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

GFCM Draft Contribution to UN-RES 74/18

The GFCM, as one of the existing Regional Fisheries Management Organization (RFMO) having a mandate on bottom fisheries, has been fulfilling its duty to regularly report progress made in connection with relevant decisions by the UNGA (Resolutions: 64/72, 66/68, and 71/123). Analyses and information on relevant technical and scientific issues, relating to the impacts of bottom fishing on vulnerable marine ecosystems (VMEs) and long-term sustainability of deep-sea fisheries (DSF) in the GFCM area of application, are detailed in this document.

Bottom fisheries in the Mediterranean and Black Sea

The narrowness of the continental shelves in the Mediterranean Sea means that most fishing grounds are relatively close to the coast. Bottom fisheries typically operate on the continental shelf and extend down on the shelf slopes to a depth of around 700–1000 m. The two main deep-water bottom fisheries that occur between 400 and 1000 m in the Mediterranean are the directed bottom trawl fishery for various shrimp species, and the multispecies multi-gear fishery for European hake. The first deep-sea bottom trawl fishery in the Mediterranean was for deep-water rose shrimp in the Ligurian Sea in the 1930s, and later spread to other areas for blue and red shrimp and giant red shrimp. Catches in all areas of the Mediterranean have increased more or less steadily since the 1950s, with some notably lower catches through the 1970s and 1990s. Catches in recent years are among the highest rates recorded. The multispecies European hake fishery uses bottom trawls, gillnets and longlines. The trawlers operate mainly in the shallower waters on the continental shelf and slopes, whereas the gillnetters and longlines operate mainly off the shelf and below 400 m, in deeper waters not suitable for trawling.

In the Black Sea, bottom fisheries are restricted in depth due to the anoxic conditions of the waters below 150–200 m depth. The maximum depth reached by demersal trawling and bottom-set gillnets in the Black Sea basin is around 100–120 m and most frequently between 80–100 m. Trawl fisheries mainly target whiting and mullet while gillnets target turbot.

In 2018, the GFCM defined DSF as:

i. All fishing vessels above 15 m (LOA) operating with bottom contact fishing gear (bottom trawls, longlines, gillnets and pots and traps) fishing for *Aristaeomorpha foliacea, Aristeus antennatus,* or *Plesionika martia;*

ii. All fishing vessels above 15 m (LOA) operating with bottom contact fishing gear (bottom trawls, longlines, gillnets and pots and traps) at depths deeper than 300 m and all offshore seamounts.

Definition/extent of VMEs against the background of the GFCM

The GFCM has not yet defined VMEs within its management measures. Through the application of the ecosystem approach to fisheries, the GFCM has adopted several Fisheries Restricted Areas (FRAs) as a multi-purpose area based management tool used to restrict fishing activities and protect essential fish habitats and deep-sea sensitive habitats. Unlike VMEs, FRA have been defined by the GFCM as "a geographically-defined area in which all or certain fishing activities are temporarily or permanently banned or restricted in order to improve the exploitation and conservation of harvested living aquatic resources or the protection of marine ecosystems" (GFCM, 2007). According to this definition, an FRA can be established to protect any kind of marine resource and habitat (e.g. aggregations of vulnerable sponges,

seamount areas, coralligenous formations, seagrass meadows, spawning grounds and reproduction sites for fish resources, etc.) from relevant fishing activities, therefore following criteria in line with those established for VMEs by the 2009 FAO Deep-Sea Fisheries International Guidelines. The proposal for the establishment of a new FRA is submitted to the GFCM by a contracting party or a cooperative non-contracting party (CPC), institution or scientist, through the compilation of a form, providing information on the area, site description, biological features, human activities and impacts, legal status and objective of the FRA, including other elements. A review process is then undertaken prior to the decision of the Commission regarding the adoption of the FRA.

The GFCM has therefore partially addressed the protection of VMEs, as described in UNGA Resolutions 59/25, 61/105, 64/72, 66/68, and 71/123, and others, through the establishment of FRAs in its area of appication (including international waters), as follows:

Deepwater FRA

In 2005, Recommendation GFCM/29/2005/118 prohibited the use of towed dredges and trawl nets at depths deeper than 1000 m. The preamble to this recommendation notes that this is mainly for protection of fish stocks and halting the expansion of fisheries into deeper waters when the stock status is unknown, as a precautionary measure. However, in 2004, the SAC also referred to the protection of vulnerable habitats and strongly advised to refrain expanding deep water fishing operations beyond the limit of 1000 m. This is in view of scientific considerations on the presence, both of unmapped sensitive habitats (deep-water coral banks, sea vents, seamounts, etc.) and of the fragile nature of deep-water fish assemblages as well as the presence of juveniles of different crustacean species at such depths. This precautionary decision addresses both the management of deep-sea bottom fisheries and the protection of deep-sea benthic ecosystems. The area below 1000 m covers a little over 1,700,000 km^2 (about 59 percent of the GFCM area of application).

Deep-sea sensitive habitat FRAs

In 2006, Recommendation GFCM/30/2006/319 established three FRAs in international waters in which fishing activities with towed dredges and bottom trawl nets were permanently prohibited. The aim of the prohibition was to protect deep-sea vulnerable habitats. They are not specifically designated as VMEs by the GFCM, but the management measure applied is similar to the VME closures in other regions.

The Nile delta area cold hydrocarbon seeps FRA (4 378 km^2) is located in Egypt (GSA 26), in the south-eastern corner of the Mediterranean Sea in waters between 300 and 800 m deep off the continental slope. The area hosts an exceptionally high concentration of cold hydrocarbon seeps supporting unique living communities of presumably chemosynthetic organisms such as polychaetes and bivalves.

The Eratosthenes Seamount FRA (10 306 km^2) is located in the eastern Mediterranean Sea, about 100 km south of Cyprus (GSA 25), between the Levantine Platform to the south and the Cyprus margin to the north, near the subduction zone of the African plate. This flat-topped seamount measures approximately 120 km in diameter at the base, and rises 1500 m above the adjacent bathyal plain, with a summit 756 m below sea level. Studies carried out in the area revealed a rich and diverse ecosystem, notably comprised of two species of scleractinian corals (these were the first records of these species from the Levant Basin, and significantly extended their known depth range), a rare deep-water sponge (known previously from a canyon in the western Mediterranean Sea), a remarkably dense population of the deep-water actinarian, and unidentified zoantharians and antipatharians. The high faunal diversity and density indicate a uniquely rich environment in the Levant Basin, possibly an isolated refuge for relict populations of species that have disappeared from the adjacent continental slope. This area likely represents one the pristine environments

found in the Mediterranean Sea, and therefore its protection from fishing activities was considered as a priority.

The Lophelia reef off Capo Santa Maria di Leuca FRA (1005 km^2) is located off the Italian coast in the Ionian Sea (GSA 19) at depths between 350 and 1100 m. Many studies demonstrate the presence of a unique ecosystem of white cold-water corals dominated by two colonial scleractinians and by two solitary corals. The coral colonies consist of bioconstructed build-ups mostly located on muddy mounds widespread in the study area. Other important taxa were identified and classified as characteristic species, associated species, accompanying species and co-occurring species. These species also contribute to the complexity of the Lophelia reef community, with the presence of many suspension feeders and a complex trophic system.

The GFCM also establishes essential fish habitat FRAs that do not necessarily address the protection of VMEs as a conservation priority. The Eastern Gulf of Lion FRA has been established in 2009 in international waters of the north-western Mediterranean Sea, restricting the level of fishing effort of demersal stocks of vessels using towed nets, bottom and mid-water longlines, bottom-set nets, in an area where important spawning aggregations of various species (European hake, monkfish, and lobsters) are reported to occur. Three FRAs in the Strait of Sicily (East of Adventure Bank FRA, West of Gela Basin FRA, and East of Malta Bank FRA) in which fishing activities with bottom trawlers are prohibited for the conservation and management of demersal stocks, including European hake and deep-water rose shrimp, have been established in 2016. The FRA of Jabuka/Promo Pit in the Adriatic Sea, established in 2018, contributes to the protection of important essential fish habitats for demersal stocks such as European hake and Norway lobster. These FRAs, whilst not entirely related to VMEs, also protects any vulnerable habitats that may occur within these closures.

Deep-Sea Fisheries (DSF) and VMEs within the GFCM context

Topics addressing VMEs and the protection of the marine environment and ecosystems in GFCM historically fell under the mandate of the Subcommittee on Marine Environment and Ecosystems (SCMEE) of the SAC. However, since 2015, they have been discussed in the relevant technical meetings of the sub regional committees, working groups and workshops, such as the GFCM Working Group on Marine Protected Areas (WGMPA) and the Working Group on VMEs. They incorporate issues such as the relation between FRAs and Marine Protected Areas (MPAs) and the identification of potential areas that should be protected within the Mediterranean and the Black Sea.

In 2013, the Commission acknowledged the UNGA Resolution 61/105, 62/177, 63/112, 64/72, 65/38, 66/68 and 67/69 on Sustainable Fisheries. It particularly referred to those paragraphs, which call upon flag States and RFMOs to sustainably manage fish stocks and protect VMEs as well as manage bottom fisheries in the high seas, in order to prevent significant adverse impacts on VMEs and to ensure the long-term sustainability of DSF. The debate on the impacts of DSF on the VMEs in the Mediterranean Sea continued when the first meeting of the Working Group on Marine Protected Areas (WGMPA) was held in 2014. However, it was concluded that the ecological importance of deep-sea and connected offshore ecosystems was probably still poorly recognized by countries, which are currently more focused on the wider protection of coastal zones. Moreover, the socio-economic implications of limiting or forbidding fishing activities in deep-sea areas could pose major challenges. While taking into account these challenges, the GFCM stressed the need to start protecting deep-sea habitats and create coherent networks of MPAs and biological corridors for living resources, including in high seas. In other words, the GFCM keeps echoing the importance of VMEs protection to policy-makers and governments who should take into consideration (more and better) the available tools and institutional frameworks to develop rational and effective protection plans, also in waters beyond national jurisdiction. To this end, GFCM CPCs were encouraged to designate MPAs in those areas, which fall within national waters and that already overlap with the designated GFCM deep-water FRA of 1000 meters in which fishing with towed gears has been forbidden.

Later in 2016, the GFCM was invited to participate in the FAO workshop on the management of DSFs and VMEs in the Mediterranean. It was regarded as an opportunity to address the management of VMEs by GFCM, by reviewing current global and regional practices and discussing relevant international processes and instruments related to deep-sea fisheries and VMEs. Most importantly, conclusions of this workshop were also reflected in the Resolution GFCM/40/2016/2 adopting a mid-term strategy (2017–2020) towards the sustainability of Mediterranean and Black Sea fisheries that clearly calls in one of its targets to "minimize and mitigate unwanted interactions between fisheries and marine ecosystems and environment", the impact of fisheries on VMEs. It called for the promotion of the identification and establishment of new FRAs to protect priority areas within VMEs from harmful fishing activities, and the implementation of monitoring and control systems to ensure the efficiency of these spatial measures, encouraging CPCs to be closely involved in the definition of new FRAs. Following this endeavour, the GFCM organised a scientific Working Group on VMEs (WGVME) in 2017, to discuss the development of appropriate measures related to the protection of VMEs according to the UN mandate (UNGA Resolutions 59/25, 61/105 and 64/72) in the GFCM area of application. During the meeting, experts reviewed the current GFCM management measures specific to deep-sea fisheries and biodiversity protection and the relevant associated conclusions and recommendations from previous meetings on area-based management measures in relation to DSF and VMEs. Proposals were formulated including the adoption of VME indicators (features, habitats and taxa) and management elements for the establishment of a VME encounter protocol, of an exploratory deep-sea bottom fishing protocol, and for the mapping of the existing deep-sea fishing areas for the Mediterranean.

In line with measures in place by other RFMOs, the GFCM agreed on the need to further discuss the proposed technical elements, calling for a second WGVME meeting. This latter was held in 2018, reviewing the technical elements for the protection of VMEs in the GFCM area of application, which led to decide on the creation and use of a GFCM VME geodatabase. The WGVME in 2018 also agreed on a process for the establishment and protection of VMEs while determining the fishing footprint. Afterwards, the SAC revised the technical elements for the protection of VMEs, suggesting a phased approach that was later endorsed by the Commission in 2018 which formally adopted the technical elements, namely the Protocols for the protection of VMEs in the GFCM area of application (Appendix). The first phase triggers the voluntary adoption of an encounter reporting protocol while concurrently working towards the determination of the footprint of deep-sea fisheries and the identification of potential thresholds of VME indicator abundance beyond which (semi-) automatic move-on rules. While, the second phase foresees the adoption of an exploratory fishing protocol and an encounter protocol including move on rules. Nonetheless, no binding decision for CPCs has been adopted yet on this matter. The paragraphs below describe the main technical features of the GFCM technical elements.

GFCM technical elements for the management of VMEs and DSFs (GFCM, 2018)

Bottom fishing areas and exploratory fishing protocols

GFCM fisheries are managed by a set of measures that regulate the extent of fishing and include requirements on fishing effort, Vessel Monitoring System (VMS), minimum landing size, seasonal and permanent closures, data collection, etc. The GFCM has started to implement multiannual management plans for selected fisheries and stocks since 2016, when it addressed deep-sea bottom fisheries exploiting European hake and deep-water rose shrimp in the Strait of Sicily. Among the set of measures, the plan also established permanent spatial closures (FRAs of Strait of Sicily). In general, the most important decision regarding deep-sea bottom fisheries is Recommendation GFCM/29/2005/1 (amended in 2016) that established a ban on using towed dredges and trawl nets below 1000 m. As aforementioned, this measure was adopted to limit the potential impact of these fisheries on poorly known deep-sea floor ecosystems, in response to the call for action by the UNGA Resolution 59/25 in 2004 to minimize or avoid the effect of trawling in deep habitats.

Because of the aforementioned decision, deep-sea bottom trawl fisheries in the Mediterranean Sea cannot expand further beyond 1000 m depth. Overall, most of the Mediterranean basin above 1000 m is considered to be open to fisheries. The GFCM is undertaking several actions to support and guide the implementation of monitoring, control and surveillance (MCS) practices through the integrated use of technologies in line with regional standards, including VMS and automatic identification system (AIS), in order to enhance the knowledge of the distribution of fishing effort in its area of application.

According to the technical elements adopted in 2018 for the establishment of an exploratory deep-sea bottom fishing protocol in the GFCM area of application, GFCM CPCs of flagged fishing vessels undertaking exploratory (or new) deep-sea bottom fishing should fill the exploratory deep-sea bottom fishing protocol, including the information mentioned in the APPENDIX. Upon notification by the vessel captain, the CPCs should forward the exploratory deep-sea bottom protocol form reported by the concerned vessel, to the GFCM Secretariat. Then, the Secretariat compiles the data received with the exploratory deep-sea bottom protocol and regularly informs the SAC that reviews this information.

Vulnerable Indicators and Encounter protocol

A list of VME indicators (features, habitats and taxa) for the region, and of a precautionary VME encounter protocol were identified and endorsed by the GFCM (APPENDIX) to consolidate the technical work done within the remit of the GFCM WGVME in 2017 and 2018. In 2018, the proposed encounter protocol clearly explained the procedures following an encounter with VME Indicator Taxa during DSF, as it instructs the vessel captain to immediately report the encounter to the flag State. Upon notification by the vessel, relevant CPCs are supposed to forward the encounter information reported by the concerned vessel to the GFCM Secretariat. Then, the Secretariat compiles the data received with the encounter protocols and sets up maps of the distribution of encounters with VME Indicator Taxa, including their abundance by group. In this respect, the GFCM Secretariat is required to regularly inform the SAC about the reported catches of VME Indicator Taxa in Mediterranean fisheries, to review the reported information. Based on the best scientific evidence available, the Committee evaluates the occurrence of VMEs and proposes to the Commission, as appropriate, the establishment of new management measures, including FRAs, to ensure the protection of these ecosystems. The use of scientific observers to assist the crew in data collection is encouraged in order to allow the identification of the VME Indicator Taxa to the lowest taxonomic level and to obtain information on bycatch composition.

In parallel, CPCs are also encouraged to consider adopting temporary closures and apply these to their flagged vessels if they consider that the encounter has identified a VME. Any measure adopted in this sense is reported to the GFCM Secretariat for further notification to the SAC. However, considering that no formal legal decision has been taken yet on these reporting instruments, as defined before, the Committee has lately suggested adopting a phased approach to use the technical elements for the protection of VMEs. The first phase triggers the adoption of an encounter reporting protocol while concurrently working towards the determination of the footprint of DSF and the identification of potential thresholds of VME indicator abundance beyond which (semi-) automatic move-on rules. Then, the second phase foresees the adoption of an exploratory fishing protocol and an encounter protocol including move-on rules.

In 2019, the WGMPA also affirmed the importance of developing a database on VME indicator features, habitats and species in the Mediterranean Sea and agreed that this should be a scientific tool in support of the work of the relevant GFCM technical groups. The integration of fishery-dependent and fishery-independent data into a common GFCM database would better support the SAC in providing enhanced scientific advice to the Commission towards the adoption of relevant measures in the future. The GFCM geodatabase would be different from and complementary to the FAO VME Database (that includes the maps of the GFCM FRAs). While the FAO database shows managed fisheries areas, the GFCM database would be a scientific repository of data about the distribution of sensitive benthic species and habitats

throughout the Mediterranean Sea, with the final objective of identifying priority areas for which fisheries protection measures would be proposed. Information on sensitive benthic species and habitats in the GFCM area of application is collected and submitted to the GFCM Secretariat though a standard form included in the GFCM geodatabase. Subsequently, the SAC endorsed the development of the GFCM georeferenced database on sensitive benthic species and habitats, aimed to support the identification of priority areas for which measures to prevent significant adverse impact from fisheries on potential VMEs. In a second instance, and once the database is populated with relevant information and priorities are identified, protection measures to prevent negatives impacts should be adopted.

The Mapping of existing deep-sea fishing areas

In the last meeting of the SAC (2019), it was recommended to adopt a binding decision on mapping existing deep-sea fishing areas in the GFCM area of application, according to agreed technical elements (GFCM 2018), including through the collection of scientific information, highlighting the need for a clear roadmap and timetable for action. The proposed elements envisage the GFCM to map the existing deep-sea fishing areas in the portion of its area of application where deep-sea bottom fishing has occurred up to and including 2019. GFCM CPCs with vessels involved in "deep-sea bottom fisheries" should submit to the extent possible, comprehensive maps of existing deep-sea bottom fishing areas to the GFCM Secretariat. The maps are based on VMS/AIS data and/or other available geo-reference data and should be expressed in precise spatial and temporal resolution. The priority should be given to bottom trawling below 300 m, but it is highly desirable to map other types of fishing gears that reach the seafloor during normal use, e.g. bottom set longlines, gillnets, trammel nets and pots. Then, the GFCM Secretariat should compile a composite map, preferably by gear type, of the existing deep-sea bottom fishing areas within the GFCM area of application. Afterwards, the SAC should review this information to adopt the map defining the existing fishing areas in the GFCM area of application, based on the available scientific evidence.

APPENDIX

Protocols for the protection of VMEs in the GFCM area of application

A –VME encounter reporting protocol in the GFCM area of application

1. Introduction

Resolutions of the United Nations General Assembly on sustainable fisheries of 2004[1], 2006[2] and 2009[3] call upon regional fisheries management organizations (RFMOs) to take urgent action to protect vulnerable marine ecosystems (VMEs) from significant adverse impact in areas beyond national jurisdiction.

2. Objective

Further implement the precautionary approach for managing deep-sea fisheries (DSF) with respect to VMEs, due to the difficulty in acquiring data on VMEs location and extent and with a view to avoiding the risk of significant adverse impacts (SAIs) by fisheries, GFCM should adopt a VME Encounter Protocol for the DSF operating in its area of application.

GFCM Contracting Party or Cooperating non-Contracting Party (CPCs) should consider, as necessary, applying additional management measures to their flagged vessels undertaking DSF to avoid overexploitation of resources and to avoid SAIs on VMEs.

3. Definitions

The list of VME Indicator Features, Habitats and Taxa for the Mediterranean Sea is given in Annex 1.

4. Scope

- *Geographical coverage:* Mediterranean Sea (GSAs 01 to 28)
- *Fisheries*

The following fisheries shall be considered:

iii. all fishing vessels above 15 m (LOA) operating with bottom contact fishing gear fishing for *Aristaeomorpha foliacea, Aristeus antennatus,* or *Plesionika martia*

iv. all fishing vessels above 15 m (LOA) operating with bottom contact gears (bottom trawls, longlines, gillnets and pots and traps) at depths deeper than 300 m and all offshore seamounts;

For the purposes of these technical elements, the fisheries described above shall be referred to as "deep-sea fisheries" (DSFs).

5. Encounter protocol

- *Encounter:* an encounter with VME Indicator Taxa is defined as any catch of VME Indicator Taxa obtained by any DSF.

Encounter rule: following an encounter with VME Indicator Taxa during DSF, the vessel captain shall immediately report the encounter to the flag State, on the form provided in Annex 2, including the following information:

[1] A/RES/59/25
[2] A/RES/61/105
[3] A/RES/64/72

i. the position of the vessel, either by the start and end point of the tow or set, or by another position that is closest to the exact encounter location;

ii. the fishing characteristics of the vessel;

iii. the groups of the VME Indicator Taxa encountered and the best estimates of their live weight (kg).

6. Reporting to GFCM Secretariat

Upon notification by the vessel captain, as described above, relevant CPCs shall forward, within 30 days, the encounter information reported by the vessel captain, to the GFCM Secretariat, including by electronic means.

7. Review of the information gathered by mean of the VME Encounter Protocol

The GFCM Secretariat shall compile the data received with the encounter protocols and set up maps of the distribution of encounters with VME Indicator Taxa, including their abundance by group. The GFCM Secretariat shall regularly inform the SAC about the reported catches of VME Indicator Taxa in Mediterranean fisheries. The SAC shall review this information and, based upon the best scientific evidence available, evaluate the occurrence of VMEs and propose to the Commission, as appropriate, the establishment of new management measures, including FRAs, to ensure the protection of these ecosystems.

8. Observers

The use of scientific observers to assist the crew in data collection is encouraged in order to allow the identification of the VME Indicator Taxa to the lowest taxonomic level and to obtain information on bycatch composition.

9. CPCs responsibilities

CPCs should consider adopting temporary closures and apply these to their flagged vessels if they consider that the encounter has identified a VME. Any measure adopted in this sense should be reported to the GFCM Secretariat for further notification to the SAC.

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

Annex 2

VME encounter reporting in the GFCM area of application

Separate forms to be completed for each deployment of the fishing gear (haul/set) in which VME Indicator Taxa are caught.

A. Fishing Trip Information	
Country:	
Vessel name:	
Captain (name and last name):	
Date of encounter (dd/mm/yyyy):	
B. Fleet and gear information[4]	
Fleet segment:	
Fishing gear:	
C. VME Encounter coordinates	
GSA:	**Statistical grid:**
Point 1 (Start)	**Point 2 (End)**
Latitude:	Longitude:
Latitude:	Longitude:
Fishing depth (average or range, m):	
VME Feature and/or Habitat (Annex 1 a and b)	
D. VME Indicator Taxa catch information (Annex 1 c)	
Total live weight of **corals** in the haul/set (kg):	
Total live weight of **sponges** in the haul/set (kg):	
Total live weight of **other vulnerable benthic taxa** in the haul/set (kg):	
E. VME Indicator Taxa (by trained observers on board)	
Identify VME Taxa to lowest taxonomic level (species if possible) and provide comments.	
F. Pictures of VME Indicator Taxa (by fishers and/or observers on board)	
Take pictures of the different VME Indicator Taxa and submit them as an attachment to the current form.	

[4] Refer to: GFCM, 2016. GFCM Data Collection Reference Framework (DCRF) (http://www.fao.org/gfcm/data/dcrf/en/)

B - Mapping existing deep-sea fishing areas in the GFCM area of application

1. Introduction

Resolutions of the United Nations General Assembly on sustainable fisheries of 2004[5], 2006[6] and 2009[7] call upon regional fisheries management organizations (RFMOs) to take urgent action to protect vulnerable marine ecosystems (VMEs) from significant adverse impact in areas beyond national jurisdiction.

2. Objectives

The deep-sea bottom fisheries of the Mediterranean target only a few species that are fished on specific habitats. In order to manage these fisheries sustainably, and prohibit any significant adverse impacts they may cause on non-target species and VMEs, it is necessary to map the distribution of the existing deep-sea bottom fishing areas.

3. Definitions

"Existing deep-sea bottom fishing areas", means that portion of the GFCM area of application where deep-sea bottom fishing has occurred according to the map adopted under Section B Paragraph 5.

"Exploratory (or new) deep-sea bottom fishing" occurs during the initial development phase of a DSF when the DSF operates in areas that have not been previously fished or in fished areas following significant changes in the gear or effort, as described in paragraphs 23, 55, 61 and 65 of the *FAO International Guidelines for the Management of Deep Sea Fisheries in the High Seas*.

4. Scope

- *Geographical coverage:* Mediterranean Sea (GSAs 01 to 28)
- *Fisheries*

The following fisheries shall be considered:

i. bottom trawlers above 15 m (LOA) fishing for *Aristaeomorpha foliacea, Aristeus antennatus,* or *Plesionika martia;*

ii. all fishing vessels above 15 m (LOA) operating with bottom contact gears (bottom trawls, longlines, gillnets and pots and traps) at depths deeper than 300 m and all offshore seamounts;

For the purposes of these technical elements, the fisheries described above shall be referred to as "deep-sea fisheries" (DSFs).

5. Management measure

GFCM Contracting Party or Cooperating non-Contracting Party (CPCs) with vessels involved in "deep-sea bottom fisheries" shall submit to the extent possible and no later than 31 December 20[20] comprehensive maps of existing deep-sea bottom fishing areas [during the five-year period of 2012-2016] to the GFCM Secretariat. Maps shall be based on VMS/AIS data and/or other available geo-reference data and be expressed in as precise spatial and temporal resolution as possible. The submission of the detailed gear deployment position information will facilitate the mapping process. Priorities should be given to bottom trawling below 300 m, but it is highly desirable to map other types of fishing gears that contact the seafloor during normal use, e.g. bottom set longlines, gillnets, trammel nets, and pots. Contracting Parties may, in the future, consider the possibility of refining these maps on the basis of haul-by-haul information, if available. GFCM Secretariat shall compile a composite map, preferably by gear type, of the existing deep-

[5] A/RES/59/25
[6] A/RES/61/105
[7] A/RES/64/72

sea bottom fishing areas within the GFCM area of application. The SAC shall review this information and based upon the scientific evidence available, adopt the map defining the existing bottom fishing areas in the GFCM area of application. The map shall be revised regularly to incorporate any new relevant information.

C - Exploratory deep-sea bottom fishing reporting protocol in the GFCM area of application

1. Introduction

Resolutions of the United Nations General Assembly on sustainable fisheries of 2004[8], 2006[9] and 2009[10] call upon regional fisheries management organizations (RFMOs) to take urgent action to protect vulnerable marine ecosystems (VMEs) from significant adverse impact in areas beyond national jurisdiction.

2. Objectives

To ensure that exploratory or new deep-sea fishing activities are only allowed to expand at a rate consistent with the knowledge and management of that fishery. This will avoid overexploitation of targeted deep-sea fish stocks. Further, great care needs to be taken to ensure that VMEs are mapped and known, and suitable mitigation measures applied to ensure their protection from significant adverse impacts resulting from any new fishery.

3. Definitions

"Existing deep-sea bottom fishing areas", means that portion of the GFCM area of application where deep-sea bottom fishing has occurred according to the map adopted under Section B Paragraph 5.

"Exploratory (or new) deep-sea bottom fishing" occurs during the initial development phase of a DSF when the DSF operates in areas that have not been previously fished or in fished areas following significant changes in the gear or effort, as described in paragraphs 23, 55, 61 and 65 of the *FAO International Guidelines for the Management of Deep Sea Fisheries in the High Seas*.

4. Scope

- *Geographical coverage:* Mediterranean Sea (GSAs 01 to 28)
- *Fisheries:* All fishing vessels above 15 m (LOA) operating with bottom contact gears (bottom trawls, longlines, gillnets and pots and traps) are considered undertaking Exploratory (or new) deep-sea bottom fishing when operating:
  - i. On VME Indicator Features (see Annex 1 a)
  - ii. Outside of the existing bottom deep-sea fishing areas
  - iii. Inside of existing bottom fishing areas with bottom-contact fishing gears not previously used or when significant increases of effort are planned or when a new fishery is developing

5. Management measure

GFCM Contracting Party or Cooperating non-Contracting Party (CPCs) of flagged fishing vessels undertaking exploratory (or new) deep-sea bottom fishing shall be required to complete the Exploratory deep-sea bottom fishing protocol provided in Annex 1, including the following information:

i. the start and end point of each tow or set;

ii. the fishing characteristics of the vessel including the gear used;

iii. the GSA area and the Statistical Grid where the exploratory deep-sea fishing occurred;

[8] A/RES/59/25
[9] A/RES/61/105
[10] A/RES/64/72

iv. the catch, the bycatch, the discards, and fishing effort;

v. VME Indicator Taxa (if any) through the VME Encounter Protocol.

6. Reporting to GFCM Secretariat

Upon notification by the vessel captain, as described above, relevant CPCs shall forward, within 30 days, the exploratory deep-sea bottom protocol form reported by the vessel captain, to the GFCM Secretariat, including by electronic means.

7. Review of the information gathered through the exploratory deep-sea bottom protocol

The GFCM Secretariat shall compile the data received with the exploratory deep-sea bottom protocol and shall regularly inform the SAC. The SAC shall review this information.

8. Observers

The use of scientific observers to assist in data collection and reporting is highly desirable according to the GFCM DCRF[11].

[11]Refer to: GFCM, 2016. GFCM Data Collection Reference Framework (DCRF) (http://www.fao.org/gfcm/data/dcrf/en/).

Annex 3

Exploratory deep-sea fishing reporting in the GFCM area of application (Mediterranean Sea)
Separate forms must be completed for each new exploratory deep-sea fishing trip

A. Fishing Trip Information
Country:
Vessel name:
Captain (name and last name):
Dates of exploratory fishing trip (dd/mm/yyyy format):

B. Fleet and gear information[12]
Fleet segment:
Fishing gear:

Area information	
GSA:	**Statistical grid**[13]**:**
Area fished (coordinates-attach map):	
VME Indicator Feature (if any):	
Depth range fished (m):	
Fishing effort:	

C. Catch summary
List main commercial species and quantities caught during the exploratory deep-sea bottom fishing

D. Bycatch summary
Provide details of bycatch species

D. VME Indicator Taxa
Use the provided VME Encounter Protocol for any catch of VME Indicator Taxa

E. Comments (by fishing crew)

[12] Refer to: GFCM, 2016. GFCM Data Collection Reference Framework (DCRF) (http://www.fao.org/gfcm/data/dcrf/en)
[13] Refer to: Appendix M - Geographic statistical grid for red coral, DCRF. GFCM, 2016. GFCM Data Collection Reference Framework (DCRF)