Focus Groups on Straits of Sicily

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Status of Stocks in the Central Mediterranean

Reno Micallef
DFA – MSDEC, Malta

Overview of the Stock Assessment conducted in the Strait of Sicily

- The Work was conducted under the MedSudMed project and endorsed by the GFCM WG on Demersal species
- Rec GFCM/39/2015/2 on the establishment of a set of minimum standards for bottom trawling fisheries of demersal stocks in the Strait of Sicily, pending the development and adoption of a multiannual management plan

...the main fishing grounds for P. longirostris and M. merluccius in the south-central Mediterranean sea...stocks are mainly shared among Italian, Maltese, Tunisian fishermen
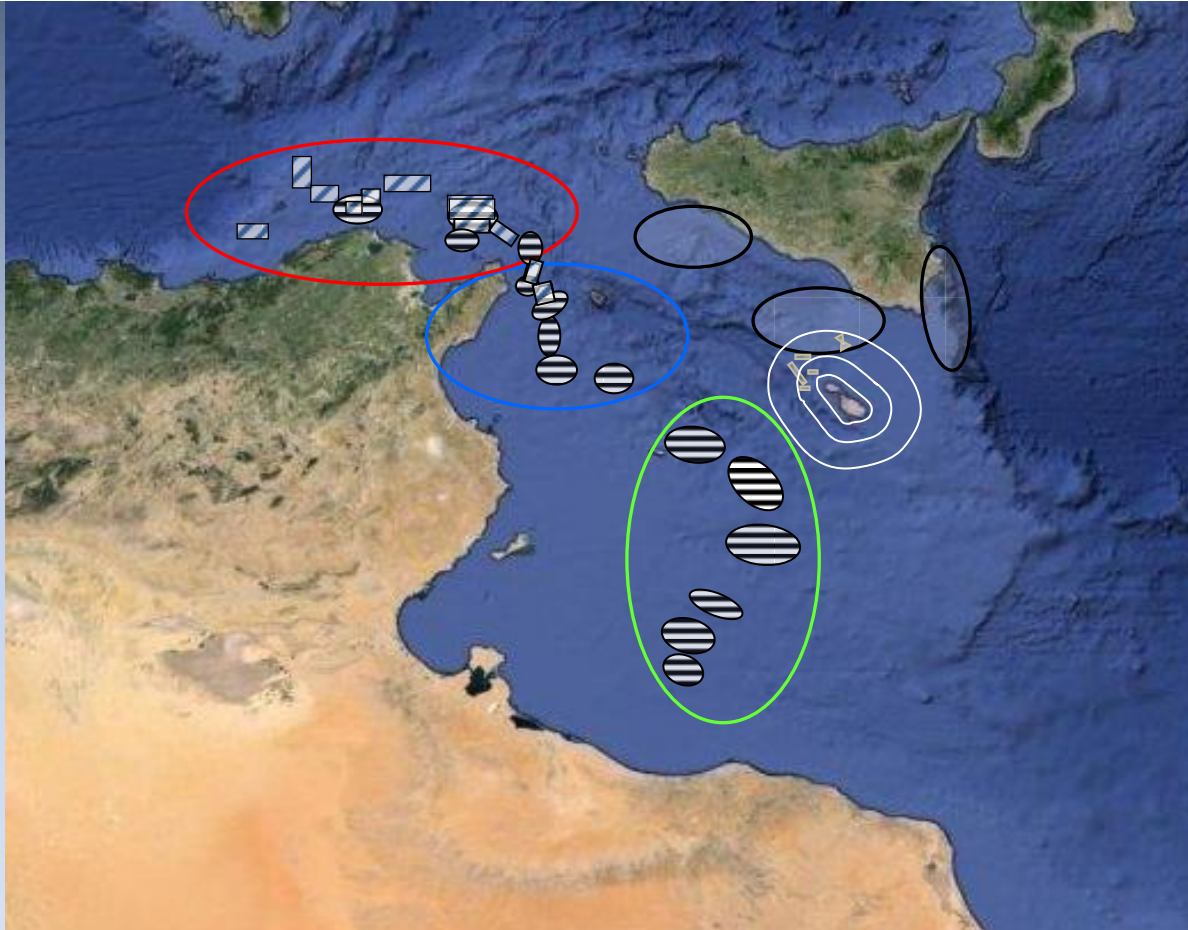
Fish stock refers to the living resources from which catches are taken in a fishery.

Italy

Tunisia

Malta

WGSA-Demersal Fisheries

➢ GSA15-16 presented 1 SA *Mullus barbatus* (preliminary)

➢ GSA12-16 presented 2 Benchmark SA

➢ The stock status of *Merluccius merluccius* and *Parapenaeus longirostris* for GSA 12-16 were re-assessed to be used as benchmark assessment.

➢ The objectives of this benchmark assessment were:
  ➢ to carry out a deep revision of the input data and assumptions used, identify preferred models and reference points
  ➢ To provide scientific advice on the status of the stocks in the Strait of Sicily

WGSAD November 2015
Conclusions and recommendations

GSA	Species	Method	Current values	Reference points	F_{bar}/ F0.1	Stock status	Scientific advice
12-16	*M.merluccius*	XSA	$F(2012-2014) = 0.74$	$F0.1 = 0.12-0.18$	5.9-3.9	In overexploitation with relative high biomass	Reduce Fishing mortality
12-16	*P.longirostris*	XSA	$F(2012-2014) = 1.12$	$F0.1 = 0.84$	1.3	In overexploitation with relative intermediate biomass	

Fishing mortality is a technical term which refers to the proportion of the fish available being removed by fishing in a small unit of time.

Merluccius merluccius
GSA 12-16
F_{bar} = 0.74 ; F $_{0.1}$ = 0.12-0.18

➢ To reach F$_{0.1}$ the current level of fishing mortality should be reduced by 70-80%.
➢ The reduction of fishing mortality should take into account the different contribution to the catch by fleet segment and GSA.

➢Possible approach:
  ▪Reduction of pressure of juveniles, increasing of minimum length of catch and reduction of growth overfishing
  ▪Improvement of the spatial fishing pattern
  ▪Improvement of the selectivity of trawlers

Stock distribution of HKE – Main patches of Essential Fish Habitats in GSA 15 and 16 (Colloca et al., 2013)
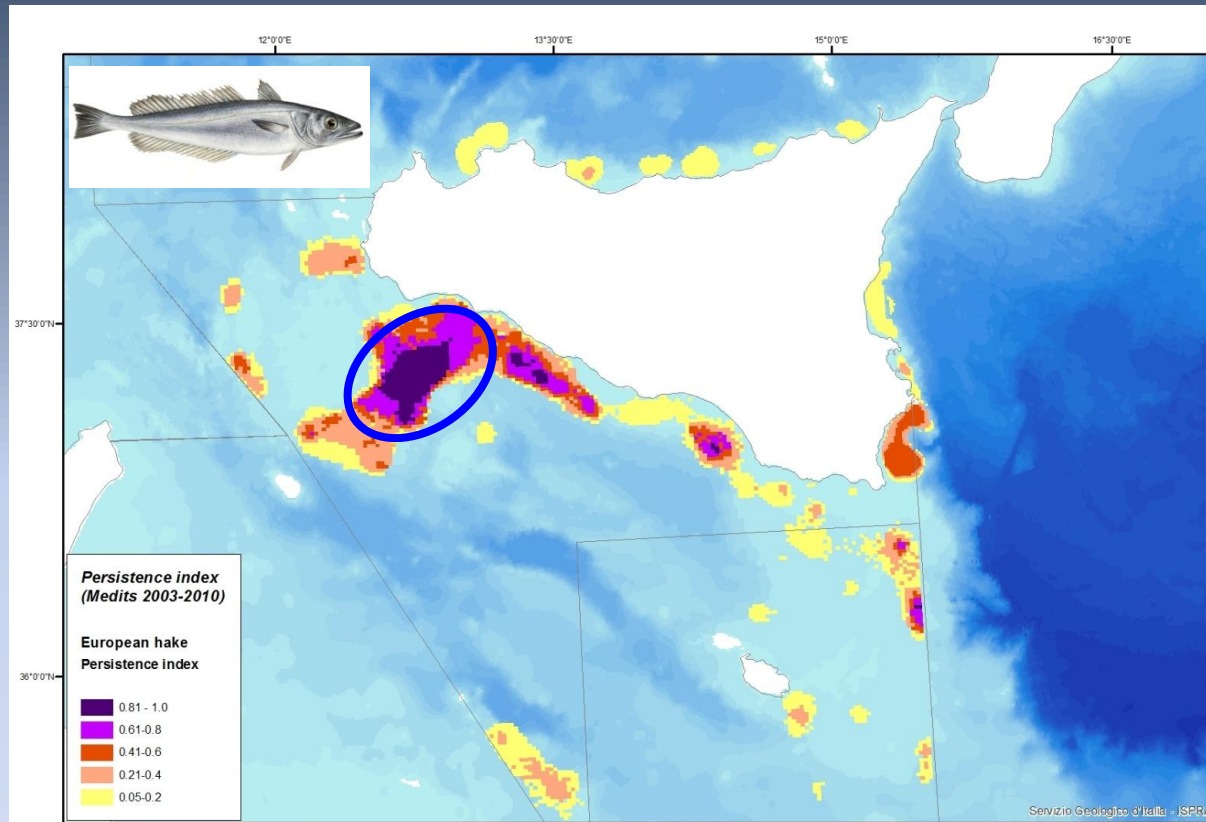
Nursery area of hke from MEDISEH – MAREA project

Parapenaeus longirostris
**GSA 12-16**
$F_{bar} = 1.14 \; ; \; F_{0.1} = 0.84 - 0.93$

➢ Reduce the current F towards F0.1 taking into account the contribution of the different fleets exploiting the stock to the total catch.

➢Fishing mortality should be reduced by 20 – 30%

➢Possible approach:
  ➢Improve exploitation pattern
  ➢Protection of nursery areas

Stock distribution of DPS – Main pachtes ofMain Essential Fish Habitats in GSA 15 and 16 (Colloca et al., 2013)
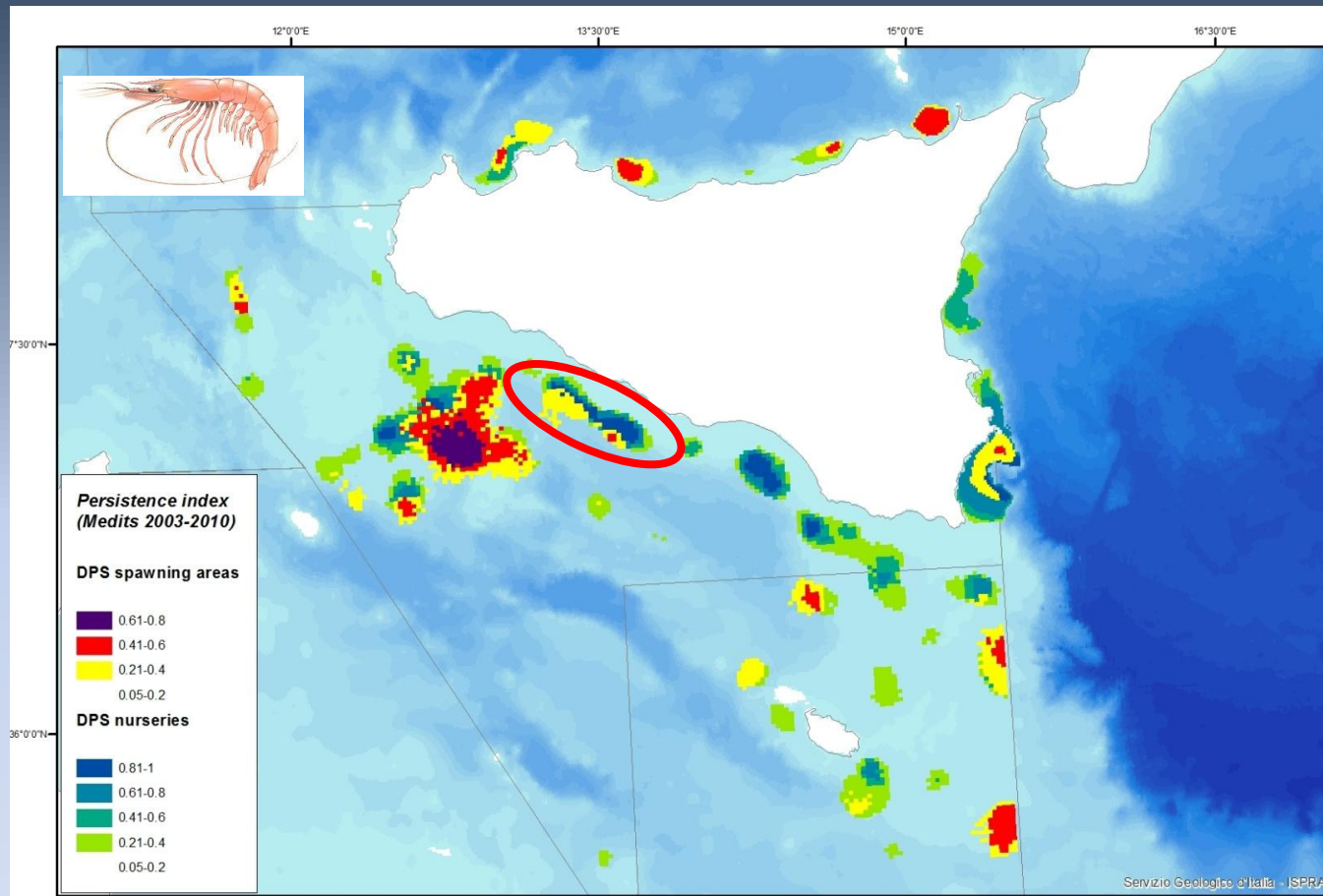
Spawning and nursery area of *rose shrimp* from MEDISEH - MAREA project
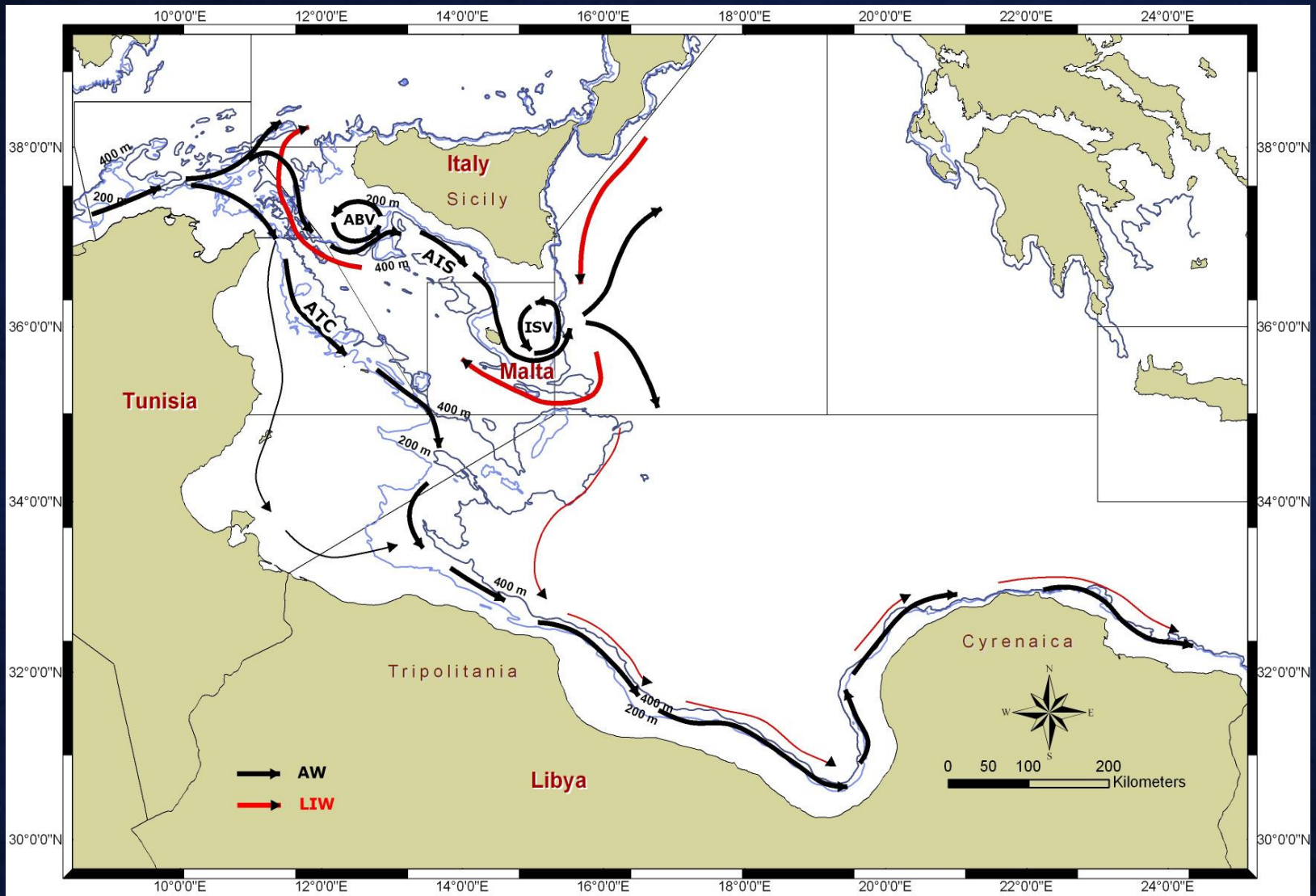
AW=Atlantic Water; LIW=Levantine Intermediate Water; AIS=Atlantic Ionian Stream; ATC=Atlantic Tunisian Current; ABV=Adventure Bank Vortex;

Main outcomes of the ad hoc technical MedSudMed meetings involving stakeholders of MedSudmed project on Deep-water rose shrimps, European hake and related fisheries

Technical issue	Outcome of the discussion
Scope	To ensure sustainability and profitability to bottom trawl fisheries in the south-central Mediterranean Sea targeting Deep water rose shrimps and European hake by mitigating the impact on environment and on associated species
General objectives	To maintain stock biomass above a reference level, reduce the impact of fishing on juveniles, and increase the economic value of the catch
Operational objectives	To improve the exploitation pattern of fisheries To protect the juvenile fraction of the population during the recruitment phase and reduce the discard To provide opportunities for increase economic value of the catch
Overall strategy	To reduce exploitation of juveniles
Proposed approach	To improve the gear selectivity To protect nursery areas from bottom trawling To promote traceability and ecolabelling
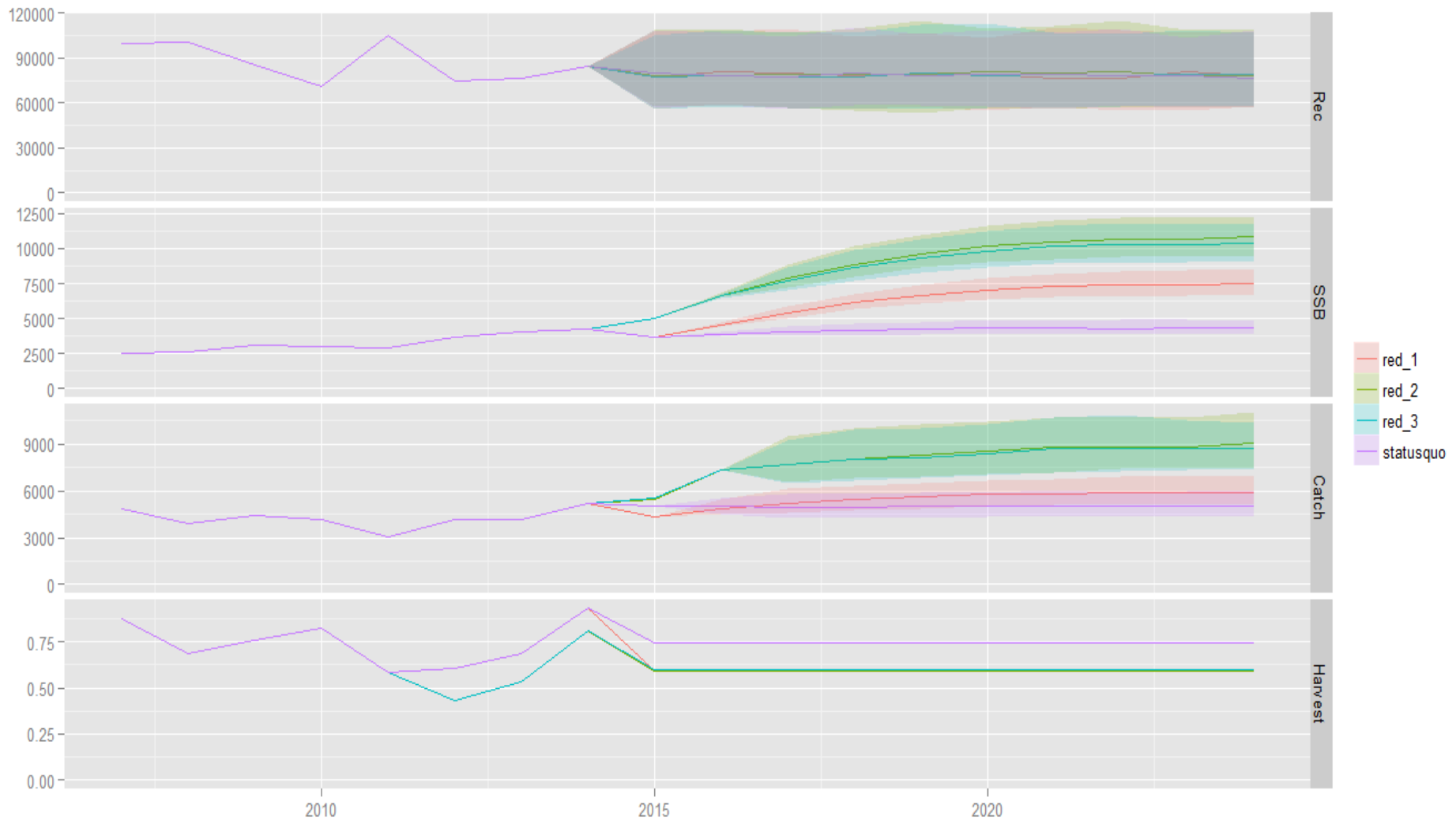
Hake GSAs12-16: Medium term deterministic forecasts.

Red 1: 20% reduction of F for all ages;

Red 2: 20% reduction of F having null F for age 0 and 1;

Red 3: 20% reduction of F half in age 1 and half in ages 2-6; F status quo

OCEANA

Sicily

Malta

Maltese Fisheries Management Zone (12 nm)
Maltese Fisheries Management Zone (25 nm)
Economic Exclusive Zone
Buffer (1 nm)
East of Adventure Bank - Essential Fish Habitat for European hake
West of Gela Basin- Essential Fish Habitat for deep-water rose shrimp
East of Malta Bank - Essential Fish Habitat for European hake

0 10 20
km
1:1.250.000
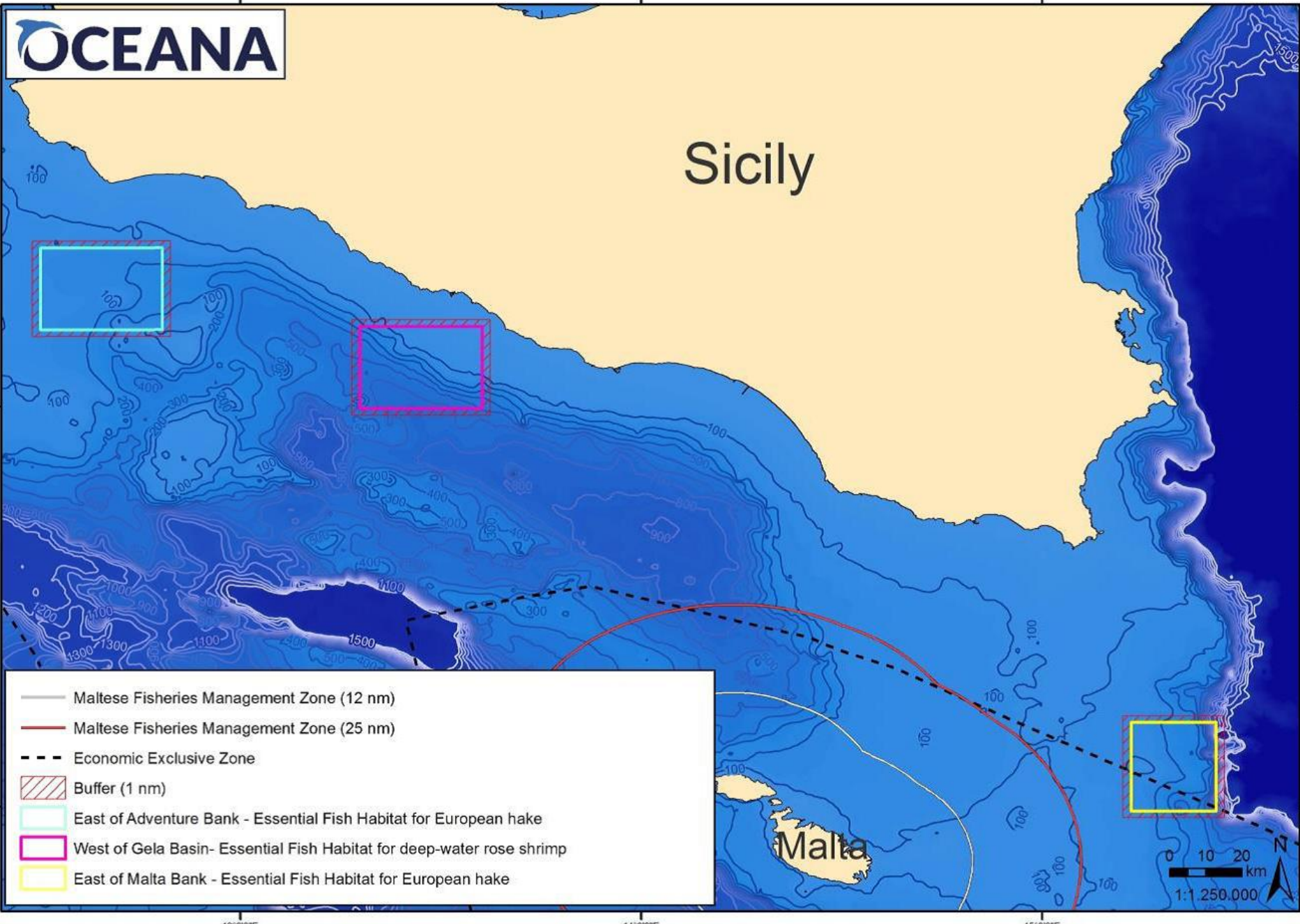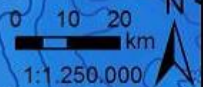
Recommendations from SRCM on FRAs

- The potential closure of the three FRAs and the reduction of effort in young age classes (juveniles) will result in a positive effect on the status of hake stocks in the short term.

- The proposed closure of the three FRAs for towed demersal gear was supported by SRCM and it was suggested that such closure should be considered as an integrated part of a future management plan for this fishery.

- It also recommended that the closure be initially established for a testing period of two years.

- During this period the areas should be closely monitored and the effects of the closure on the population should be evaluated.

- More studies are required to define other nursery areas in the area

Recommendations from SRCM on FRAs

- SRC-CM recommended a reduction of 20 % of current fishing mortality, reducing fishing mortality for hake juveniles

- The % reduction of Fishing mortality will based on the % contribution of each operational unit

- The effectiveness of this reduction should then be assessed and additional measures could be proposed if needed.
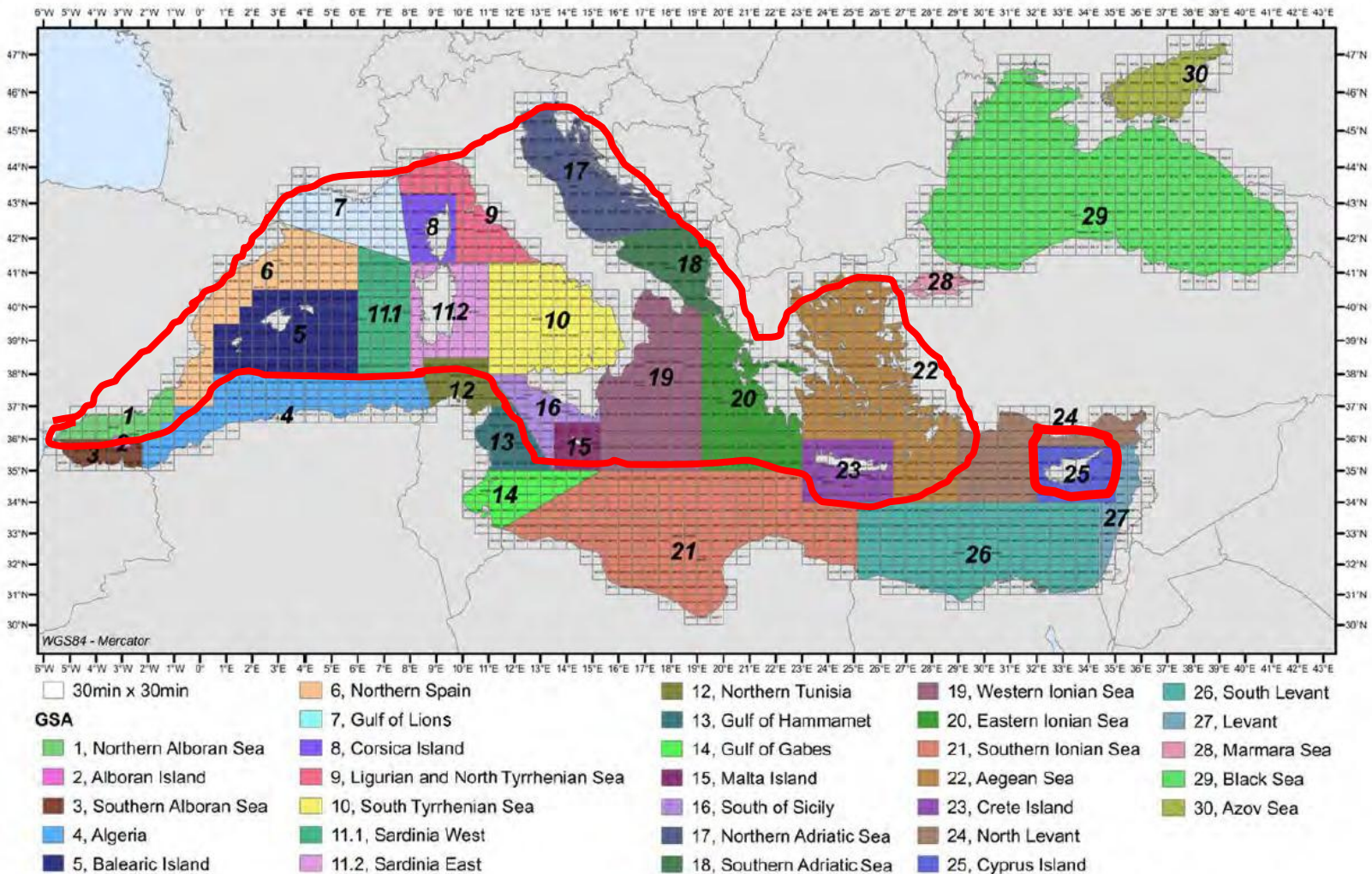
Stockmed

Mediterranean and Black Sea Geographical Sub-Areas (FAO area 37)

The 19 target species

- European hake (*Merluccius merluccius*),
- Red mullet (*Mullus barbatus*),
- Striped mullet (*M. surmuletus*),
- Common Pandora (*Pagellus erythrinus*),
- Common sole (*Soleas olea*),
- Horse mackerels (*Trachurus trachurus* and *T. mediterraneus*),
- Anchovy (*Engraulis encrasicolus*),
- Sardine (*Sardina pilchardus*),
- Norway lobster (*Nephrops norvegicus*)

- Giant red shrimp (*Aristaeomorpha foliacea*),
- Blue-and-red shrimp (*Aristeus antennatus*),
- Deep-water rose shrimp (*Parapenaeus longirostris*),
- Common octopus (*Octopus vulgaris*),
- Broadtail shortfin squid (*Illex coindetii*),
- Horned octopus (*Eledone cirrhosa*),
- Musky octopus (*E. moschata*),
- Blackmouth catshark (*Galeus melastomus*),
- Anglerfish-monk (*Lophius budegassa*).

The Choice of species depends on:
- **The Countries exploiting the stock**
- **The availability of data**

Conclusions

- The main aim of a management plan should include:
    - The protection of juveniles
    - Reduction of by-catch

- Possible measures:
    - Protection of nursery grounds
    - Increase gear selectivity

Thanks for your attention