



PUBLIC HEARING  
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## REBUILDING FISH STOCKS IN THE MEDITERRANEAN: NEXT STEPS

Recovery of endangered stocks, while safeguarding stock  
productivity and fleet profitability

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# Overview: some Mediterranean ecological characteristics

## Fisiography

- irregular coastline, narrow continental shelf, almost non-existent in certain areas.
- where continental shelf (down 200 m depth) is wider and on the slope, there are main fishing grounds for bottom trawlers.

## Ecological features

- very heterogeneous, producing a variety of habitats and biological communities;
- oligotrophic nature of the marine environment;
- the region is also exposed to climate change risks.

## Productivity of the area

- low biological productivity of the area, though differentiated among the (GSAs).

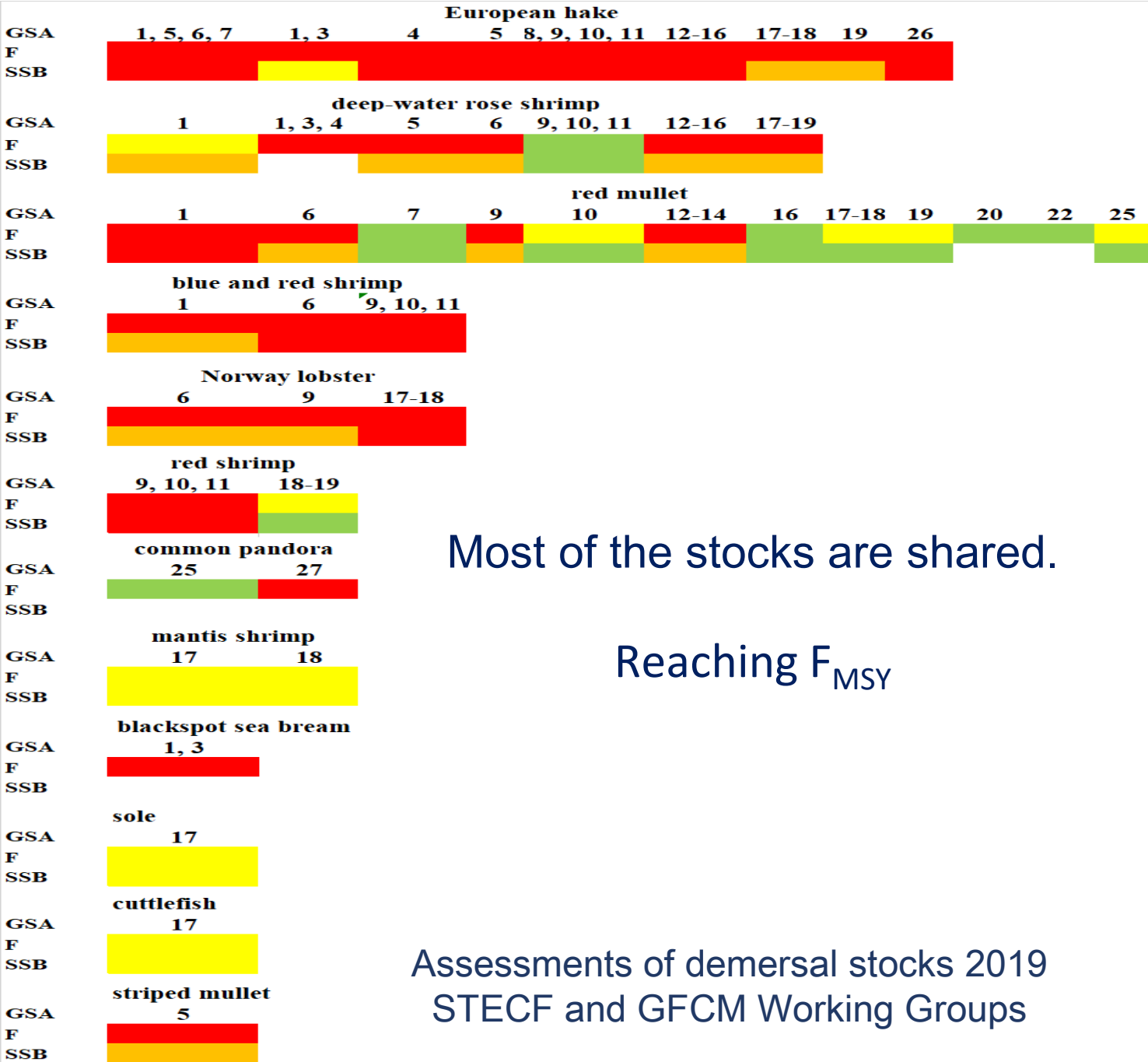
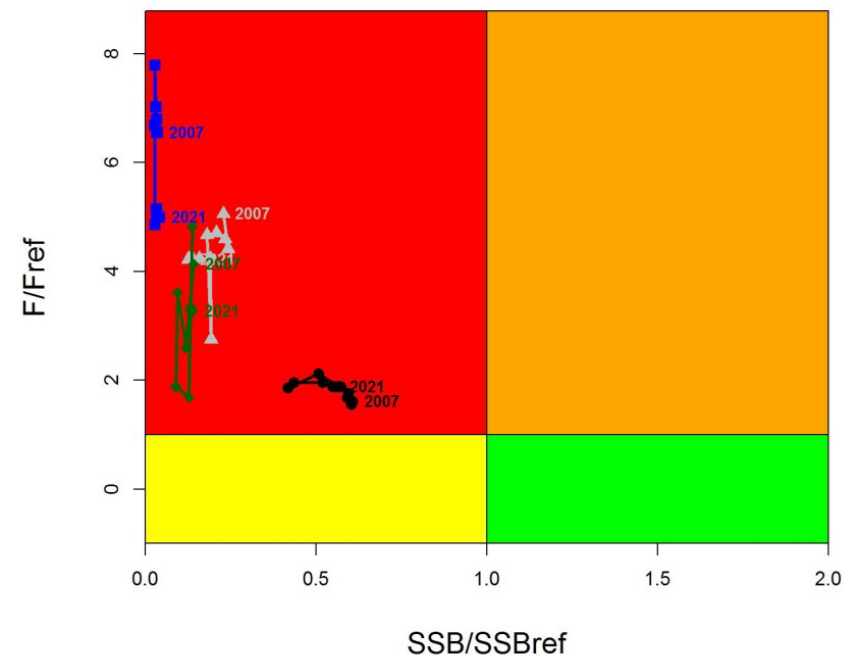
# Overview: some fishery traits in the Mediterranean

## Fisheries

- Poorly identified and overfished stocks;
- fisheries are mixed, characterized by different “métiers” and gear interactions (especially for European hake);
- small-scale fisheries characterize several areas, in certain GSAs landings and revenues are sometimes similar to the trawler ones;
- recreational fisheries and its impact on the commercial stock is still poorly quantified;
- potentially high impacts on habitats and species;
- poor economic performance of several fisheries;
- prawn fisheries characterized often by the occurrence of considerable amount of juveniles in the catches of many commercial species.

# The current situation: the exploitation level of some key stocks is high

- Reference point based on Fishing mortality,  $F_{msy}$ , and current value of Spawning Stock Biomass compared to historical higher values



Most of the stocks are shared.

Reaching  $F_{MSY}$

Assessments of demersal stocks 2019  
 STECF and GFCM Working Groups

# Increasing scientific capacity

- in the Mediterranean the stock assessment process started about 10-15 years ago, mainly following the advent of the European Data Collection;
- in the region still few stocks are assessed compared to the needs;
- fishery researchers are few compared to other areas;
- there is a need of building and expanding scientific capacity



An example

- ✚ Is the potential of fishery independent data fully exploited?
- ✚ Is there any room for improving and/or expanding the current assessment framework, in particular for DLS?

## Framework of stock categories based on available knowledge for the basis of advice in the ICES area<sup>1</sup>

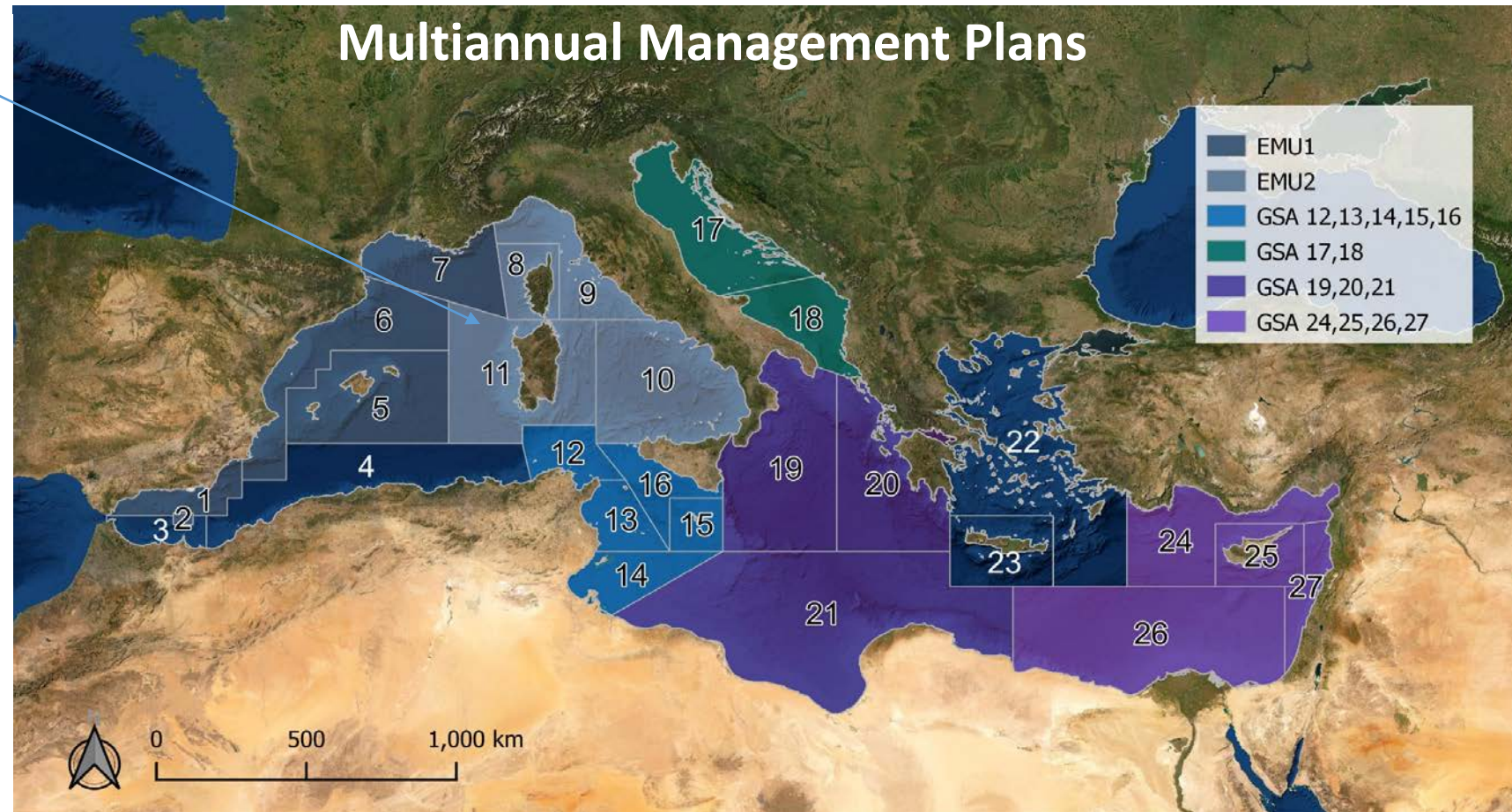
Stock categories			Advice basis
1	Stocks with quantitative assessments	The stocks with full analytical assessments and forecasts as well as stocks with quantitative assessments based on production models	MSY approach
2	Stocks with analytical assessments and forecasts that are only treated qualitatively	Stocks with quantitative assessments and forecasts which for a variety of reasons are considered indicative of trends in fishing mortality, recruitment, and biomass	MSY approach
3	Stocks for which survey-based assessments indicate trends	Stocks for which survey or other indices are available that provide reliable indications of trends in stock metrics, such as total mortality, recruitment, and biomass	Precautionary approach, MSY approach being developed
4	Stocks for which only reliable catch data are available	Stocks for which a time-series of catch can be used to approximate MSY	Precautionary approach, MSY approach being developed
5	Landings only stocks	Stocks for which only landings data are available	Precautionary approach
6	Negligible landings stocks and stocks caught in minor amounts as bycatch	Stocks where landings are negligible in comparison to discards and stocks that are primarily caught as bycatch species in other targeted fisheries	Precautionary approach

<sup>1</sup>ICES Advice 2018, <http://www.ices.dk/community/advisory-process/Pages/default.aspx>



# How to reverse the overfishing situation: towards sustainability

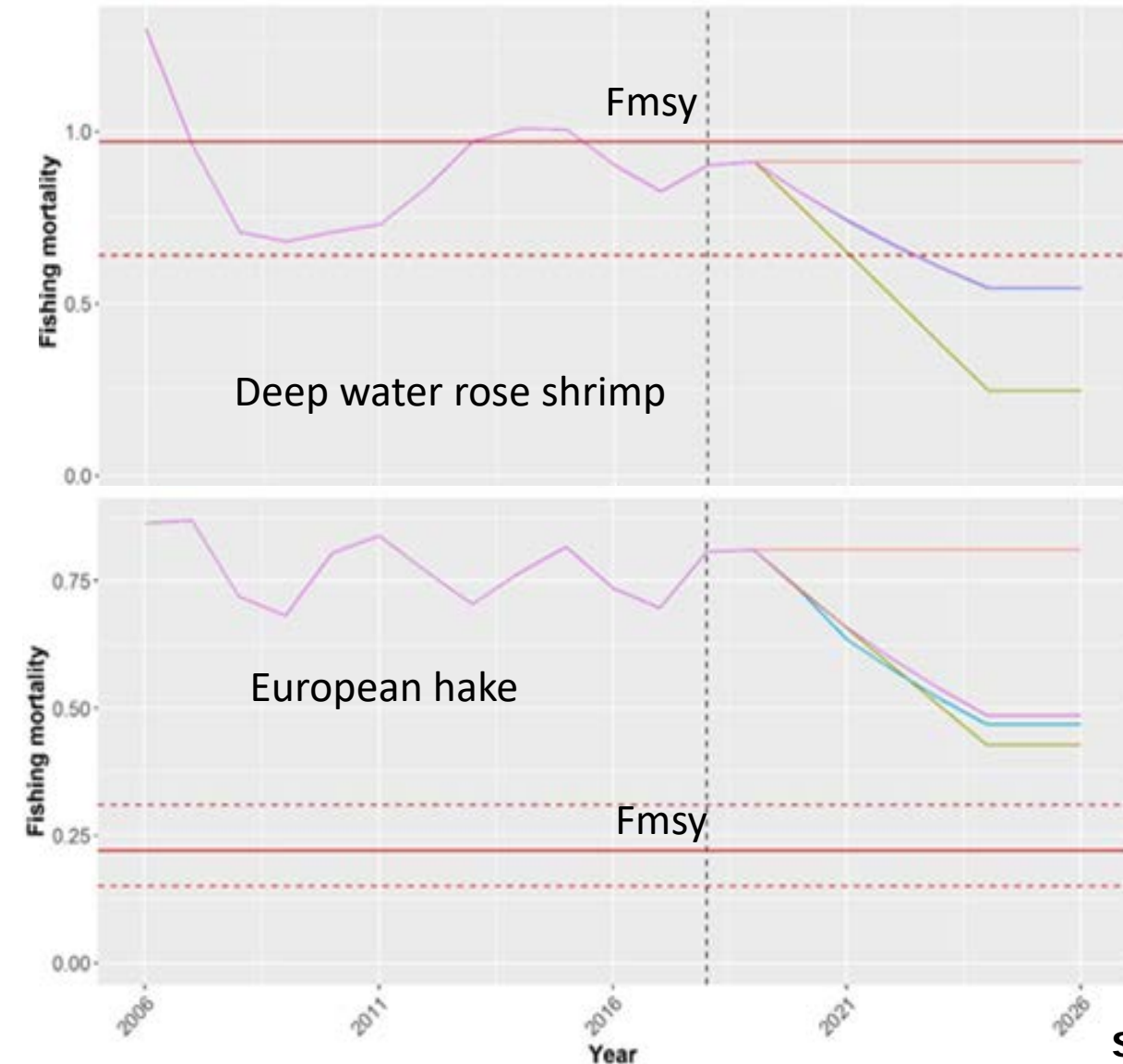
- WMed MAP (COM(2018) 115 final).
- Rec. GFCM/43/2019/6 (MAP trawl fisheries of red shrimps in the Strait of Sicily) (GSAs 12-16);
- Rec. GFCM/42/2018/5 (MAP for bottom trawl fisheries exploiting demersal stocks in the Strait of Sicily) (GSAs 12-16);
- Rec. GFCM/43/2019/5 (MAP demersal fisheries in the Adriatic Sea; GSAs 17 and 18);
- Rec. GFCM/42/2018/8 (small pelagic stocks in the Adriatic Sea (geographical subareas 17 and 18)
- Rec. GFCM/43/2019/2 MAP blackspot seabream in the Alboran Sea (GSAs 1-3);



Rec. GFCM/42/2018/4 (MAP trawl fisheries of red shrimps in the Ionian Sea (GSAs 19, 20 and 21).

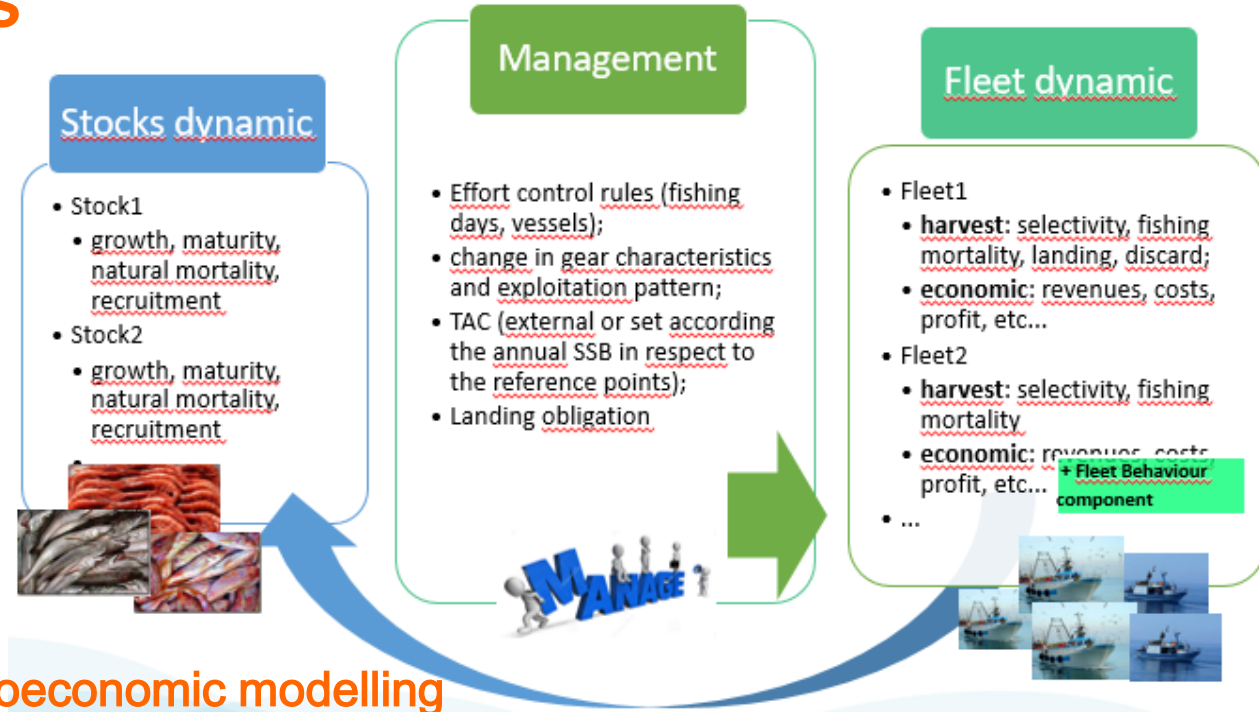
Rec. GFCM/42/2018/4 (MAP trawl fisheries of red shrimps in the Levant Sea (GSAs 24, 25, 26 and 27).

# Evaluation of management scenarios



## Bioeconomic modelling (Bemtool applications)

STECF-19-14

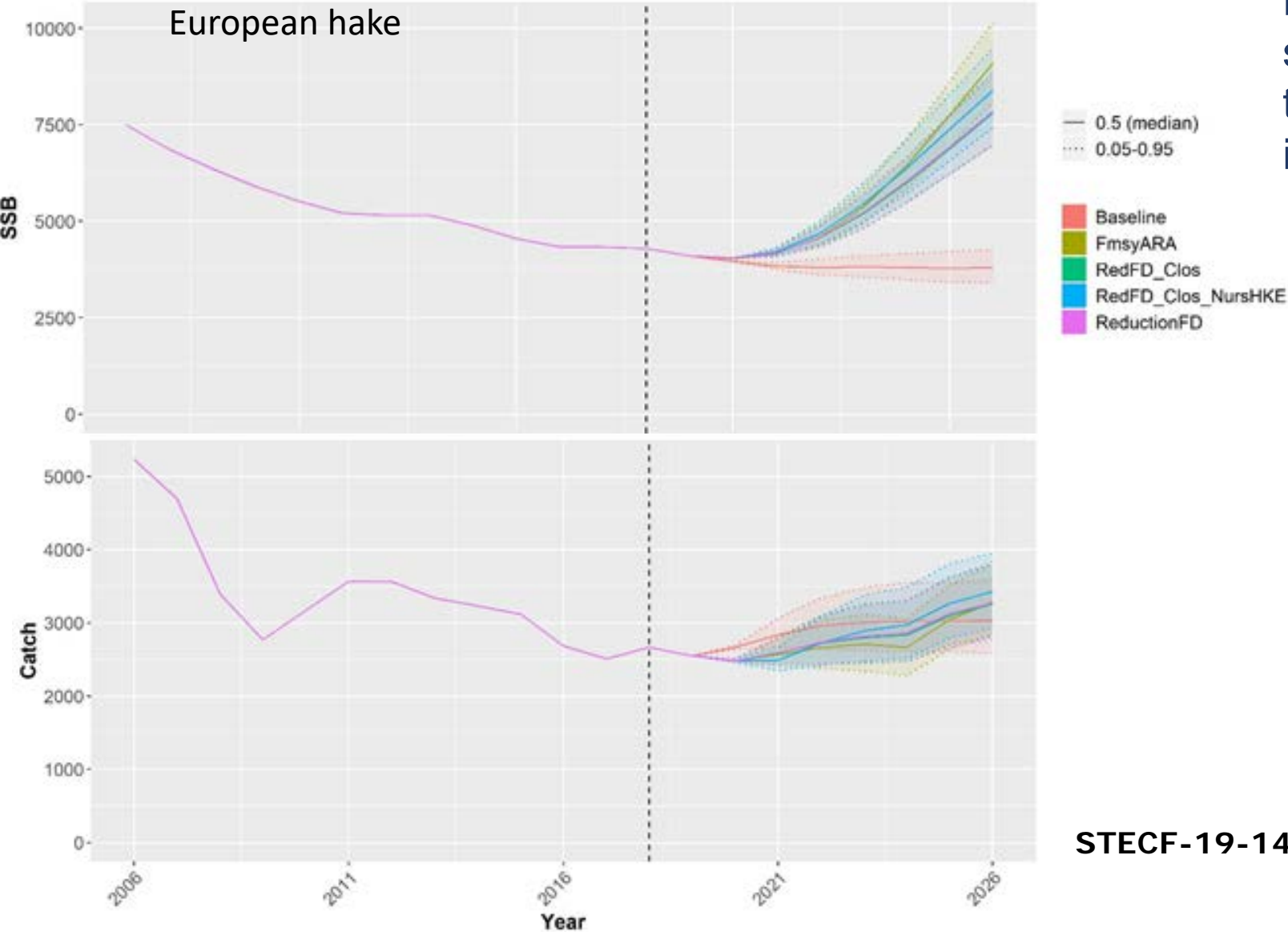


High reduction of effort are needed to bring some stocks at a sustainable level.

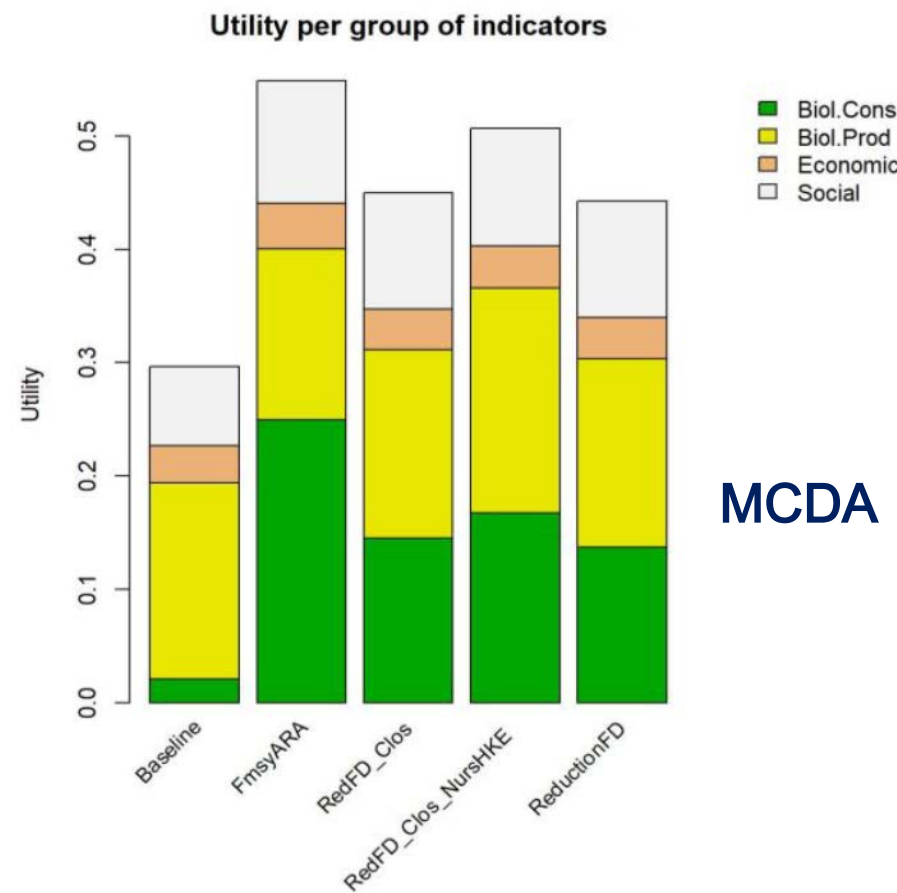
However, the situation of the stocks is different, and while some does not reach Fmsy, other could remain underutilised.



# Evaluation of management scenarios



Reducing fishing effort there will be some loss of catches in the short term, and in turn of revenues, but improvement in the medium term.



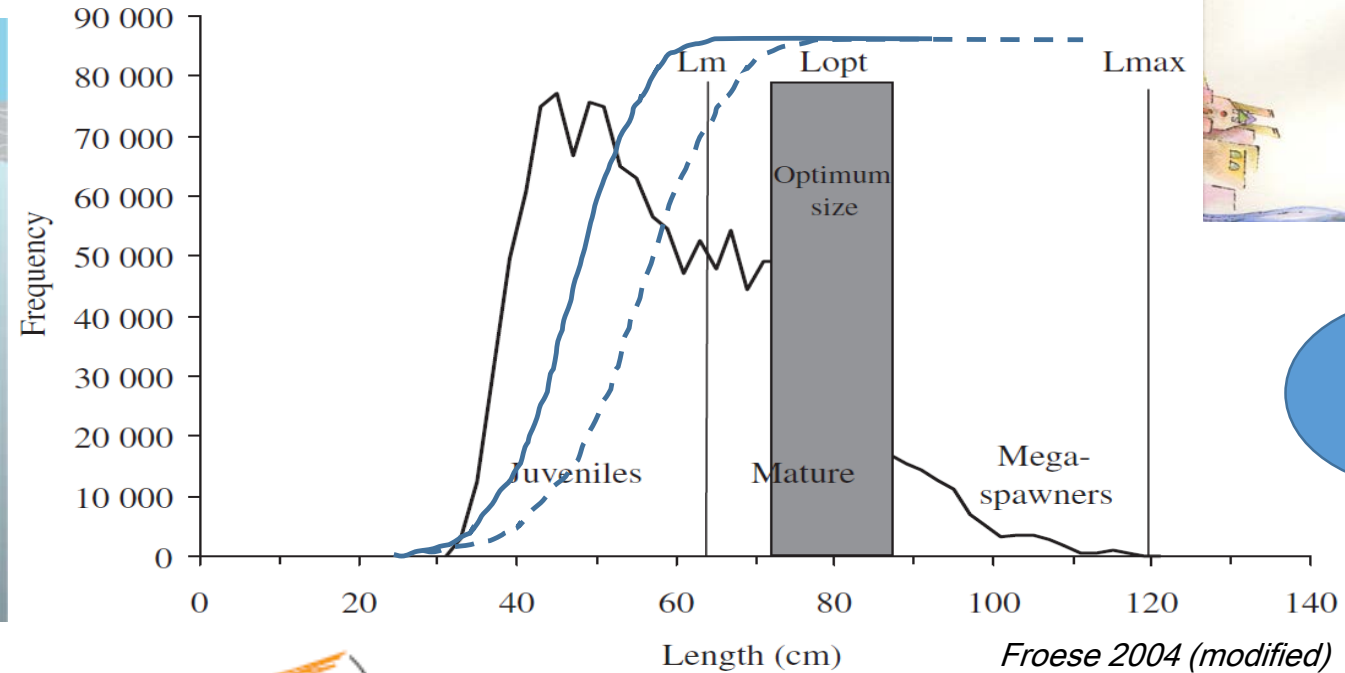
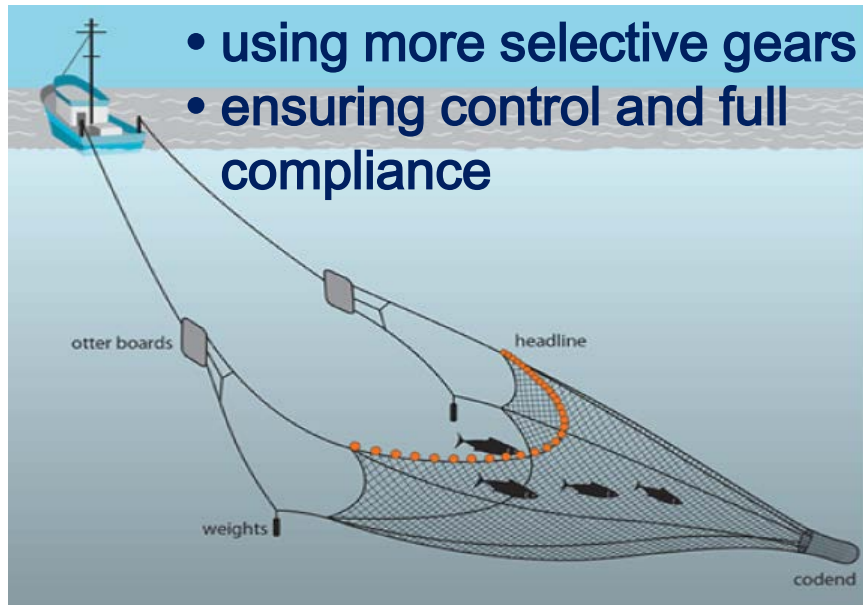
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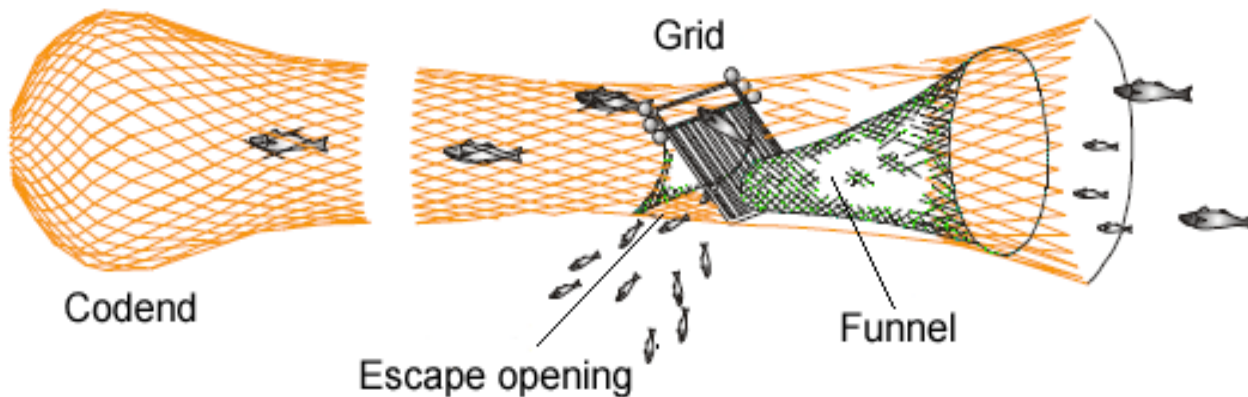
# How to reverse the current situation?

## Improving the exploitation pattern – the technical approach

- using more selective gears
- ensuring control and full compliance



MCRS



Grid used to reduce the catch of small fish and shrimps  
(Sacchi, 2008)



# Improving the exploitation pattern – the spatial approach

*M. merluccius*

From the MEDISEH EU project

Recruits

Probability of persistence

0.81-1.00

0.61-0.80

0.41-0.60

0.21-0.40

bathymetry (m)

100

200

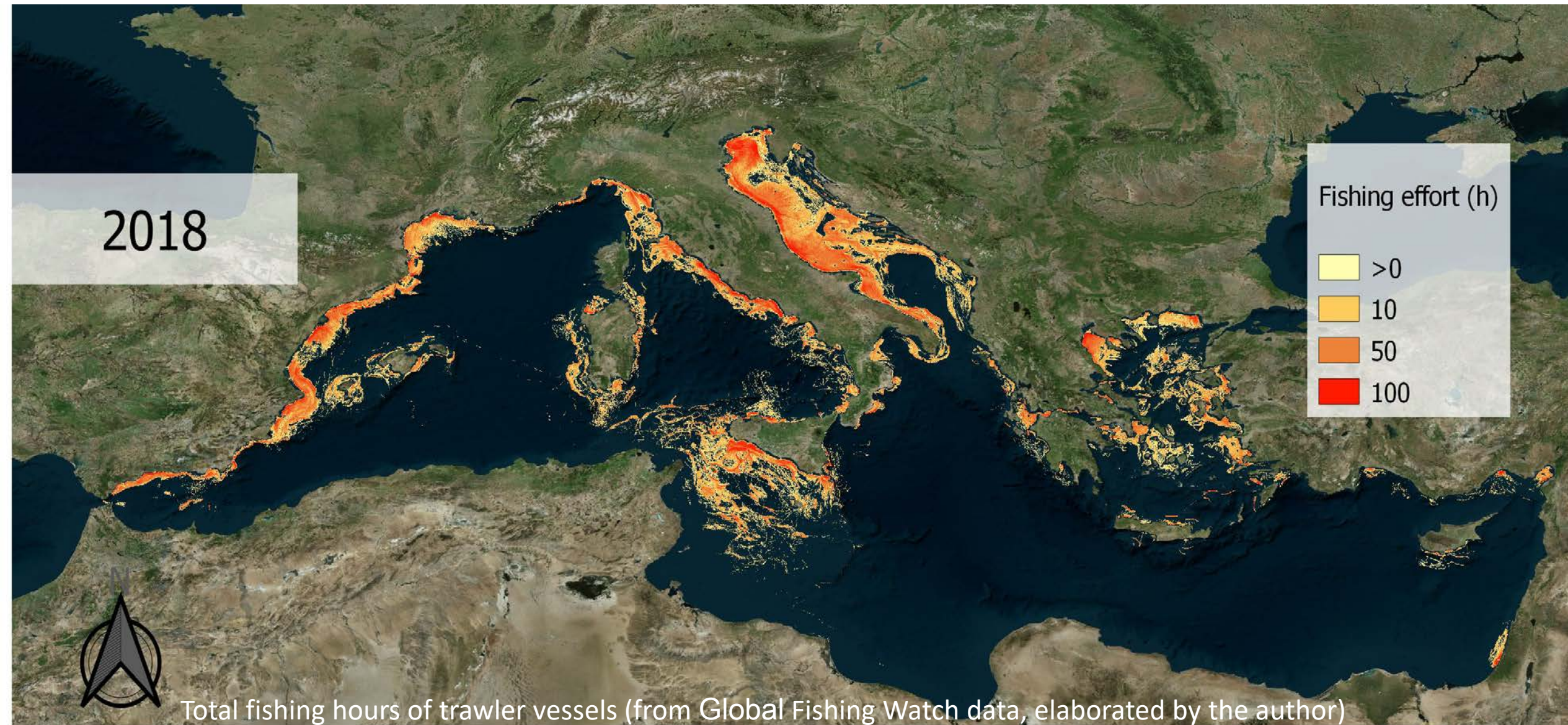
800

0 250 500 km



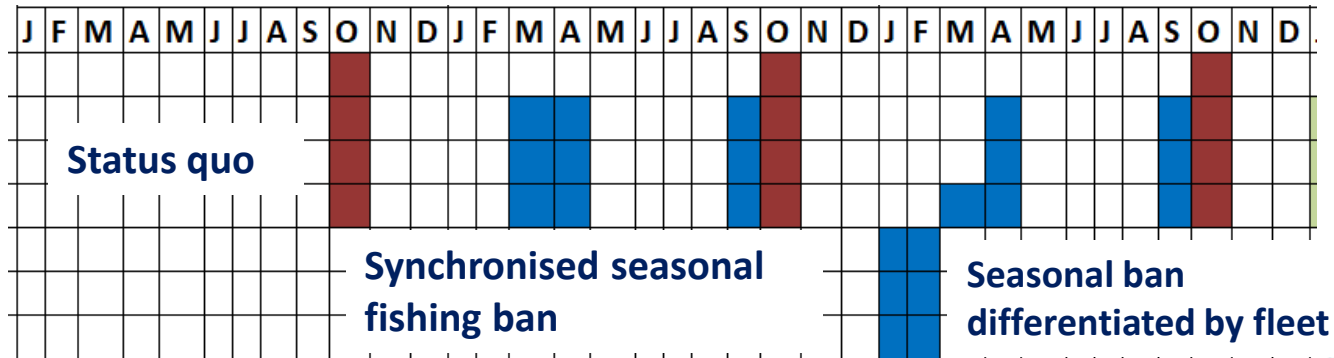


## Improving the exploitation pattern – the spatial approach





# Integrate the spatial and temporal dimensions for the management



Proportion of recruits entering in the stock by month

Temporal measure  
(seasonal ban)



europa project

Or a combination of both options: temporal and spatial

- Current MPA settings **contribute modestly** to fisheries sustainability
- **Plausible modifications** to current MPA settings can positively impact fisheries

Win-win benefits for fisheries and conservation can be achieved through:

- Ecologically connected networks of MPAs
- **Multiple local fisheries closures**, either simultaneously or in rotation, which allow a more **equitable distribution** of benefits
- **Closures of nursery areas or seasonal closures during recruitment peaks**



Common Fisheries Policy



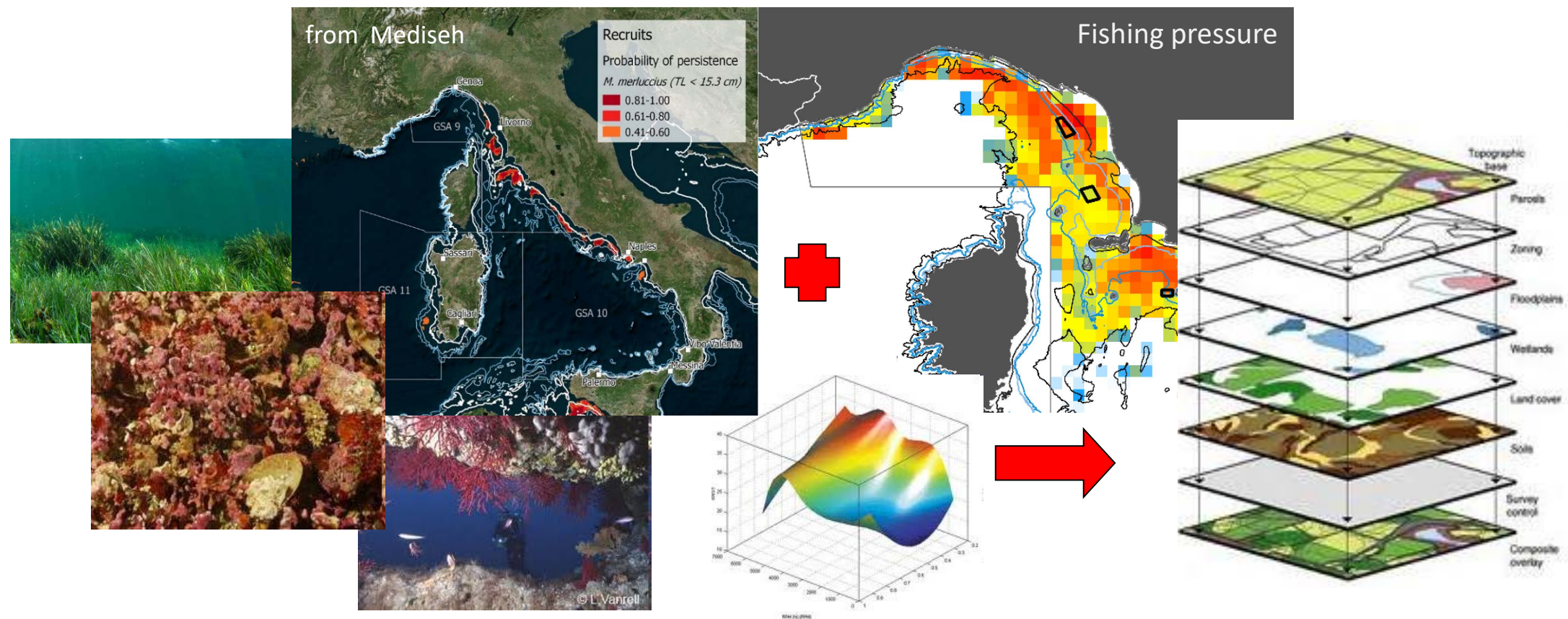
Marine Strategy Framework Directive

Spatial and temporal modelling and Bemtool ready to provide support for EBFM



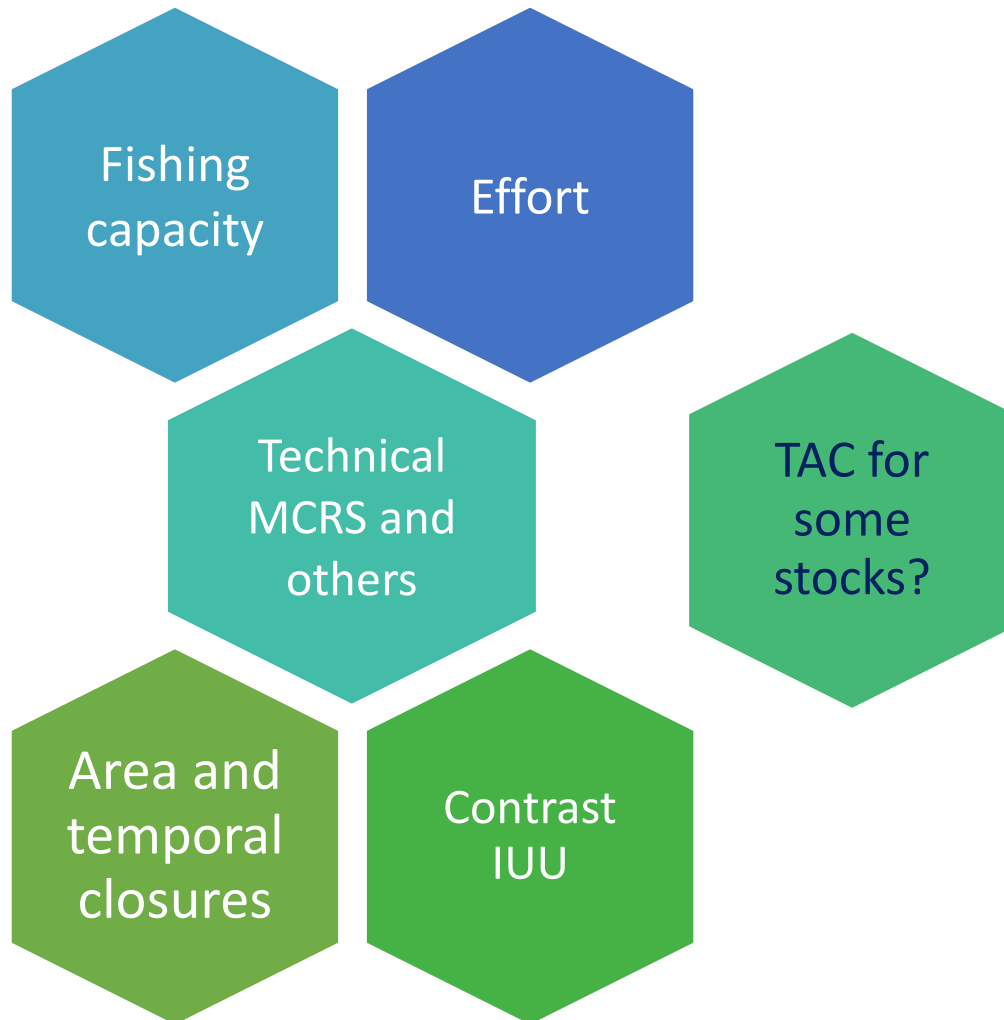
# Integrate the spatial and temporal dimensions for the management

## Spatial measures



Preserve the Ecosystem functioning (reaching Good Environmental Status – GES)

# Integrate management measures



## Other key points



## 8. Recommendations

- Adopt **flexibility** in the sustainability concept of  $F_{MSY}$  by MSY ranges is important in the adaptive management.
- Strengthen the **scientific basis** for fisheries management.
- More sustainable fishing practices should be adopted to guarantee **durability of the results when the stock rebuilt**.
- **Improving the fishing pattern**, avoiding hot spots associated with high discarding (e.g. the nursery areas of key species) or improving gear selectivity, may contribute twofold to the CFP objectives: moving towards MSY and **reducing the wasteful practice of discarding**.

## 8. Recommendations

- Avoidance of discard hot spots requires, in turn, a special effort to **control the fleet displacement**.
- **Enforcement and compliance cannot be disjoined but compliance cannot be disjoined by increased awareness**.
- **Promote awareness** and bottom up processes at local level, self-decision within small groups of fishers.
- **Increase mutual trust between fishermen and researchers** by partnerships and collaborative research, thus improving also data quality, identifying solutions and best practices.
- **Increase consumers' awareness** towards products that are fished sustainably.

**Many thanks for your attention**