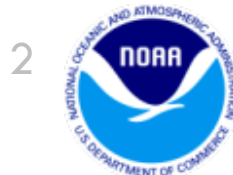


**CORAL TRIANGLE
INITIATIVE**
ON CORAL REEFS, FISHERIES AND FOOD SECURITY

Incorporating climate and ocean change into an ecosystem approaches to fisheries management (EAFM) plan


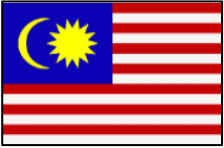




Robert Pomeroy¹, Rusty Brainard², Adel Heenan³



Coral Triangle Initiative Regional Plan of Action Goals



Under the CTI-CFF, the six Coral Triangle countries (CT6) adopted a Regional Plan of Action (RPOA) with five overarching goals:

- 
- 
- 
- 
- 
- 
- 1) strengthening management of seascapes;
 - 2) **application of an ecosystem approach to fisheries management (EAFM);**
 - 3) developing and strengthening the management of marine protected areas;
 - 4) **implementing climate change adaptation measures; and**
 - 5) protecting threatened marine species.

EAFM in the Coral Triangle

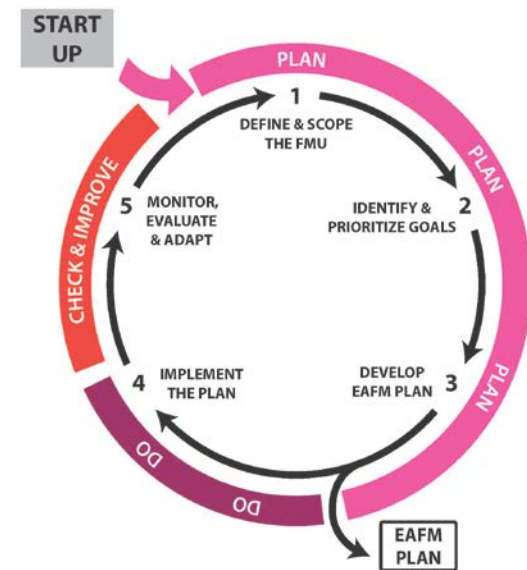


Applying an EAFM is considered the preferred option and best practice for the long-term sustainability of fisheries and the services that fisheries ecosystems provide to society (e.g., food security, livelihoods, economic security, coastal protection, human health and well-being).

The “**Coral Triangle Regional Ecosystem Approach to Fisheries Management (EAFM) Guidelines**” or EAFM Regional Guidelines were prepared to support the CT6 countries and the CTI-CFF in this process.

EAFM in the Coral Triangle

The EAFM Regional Guidelines describe what is meant by an EAFM, considerations in transitioning to an EAFM, and outline a five step process on how to implement an EAFM at various spatial and governance scales across the Coral Triangle region.



Climate and ocean change in the Coral Triangle

What will the impacts be?

Direct: for example, changes in habitat

... will affect species diversity and abundance

Indirect: for example, changes in fisheries stock

... will decrease catch potential

Widespread societal effects

.... How do you manage for the **unequivocal** but **uncertain** impacts of climate change?

Expert workshop

Cheryl Logan Janna Shackeroff Teresa Leonardo Nygiel Armada William Cheung Johann Bell Stuart Green Phil Munday Zulfigar Yasin



Perry Alino Rebecca Guieb Rusty Brainard Affendi Amri Sam Mamaug Britt Parker Bob Pomeroy Jamal Jompa

Expert workshop aim:

→ develop operational guidelines on how to include climate and ocean change impacts into the EAFM process

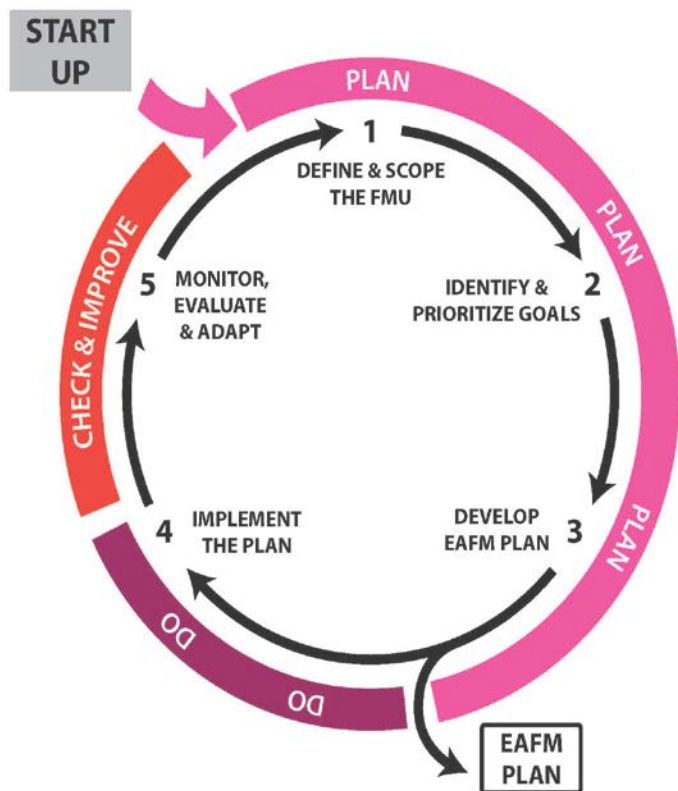


Why EAFM is a good framework for dealing with climate change



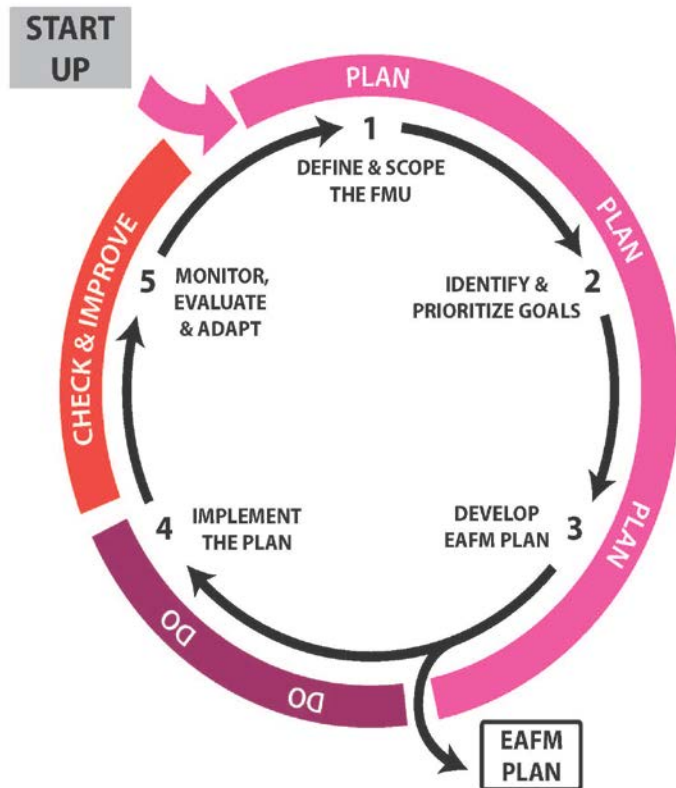
1. Resilience is a primary goal
2. It broadens spatial and temporal scale
3. It is participatory
4. It is integrative
5. It is adaptive

Highlighting climate change in the EAFM process



Addendum to the EAFM Regional Guidelines to highlight how the potential impacts of climate and ocean change can be integrated into the EAFM planning process through specific activities

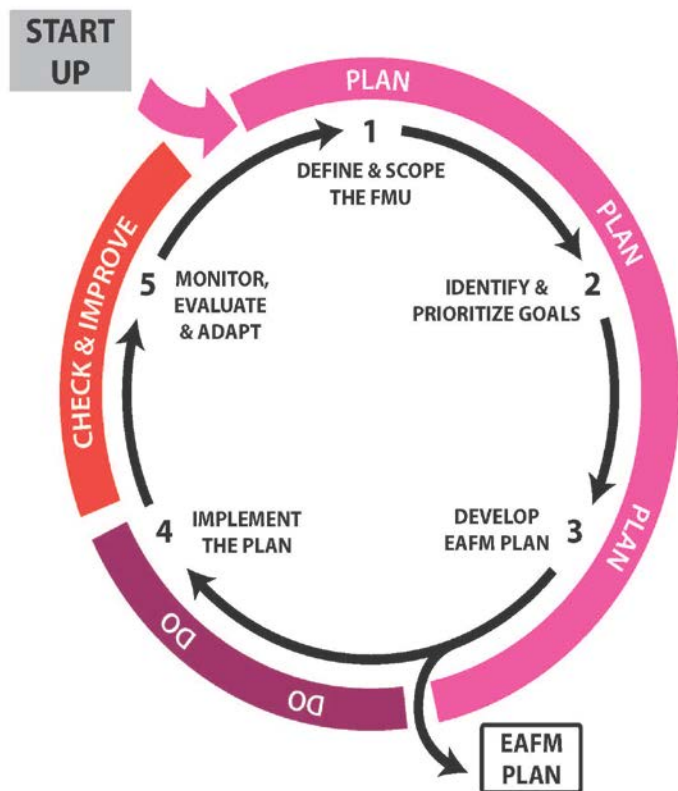
Highlighting climate change in the EAFM process



Start-up:

- Assemble the EAFM team
- EAFM introductions
- Coordinate with other agencies and levels of government
- Identify stakeholders vulnerable to COC
- Awareness raising and empowerment

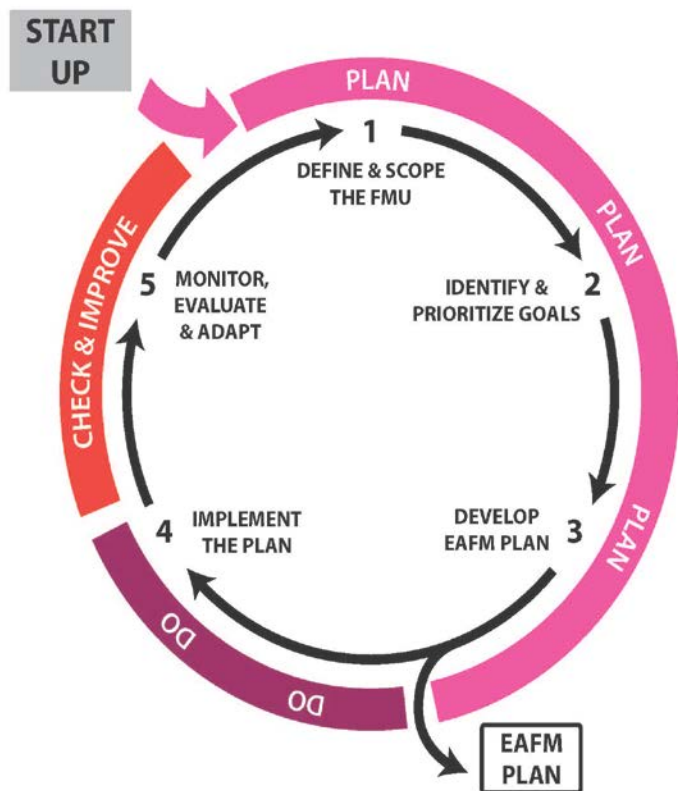
Highlighting climate change in the EAFM process



Step 1. Define and scope the fisheries management unit (FMU):

- Assessing non-climate threats
- Mapping the FMU
- Threat/action model
- Gap analysis
- Threshold analysis
- Local climate story

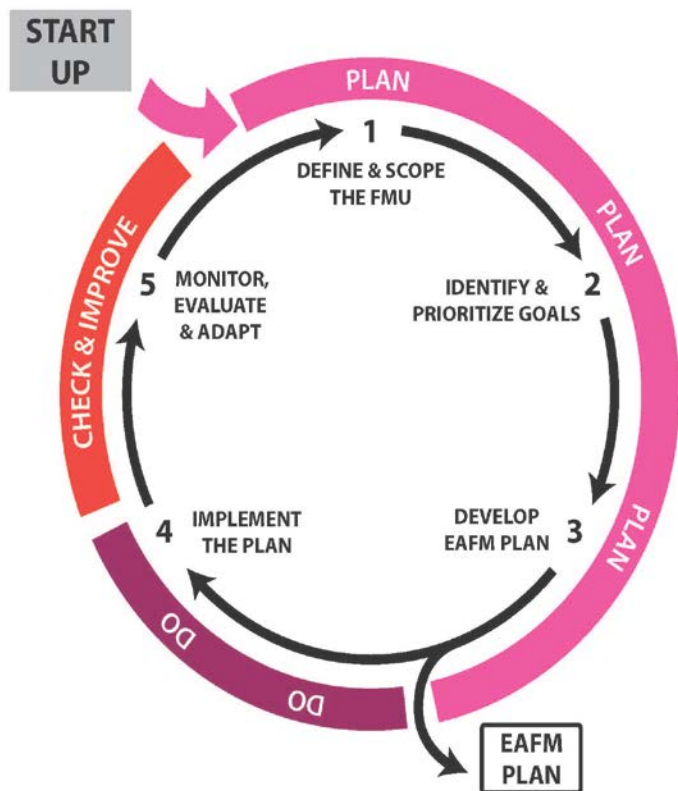
Highlighting climate change in the EAFM process



Step 2. Identify and prioritize issues and goals:

- Identify COC threats and issues
- Prioritize threats and issues
- Define the goals for the EAFM plan

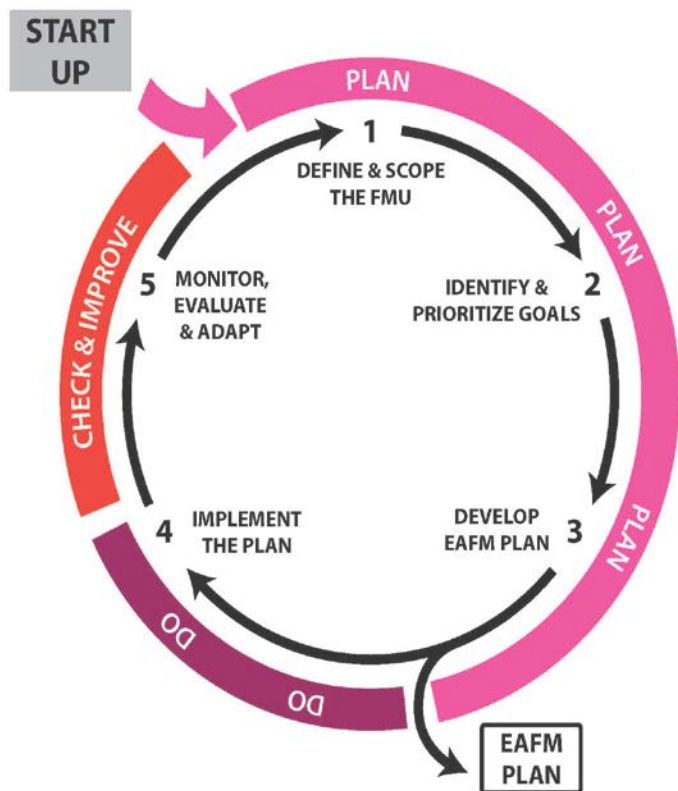
Highlighting climate change in the EAFM process



Step 3. Develop the EAFM plan:

- Develop operational objectives based on the issues affecting the goals
- Develop indicators and benchmarks
- Management actions and compliance

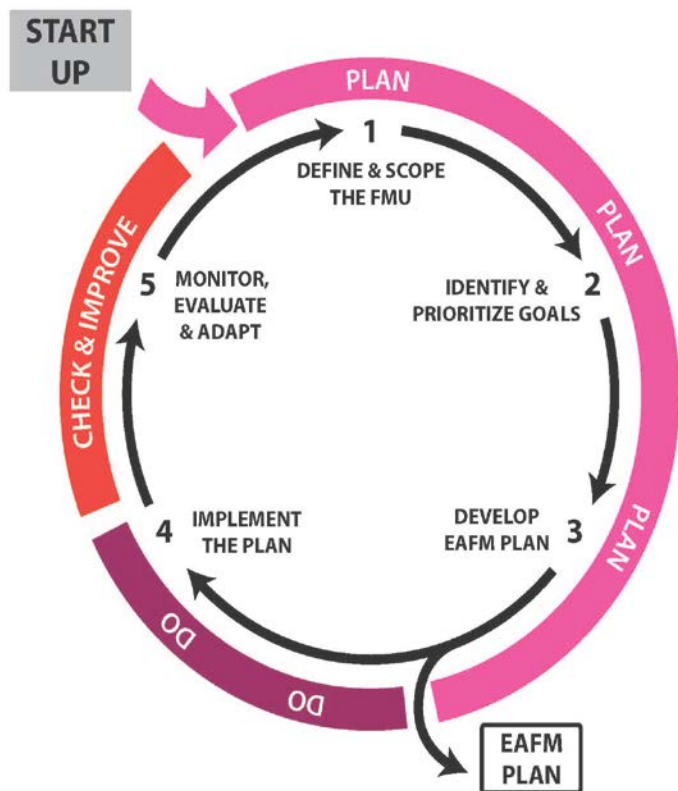
Highlighting climate change in the EAFM process



Step 4. Implement the plan:

- Formalize, communicate and engage
- Governance check
- Conflict management

Highlighting climate change in the EAFM process



Step 5. Monitor, evaluate and adapt:

- Monitoring performance of management actions
- Evaluate and adapt the plan

Other considerations



Scaling up:

There are a number of scaling factors that are considered during the implementation of EAFM, ecological, socio-economic, legal and jurisdictional and temporal, each of which are relevant to dealing with the wider implications of a changing climate.

Other considerations

Adaptation options:

A framework is needed for planning adaptations that address the myriad of other drivers in the near term, and climate and ocean change in the long term

Adaptation decision framework

		Addresses Climate Change	
		Long-term Loss	Long-term Gain
Addresses other drivers	Near-term Loss	Lose-Lose X X	Lose-Win ✓
	Near-term Gain	Win-Lose X	Win-Win ✓ ✓

Other considerations

Links to coastal community climate change toolkits:

There are a variety of coastal community and coastal resources resilience, vulnerability and adaptation toolkits available (for example, CTI REAP-CCA, CTI VA-LEAP)

Important to link any fisheries/COC plans with these coastal community/coastal resource climate change plans

National and regional supporting activities



Getting started

Example: commit to vulnerability assessment process

Supportive and coordinating activities

Example: establish formal mechanism to spread new climate knowledge

Further knowledge and understanding

Example: Promote training, government and school

Concluding remarks



EAFM provides a good framework for climate change impacts

CTI COC-EAFM addendum are available to provide guidance

For further information email:

adel.heenan@noaa.gov or robert.pomeroy@uconn.edu