FAO – NAFO - ICES
Symposium on applying the Ecosystem Approach to Fisheries Management in ABNJ
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Dialogue and participatory processes at the science-management interface:

Making ecosystem overfishing considerations operational within the NAFO Roadmap for an Ecosystem Approach to Fisheries

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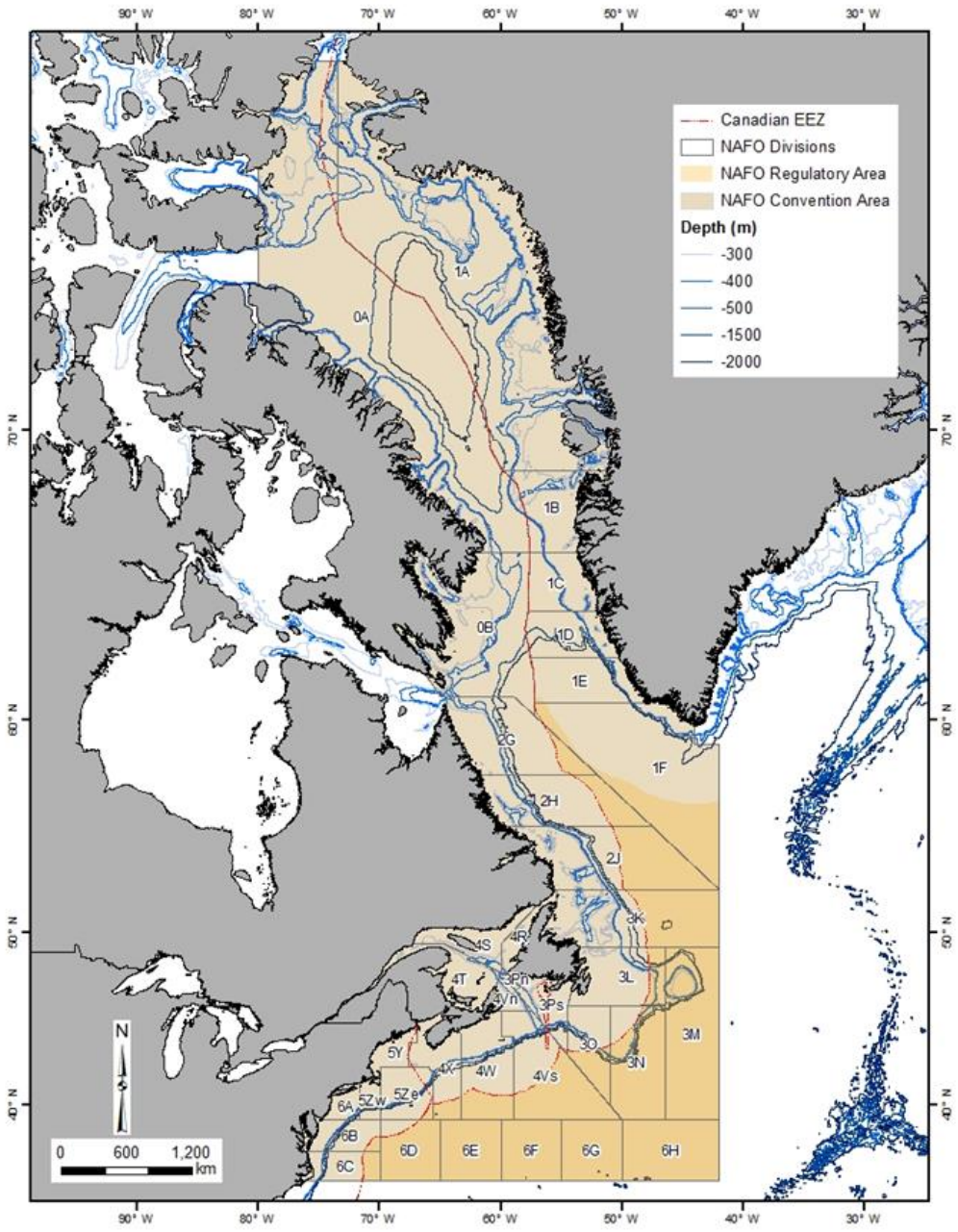
Take home message

- The ecosystem approach provides a more comprehensive concept for fisheries sustainability but is often difficult to make it operational. These difficulties typically emerge when we need to change existing management practices.
- Key to this challenge is that managers, scientists, and stakeholders see the world from different perspectives and operate under different constraints.
- The solutions to bridge these gaps emerge from an open dialogue between all parties, and that open dialogue requires trust.
- We need dedicated spaces within RFMOs where such trust can be actively built, and the open dialogue fostered.
- Only when we can relate to each other's concerns, we are able to find the compromises required to make the ecosystem approach operational.
- At the end of the day, making the ecosystem approach operational is less about science, and more about understanding people.



The Northwest Atlantic Fisheries Organization (NAFO)

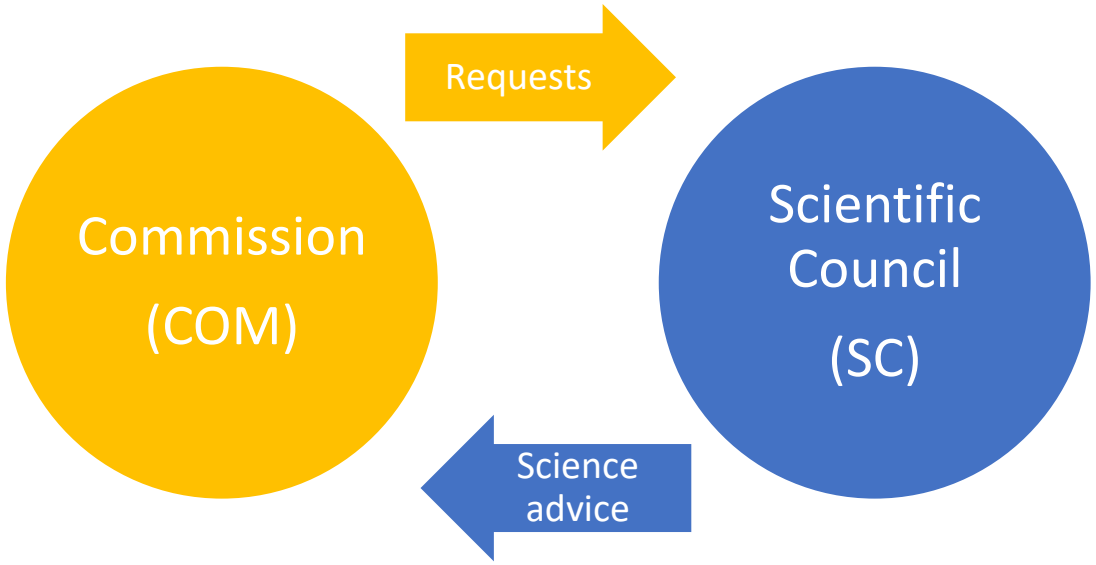
- Regional Fisheries Management Organization (RFMO).
- 13 Contracting Parties (CPs).
- NAFO Regulatory Area (NRA) outside the 200nm EEZ.
- Manages fisheries on NRA stocks, and straddling stocks.
- 28 stocks (13 spp) (NAFO & Coastal States requests).
- Precautionary and ecosystem approaches formally embedded in the NAFO convention.
- **A general plan for implementing an Ecosystem Approach to Fisheries for NAFO has been developed (NAFO Roadmap to EAF).**

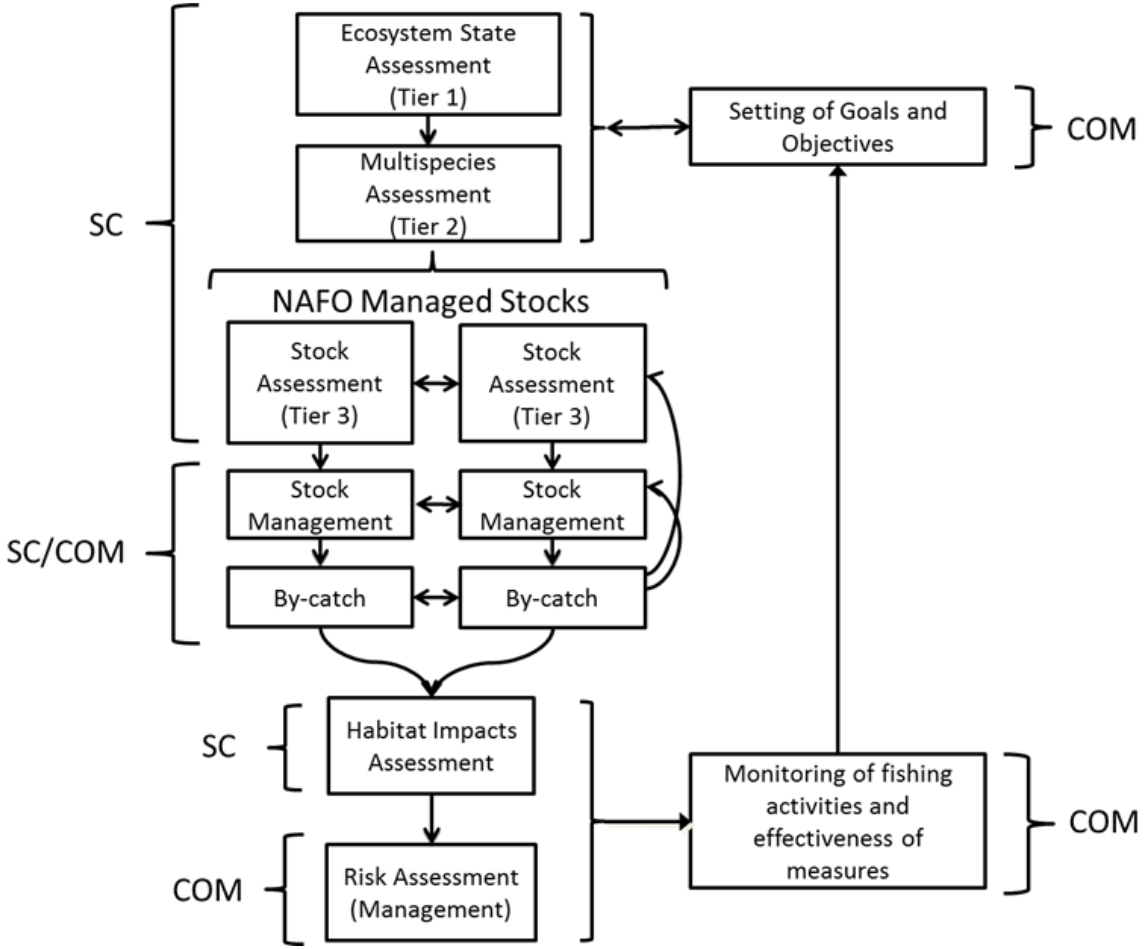
Ecosystem Approach: A more comprehensive concept of sustainability

- Sensible catch rates on the target stock are a necessary but not sufficient condition for fisheries sustainability

- A more complete take on fisheries sustainability requires:
  - **Sensible catch rates on the target stock** (including considerations of species interactions, impacts from/to other fisheries, and climate/environment)
  - **Avoiding or minimizing impacts on other stocks** (incidental catches)
  - **Avoiding or minimizing impacts on habitats** (habitat erosion and/or destruction)
  - **Building and maintaining resilient fishing communities** (social, cultural, and economic pillars)

The NAFO Roadmap: Integrating EAF within NAFO operations





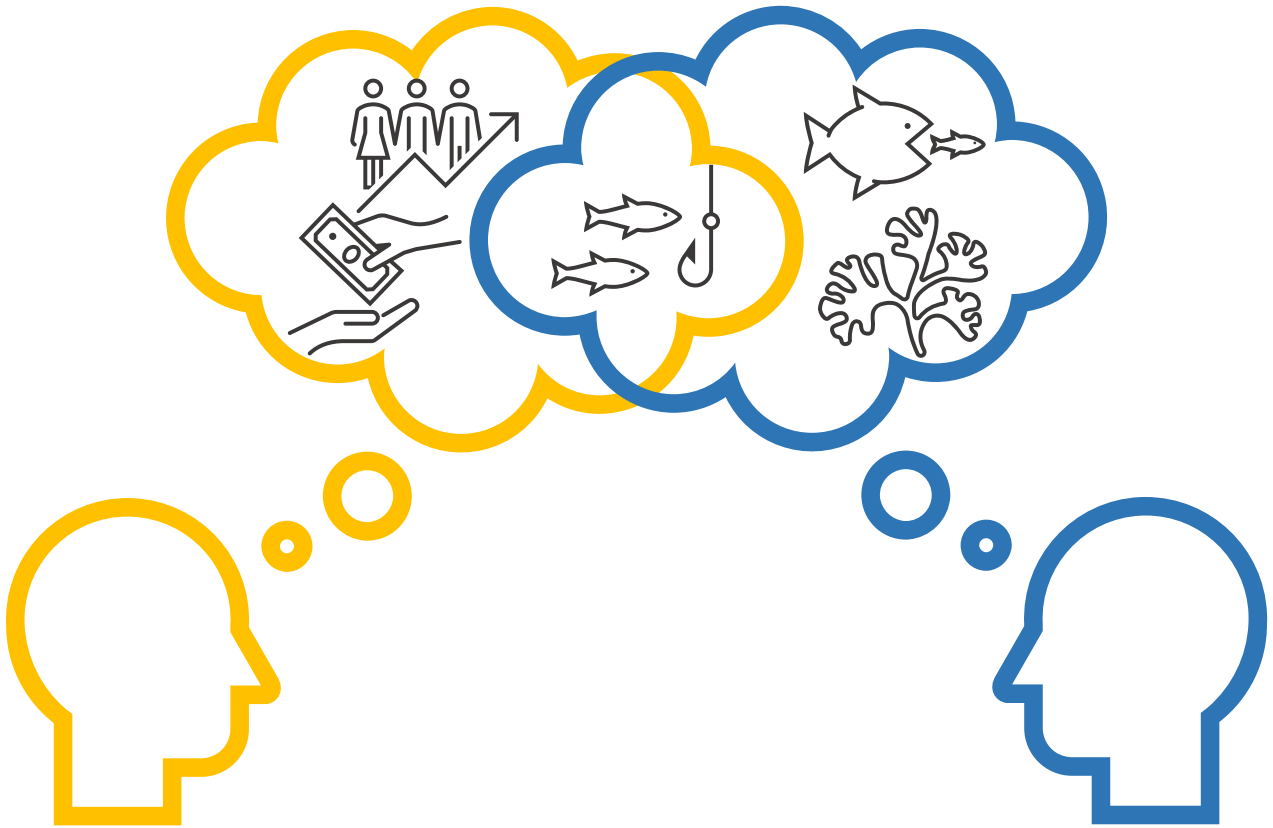
The science-management interface

What defines the science-management interface:

- Policy framing
- Institutional mechanisms
- Operational implementation

- **People**

Conflicting perspectives: From solitudes to dialogue



- Trade-offs
  - Conservation vs Socio-Economics
  - Short vs long-term
    - What is long-term?
  - RFMO vs Domestic obligations
- Accuracy vs precision
  - What is good enough?
  - What about uncertainty?
- Policy vs Politics
  - Important vs Urgent
  - Conflicting priorities
  - Allocation of finite resources (time, people and funding)
  - Risk comfort vs ownership of consequences

Common goals provide common ground: Even if sometimes does not seem like it

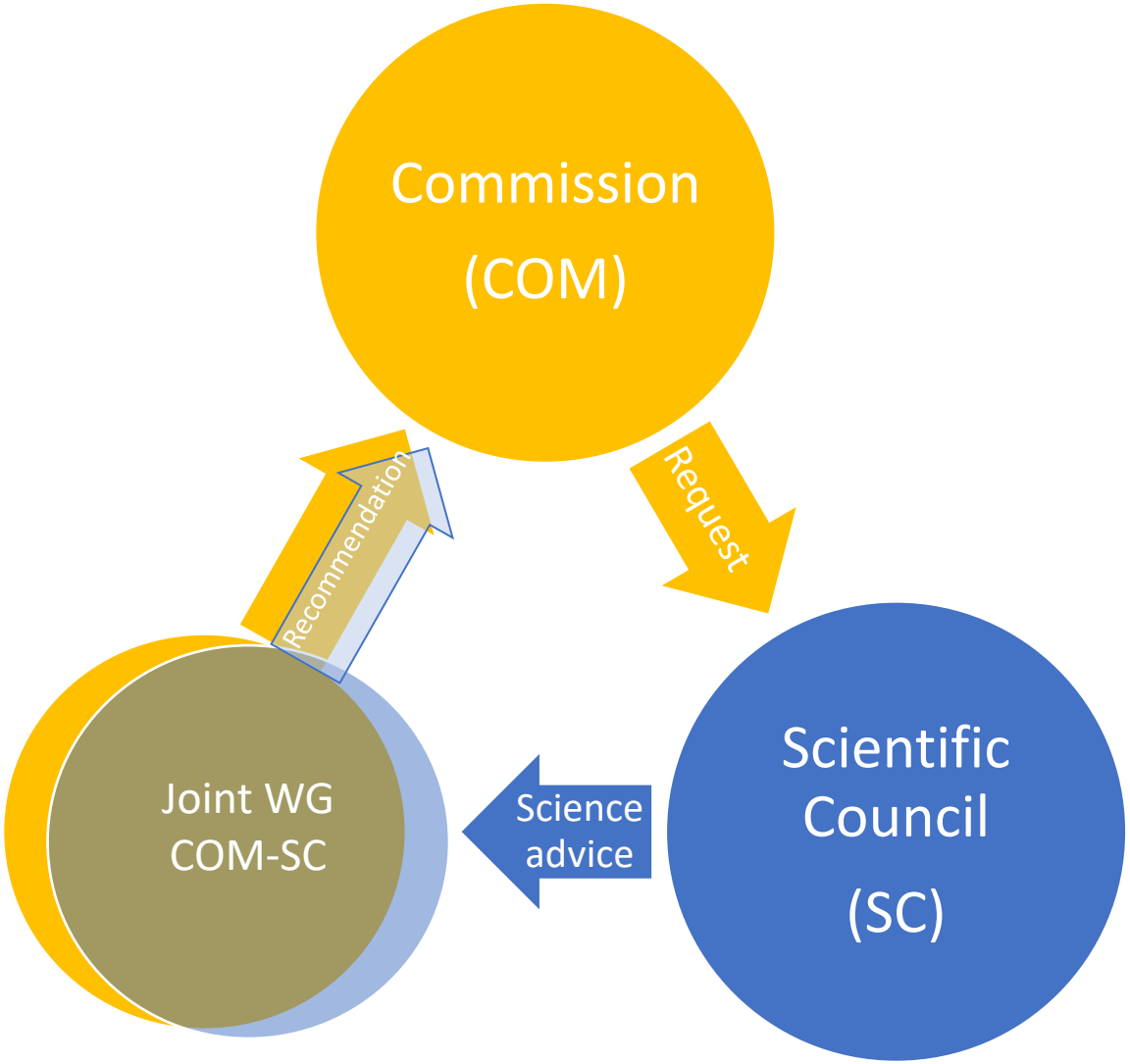
- UNCLOS, UN Fish stocks agreement, and other UNGA Resolutions (e.g. VMEs, SDGs).
  - Precautionary Approach
  - Ecosystem Approach

- **Sustainability of fisheries ecosystems**
- **Benefits for fishing and coastal communities**
- **Sustainable food production**

Push and pull: Science, management, and politics

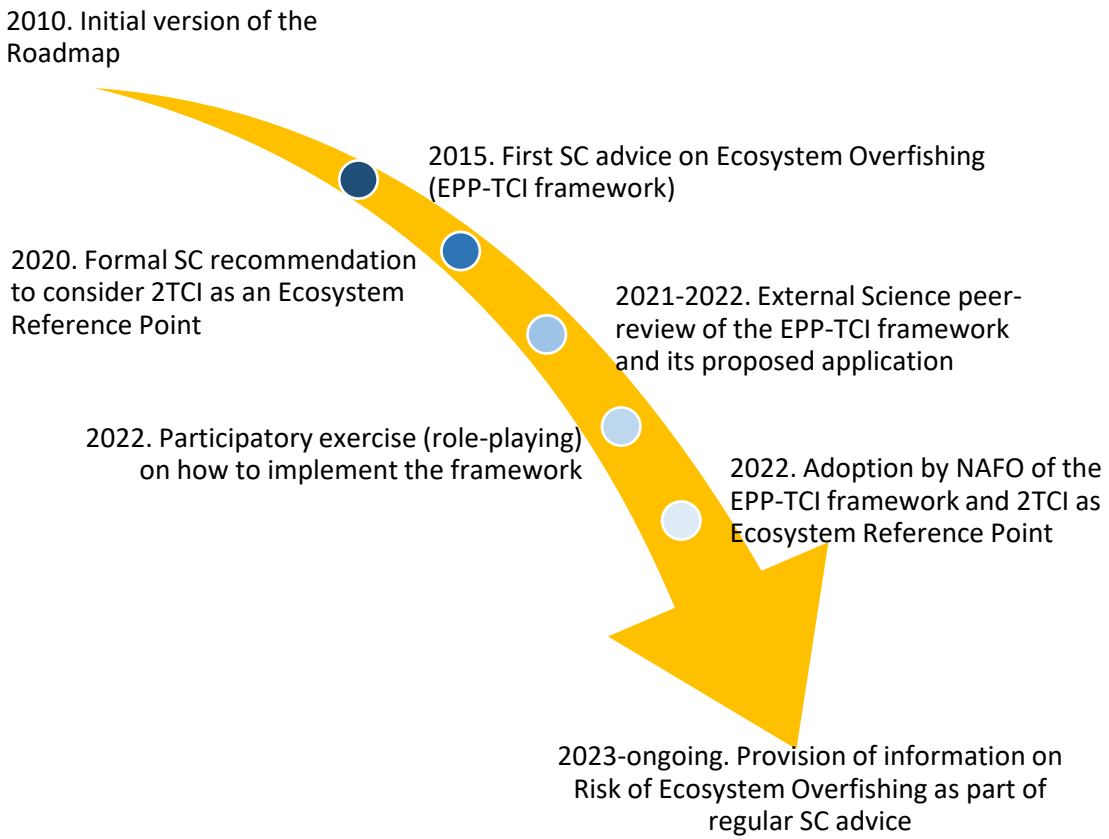
- RFMOs are mechanisms for international cooperation.
- Contracting Parties have their own interests in mind.
- International cooperation is about working together to align those interests around common goals.
- Domestic and international politics are always an important influence on the development of those alignments.

Navigating the science-management interface: Building mechanisms



- These Joint WGs aim at reconciling the science advice with the practical, operational, and policy/politics constraints that may exist.
- They provide a forum for exploring and developing the operational application of the new/emerging ecosystem advice.
- Key to the effectiveness of these WGs is operating under *Chatman House Rules* during the "working part" of the meetings (e.g. free flowing and open discussions, no formal delegation structure).

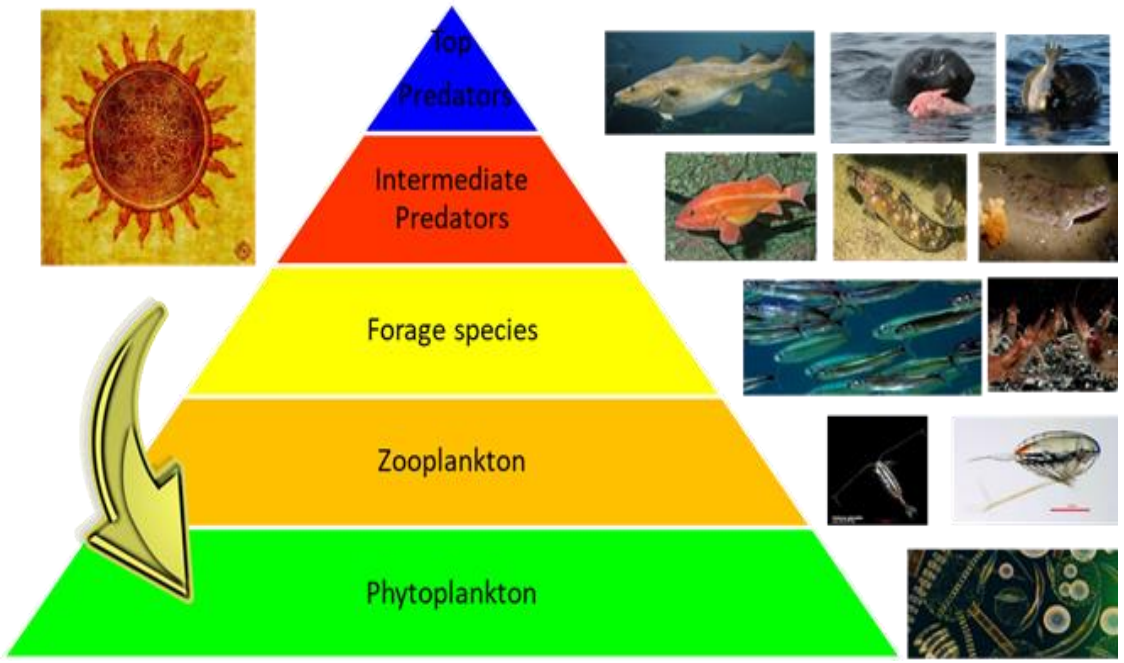
The path towards considering ecosystem overfishing in NAFO



- Considerations on Ecosystem Overfishing are part of the implementation of Tier 1 of the Roadmap.
- The concept was already included in the initial version of Roadmap.
- It took 12 years from the initial conceptualization to the formal adoption of operational tools.
- It wasn't easy.

EPP: Ecosystem Production Potential [model]
TCI: Total Catch Index [indicator]

Ecosystem overfishing

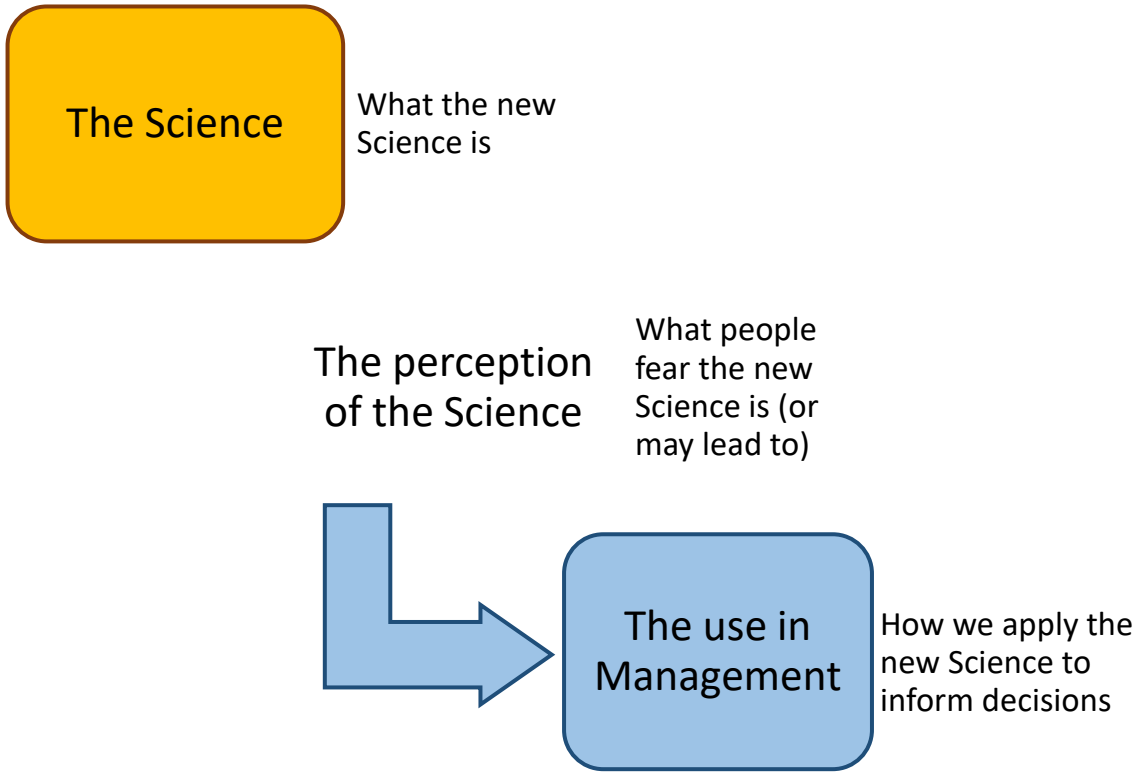


- What is overfishing?

Rate of Removal > Rate of biological net production

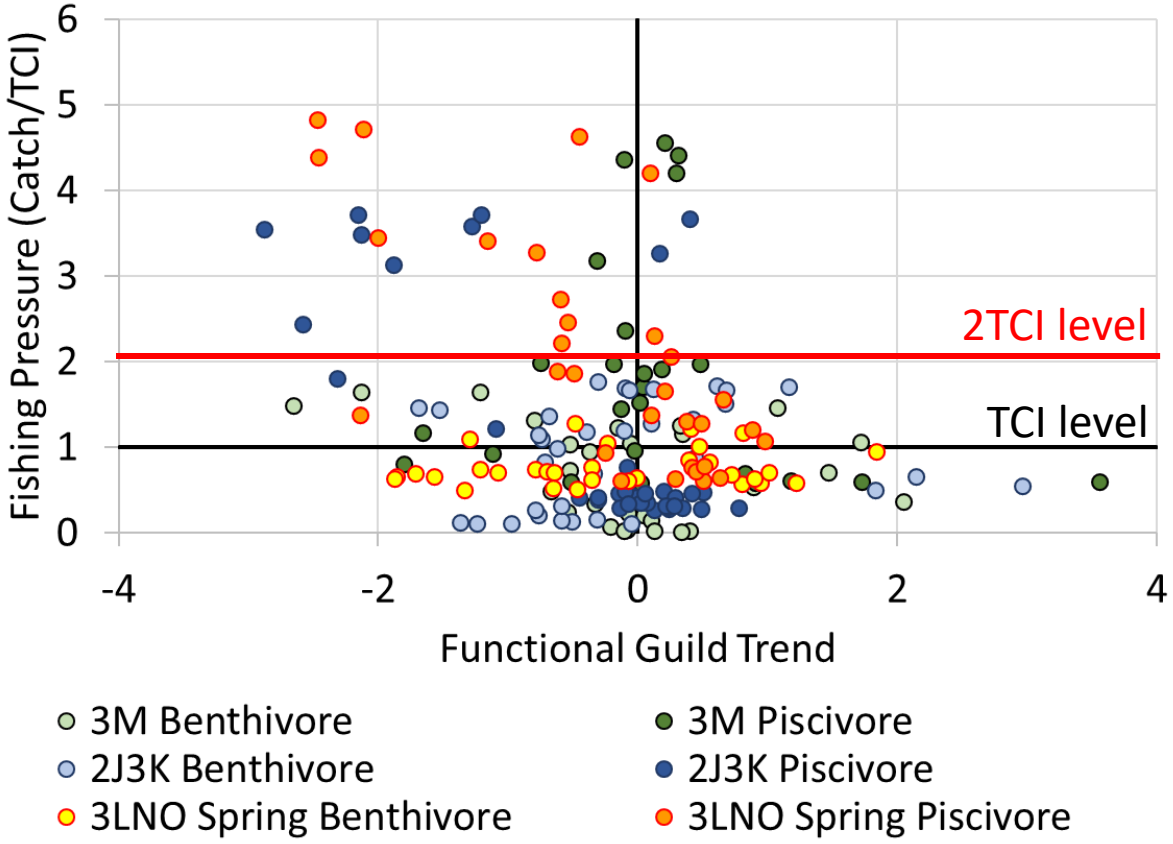
- From an ecosystem perspective, this translates into understanding which fraction of the new primary production is removed by fishing.
- This requires looking at aggregated catches at the ecosystem level.

The challenges: Upsetting the *status quo*



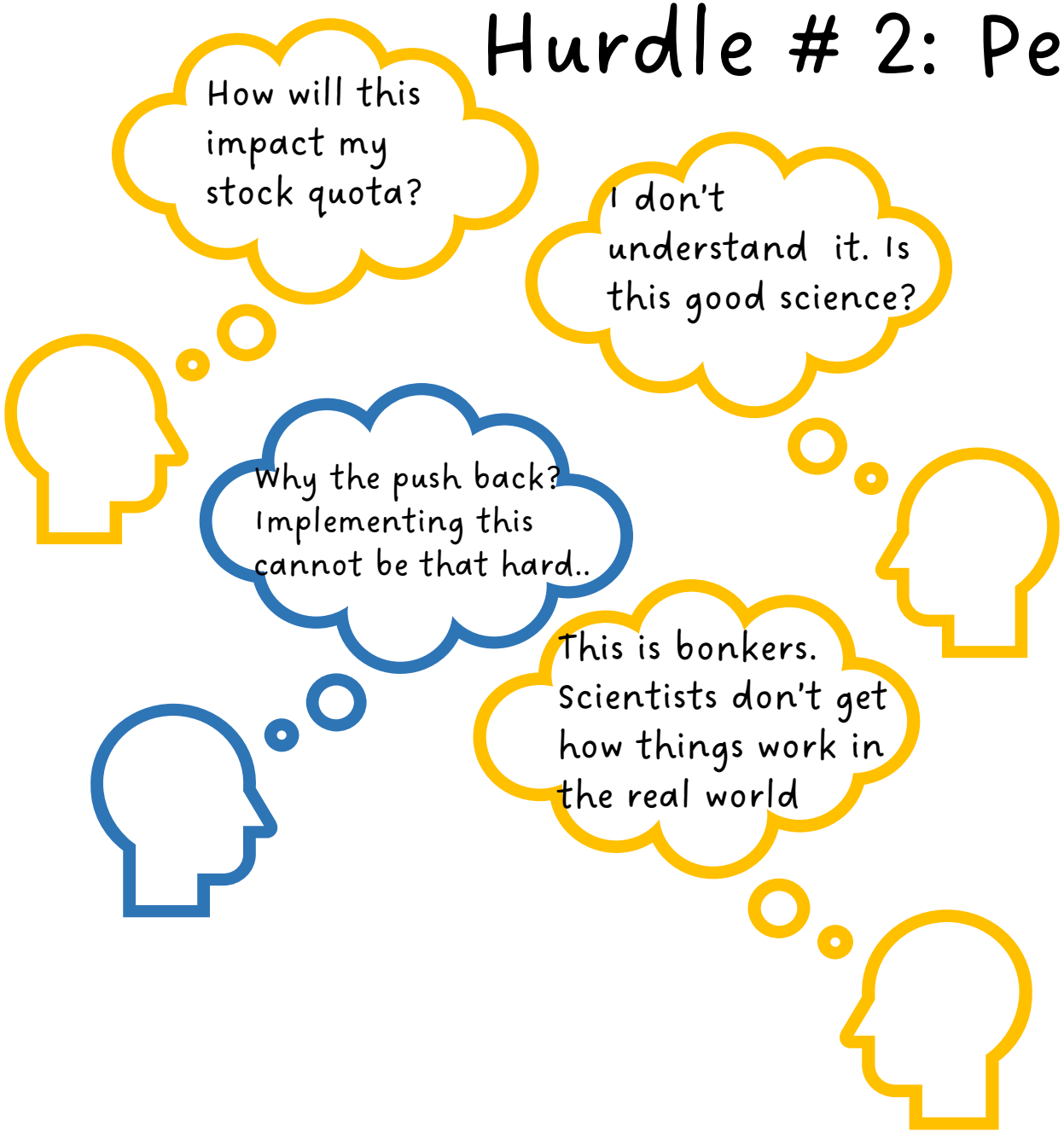
- The *status quo* is the *status quo* for a reason.
  - Everybody understands it.
  - **Its known flaws and shortcomings instill less fear than an unknown alternative.**
- The path:
  - Explain the alternative… and then explain it again… and again.
  - **Transform the unknow alternative into a known and tangible quantity.**

Hurdle # 1: The new Science



- How much can the ecosystem produce given primary production and status of the ecosystem?
  - Food web model for aggregates of species (functional guilds) and other analyses.
- How much catch can we safely take given the ecosystem productivity?
  - Total Catch Index (TCI) by functional guild as indicator of safe removal level.
- How does the ecosystem respond to different levels of aggregated catches?
  - Catch/TCI as indicator of aggregated fishing pressure at the functional guild level.

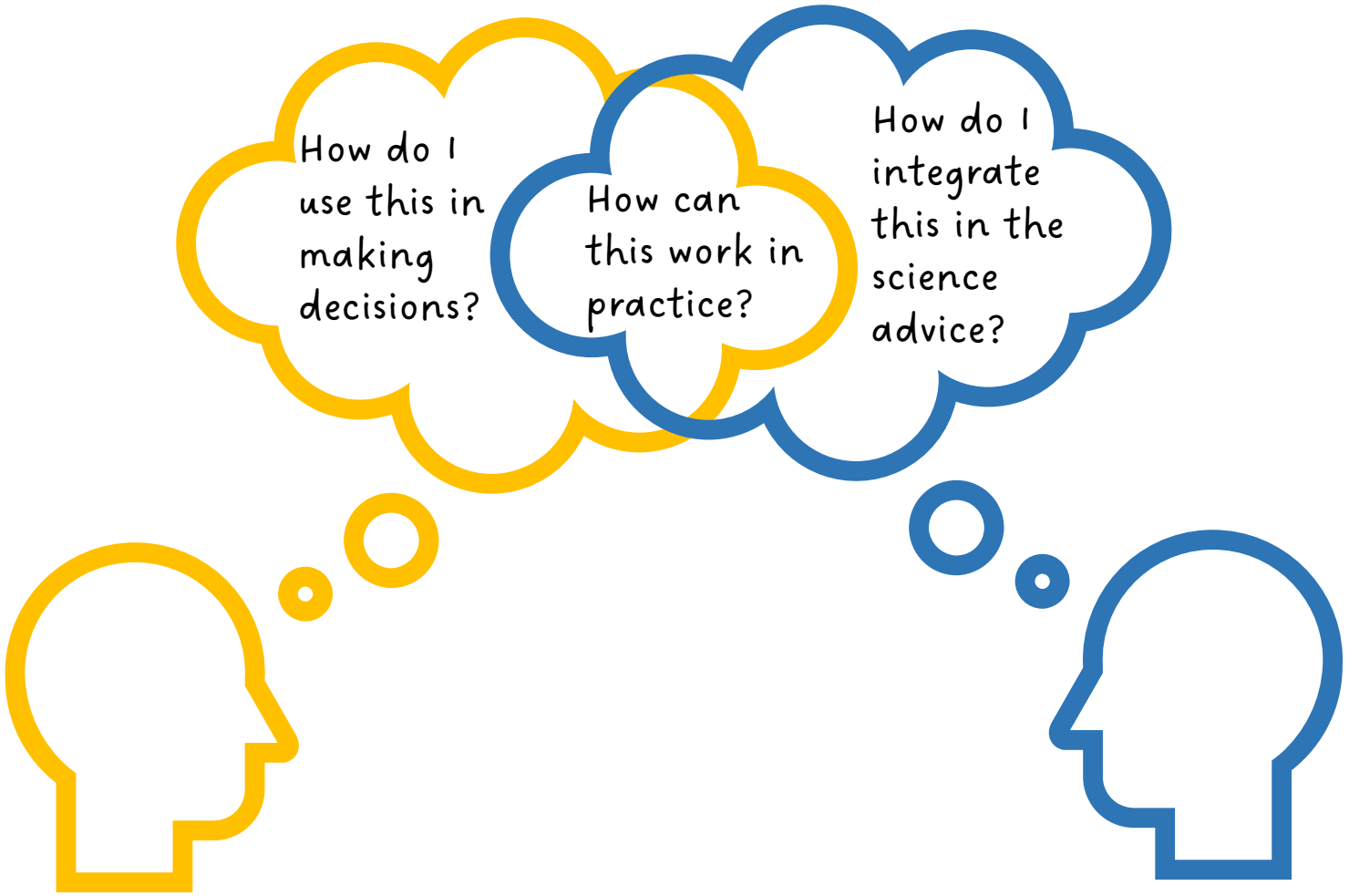
Hurdle # 2: Perception of the Science



- The new Science is unfamiliar, so there is not prior experience within the organization to judge it:
  - Is the new Science good science?
  - How will this new Science perturb current practices?
  - How will this impact my CP interests?

External Experts Scientific Review on the ecosystem overfishing work and its proposed scope of application.

Hurdle # 3: Use in Management



- The new Science is only good in practice if we can make it operational for decision-making.
- This step is not about the science itself, but about how the organization functions.

Putting the idea to the test: A participatory process

Scenario 1: Soft Approach
The 2TC1 Ecosystem Reference Point is provided as information. CPs are expected to negotiate stock quotas to avoid or minimize catches to exceed 2TC1, but there is no penalty if 2TC1 is exceeded.

Scenario 2: Prescriptive Approach
The 2TC1 Ecosystem Reference Point is a hard limit. If CPs cannot negotiate quotas to avoid exceeding 2TC1, the quotas for stocks within the functional guild are proportionally reduced to respect the 2TC1 limit.

Mock Contracting Parties

- **Can ecosystem overfishing be integrated in the COM negotiation and decision-making process?**
  - A role-playing exercise mimicking a COM meeting.
  - Mock Contracting Parties (CPs) with delegations composed by a mix of managers, scientists and stakeholders from different real CPs.
  - A real past management scenario but adding information on ecosystem overfishing that did not exist at the time.
  - A couple of alternative implementations for how to consider the ecosystem overfishing information.

Participatory process: The outcomes

Scenario 1: Soft Approach
All groups managed to negotiate quotas either below 2TC1 or minimally exceeding it.
Considering 2TC1 added an element in the negotiation, but did not disrupt the process.
There was more ownership of the outcomes.

Scenario 2: Prescriptive Approach
Quota negotiation was not as effective (one group abandoned the exercise). CPs took harder stances, relying on the application of proportional reductions.
There was little ownership of the outcomes.

- The role-playing exercise demonstrated that incorporating ecosystem overfishing considerations in the COM negotiation and decision-making process was possible.
- It was pivotal to ease fears and concerns from managers and stakeholders.
- It allowed identifying the soft approach as the way to introduce the concept of ecosystem overfishing into the NAFO process.

Cod in Division 3M Advice June 2024 for 2025-2026

Recommendation for 2025 and 2026

Catches up to 3/4 F_{lim} are projected to result in a very low probability (≤10%) of the stock going below B_{lim} and of fishing mortality exceeding F_{lim}. SSB is projected to increase with a probability of more than 50% under all fishing scenarios with fishing mortality less than 0.56 F_{lim}.

Scientific Council recommends a level of F that promotes SSB growth.

Management objectives

No explicit management plan or management objectives have been defined by the Commission. General principles from the *Convention on Cooperation in the Northwest Atlantic Fisheries* are applied.

Convention Principle	Status	Comment
Restore to or maintain at Bmsy		Bmsy undefined, B > Blim
Eliminate Overfishing (Stock)		F < Flim
Eliminate Overfishing (Ecosystem)		Total EPU catches < 2TCI
Apply Precautionary Approach		Blim and Flim defined
Minimize harmful impacts on living marine resources and ecosystems		Directed fishery, VME closures in effect, effectiveness of bycatch regulations
Preserve marine biodiversity		

OK
Intermediate
Not accomplished
Unknown

Report on Ecosystem Sustainability of Catches

Since 2005 the Grand Bank (3LNO) and the Flemish Cap (3M) Ecosystem Production Units (EPUs) have shown aggregate catch levels by functional guild which are consistent with the productivity of the EPUs and the prevention of high risk of ecosystem overfishing.

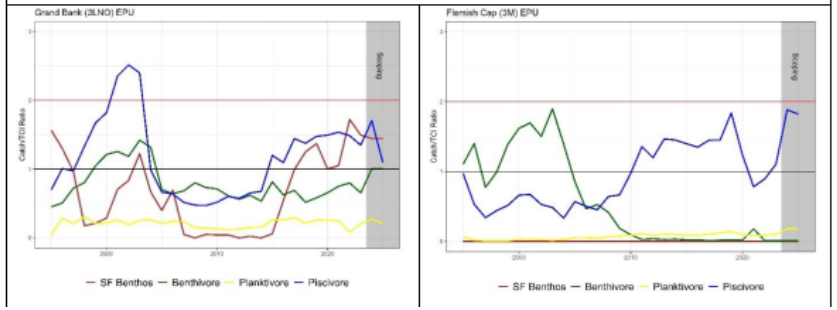
Scoped catch levels for 2024-2025 remain below the 2TCI Ecosystem Reference Point, but piscivore guild catches in the Flemish Cap (3M) are scoped to be near the 2TCI boundary.

Approach:

Total Catch Index (TCI): This index is an indicator of the level of aggregated catch for a given functional guild (aggregate of species) that is consistent with the current productivity of the ecosystem (ecosystem sustainability). The comparison of aggregate catches with TCI is informative of the risk of ecosystem overfishing.

NAFO has adopted 2TCI as an ecosystem reference point to inform on ecosystem overfishing (EO).

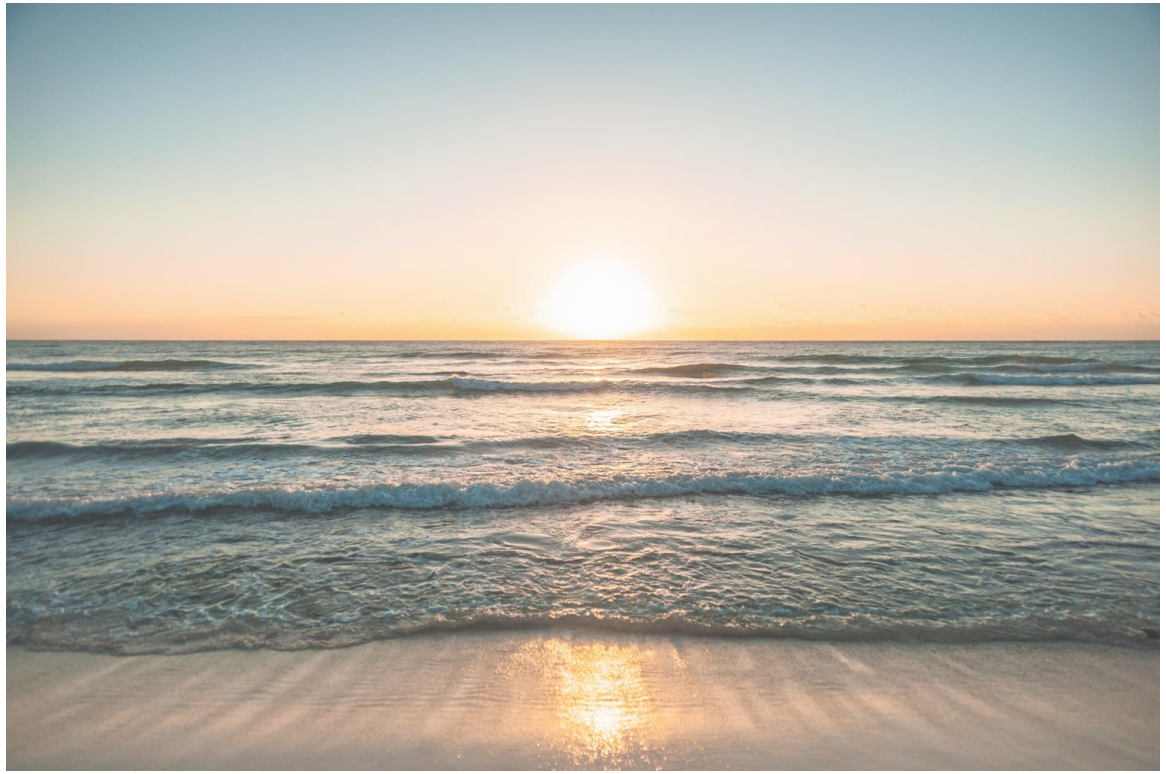
Analysis includes reported catches up to 2023, and scoping of likely catches for 2024-2025, assuming the SC recommended catch levels for 2025.



Implementation

- In September 2022, NAFO adopted the EPP-TCI framework and the 2TCI Ecosystem Reference Point to complement stock-assessments and inform on the risk of ecosystem overfishing (soft approach).
- In June 2023 SC produced the first Report on Ecosystem Sustainability of Catches and began incorporating this information in the Stock Summary Sheets (stock advice).
- The feedback from the Joint COM-SC WG led to the developing of a scoping of the risk of ecosystem overfishing for the incoming year, based on existing quota decisions and new SC stock advice.
- In 2024 SC introduced the scoping in the reporting on Ecosystem Sustainability of Catches, and COM integrated the reporting on risk of ecosystem overfishing to the standard template for stock advice.

The future

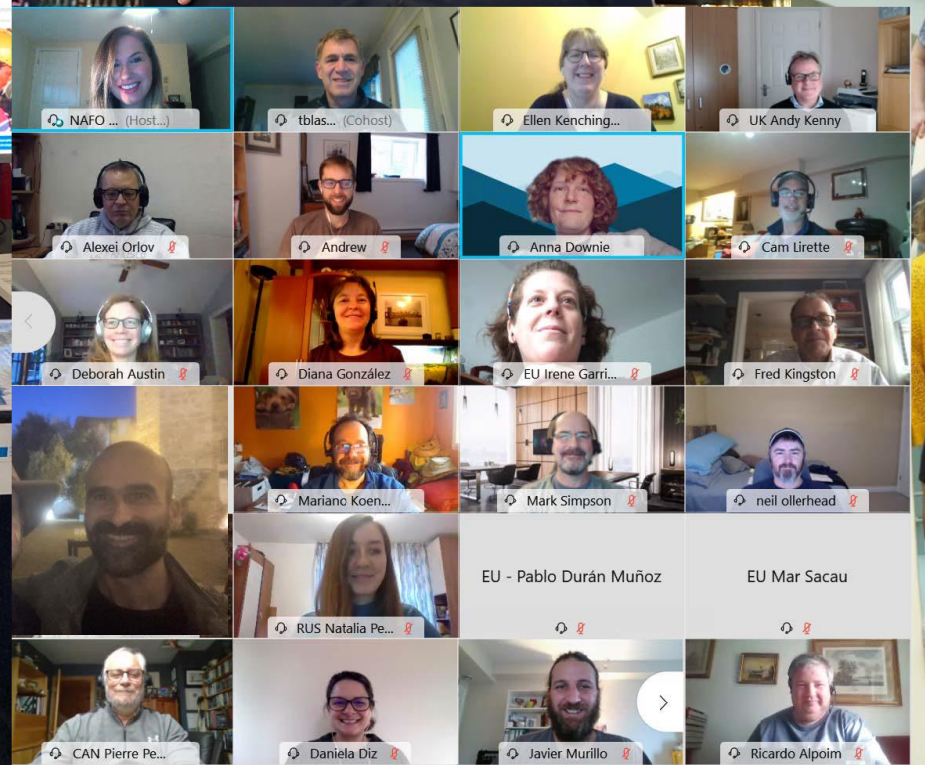


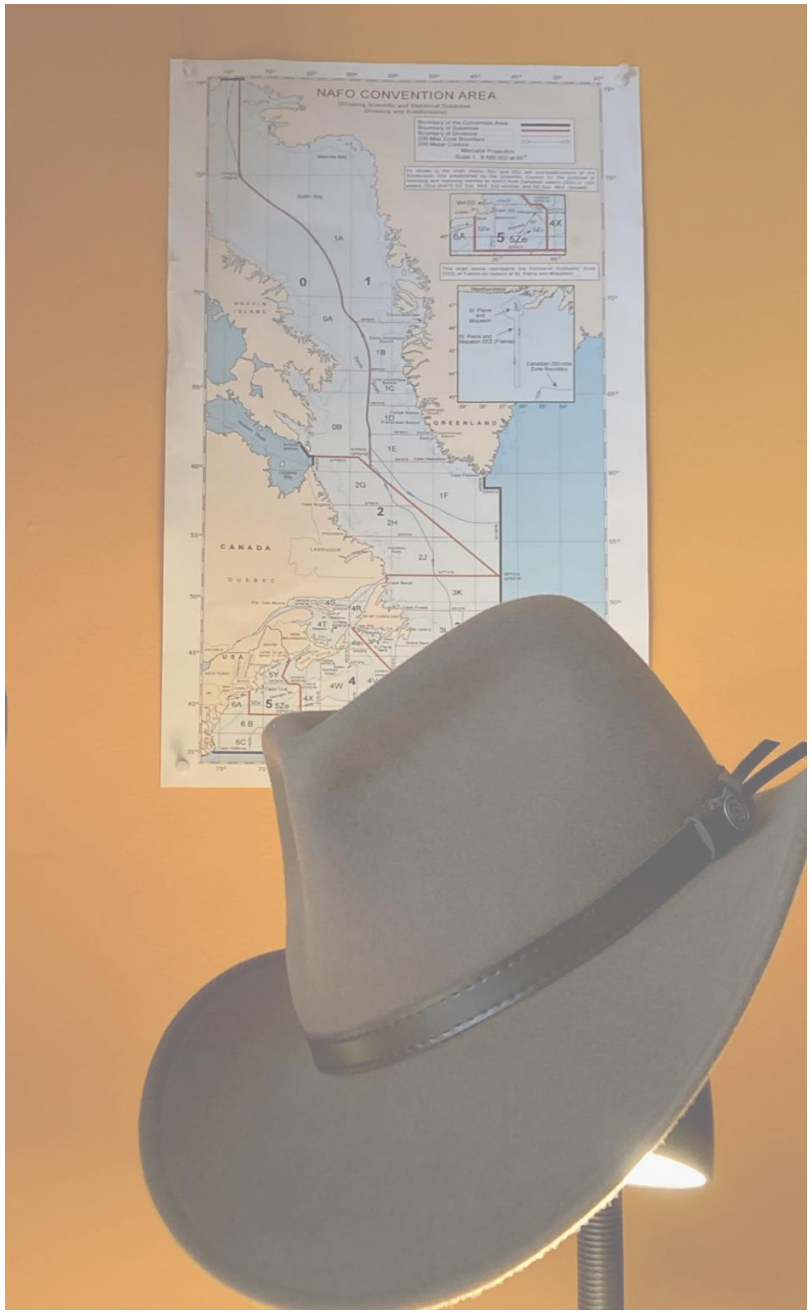
- Time will tell us how effective the current implementation really is, and what changes may be needed down the road to make it better.
- There are also other elements of the Roadmap that still need work on both the science and operational sides.
- Critical to all of this is keeping the trust and open dialogue going. This requires regular and dedicated attention. After all Joint WGs are the mechanism, but trust and open dialogue is about people.
- The Ecosystem Approach may be the idea we are pursuing, but what drives the changes in our RFMOs is us.

Take home message

- The ecosystem approach provides a more comprehensive concept for fisheries sustainability but is often difficult to make it operational. These difficulties typically emerge when we need to change existing management practices.
- Key to this challenge is that managers, scientists, and stakeholders see the world from different perspectives and operate under different constraints.
- The solutions to bridge these gaps emerge from an open dialogue between all parties, and that open dialogue requires trust.
- We need dedicated spaces within RFMOs where such trust can be actively built, and the open dialogue fostered.
- Only when we can relate to each other's concerns, we are able to find the compromises required to make the ecosystem approach operational.
- At the end of the day, making the ecosystem approach operational is less about science, and more about understanding people.

To do these things, you need a village.
Thanks to my NAFO village!!
And yes, I need many more pictures to be even close to fair!!





Thanks everyone.
Questions?