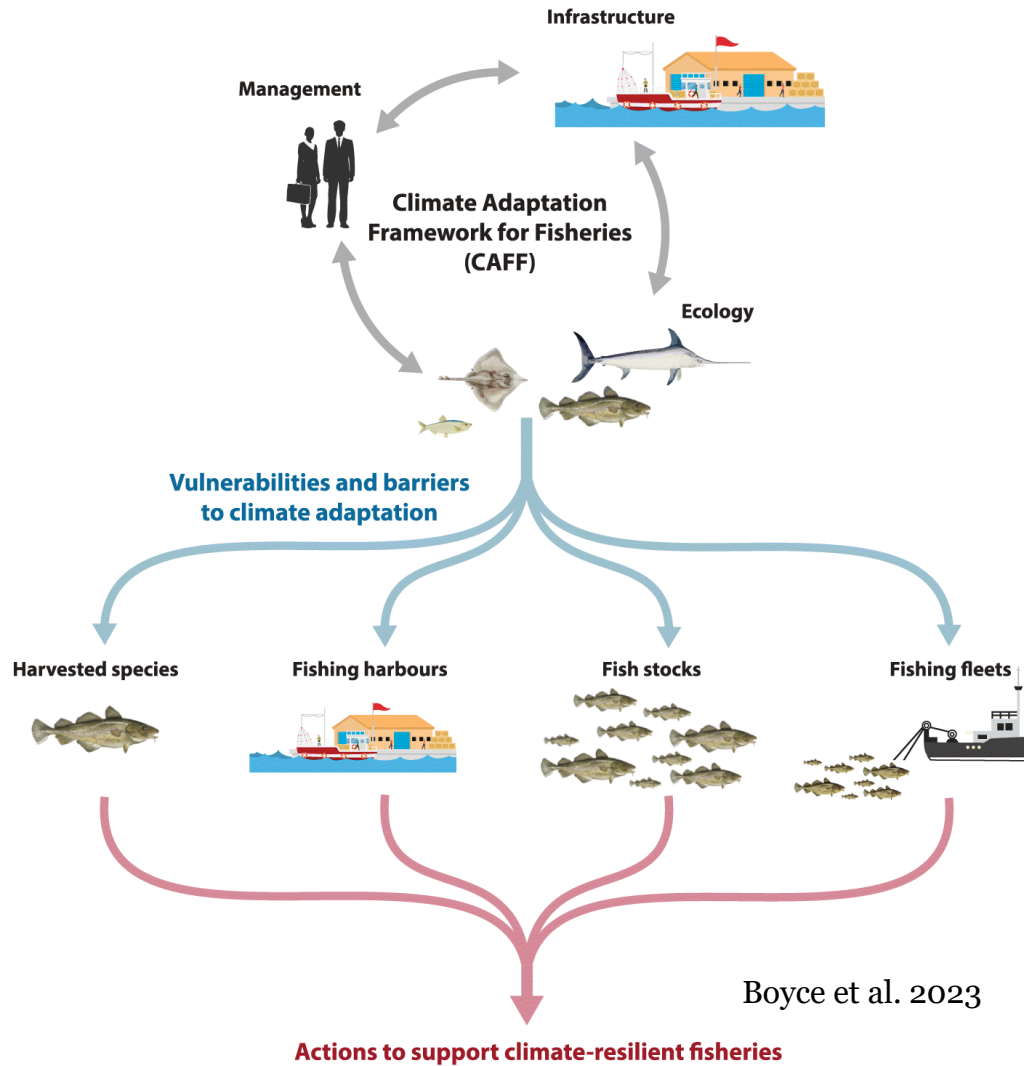
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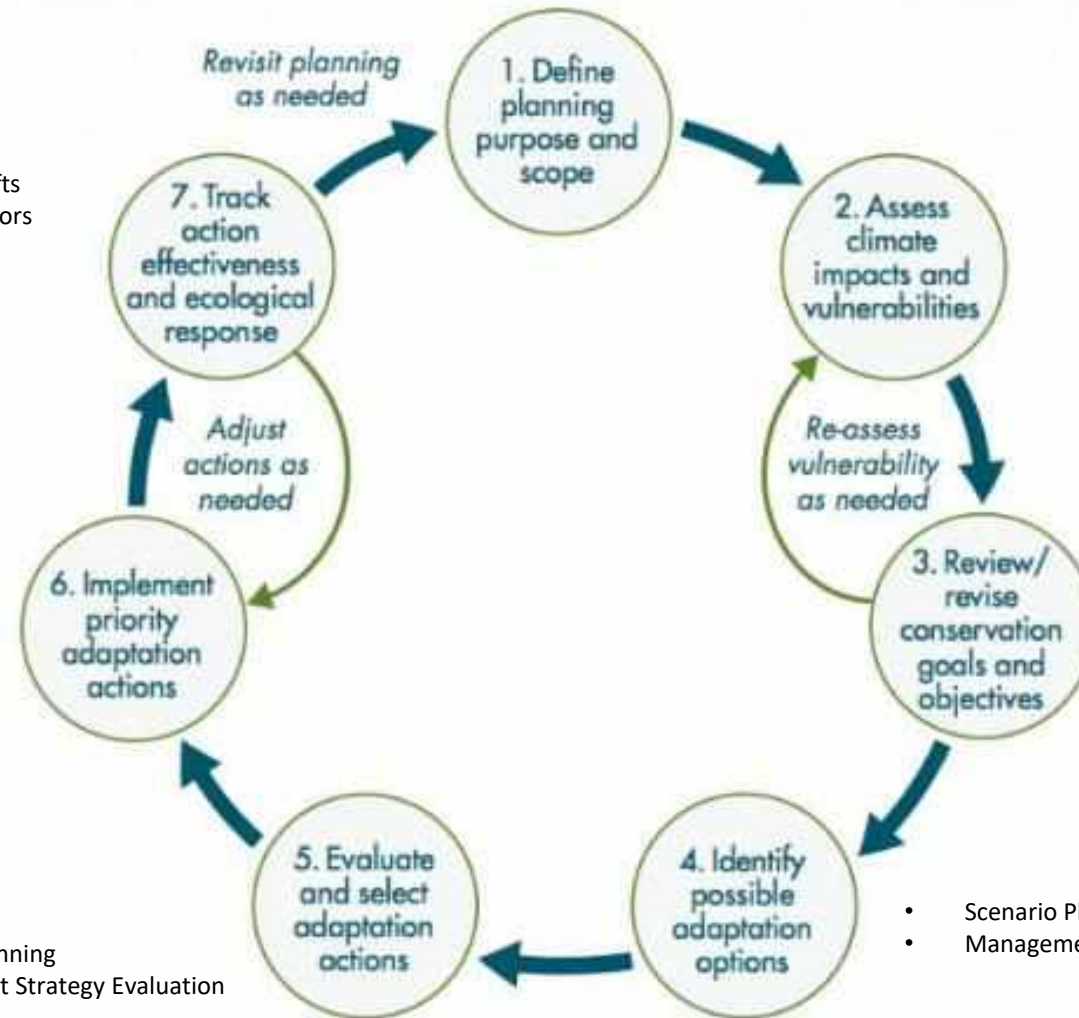


Frameworks



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

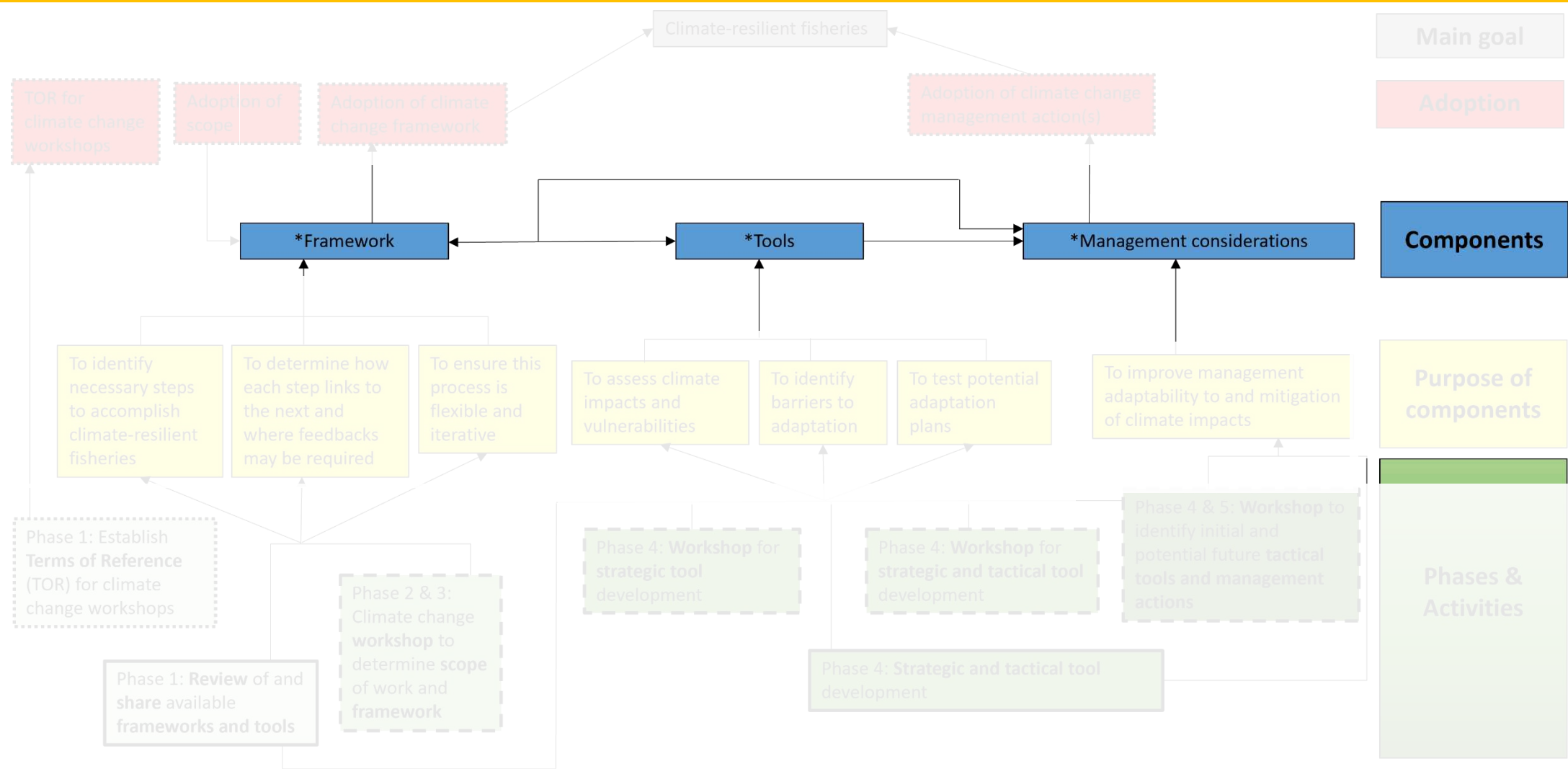
- Climate integrated stock assessments
- Climate informed reference points
- Modify harvest control rules
- Revise spatial and temporal management tools (i.e., dynamic closed areas, quota allocation, fishing seasons)
- Flexible management and permit systems
- Tools to help fishermen adjust to change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

- Scenario Planning
- Risk Assessments
- Management Strategy Evaluation

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Climate change proposed workplan



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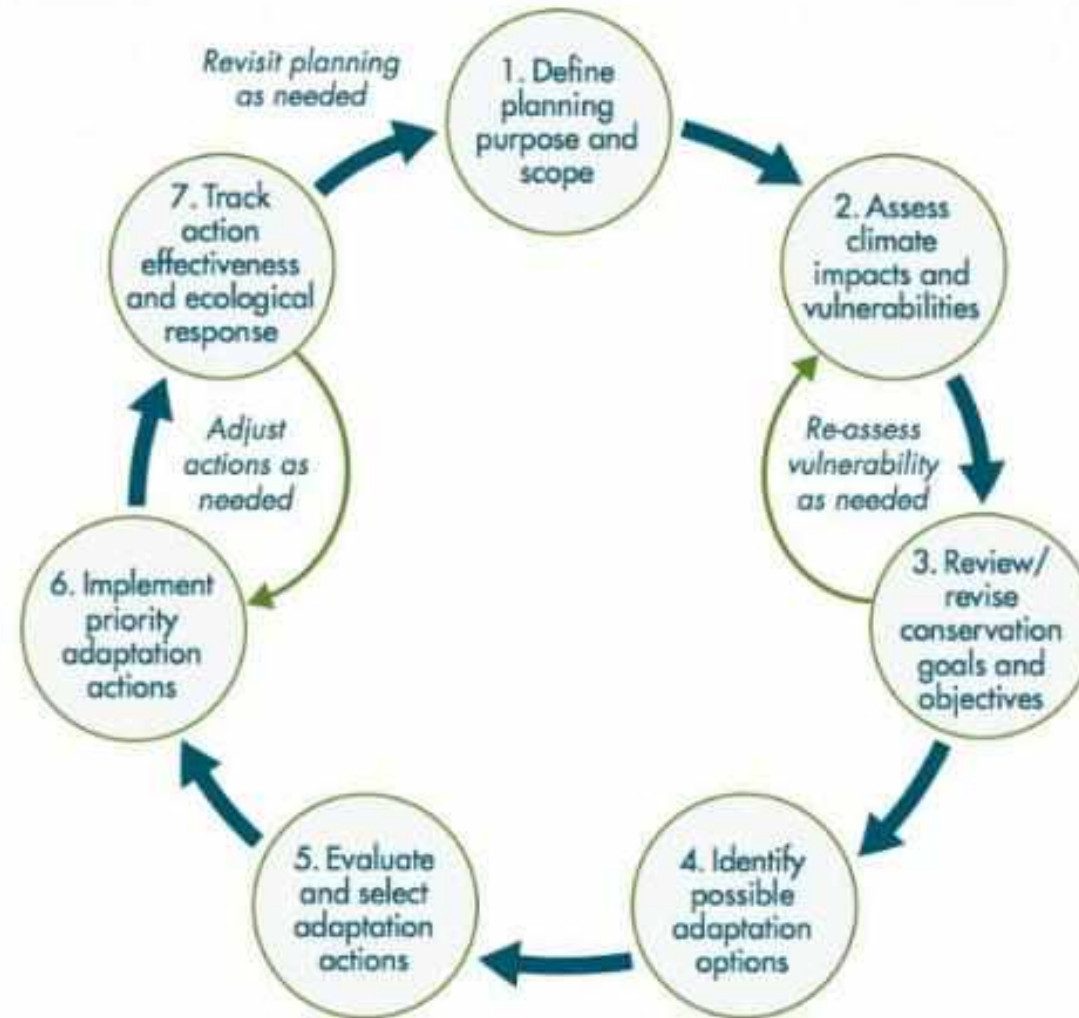
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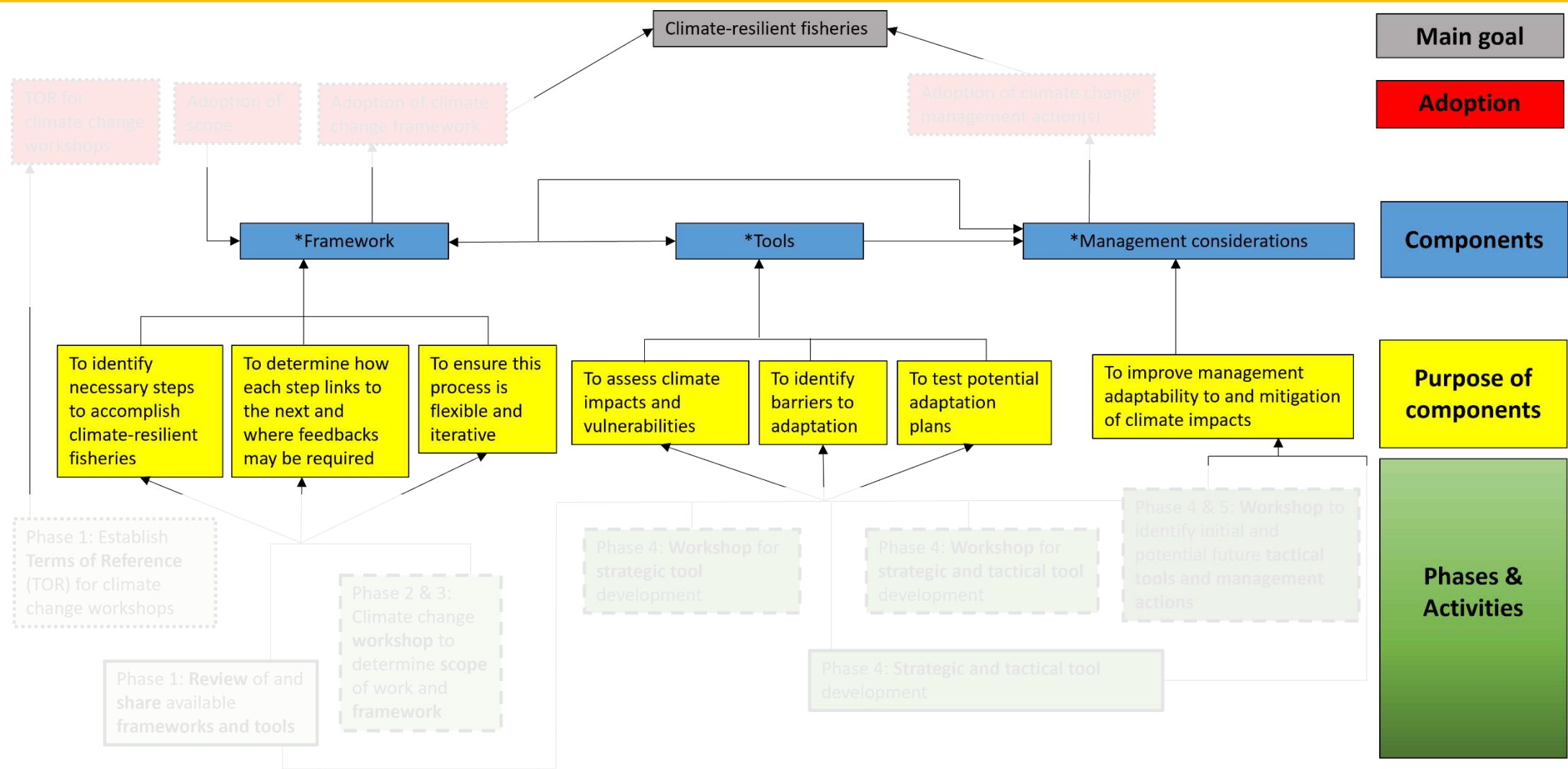


Management considerations



- 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

