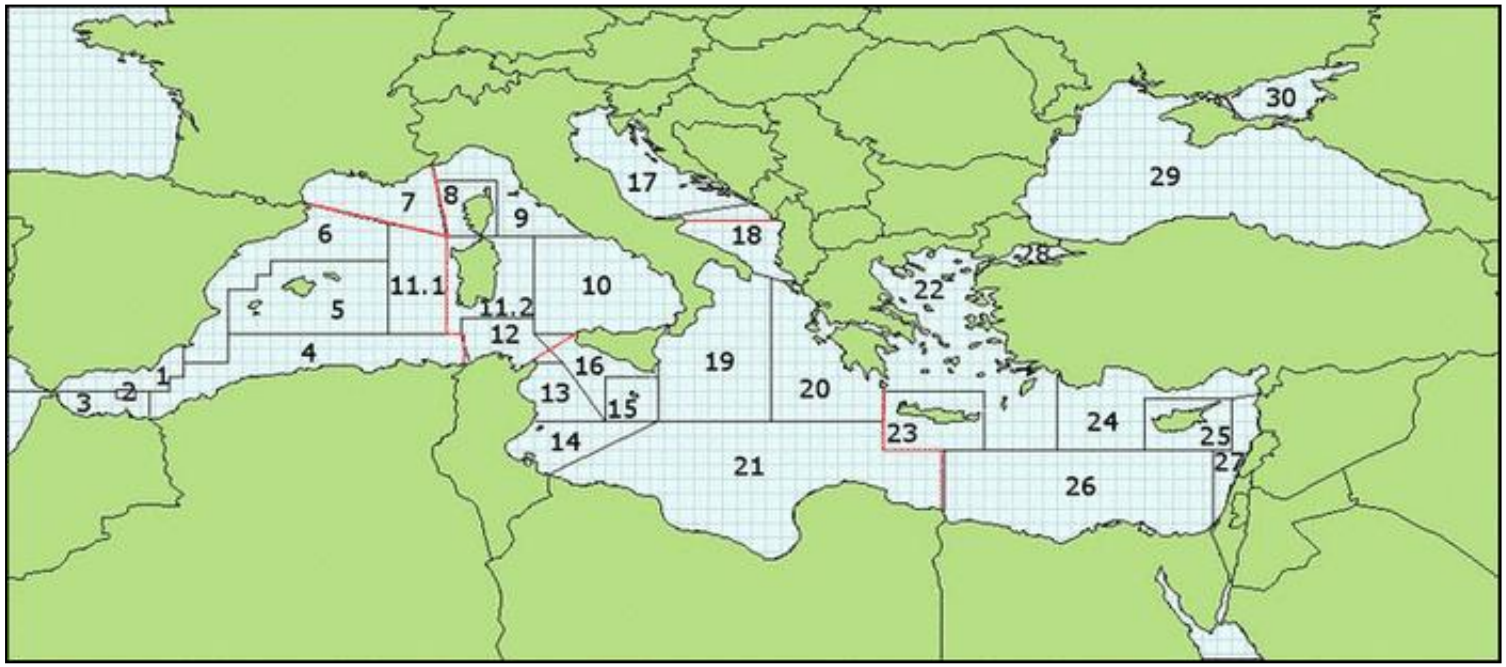
Presentation of the stock assessment results GFCM WGSAD/WGSASP (stock assessment of demersals and small pelagics 12-17 December 2022) in the Eastern EU Med (GSAs 20-23, 25).



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Focus Group Eastern Mediterranean 23 Feb 2023

Conclusions of stock assessment results GFCM WGSAD

For demersal: 8 stocks were analysed

6 stocks were in overexploitation status (or possible)

Scientific Advice ↓

Reduce Fishing mortality

2 stocks were in Sustainable exploitation (or possible), with relatively high biomass

Scientific Advice ↓

Do NOT increase Fishing mortality

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Performed assessments

Table 1. Scientific advice on the status of the **demersal** stocks assessed in the eastern EU Mediterranean, including WGSAD comments

GSA	Species	Method	Current Levels	Reference Points	Quantitative Status	Stock Status	Scientific Advice	WG Comments
18,19,20	Aristeus antennatus	a4a	Fc = 0.91, Bc = 201	F0.1 = 0.206	F/Fref = 4.43	In overexploitation	**Reduce fishing mortality**	New assessment
18,19,20	Aristaeomorpha foliacea	a4a	Fc = 0.83, Bc = 352	F0.1 = 0.371	F/Fref = 2.25	In overexploitation	**Reduce fishing mortality**	New assessment
22	Corallium rubrum	LBSPR				Possibly overexploited	**Reduce fishing mortality**	New assessment; qualitative advice (F/M = 1.28)
22,23	Merluccius merluccius	a4a	Fc = 0.92, Bc = 6524	F0.1 = 0.151	F/Fref = 6.09	In overexploitation, with relatively intermediate biomass	**Reduce fishing mortality**	New assessment; showing consistent results with an assessment presented for GSA 22 alone but using different historical catch series
22	Mullus barbatus	a4a	Fc = 0.25, Bc = 6535	F0.1 = 0.29	F/Fref = 0.86	Sustainable exploitation, with relatively high biomass	**Do not increase fishing mortality**	Revised assessment with new sub-model settings
22	Parapenaeus longirostris	a4a	Fc = 1.95, Bc = 4026	F0.1 = 0.522		In possible overexploitation	**Reduce fishing mortality**	Revised assessment with new catch data. Qualitative advice
25	Raja clavata	AMSY				Possibly sustainably exploited	**Do not increase fishing mortality**	New Assesment; qualitative advice (F/Fref = 0.15, B/Btgt = 1.91)
25	Mullus barbatus	SAM	Fc = 0.76, Bc = 27	F0.1 = 0.27	F/Fref = 2.81	In overexploitation, with relatively intermediate biomass	**Reduce Fishing Mortality**	Updated Assessment

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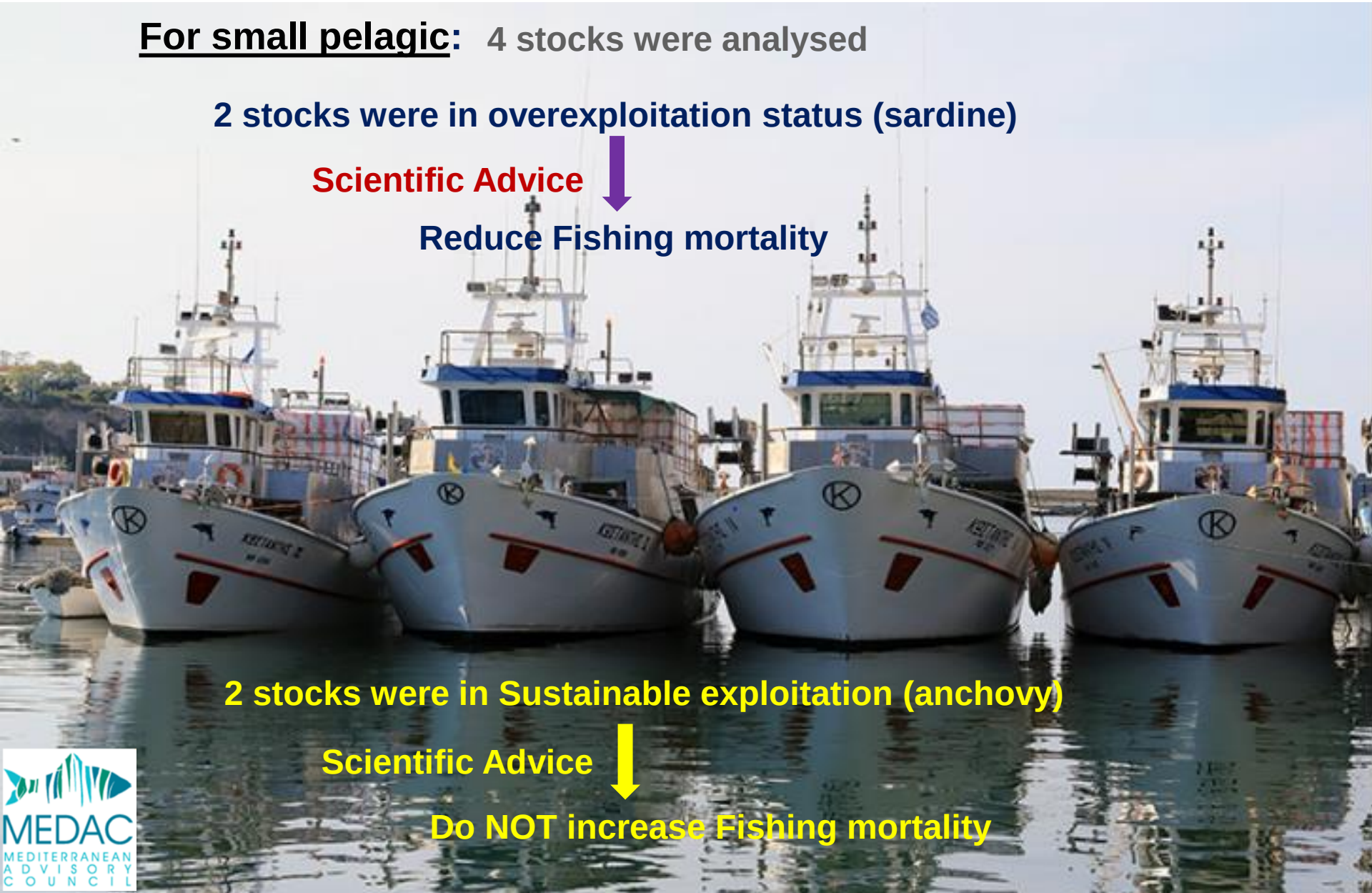
Conclusions of stock assessment results GFCM WGSASP



For small pelagic: 4 stocks were analysed

2 stocks were in overexploitation status (sardine)

Scientific Advice

Reduce Fishing mortality

2 stocks were in Sustainable exploitation (anchovy)

Scientific Advice

Do NOT increase Fishing mortality

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Performed assessments

Table 2. Scientific advice on the status of the **small pelagic** stocks assessed in the eastern EU Mediterranean, including WGSASP comments

GSA	Species	Method	Quantitative Status	Stock Status	Scientific Advice	WG Comments
20	Anchovy	SPiCT	B/Bmsy=1.88, F/Fmsy=0.096	**Sustainable exploitation**	Do not increase fishing mortality	Assessment was considered validated providing **qualitative advice**
20	Sardine	SPiCT	B/Bmsy=0.69, F/Fmsy=1.113	**In overexploitation**	Reduce fishing mortality	Assessment was considered validated providing **qualitative advice**
22	Anchovy	a4a, SAM, SPiCT	B/Bmsy=1.51, F/Fmsy=0.222	**Sustainable exploitation**	Do not increase fishing mortality	**Qualitative advice**
22	Sardine	a4a, SPiCT	F/Fmsy=1.39, B/Bmsy= 0.357	**In overexploitation**	Reduce fishing mortality	**Qualitative advice**

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The WGSAD, conclusions and recommendations relevant to eastern Med EU MS:

1. Gradual **progress** to more complicated methods (from VPA to SCAA)
2. Assessing species at the **correct stock unit level** (e.g. the MEDUNITS project).
3. WGSAD noted many hake models estimated high exploitation ratios (F/Ftgt) sustained over time, but with no evident consequences on SSB; this was likely due to the **misspecification of trawl selectivity** (dome-shaped but not configured as such) - recommended **reflection**
4. Provide **adequate diagnostics** of model performance utilizing newly available tools/packages (e.g "a4adiags" for a4a).
5. Provide **consistent information** with terminology agreed ("New assessment"; "Updated"; "Revised").
6. **Extend the time series of catches** as far back as possible.
7. Identify the spatial resolution of catches from fishing trips exploiting multiple GSAs. This is particularly important for the assessment of **hake**, **deepwater rose shrimp and deep water red shrimp stocks.**
8. Consider **drivers other than fishery-related** ones (e.g. environmental) - stock productivity; shrimps.
9. For filling data gaps in survey and/or catch-at-size data it is encouraged the use of modeling approaches that take into account spatial and temporal parameters.
10. When biomass RPs are not estimated by the assessment model, **do NOT report on relative biomass**.
11. **Revise the GFCM framework for the provision of advice with special emphasis on biomass reference points** and on the explicit inclusion of a framework for **data-limited assessments**.
12. Need for a number of new and additional benchmark sessions, for GSAs 20, 22 and 23 on hake.

13. The WGSAD reiterated the importance of **establishing a clear path for the consideration of STECF assessments within the GFCM**, with particular emphasis on assessments that only cover EU GSAs.

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The WGSASP, conclusions and recommendations relevant to eastern Med EU MS:

1. A total of 4 stocks were analysed. Advice was validated but qualitative for sardine (in overexploitation) and anchovy (sustainably exploited).
2. **Understanding the implications and biological meaning of the assumptions** at the basis of the assessment models used (e.g. impacts of priors on the results of SPiCT models and assumptions related to length-based models (e.g. LBSPR, VIT, LIME))
3. Importance of using **more than one methodology and evaluating consistency in the results** of all models for data-poor/limited/uncertain situations.
4. **Increase the number of stocks assessed** (particularly in the **eastern** and southern Mediterranean).
5. **Need to avoid gaps** in the time series of surveys (e.g. **GSA 22**, GSA6, GSA1) that result in **high uncertainties in assessment models**.
6. M**aintain the same assumptions of the previous year** when performing **update** assessments so to make years comparable (if benchmarked assessments then full justification).
7. The WGSASP given the shrinkage in ages and lengths that has been observed for several stocks, acknowledged **the need to explore the contribution of undersized specimens in the catch for small pelagic species with a MCRS i.e. sardine, anchovy, mackerel as well as sardinella and determine length at first maturity in the different areas depending on available information**. This can be explored in a dedicated session prior to the WGSASP meeting. Based on a common workplan, data should cover the last ten years, aggregated per 0.5 cm basis, presented by GSA.
8. **Retrieve information on CPUE** that scaled based on biomass indices could be used to assist modelling.

Thank you for your attention

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