

MareFrame



A decision support framework for the real policy context

MareFrame Policy Day

13.12.2017 Brussels

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This project has received funding from the European Union's Seventh Framework Programme for research, technological development and demonstration under grant agreement no. 613571

Policy context for EBFM



CFP



MSFD

Opportunity for integration: Multispecies multiannual plans



Challenges for planning and decision-making in EBFM

- Avoid information overload and make relevant information accessible
- Present and analyze tradeoffs and balance concerns



The Decision Support Framework (DSF) combines:

1. Co-creation process
2. Ecosystem models
3. Decision Support Tools
4. Educational resources

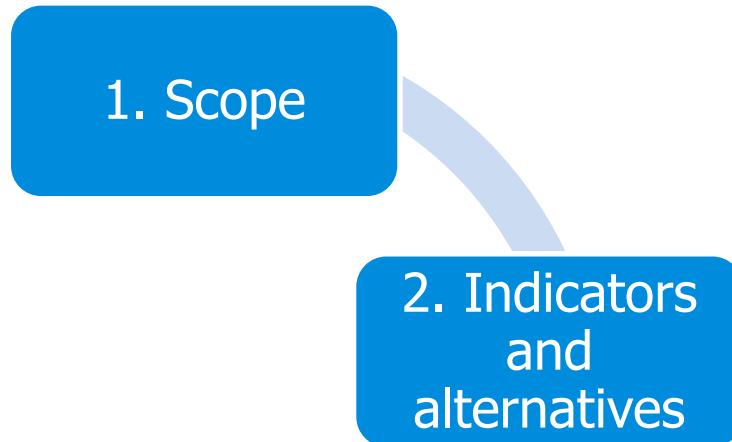


Development and use of the DSF **MareFrame**

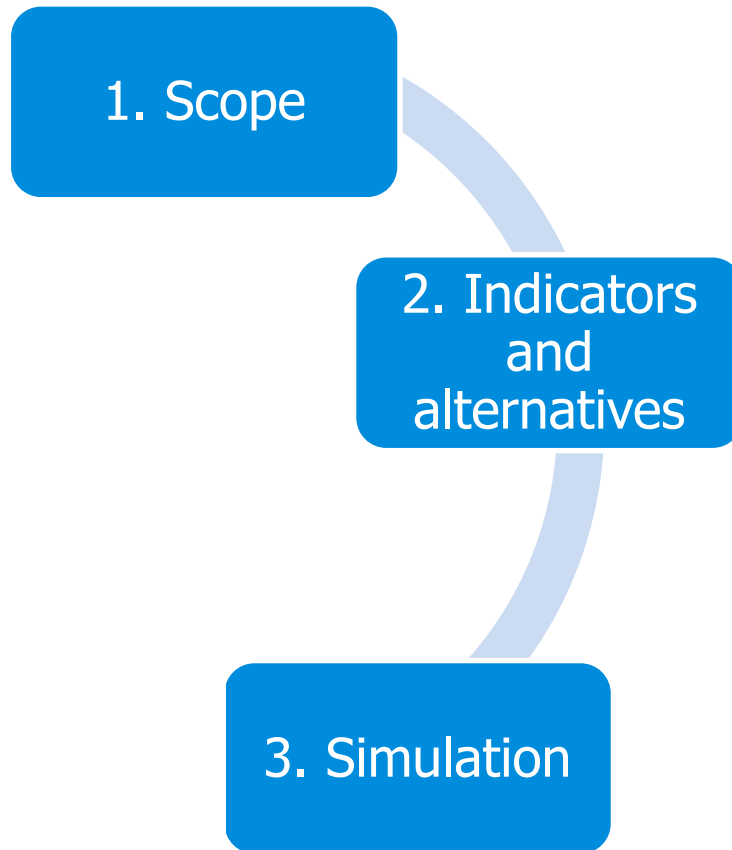
1. Scope



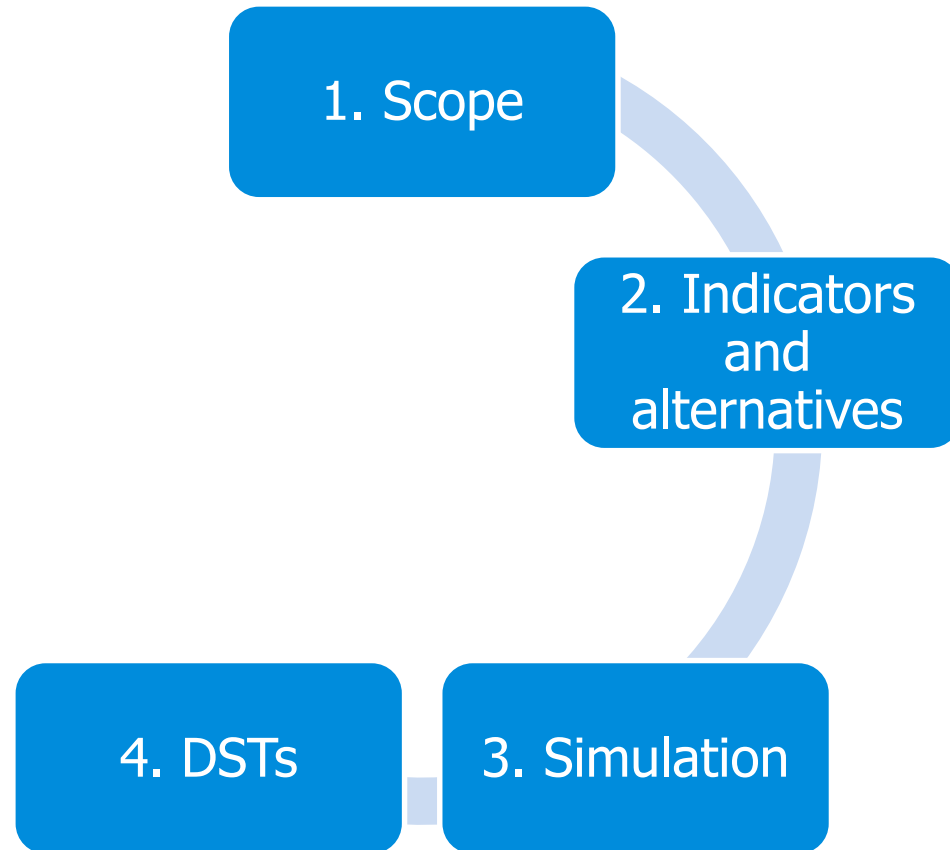
Development and use of the DSF **MareFrame**



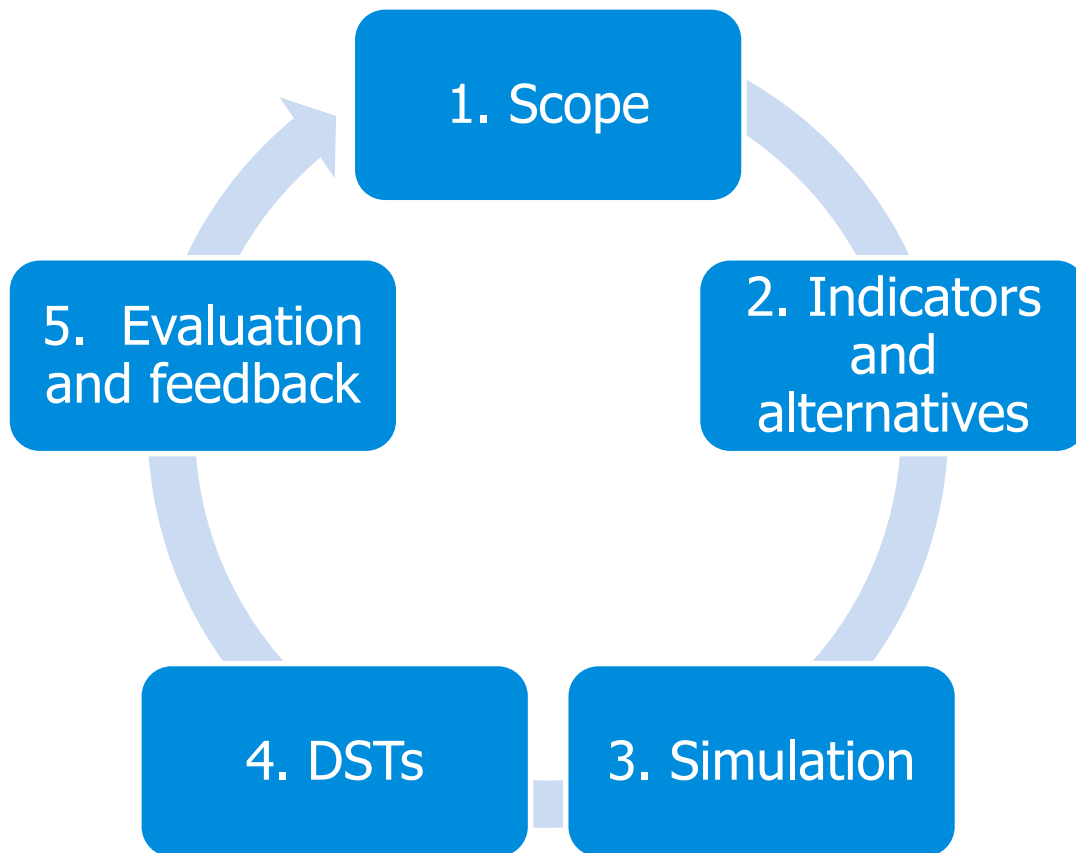
Development and use of the DSF **MareFrame**



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MareFrame Decision Support Framework

The MareFrame Decision Support Framework is a pragmatic planning process for moving towards an Ecosystem Approach to Fisheries Management. Please select from the case studies below to review the available information and decision support tools.



[1. Iceland](#)

[2. West Coast of Scotland](#)

[3. North Sea](#)

[4. Baltic Sea](#)

[5. Gulf of Cádiz](#)

[6. Strait of Sicily](#)

[7. Black Sea](#)

[8. Chatham Rise \(New Zealand\)](#)

<http://mareframe.mapix.com/>



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The MareFrame Decision Support Framework is a pragmatic planning process for moving towards an Ecosystem Approach to Fisheries Management. Click on the map of Europe to the left to see all case studies. Please review the case study and select the Multi-Criteria Analysis or Bayesian Belief Network below.

Case Study: West Coast of Scotland

Objective: To achieve an advantageous and economically and sustainable fisheries through a multispecies approach that addresses environmental concerns.

Management Problem

The main problem that has identified by stakeholders and researchers is that the spawning stock biomass of cod and whiting have declined to the lowest levels seen in available data series. This is in spite of fisheries management measures aiming to achieve recovery. Such measures include a cod recovery plan (2009) and a zero TAC for cod (except for a 1.5% bycatch limit) that has been in place since 2012. The bycatch limit applies only to landed fish and does not constrain discards of cod. The discards mainly stem from mixed demersal trawl fisheries and for Norway lobster, respectively. In addition, it has been suggested that seal predation on small cod individuals could impair recovery of the cod stock (Cook et. al., 2015). From 2016, the main commercial species will be subjected to an "obligation to land all catches", which may involve severe negative consequences for the industry (at least in the short term) due to the so-called "choke species problem".

Management Setting:

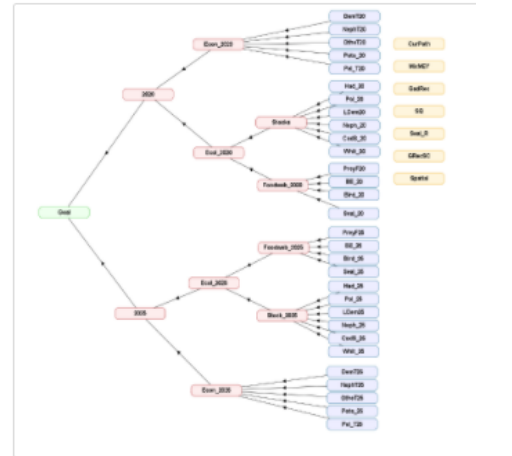
The governance of marine resources and the environment in the VIa area is complex and involves institutional arrangements and agencies at both national (UK and Scotland) and international (EU) levels. The fisheries are managed under the Common Fisheries Policy while environmental aspects are mainly managed under the Marine Strategy Framework Directive. UK and Scotland are responsible for implementing fisheries and environmental management measures in the near shore areas. The fisheries in VIa are dominated by Scotland although other countries such (mainly France and Ireland) also are participating.

Main objectives and criteria:

A management proposal for the case study will be evaluated in relation to a set of objectives and criteria (see the list below). Some criteria are derived from the main policies that apply to the case study (the CFP and the MSFD). For instance, the CFP requires that the spawning stock biomass (SSB) of any commercial fish stock should be at or above the level consistent with a Maximum Sustainable Yield (MSY) no later than the year 2020.

Objectives for the management plan proposal	Candidate operational objectives and indicators
Recovery of the cod stock	Cod SSB \geq 22.000 t (Bpa) by the end of the planning period
Recovery of the whiting stock	Whiting SSB \geq 22.000 t (Bpa) by the end of planning period
Ensure strong economic performance of demersal fisheries	An optimum combination of Multispecies Maximum Economic Yields of key demersal species is suggested An optimum balance between shrimp and whitefish is suggested
Healthy commercial fish stocks	All commercial stocks \geq Blim by end of planning period All commercial stocks \leq Flim by end of planning period At least 75% commercial stocks \geq SBB MSY or:

Multi-Criteria Analysis

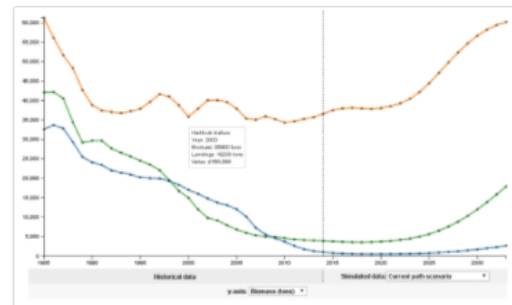


MCA with set priorities

MCA without set priorities

MCA with previous model outcomes and set priorities

Scenario Model output



Management Scenarios

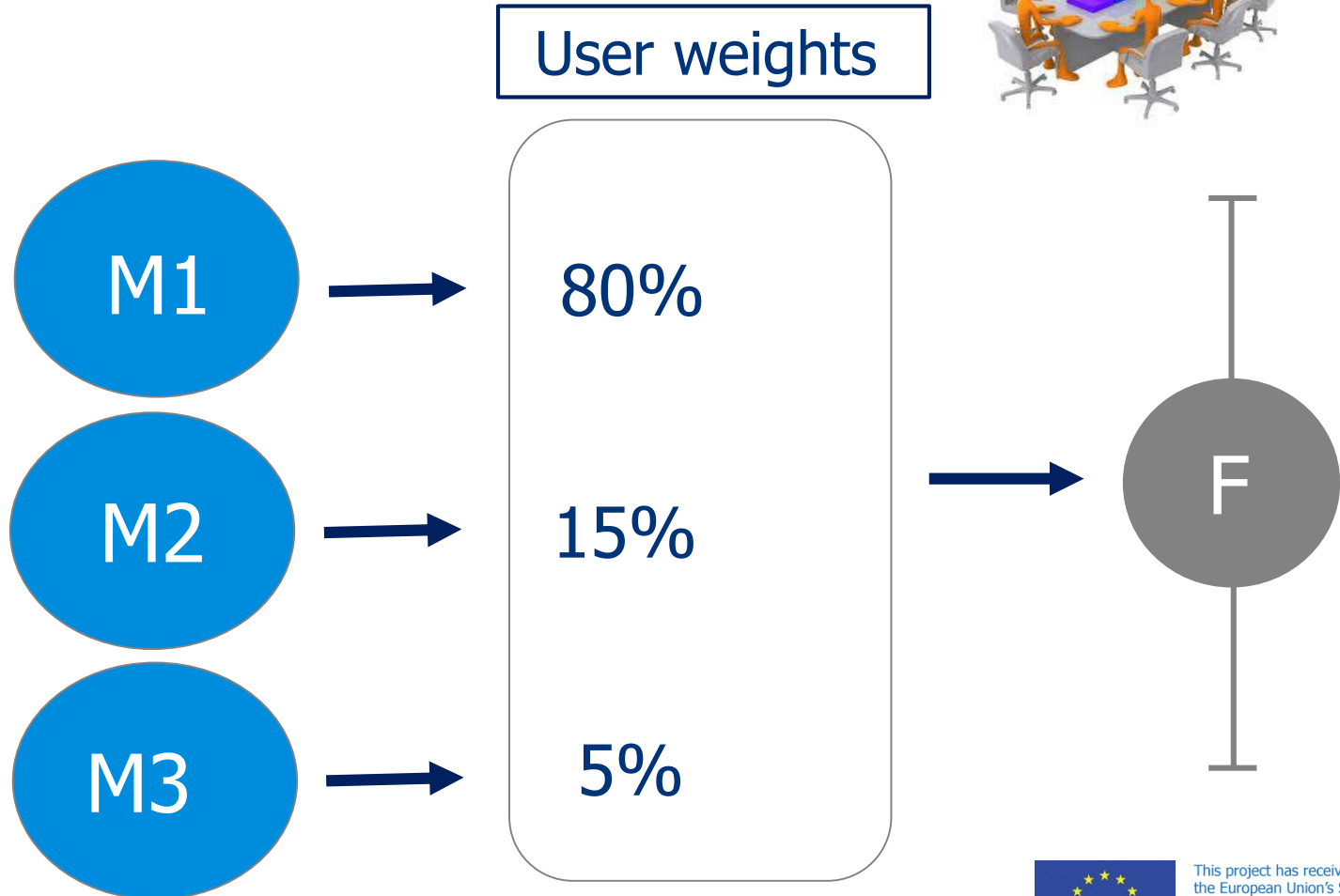
Generic management alternatives were defined based on meetings with stakeholders. The alternatives (MCA short names in parenthesis), their rationale, model approach and limitations are described. NB! Two scenarios (marked with *) involve seal culling and were only included to assess the effect of seal predation on the recovery of cod and whiting for research purposes, they are not regarded as

- ❖ Case study description
- ❖ Decision Support Tools:
 - Structured evaluation
 - Interactive scenario exploration



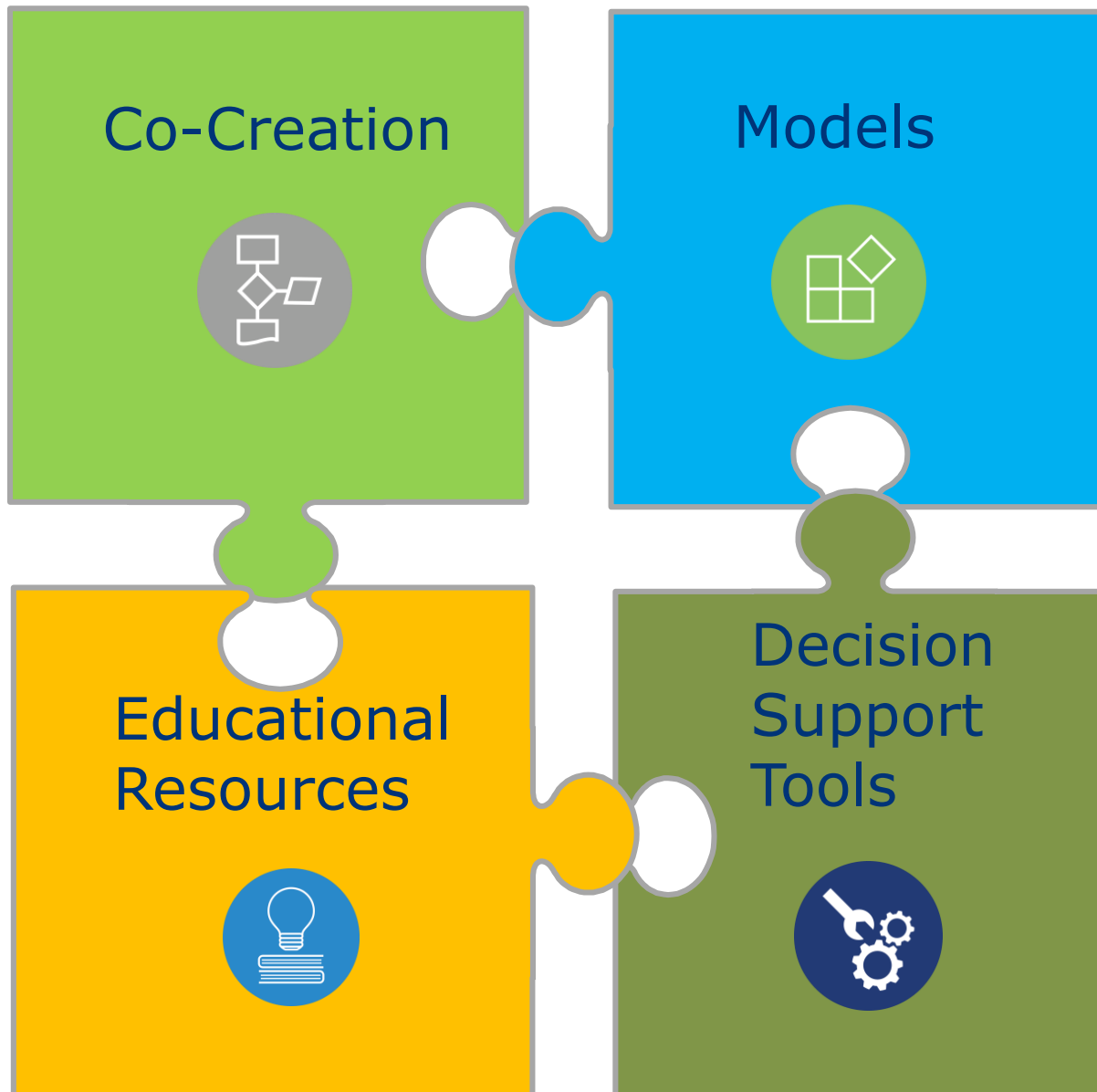
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Integrating model results with DSTs



Decision Support Framework

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Take what
you need

Use it!



Decision Support Workshop Brussels, 20.06.17

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