Scientific Technical and Economic Committee for Fisheries (STECF)
Expert Working Groups on Western Mediterranean (EWGs 21-11 and 21-13)

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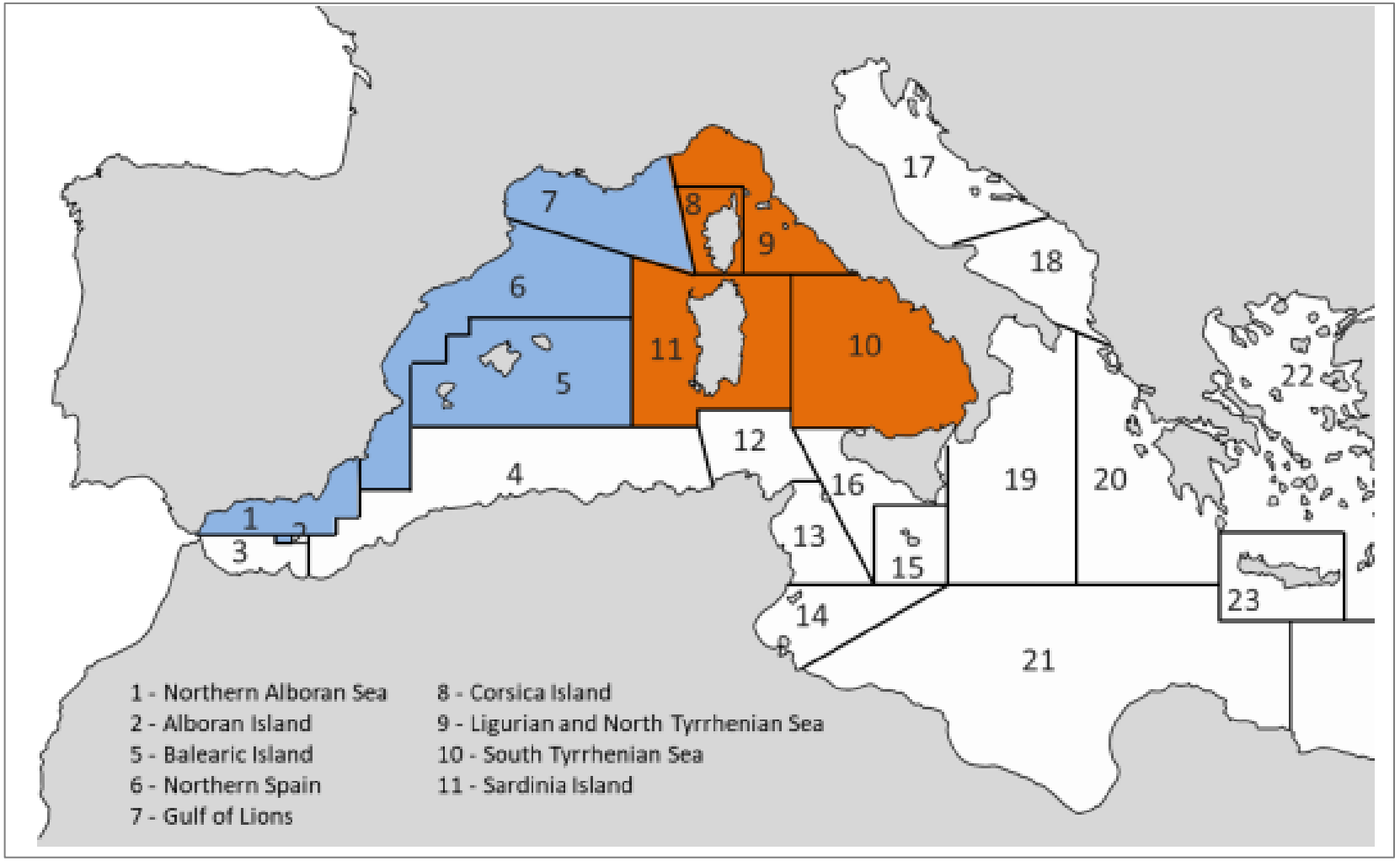
Western Mediterranean – MAP Region



Effort Management Units/GSAs

Blue: EMU1 Orange: EMU2

Overview of the Western Mediterranean Management Plan (2019/1022)

- Annual effort quotas are set by the Council, since 01.01.2020
- The main characteristics of the regime are as follows:
  - Effort regime applicable to all trawl vessels targeting demersal stocks.
  - Two effort groups: mixed demersal fisheries (Hake, Red mullet, Deep-water rose shrimp, Norway lobster); deep-shrimp fisheries (Giant red shrimp, Blue and red shrimp).
  - Four sub-groups of vessels: < 12m; 12-18m; 18-24m; and >24m.
  - Effort quotas in terms of fishing days.
  - Fishing day is limited to 15 hours (from port to port).
  - Baseline: average fishing days between 01.01.2015 and 31.12.2017
  - Implementation of closure areas to obtain a 15-25% reduction of captures of juveniles and spawners.

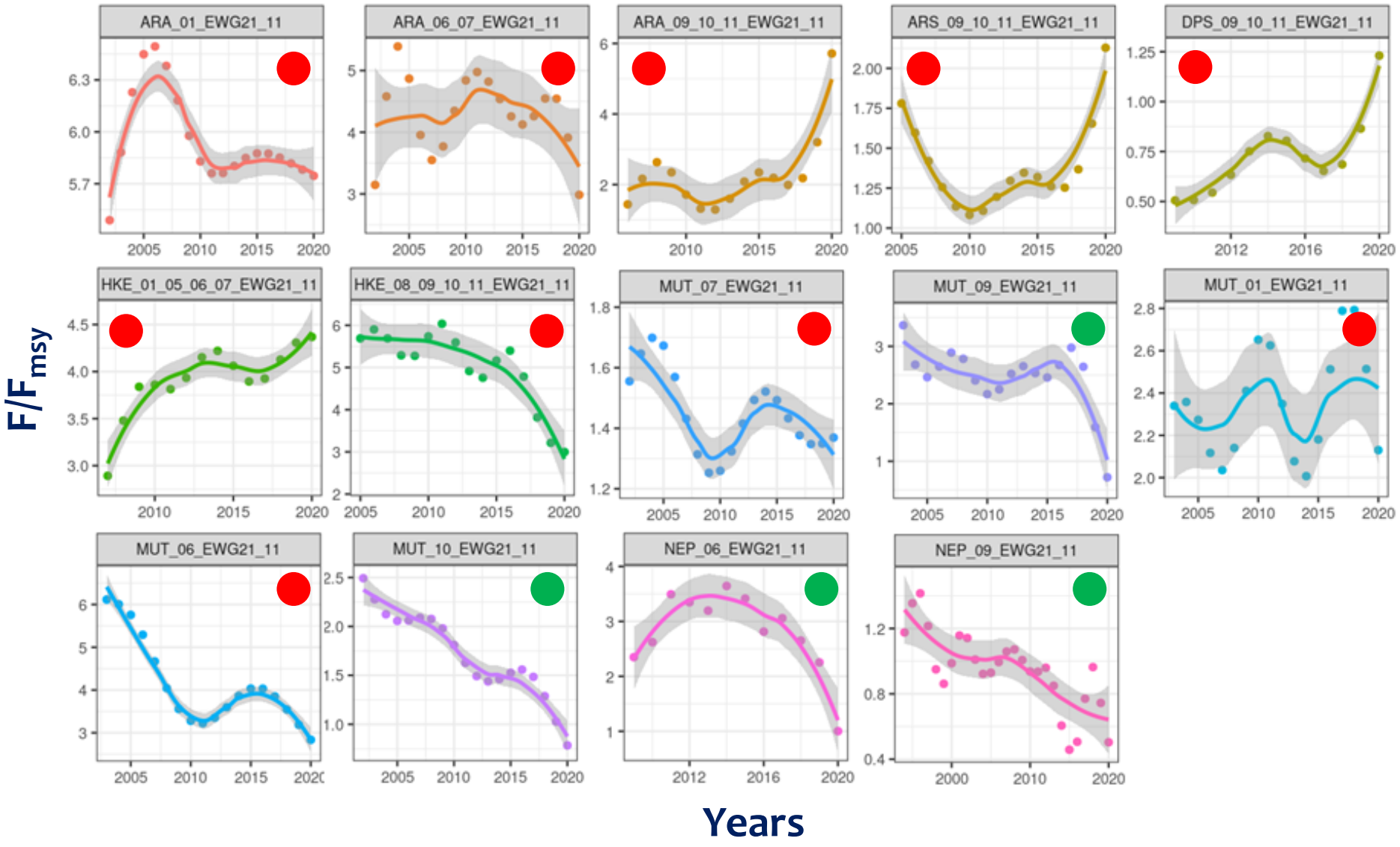
Overview of the Plan from 01.01.2020 up to 31.12.2021

	EMU 2	EMU 1	
	Italy	France	Spain
Effort reduction 2020	-10%	-10%	-10%
Effort reduction 2021	-10%	-7.5%	-7.5%
Spatial closures 2020	Permanent	Temporal	Permanent and Temporal
Spatial closures 2021	NONE	NONE	Permanent and Temporal

Western Mediterranean – EWG 21-11 (stock assessment)

GSA	Species	Method/ Basis	Age Fbar	Biomass 2018-2020	Catch 2018-2020	F 2020	F 2022 (F_{msy})	Change in F	Catch 2020	Catch 2022 at F_{msy}	Change in catch
1_5_6_7	European Hake	a4a	1-3	declining	declining	1.94	0.44	-77%	2011	1220	-39%
1_5_6_7	Deep-water rose shrimp	Index 2020	Biomass	fluctuating	increasing				1764	681	-61%
1	Red Mullet	a4a	1-3	declining	declining	1.29	0.61	-53%	98	82	-16%
5	Striped Red Mullet	Index 2021	Biomass	fluctuating	declining				84	85	1%
6	Red Mullet	a4a	1-3	increasing	decreasing	0.90	0.32	-65%	1539	842	-45%
7	Red Mullet	a4a	1-3	increasing	increasing	0.62	0.46	-27%	389	351	-10%
5	Norway lobster	Index 2021	Biomass	fluctuating	declining				58	37	-35%
6	Norway lobster	a4a	3-6	increasing	decreasing	0.26	0.26	-1%	128	206	61%
8_9_10_11	European Hake	a4a	1-3	increasing	stable	0.50	0.17	-67%	1983	920	-54%
9_10_11	Deep-water rose shrimp	a4a	1-2	fluctuating	increasing	1.58	1.29	-19%	1960	1455	-26%
9	Red Mullet	a4a	1-3	Increasing	declining	0.37	0.52	39%	629	1033	64%
10	Red Mullet	a4a	1-3	increasing	stable	0.31	0.40	27%	426	485	14%
9	Norway lobster	a4a	2-6	declining	declining	0.15	0.30	100%	103	220	113%
11	Norway lobster	Index 2020	Biomass	low fluctuating	increasing				44	13	-70%
1	Red and blue shrimp	a4a	1-2	stable fluctuation	fluctuation	1.68	0.29	-83%	117	33	-72%
5	Red and blue shrimp	Index 2020	Biomass	stable	declining				131	137	5%
6_7	Red and blue shrimp	a4a	1-2	increasing	declining	0.85	0.29	-66%	549	267	-51%
9_10_11	Red and blue shrimp	a4a	2-5	declining	increasing	1.68	0.29	-82%	366	45	-88%
9_10_11	Giant red shrimp	a4a	1-3	declining	stable	0.98	0.46	-35%	496	241	-51%

Western Mediterranean – EWG 21-11 (stock assessment)



Western Mediterranean – EWG 21-13 (update of models and scenarios)

TOR 1. **Update the F-E analyses** for Effort Management Units 1 and 2 with the most recent socio-economic and biological data and the most recent stock assessments' results. If possible, estimate the impact of the COVID-19 outbreak with the most updated available data and knowledge.

TOR 2. Based on the work of the FDI EWG in September 2021, compile and provide **complete sets of annual data on fishing effort** starting in 2015 to and including 2020. This should be described in terms of fishing days, days at sea, GT*days, fishing hours and nominal effort by Member State, GSA and, where possible, by fishing gear.

TOR 3. **Develop mixed-fisheries effort scenarios for all demersal fishing gear** (e.g. bottom trawls, gillnets, longlines) in EMU1 and EMU2. In grey, the priority scenarios, in case time constraints do not allow to fully address the proposed scenarios. The percentages of reduction of effort given in the scenarios are calculated in reference to the reference period 2015-2017 and should account for the 10% reduction of effort applied in 2020.

a) 7,5% reduction in 2021 for France & Spain, 10% reduction in 2021 for Italy + closures in 2020 and 2021 + no additional reduction of effort for 2022-2024; b) 7,5% reduction in 2021 for France & Spain, 10% reduction in 2021 for Italy + closures in 2020 and 2021 + 22,5% effort reduction in 2022 for France and Spain, 20% for Italy; c) 7,5% reduction in 2021 for France & Spain, 10% for Italy + closures in 2020 and 2021 + 10% in 2022 for France-Spain-Italy + 10% in 2023 for France-Spain-Italy + 2,5% effort for France-Spain in 2024; d) 7,5% reduction in 2021 for France & Spain, 10% for Italy + closures in 2020 and 2021 + 7,5% in 2022 + 7,5% in 2023 + 7,5% for France-Spain in 2024 and 5% for Italy; e) Scenario d + permanent closures in 2022-2023-2024 where closures were implemented in 2020 and 2021; f) Scenario d + increased selectivity (e.g. 50% of the vessels equipped with sorting grids, T90 etc.); g) Scenario d + 10% effort reduction of other fishing gear in 2022, 2023 and 2024 (longline, gillnet, trammel net, others) compared to the baseline period 2015-2017; h) Scenario a + TAC in 2022-2023-2024 on the most overfished species (to be confirmed by STECF EWG 21-11: hake, Norway lobster, giant red shrimp and blue & red shrimp); i) Scenario a + TAC in 2022-2023-2024 on the most overfished species (to be confirmed by STECF EWG 21-11: hake, Norway lobster, giant red shrimp and blue & red shrimp) + permanent closures in 2022-2023-2024 where closures were implemented in 2020 and 2021 + 10% effort reduction of other fishing gear in 2022, 2023 and 2024 (longline, gillnet, trammel net, others).

Western Mediterranean – EWG 21-13 (update of models and scenarios)

TOR 4. Using the advice structure developed in 2020 (EWG 20-13) and the Annex 1 of 2020 and 2021 Fishing Opportunities (in supp. Material), provide a **synoptic overview** of: (i) the **source of data and methods** and; (ii) the **management advice**, including technical and conservation measures combined to a range of fishing effort reduction that secure the achievement of MSY by 2025 accounting for the socio-economic impact.

TOR 5. Discuss **future steps in preparation of EWG 22-01** (March 2022) that would investigate the impact of additional management measures in order to achieve MSY by 2025 at the latest, for the six main demersal species in the western Mediterranean Sea.

TOR 6. To the extent possible, **evaluate the impact of transfers of fishing days** between deep and coastal bottom trawl fisheries of the same geographical area at metier level and where possible at stock level, following the procedure developed during STECF EWG 21-01.

Western Mediterranean – EWG 21-13 (Regulations *vs* FDI data)

Country EMU	A. Baseline average 2015-2017	B. Fishing opportunities 2020*	C. Fishing effort 2020 (FDI data)	D. Fishing opportunities 2021**	E. 82.5% of A (FR and ES) 80.0% of A (IT)	Difference (%) between B and C	Difference (%) between D and E
France (EMU1)	10,781	11,402	9,832	10,452	8,894	**+13.8%**	**+14.9%**
Spain (EMU1)	110,009	110,088	97,544	100,914	90,758	**+11.4%**	**+10.1%**
Italy (EMU2)	102,964	92,464	71,982	84,757	82,371	**+22.2%**	**+2.9%**

* COUNCIL REGULATION (EU) 2019/2236 of 16 December 2019 fixing for 2020 the fishing opportunities for certain fish stocks and groups of fish stocks applicable in the Mediterranean and Black Seas

** COUNCIL REGULATION (EU) 2021/90 of 28 January 2021 fixing for 2021 the fishing opportunities for certain fish stocks and groups of fish stocks applicable in the Mediterranean and Black Seas

Fishing opportunities (Regulations) always higher than fishing effort declared in FDI data

In 2020, the impact of COVID reduced fishing effort in EMU1 by a -1% and in EMU2 by a -21%

Western Mediterranean – EWG 21-13 (Conclusions)

- None of the models accounted for *hyperstability*: a linear relationship between effort and fishing mortality is assumed.
- Difficult to discriminate on the efficacy of spatial management within the results: no scenario accounting only for closure areas. Permanent closures did not show any improvement compared to temporal ones (EMU 2).
- When effort reduction was gradual, losses in revenues and gross profits were minimal.
- 50mm square mesh both on coastal and deep-water métiers, with effort reduction and spatial closures showed an increase in biomass and a reduction of fishing mortality even for the most overexploited stocks. Increased selectivity could determine a loss of catches for the stocks which are already close to Fmsy in 2020 (e.g. Red mullet).
- Reduction of effort on other gears (e.g. set nets and longlines) generates improvements on HKE in EMU 2 (but not in EMU 1), and this is probably due to a decrease of fishing effort on hake spawners.
- Scenarios accounting for a TAC implementation since 2022 should be considered as very preliminary results from all models: i) potential choke effect was not explored in depth and should be accounted for in the future; ii) IAM and BEMTOOL could not consider the two métiers (coastal and deep water) separately.
- SMART was the only model accounting for two métiers (coastal and deep water) behaviour when the TAC was reached and it highlighted how effort redistribution could negatively affect the coastal stocks.
- All models showed that a gradual TAC towards reaching Fmsy would have a weaker economic impact.
- BEMTOOL results suggest also that an "inverse TAC" (which increases through time) should be tested, as it would be more efficient in reaching Fmsy.

The EWG highlighted the following limitations when estimating conversion factors at métier level:

- analysis based on métier are quite uneven as it depends on the abundance of the resources, therefore vessels can move between métiers;
- in the EU regulations, the assignment of the fishing opportunities does not use métier as reference strata;
- swapping fishing days between métier could have higher effect on the population dynamic compared to the vessel length approach (e.g., hake in slope are larger than in shelf);
- definition of métier is not the same in all countries.

Western Mediterranean – EWG 22-01 (Terms of Reference)

1) STECF is requested to continue the development of management models including different levels of TACs for deep-water shrimps and for hake in both West Med management units.

2) STECF is also requested to develop mixed-fisheries spatio-temporal scenarios for all demersal fishing gear (e.g. bottom trawls, gillnets, longlines) in EMU1 and EMU2 with simulations from 2020 to 2030. The STECF evaluation should be looking at differences in captures reduction between the 2019 situation (prior to closure adoptions) by species and by age-class and the following scenarios:

a) Status quo scenario: closures adopted since the implementation start of the West Med MAP by the 3 Member States;.

b) Same delineation of closures areas as in 2020, 2021 and 2022 and all closure areas become permanent from 2023 onwards;

c) Same delineation of closures areas as in 2020, 2021 and 2022 and all closure areas are for all fishing gear (e.g. trawlers, longliners, netters);

d) 10% of permanent closure areas in each GSA, taking into account the different types of habitats such as for instance waters shallower than 200m depth and waters deeper than 200m;

e) 20% of permanent closure areas in each GSA with half of it in waters shallower than 200m depth and half of it in waters deeper than 200m;

f) 30% of permanent closure areas in each GSA with half of it in waters shallower than 200m depth and half of it in waters deeper than 200m.

Thanks for your attention!