



Food and Agriculture
Organization of the
United Nations



General Fisheries Commission
for the Mediterranean
Commission générale des pêches
pour la Méditerranée



PILOT PROJECT ON TRAWL GEAR SELECTIVITY

PAOLO CARPENTIERI

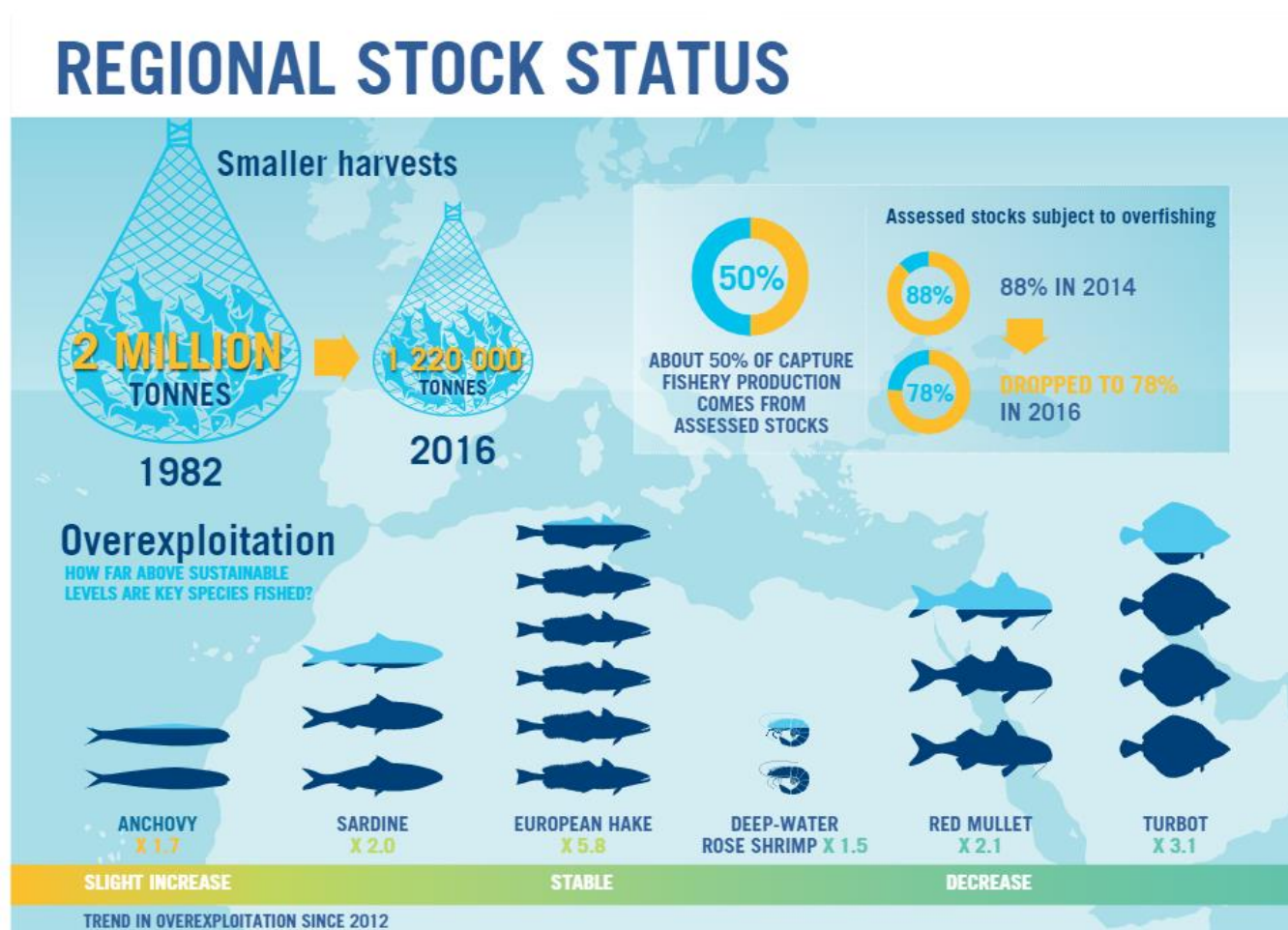
*General Fisheries Commission for the Mediterranean (GFCM)
Food and Agriculture Organization (FAO) of the UN*

5 April, 2022

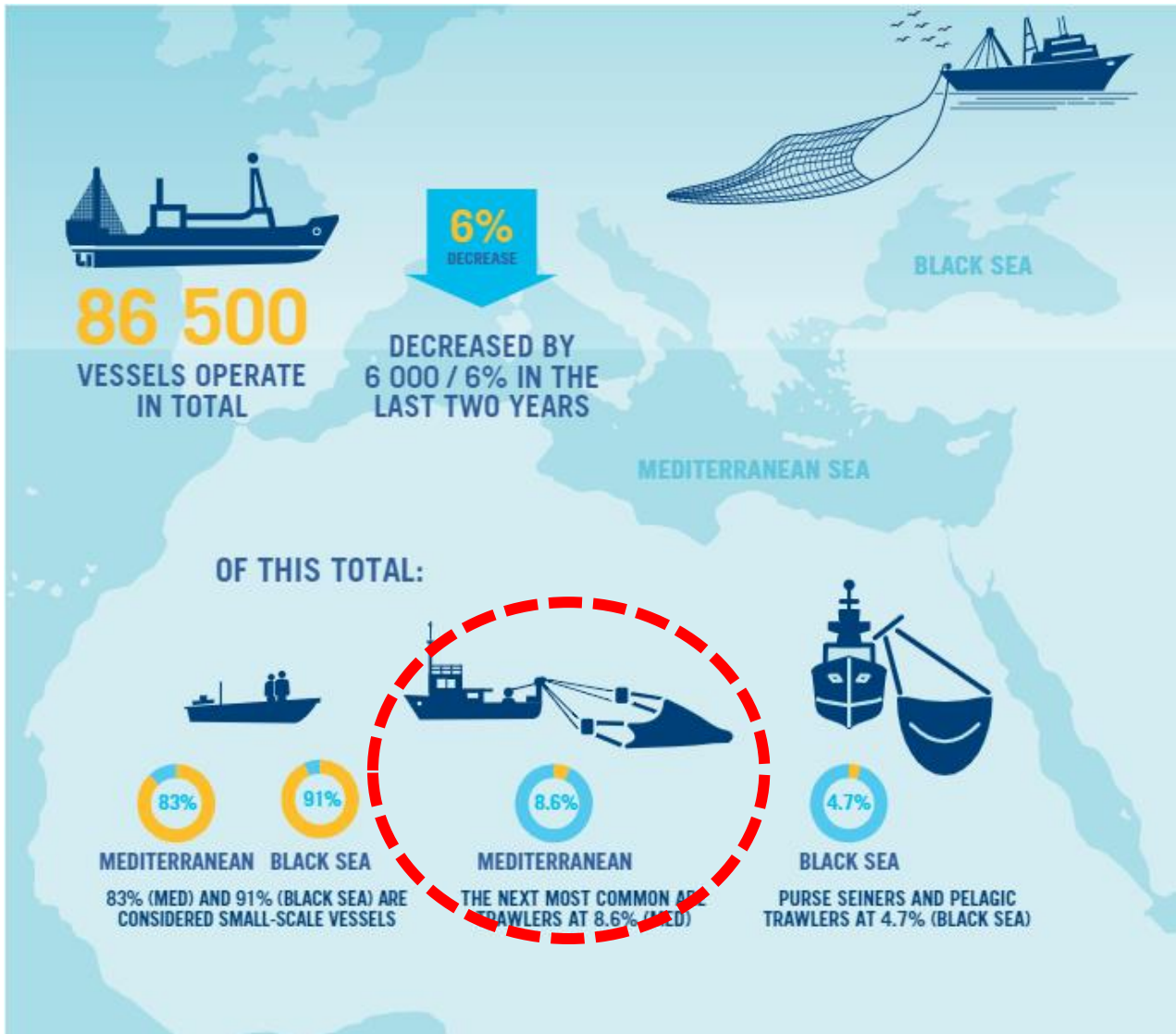


Proposal for a pilot project on trawl gear selectivity

In the Mediterranean basin, despite concerted efforts to establish an effective legal framework and ensure the implementation and compliance of the fishery sector, **around 75% of the assessed stocks are still considered to be threatened by overfishing**



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One of the main fleet segment is composed by bottom trawlers, which target a variety of species, most of them in overexploitation status. Also, bottom trawlers are among the fleet segment with larger discards

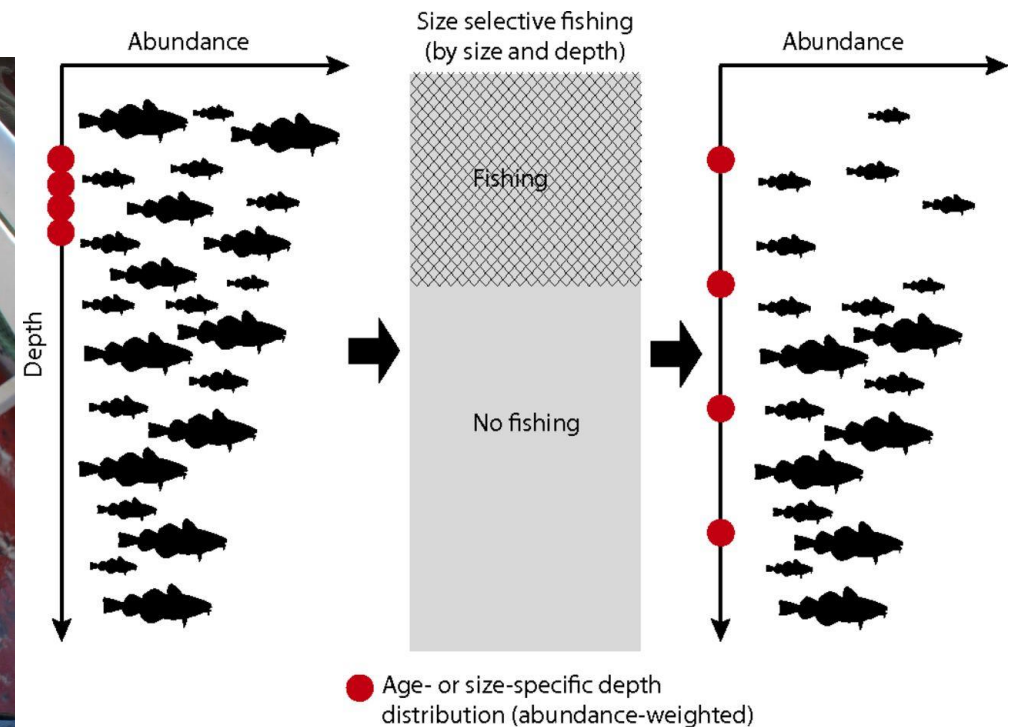
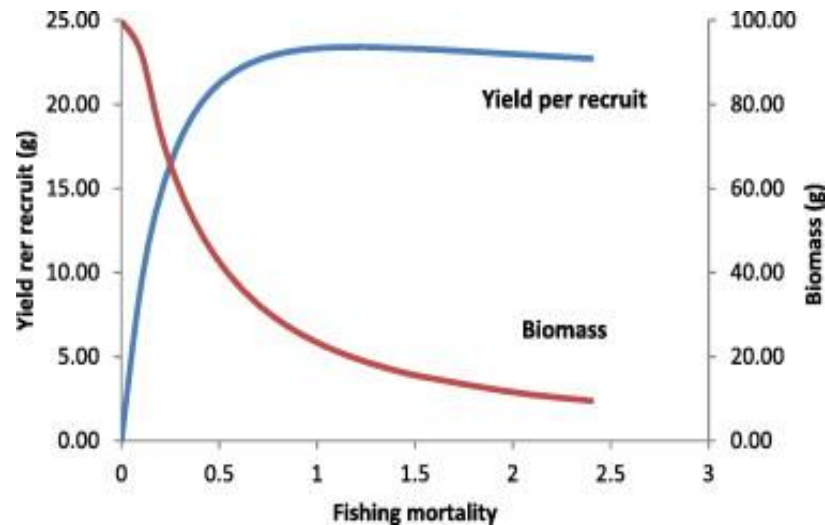


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As the percentage of overexploited stocks remains high, and despite an improvement in exploitation rates, the GFCM stressed the need to implement immediate actions to reduce overfishing, in particular towards managing the trawl fishery through a combination of:

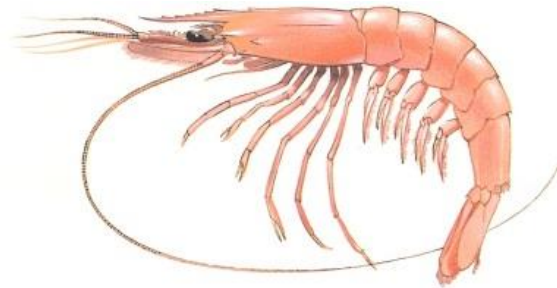
- i) spatio-temporal and selectivity measures, also accounting for subregional specificities,
- ii) measures targeting the reduction of fishing mortality, and
- iii) measures towards the protection of the most vulnerable life stages of the populations (i.e. juveniles and spawners in appropriate periods and areas).



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Considering that European hake and deep-water rose shrimp stocks, in the Strait of Sicily, were overexploited and in overexploitation, and that the existing management plan was due to end in 2021, the **GFCM**, based on a proposal by the European Union, **adopted** Recommendation GFCM 44/2021/12 on a multiannual management plan for bottom trawl fisheries exploiting demersal stocks in the Strait of Sicily (geographical subareas 12 to 16).



Recommendation GFCM 44/2021/12 amending Recommendation GFCM/42/2018/5 on a multiannual management plan for bottom trawl fisheries exploiting demersal stocks in the Strait of Sicily (geographical subareas 12 to 16)

The General Fisheries Commission for the Mediterranean (GFCM),

CONSIDERING that the objective of the Agreement for the establishment of the General Fisheries Commission for the Mediterranean (GFCM Agreement) is to ensure the conservation and sustainable use, at the biological, social, economic and environmental level, of marine living resources in the GFCM area of application;

RECALLING that in giving effect to the objective of the GFCM Agreement, the GFCM shall adopt recommendations on conservation and management measures aimed at ensuring the long-term sustainability of fishing activities, in order to preserve marine living resources and the economic and social viability of fisheries and that, in adopting such recommendations, the GFCM shall give particular attention to measures to prevent overfishing and minimize discards as well as to the potential impacts on small-scale fisheries and local communities;

ADOPTÉ, conformément aux articles 5b), 8b) et 13 de l'Accord de la CGPM, la recommandation suivante :

Amendment of Recommendation GFCM/42/2018/5 :

1. Paragraph 44 of Recommendation GFCM/43/2019/1 shall be amended as follows :

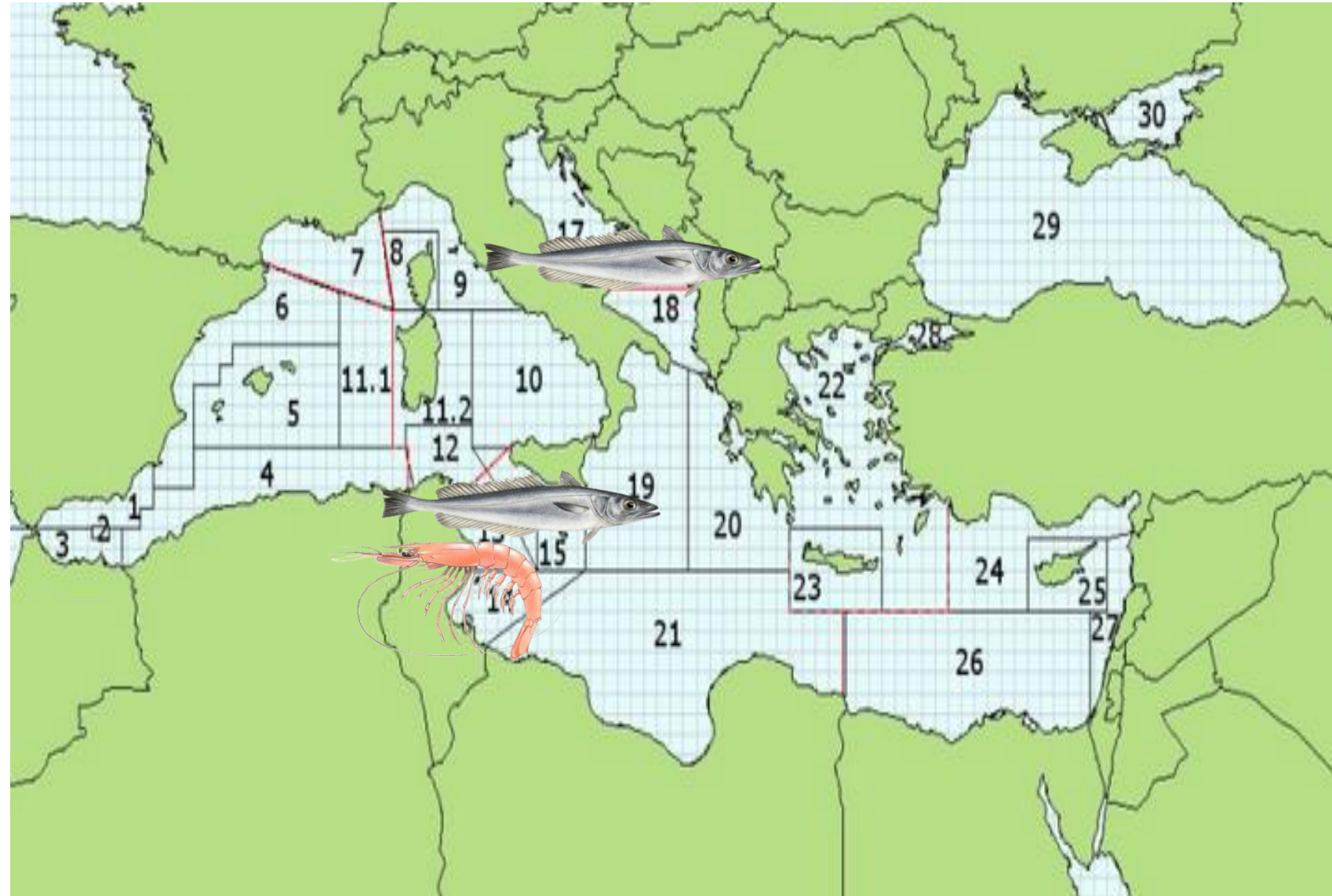
« This multiannual management plan remains in force for four years from the date of its adoption »

2. The SAC shall assess the measures of this Recommendation and the measures that may be developed to achieve the objectives referred to in paragraphs 4 and 5.

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Goal: In light of the requests of the GFCM, to prioritize the identification and the need to develop measures focusing on the mitigation of the adverse impacts of trawl fishing to juveniles in the fisheries of deep-water rose shrimp (*Parapenaeus longirostris*) and European hake (*Merluccius merluccius*), it was agreed to implement a large-scale multiannual pilot study in the Strait of Sicily, and possibly extend it in Adriatic and in the Western Mediterranean fisheries....



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Aims: assess the effectiveness of reducing the impact of trawling on juveniles by experimentally adopting two directly implementable selectivity measures:

- fitting a 90° turned mesh (T90) panel on the trawl net extension
- inserting a selective grid in the standard net extension

Ensure that results are maximized by planning in line with the selectivity work carried out elsewhere



EXTRACT OF THE FINAL REPORT OF THE PROJECT DISCATCH

General description of the project components

Conservation standards for sustainable exploitation, within an ecosystem approach to fisheries management, increasingly urge the elimination of the wasteful practice of biomass discarding at sea. Understanding the reasons for discarding and identification of solutions to tackle the bycatches of unwanted species and specimens is essential if discards are to be eliminated without affecting the minimum requirements of conservation standards. To strengthen the scientific basis for the ecosystem approach to fisheries management the EU requires knowledge on the impact of fishing on the structure, functioning and services of the ecosystem as well as on the socio-economic aspect of innovations in fisheries technology and management. The current project will provide this basis. The success of this multi-disciplinary project, however, will critically depend on a clear a priori understanding of how these different topics are inter-linked and fit into the overall framework of the project.

The aim of DISCATCH will be to support the identification of viable solutions to address factors determining the catches of unwanted species and specimens in trawl fisheries with a view to reducing unwanted catches and eliminating discards. The main objectives of DISCATCH are:

- to provide an overall assessment of the fishing fleet discarding behaviour and to identify the main reasons for discarding in Mediterranean continental shelf demersal and small pelagic trawl fisheries.
- to identify measures, including technical ones related to fishing gear characteristics, to mitigate or eliminate bycatches of unwanted species and measures to eliminate discarding based on existing or new measures.

DISCATCH will cover seven non-adjacent Mediterranean sub-regions, as identified by the FAO Statistical Divisions, within the Western, Central and Eastern Mediterranean Basin, where relevant demersal and small pelagic trawl fisheries occur. For every Mediterranean sub region covered by this proposal, project will provide:

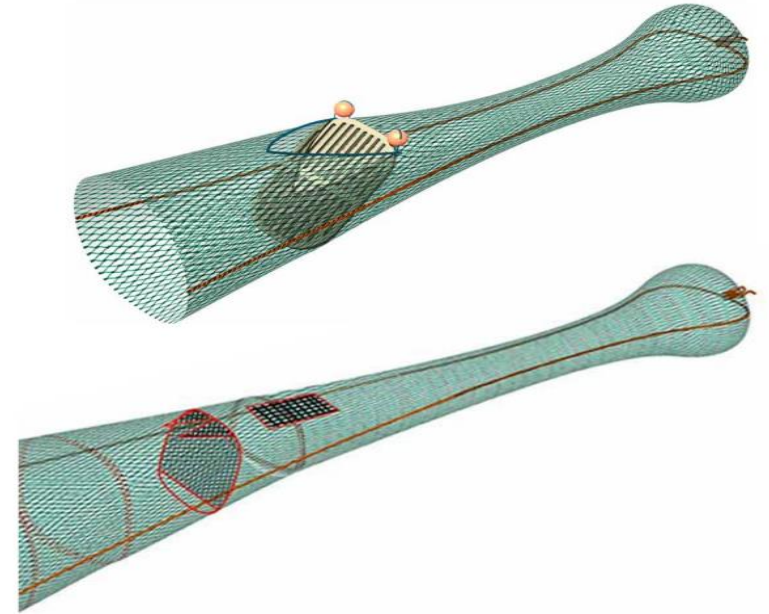
- a comprehensive review and analysis of scientific papers and technical reports covering fisheries for demersal and small pelagic fisheries in the selected area;
- a description of commercial yields, discard rates, selectivity parameters in relation to different mesh sizes/shapes and/or net structures through existing simulation models;
- a comprehensive analysis of the relevant data collected through the Commission Decision No 2010/93/EU adopting a multinational Community programme for the collection, management and use of data in the fisheries sector. Where applicable, data shortcomings will be described in detail, and if needed, scientific surveys on board of commercial vessels to address such shortcomings will be performed;
- statistically significant sea trials, both for demersal and small pelagic trawls, supplemented by predictive simulation models to test the use of different mesh sizes, shapes and net structure.

To ensure that DISCATCH will provide a long term basis for partnership, all simulation models will be duly documented and will include clear visual outputs.

**Implemented
Project**

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For a trawl gear to be truly selective, the fish entering the net should be filtered to ensure that those that are small enough to pass through the meshes can escape, whereas those above the *Minimum Conservation Reference Size* are retained. In this context, we should be able to improve the selectivity of the bottom trawl fisheries trying to make it more sustainable by **minimizing the retention of undersized fish and do not penalizing revenues of the fishing industry.**



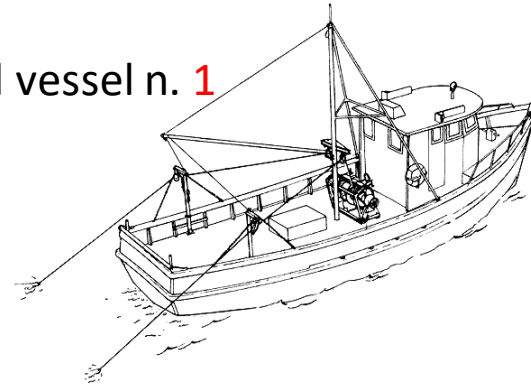
Even if all the studies which applied sorting grids or T90 pointed out the positive impact of sorting grids on the size at first capture of the commercial species, **further trials at the sea and improvements should be carried out before transferring this technical solution to the Mediterranean fishing industry, and to further improve the selectivity of bottom trawling.**

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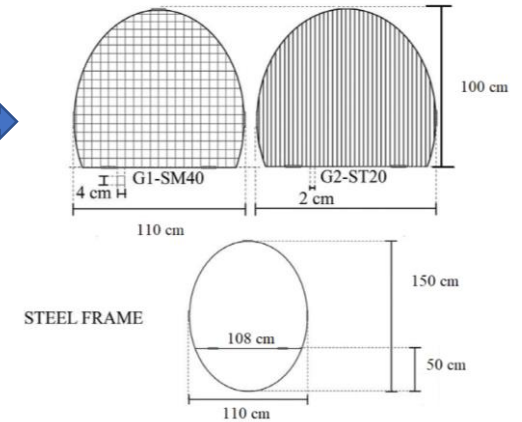
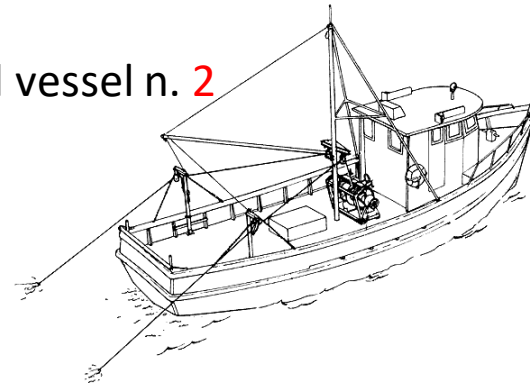
Methodology:

Three vessels will operate at the same time in the same fishing ground, one of these will use a commercial trawl net (control) while another will use a sorting grid, by selecting it depending on the target species of the survey, and a third vessel will be rigged with a T90 mesh shape in the trawl net cod-end

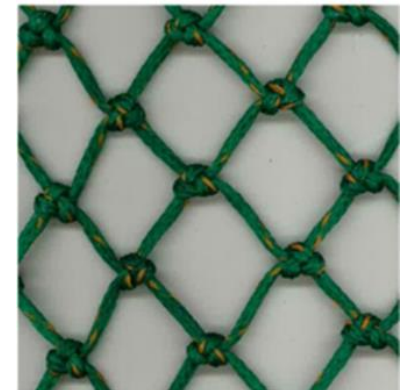
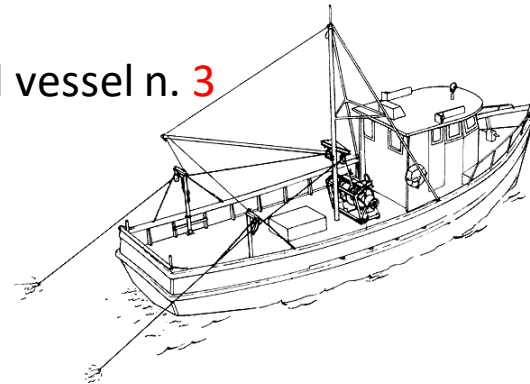
Trawl vessel n. 1



Trawl vessel n. 2



Trawl vessel n. 3



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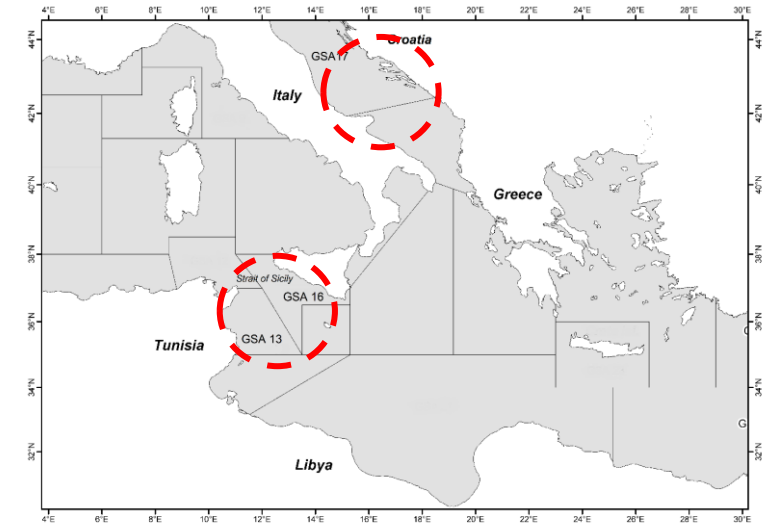


Methodology: During three consecutive fishing days, the fishing operations (a minimum of 4 per each day), having the hake and deep water rose shrimps as target species, will reach a depth ranging between 100 and 200 meters, which is usually defined as the continental shelf.

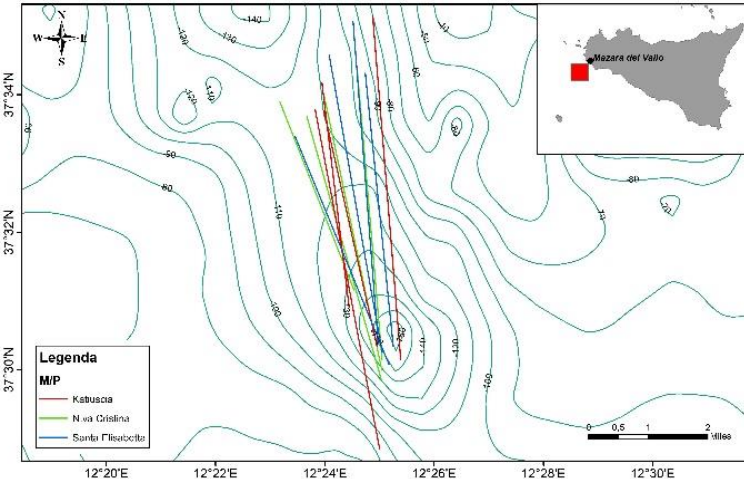
Red line: Grid

Green line: T-90

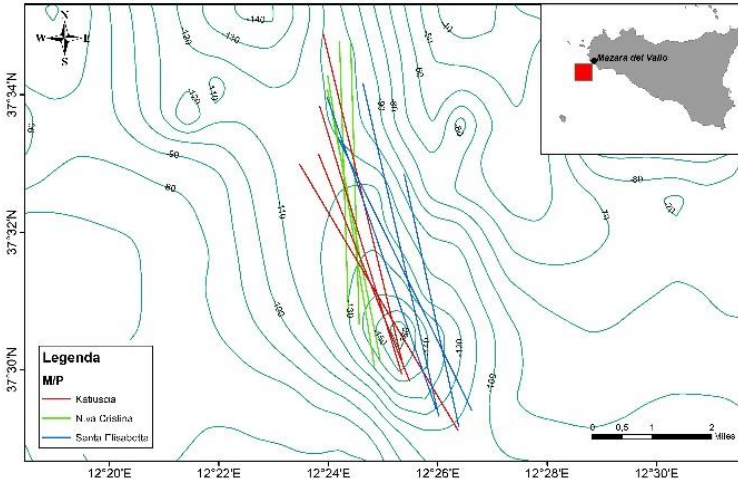
Blue line: Control



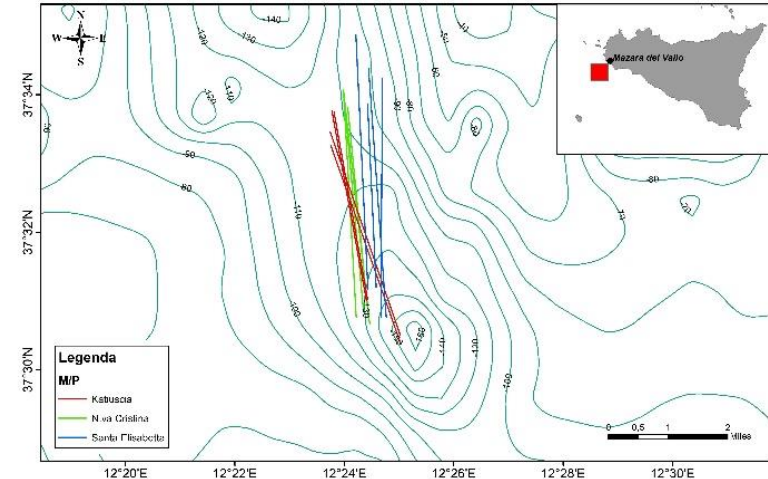
Day 1



Day 2



Day 3



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Methodology: All the catches will be analysed and compared among commercial net and the by-catch reduction device to assess: the effectiveness of these latter gear in reducing the catch of juveniles of hake and deep sea rose shrimp; the differences in the total catch composition (also considering size of main commercial species, conditions of the individuals caught, etc.) and in turn to estimate the profit per fishing vessel (also considering fuel consumption);





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THANK YOU FOR YOUR ATTENTION

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