Food and Agriculture Organization of the United Nations

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

Rome, 4 March 2022

TO WHOM IT MAY CONCERN
Division for Ocean Affairs and the Law of the Sea, Office of Legal Affairs

Dear colleagues,

With reference to your communication dated 6 January 2022 / LOS/FISHERIES/SG report/2022, please find here below a technical summary about GFCM actions relating to the impacts of bottom fishing on vulnerable marine ecosystems and the long-term sustainability of deep-sea fish stocks.

Kind regards,
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SUMMARY OF THE VARIOUS ACTIONS AND MEASURES BY GFCM FOR THE MANGEMENT OF DSF AND THE PROTECTION OF VMEs (MARCH 2022)

1. **Establishment of four Fisheries Restricted Areas to protect VMEs and deep-sea habitats** https://www.fao.org/gfcm/data/maps/fras
    - Deepwater FRA below 1000 m (bottom trawl and towed gear is forbidden)
    - Lophelia reef Santa Maria di Leuca (2006)
    - Eratosthenes Seamount (2006)
    - Nile Delta area cold hydrocarbon seeps (2006)
    - Bari Canyon (2021)

2. **Establishment of a GFCM Working Group on VMEs (2017, 2018, since 2022 WGVME-EFH)**
    - The 2017 and 2018 meetings of the WGVME (GFCM, 2017b; GFCM, 2018c) agreed and revised the **technical elements for the protection of VMEs** in the GFCM area of application, including:
        - issues on the determination of the **bottom fishing footprint**,
        - the establishment of **Encounter protocols and VME indicator taxa/features** endorsed by the forty-second session of the GFCM - FAO, 2019c)
        - the establishment of **Exploratory fishing protocols** (endorsed by the forty-second session of the GFCM - FAO, 2019c).
        - agreed on the creation of a tool for identifying VME indicator hotspots, and ultimately VMEs, through the statistical analysis of all datasets available: the **GFCM Database on Sensitive Benthic Habitats and Species**.
    - The 2019 meeting of the WGMPA mainly discussed issues related to **essential fish habitats (EFH)**, in response to Resolution GFCM/41/2017/5 requiring the establishment of a network of EFHs.
    - In 2022 the **WGVME-EH of 2022** will meet on **22-24 March 2022**

3. **Resolution GFCM/43/2019/6 on the establishment of a set of measures to protect vulnerable marine ecosystems formed by cnidarian (coral) communities in the Mediterranean Sea**
    - This resolution establishes a direct link between fisheries and the conservation of biodiversity by encouraging CPCs to implement transitional measures aimed at preventing significant adverse impacts (SAI) on deep-sea VME.
    - The measures regulate the **activities of large vessels** (> 15 m length overall) operating **bottom contact gear** (e.g. bottom trawls) **deeper than 300 m or on seamounts**, particularly of those **targeting deep-water shrimp species**.
    - The aim is to **prevent or reduce their impact on the coral communities** protected under Annex II of the Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean (SPA/BD Protocol) of the Barcelona Convention (1992).
    - The measures are in line with the **GFCM protocols for the protection of VME** endorsed by the forty-second session of the GFCM (FAO, 2019c), including:

- observation of **encounter rules**: deep-sea fishing vessels should report the details (position, taxon and weight) of any encounters with VME indicator taxa
- application of an **exploratory deep-sea bottom fishing protocol** by deep-sea fisheries vessels operating in previously unfished areas. This includes the fact that any **VME indicator taxa comprising bycatch** should be reported and an **adequate level of onboard observer coverage** established, particularly in the exploratory/initial stages of deep-sea fishing.
- **collation and analysis of all available data** sources by the SAC (facilitated by the CPCs involved) who should provide **advice on areas where VME indicator taxa are known or likely to occur**, as well as **expert views on potential additional measures** for the protection of VME indicator species, including **threshold levels**, **move-on rules**, **level of scientific observer coverage**.
- CPCs are encouraged to **voluntarily establish research projects** to collect relevant data.

A list of deep-water Mediterranean VME Indicators and their characteristic taxa is provided (see Annex 1).

4. Database of sensitive benthic habitats and species

- The **GFCM database of sensitive benthic habitats and species** was **developed and launched in 2020** as a scientific tool to support the work carried out on deep-sea benthic ecosystems and EFH.
- The development of such a database represents one of the steps taken by the GFCM towards improving the management of deep-sea fisheries and preventing any potential adverse impacts that they may have on VMEs.
- The database is an **online platform** containing information on the **distribution of VME indicator taxa, habitats and features** in the Mediterranean Sea (GFCM, 2017b, 2018c)
- It has the additional important aim of **facilitating data analysis to identify possible priority areas for conservation purposes** and to provide the SAC with scientific advice on VMEs.
- Hosted in a password-protected environment where data consultation dashboards and data diagnostic instruments are made available to experts, including through advanced filters and search criteria, providing basic geographic information system features and allowing for the analysis of aggregated data outputs and representations. Integrated instruments facilitating data consultation, visualization and analysis exist for users familiar with data analysis tools, allowing online execution of R code for advanced map plotting and spatial analysis of datasets present in the database.
- At present, the database of sensitive benthic habitats and species includes only records (numbering almost 600) on the distribution of the alcyonacean bamboo coral (*Isidella elongata*), gathered by means of different types of surveys between 1974 and 2018 across different Mediterranean subregions. Data on other benthic species potentially forming VME will be added in the future, as they become available within the context of relevant GFCM technical bodies dealing with VME- and EFH-related issues.

5. **Set up of an official data call to gather data on the occurrence of VME indicators across the GFCM area of application**
    - The 44th annual session of the GFCM in 2021 Commission endorsed the establishment of **an annual data call** to **collect data on the occurrence of sensitive species and habitats that may form VMEs** across the Mediterranean and the Black Sea to populate the above-mentioned database.
    - Data should come from scientific surveys as well as from commercial fisheries, if available.
    - The data call is being finalized at time of writing.

6. **Deep water red shrimp fisheries and VMEs**
    - Three recommendations are in place to manage deep water red shrimp (DWRS) fisheries in the eastern-central Mediterranean (Recs GFCM/2018/3, GFCM/2018/4, GFCM/2019/6).
    - The SAC has been working on **underpinning the spatial extent of these fisheries** for the past few years and work done resulted in an analysis of the fishing grounds in the eastern and central subregions using AIS and multicriteria decision analysis – the results for these studies included a **preliminary analysis to overlay the emerging fishing grounds with the information contained in the Database of sensitive benthic habitats and species**.
    - The work was presented at the Subregional committees of the eastern (SRC-EM) and central (SR-CM) Mediterranean in 2021. Discussions led to the 22nd session of the SAC **endorsing a roadmap to guide the work needed to analyze the overlap between VMEs and the DWRS fishery**.

7. **Publications of manuals and reviews**
    - Carpentieri, P., Nastasi, A., Sessa, M. & Srour, A., eds. 2021. *Incidental catch of vulnerable species in Mediterranean and Black Sea fisheries: a review.* GFCM Studies and Reviews No. 101. Rome, FAO https://www.fao.org/gfcm/publications/studies-reviews/101/en/

    - FAO. 2020. The State of Mediterranean and Black Sea Fisheries 2020. General Fisheries Commission for the Mediterranean. Rome. https://doi.org/10.4060/cb2429en https://www.fao.org/3/cb2429en/cb2429en.pdf

    - FAO. 2019. *Monitoring the incidental catch of vulnerable species in Mediterranean and Black Sea fisheries: Methodology for data collection*. FAO Fisheries and Aquaculture Technical Paper No. 640. Rome, FAO https://www.fao.org/gfcm/publications/series/technical-paper/640/en/

8. **Organization of a Training course on the identification of vulnerable species incidentally caught in Mediterranean & Black Sea fisheries (including macrobenthic invertebrates)** https://www.fao.org/gfcm/news/detail/en/c/1468852/

9. MAIN REFERENCES

GFCM. 2017b. Report of the first meeting of the Working Group on Vulnerable Marine Ecosystems (WGVME). Malaga, Spain, 3–5 April 2017 [online]. http://www.fao.org/gfcm/technical-meetings/detail/ en/c/885358/

GFCM. 2018c. Report of the second meeting of the Working Group on Vulnerable Marine Ecosystems (WGVME). FAO headquarters, Rome, Italy, 26–28 February 2018 [online]. http://www.fao.org/gfcm/ technical-meetings/detail/en/c/1142043/

FAO. 2019c. Report of the forty-second session of the General Fisheries Commission for the Mediterranean (GFCM), FAO headquarters, Rome, Italy, 22–26 October 2018. GFCM Report No.42. Rome. 146 pp. (also available at http://www.fao.org/3/ca4047en/ca4047en. pdf).

FAO. 2020b. Report of the forty-third session of the General Fisheries Commission for the Mediterranean (GFCM), Athens, Greece, 4–8 November 2019. GFCM Report No. 43. Rome. 202 pp. (also available at http://www. fao.org/3/ca8379en/CA8379EN.pdf).

Annex 1 - Mediterranean VME indicator features, habitats and taxa

(a) Mediterranean VME indicator features

The following features potentially support VMEs:

Seamounts and volcanic ridges
Canyons and trenches
Steep slopes
Submarine reliefs (*slumped blocks, ridges, cobble fields, etc.*)
Cold seeps (*pockmarks, mud volcanoes, reducing sediment, anoxic pools, methanogenetic hard bottoms*)
Hydrothermal vents

(b) Mediterranean VME indicator habitats

The following habitats potentially support VMEs:

Cold-water coral reefs
Coral gardens
- Hard-bottom coral garden
- Soft-bottom coral gardens

Sea pen fields
Deep-sea sponge aggregations
- "Ostur" sponge aggregations
- Hard-bottom sponge gardens
- Glass sponge communities
- Soft-bottom sponge gardens

Tube-dwelling anemone patches
Crinoid fields
Oyster reefs and other giant bivalves
Seep and vent communities
Other dense emergent fauna

(c) Mediterranean VME indicator taxa

Phylum	Class	Subclass (Order)
Cnidaria	Anthozoa	Hexacorallia (Antipatharia, Scleractinia)
		Octocorallia (Alcyonacea, Pennatulacea)
		Ceriantharia
	Hydrozoa	Hydroidolina
Porifera (sponges)	Demospongiae	
	Hexactinellida	Amphidiscophora
		Hexasterophora
Bryozoa	Gymnolaemata	
	Stenolaemata	
Echinodermata	Crinoidea	Articulata
Mollusca	Bivalvia	Gryphaeidae (*Neopycnodonte cochlear, N. zibrowii*)
		Heterodonta* (Lucinoida) (e.g. *Lucinoma kazani*)
		Pteriomorphia* (Mytiloida) (e.g. *Idas modiolaeformis*)
Annelida*	Polychaeta	Sedentaria (Canalipalpata) (e.g. *Lamellibrachia anaximandri*, *Siboglinum* spp.)
Arthropoda*	Malacostraca	Eumalacostraca (Amphipoda) (e.g. *Haploops* spp.)

*only chemosynthetic species that indicate the presence of a cold seep or hydrothermal vent are considered