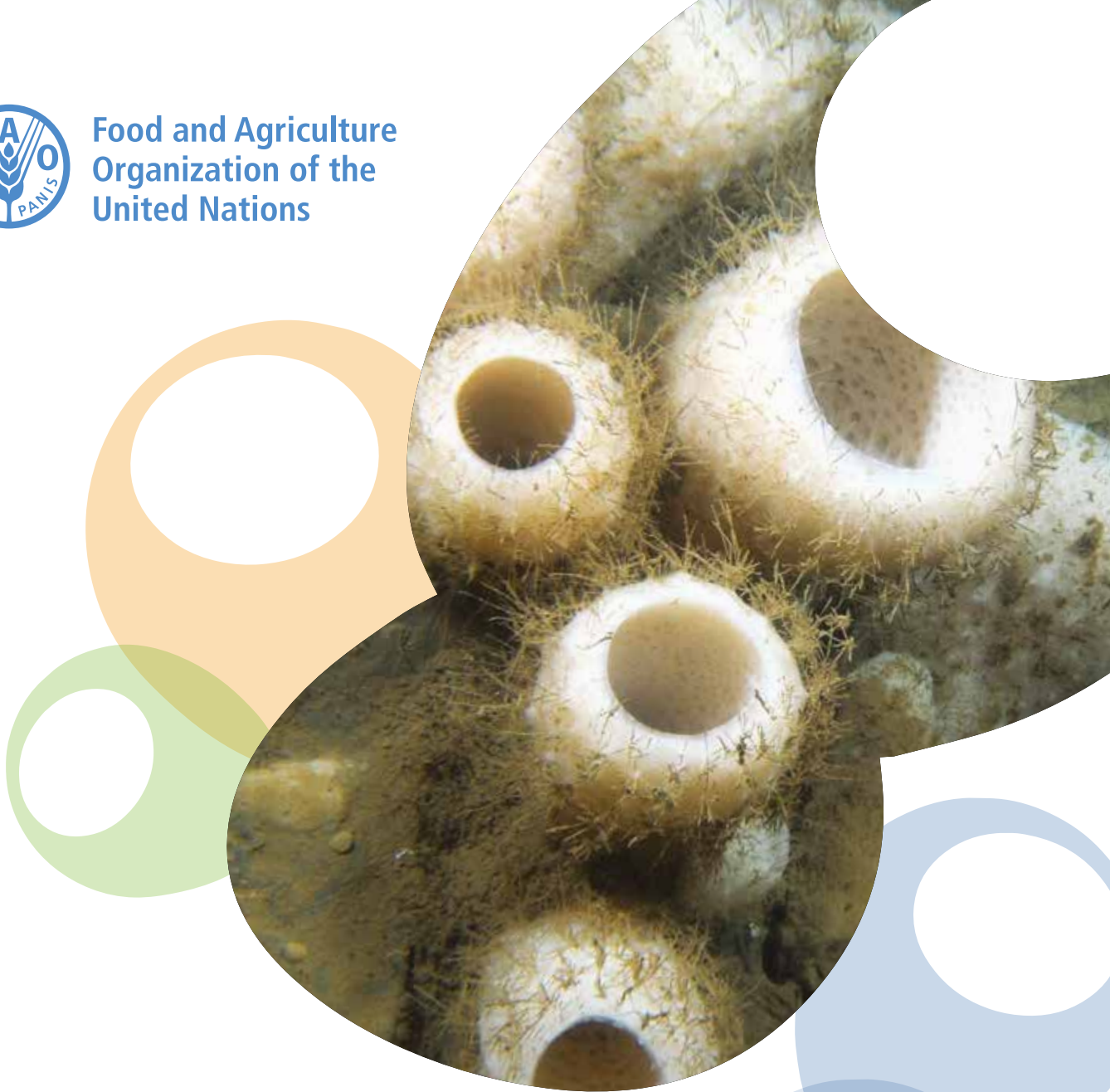
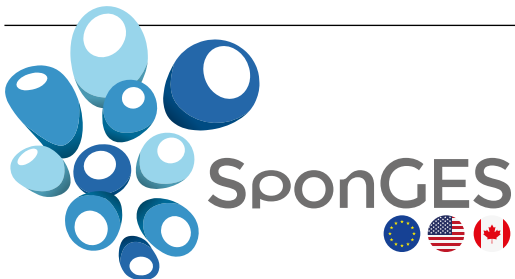




Food and Agriculture
Organization of the
United Nations



Global and regional policies and strategies for identification and protection of VMEs



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Deep-sea fishing occurs over a range of habitats such as continental slopes, seamounts, ridge systems and banks. The bottom may consist of muddy sediments or hard rocky substrates. In many of these habitats species or communities are vulnerable to bottom fishing through dislodgement, crushing and smothering.

International commitments relating to **biodiversity** in sustainable Deep-Sea Fishing in the ABNJ are embodied in a wide range of legal and policy instruments, implemented by States and eight regional bodies:

- Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)
- UN Convention on the Law of the Sea (UNCLOS)
- Convention on the Conservation of Migratory Species of Wild Animals
- The International Convention for the Prevention of Pollution from Ships
- Convention on Biological Diversity (CBD)
- UN Fish Stocks Agreement
- FAO Code of Conduct for Responsible Fisheries
- FAO International Plan of Action for the Conservation and Management of Sharks
- FAO International Plan of Action for the Management of Fishing Capacity
- FAO International Plan of Action for Reducing Incidental Catch of Seabirds in Longline Fisheries
- FAO Technical Guidelines for responsible fisheries. Fisheries Management - 2. The Ecosystem Approach to Fisheries.
- FAO International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing

- UN General Assembly (UNGA) Resolutions 61/105, 64/72, and 66/68
- FAO Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas
- Agreement on the Conservation of Albatrosses and Petrels
- FAO Guidelines to Reduce Sea Turtle Mortality in Fishing Operations
- FAO International Guidelines for the Management of Deep-sea Fisheries in the High Seas
- FAO International Guidelines on Bycatch Management and Reduction of Discards
- FAO Guidelines for Flag State Performance
- FAO Port State Measures Agreement

The most relevant regulations regarding management and protection of VMEs at the **global level** are:

- UNGA Resolutions related to bottom fisheries
- FAO Guidelines on the management of deep-sea fisheries in the high seas
- FAO technical guidelines for responsible fisheries. Fisheries Management - 2. The Ecosystem Approach to Fisheries

At the **regional level**, there is a range of strategies and policies developed by the European Commission:

- EU Integrated Maritime Policy
- EU Marine Strategy Framework Directive (MSFD)
- Common Fisheries Policy (CFP)
- EU Maritime Strategy for the Atlantic Ocean Area

- ⚙️ Galway Statement on Atlantic Ocean Cooperation

Finally, regarding the North Atlantic there are two **regional fisheries management organizations (RFMOs)**, whose mandates include the management of deep-sea fisheries, and a Convention dealing with the protection of the marine environment.

- ⚙️ Northwest Atlantic Fisheries Organisation (NAFO)
- ⚙️ Northeast Atlantic Fisheries Commission (NEAFC)
- ⚙️ OSPAR Convention

These regulations are briefly described below. Full references are presented in the Annex.

UNGA resolutions related to bottom fisheries

UN General Assembly Resolutions (UNGA), beginning in 2004 with Resolution 59/25 and followed in 2006 by Resolution 61/105, called on high seas fishing nations and RFMOs to take urgent action to protect vulnerable marine ecosystems (VMEs) from destructive fishing practices, including bottom trawl fishing, in areas beyond national jurisdiction (ABNJ). The resolution called on States and RFMOs to conduct impact assessments to determine whether these bottom fisheries activities would result in significant adverse impacts on VMEs, among other requirements.

Paragraph 83 of UNGA Resolution 61/105 calls on States and RFMOs to cease bottom fishing where VMEs are known or likely to occur, unless the fishing can be managed to prevent significant adverse impacts on VMEs. Furthermore, the resolution called

for the management of high seas bottom fisheries to ensure the long-term sustainability of target and non-target (bycatch) deep-sea fish stocks.

Paragraphs 119-20 and 122-123 of UNGA Resolution 64/72 reaffirms Resolution 61/105, and asserts that the measures should be implemented by flag States and RFMOs in accordance with the *FAO International Guidelines for the Management of Deep-Sea Fisheries in the High Seas*, prior to allowing or authorising bottom fishing in the high seas. Resolution 64/72 also calls for States and RFMOs to conduct impact assessments for bottom fishing activities on the high seas and to “ensure that vessels do not engage in bottom fishing until such assessments have been carried out” (Paragraph 119(a)). Furthermore, the resolution calls for stock assessments and conservation measures to ensure the long-term sustainability of deep-sea fish stocks and non-target species and the rebuilding of depleted stocks.

FAO international guidelines for the management of deep-sea fisheries in the high seas

The guidelines elaborate the science-based criteria for VME identification and provide guidance for conducting impact assessments for bottom fisheries to determine whether significant adverse impacts would occur. Governance, management and conservation steps are described in the guidelines, and examples of potentially vulnerable species groups, communities and habitats, as well as features that potentially support them are described in an annex.

Key concepts described in the guidelines include *vulnerability* and *significant adverse impacts*.

Vulnerability is related to the likelihood that a population, community, or habitat will experience substantial alteration from short-term or chronic disturbance, and the likelihood that it would recover and in what time frame.

Significant adverse impacts are those that compromise ecosystem integrity (i.e. ecosystem structure or function) in a manner that: (1) impairs the ability of affected populations to replace themselves; (2) degrades the long-term natural productivity of habitats; or (3) causes, on more than a temporary basis, significant loss of species richness, habitat or community types. Impacts should be evaluated individually, in combination and cumulatively. The guidelines describe six factors to consider when determining the scale and significance of an impact.

The guidelines note that marine ecosystems should be classified as vulnerable based on the characteristics it possesses. The guidelines provide scientific criteria for the identification of VMEs, which include: uniqueness or rarity, functional significance of the habitat, fragility, life-history traits of component species that make recovery difficult, and structural complexity.

The guidelines also describe the governance and management frameworks for the sustainable management of deep-seas high seas fisheries and the protection of VMEs, as well as enforcement and compliance issues based on monitoring, control, and surveillance programmes.

To prevent significant adverse impacts on VMEs and to ensure the long-term sustainability of deep-sea high seas fisheries, the guidelines recommend that conservation and management measures should include:

- closing of areas to bottom fisheries where VMEs are known or likely to occur, based on the best available scientific information;
- refraining from expanding the level or spatial extent of effort of vessels involved in high seas bottom fisheries;
- reducing fishing effort of bottom fisheries, as necessary, to the levels needed to provide information for assessing the fishery and obtaining relevant habitat and ecosystem information.

Precautionary conservation and management measures, including catch and effort controls, are essential during the exploratory phase of deep-sea bottom fisheries, and should be a major component of the management of an established deep-sea fishery.

In areas where VMEs have been designated, or are known or likely to occur, based on best available information, States and RFMOs should close such areas to bottom fisheries until appropriate conservation and management measures have been established to prevent significant adverse impacts on VMEs and ensure long-term conservation and sustainable use of deep-sea fish stocks.

All regional bodies with a mandate to manage bottom fisheries in the high seas, and some individual States, have established protocols for their fishing vessels to follow in the event of encountering VME indicator species during the course of their fishing operations, and these include definitions of what constitutes evidence of an encounter.

FAO technical guidelines on the ecosystem approach to fisheries

The technical guidelines for implementing the ecosystem approach to fisheries (EAF) aim to increase the awareness of the importance of interactions between fishery resources and their ecosystems. The guidelines also recognize the multiple objectives and values of fishery resources and marine ecosystems within the context of sustainable development. This includes the importance of disseminating information on the state of the world's fisheries and recent advances in science that highlight both knowledge and uncertainties about the functional value of ecosystems (i.e. the goods and services they are providing).

The purpose of an ecosystem approach to fisheries, therefore, is to plan, develop and manage fisheries in a manner that addresses the multiple needs of societies without jeopardizing the options for future generations to benefit from the full range of goods and services provided by marine ecosystems. Consequently, an ecosystem approach to fisheries strives to balance diverse societal objectives, considering the knowledge and uncertainties about biotic, abiotic and human components of ecosystems and their interactions and applying an integrated approach to fisheries within ecologically meaningful boundaries. The ecosystem approach to fisheries is a means to implement sustainable development concepts in fisheries management by addressing both human and ecological well-being.

Recognizing that fisheries have the potential to alter the structure, biodiversity and productivity of marine ecosystems, and that natural resources should not be allowed to decrease from their level of maximum

productivity, fisheries management under an ecosystem approach to fisheries should respect the following principles:

- ⚙️ fisheries should be managed to limit their impact on the ecosystem to the extent possible;
- ⚙️ ecological relationships between harvested, dependent and associated species should be maintained;
- ⚙️ management measures should be compatible across the entire distribution of the resource (across jurisdictions and management plans);
- ⚙️ the precautionary approach should be applied because the scientific knowledge on ecosystems is incomplete;
- ⚙️ governance should ensure both human and ecosystem well-being and equity.

EU Integrated Maritime Policy

The Integrated Maritime Policy (IMP) provides a holistic approach to all sea-related EU policies. The aim is to draw higher returns from seas and oceans with less impact on the environment by coordinating its policies for fisheries and aquaculture, shipping and seaports, marine environment, marine research, offshore energy, shipbuilding and sea-related industries, maritime surveillance, maritime and coastal tourism, employment in the maritime sectors, development of coastal regions, and external relations in maritime affairs.

Some objectives are:

- ⚙️ maximising the sustainable use of the oceans and seas, in order to enable the growth of maritime regions and coastal regions for:
 - fisheries management: eliminating discards, destructive fishing practices (e.g. bottom trawling in sensitive areas) and illegal, unreported and unregulated fishing, and promoting environmentally safe aquaculture.
- ⚙️ building a knowledge and innovation base for maritime policy, through:
 - a comprehensive European Strategy for Marine and Maritime Research;
 - a European marine science partnership aiming at dialogue among the scientific community, industry and policy makers.

EU Marine Strategy Framework Directive (MSFD)

The Directive establishes a framework within which Member States shall take the necessary measures to achieve or maintain Good Environmental Status in the marine environment by the year 2020.

'Good Environmental Status' in this context refers to the environmental status of marine waters that provide ecologically diverse and dynamic oceans and seas that are clean, healthy, and productive within their intrinsic conditions, and the use of the marine environment is at a level that is sustainable, thus safeguarding the potential for uses and activities by current and future generations.

Annex 1 of the Directive defines eleven Descriptors and a range of indicators thereof: D1 - biological

diversity, D3 - commercially exploited fish and shellfish, D4 - marine food webs, and D6 - sea-floor integrity are of special relevance to the deep-sea fisheries. Descriptor 6 states: sea-floor integrity should be at a level that ensures the structure and functions of the ecosystems are safeguarded and benthic ecosystems, in particular, are not adversely affected.

A Decision establishes criteria to be used by Member States to assess the extent to which Good Environmental Status is being achieved, accompanied with references to applicable methodological standards where available.*

Common Fisheries Policy (CFP)

The CFP aims to ensure that fishing and aquaculture are environmentally, economically and socially sustainable and provide a source of healthy food for EU citizens. Its goal is to foster a dynamic fishing industry and ensure a fair standard of living for fishing communities.

The impact of fishing on fragile parts of the marine ecosystem is not fully understood. For this reason, the CFP adopts a cautious approach which recognises the impact of human activities on all components of the ecosystem. It seeks to make fishing fleets more selective in what they catch, and to phase out the practice of discarding unwanted fish.

The CFP management decisions are based on the best available knowledge about the interactions between fishing and ecosystems, and that both direct and indirect impacts on the marine environment are minimised, by reducing the overall fishing pressure.

*At the time of publication, this Decision is still under review.

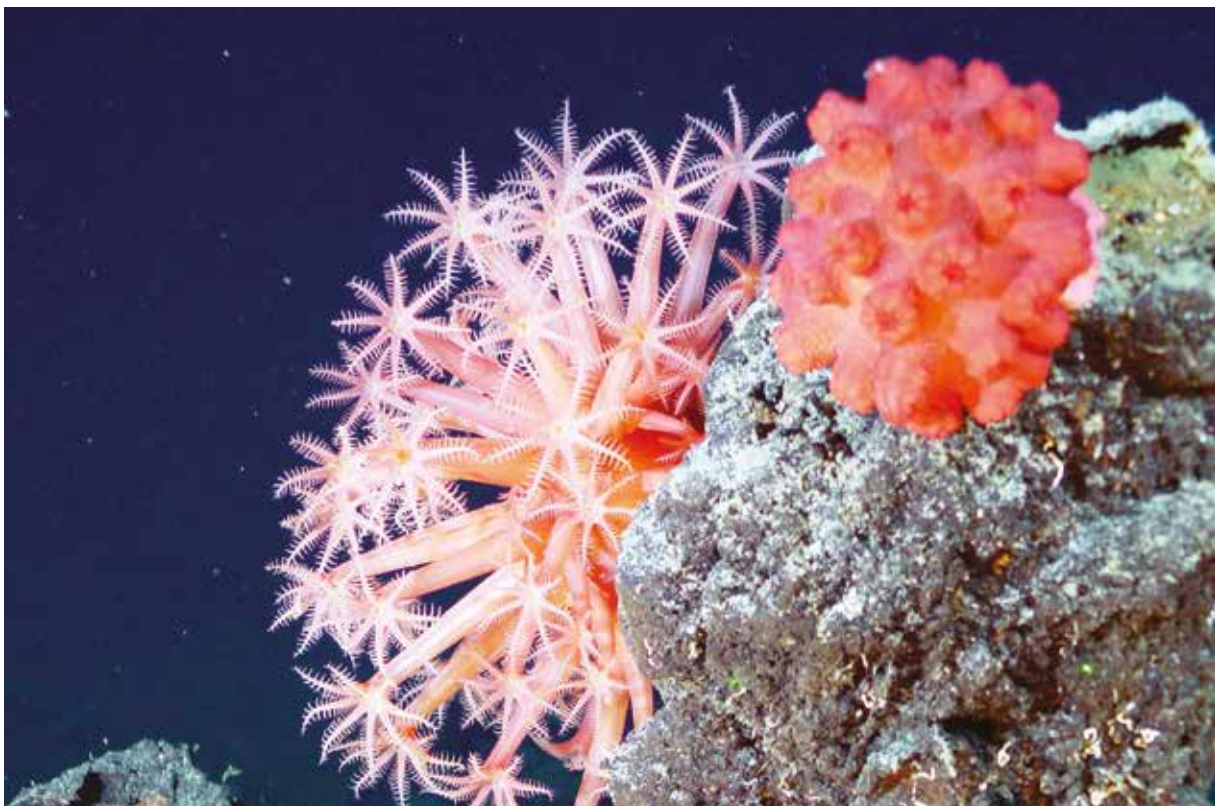
EU Maritime Strategy for the Atlantic Ocean area

The Atlantic Action Plan aims to revitalize the marine and maritime economy in the Atlantic Ocean area by supporting sustainable growth in coastal regions and drive forward the “blue economy” while preserving the environmental and ecological stability of the Atlantic Ocean.

The Action Plan encourages Member States to work together and share information, costs, results and best practices, as well as generate ideas for further areas of cooperation of maritime activities. This includes both traditional activities, such as fisheries, aquaculture, tourism and shipping, as well as emerging ones such as offshore renewables and marine biotech.

The Action Plan considers responses to the challenges of delivering growth, reducing the carbon footprint, using the sea’s natural resources sustainably, responding effectively to threats and emergencies and implementing an “ecosystem” management approach in Atlantic waters.

The actions focus on growing the tourism market, meeting the increasing demand for offshore installations, improving education and training in traditional and emerging maritime industries, as well as extending cooperation in the field of oceanic research in order to better assess climate change impacts.



Galway statement on Atlantic Ocean Cooperation

The European Union, the United States and Canada agreed to join forces on Atlantic Ocean research. The agreement focuses on aligning the ocean observation efforts of the three partners. The goals are to better understand the Atlantic Ocean and to promote the sustainable management of its resources. The work will also study the interplay of the Atlantic Ocean with the Arctic Ocean, particularly with regards to climate change.

The agreement recognises that Atlantic research will be more effective if coordinated on a transatlantic basis. Areas identified for potential cooperation under the agreement include:

- ⚙ Ocean observation
- ⚙ Sharing of data, such as on temperature, salinity and acidity
- ⚙ Interoperability and coordination of observing infrastructures, such as measurement buoys and research vessels
- ⚙ Sustainable management of ocean resources
- ⚙ Seabed and benthic habitat mapping
- ⚙ Promoting researcher mobility
- ⚙ Identifying and recommending future research priorities

The agreement builds on the Atlantic Action Plan. The initiative is of particular interest for the EU's five Atlantic states, but it is open to researchers from all over Europe and beyond.

Northwest Atlantic Fisheries Organization (NAFO)

NAFO manages the international fisheries in the northwest Atlantic by establishing conservation and enforcement measures (CEM), such as total allowable catches (TACs) and quotas for commercial fish stocks as well as gear requirements, area and time restrictions, coral/sponge protection zones, minimum fish size, bycatch requirements and measures for the conservation and management of sharks.

In addition, NAFO has developed a comprehensive array of monitoring, control and surveillance (MCS) measures. Important measures are satellite-based vessel monitoring systems (VMS) for hourly position reports, communication of catches and an observer program (that requires an independent observer on board every fishing vessel).

The NAFO CEMs are reviewed and adopted by the annual Fisheries Commission meetings in accordance with provisions of Articles XI, XII, and XXIII of the Convention on Future Multilateral Cooperation in the Northwest Atlantic Fisheries.

These CEMs shall, unless otherwise provided, apply to all fishing vessels used or intended for use for the purposes of commercial fishing activities conducted on fisheries resources in the Regulatory Area, as defined in Article 1 of the NAFO Convention.

Within its regulated area, NAFO has identified 20 areas as being vulnerable to bottom contact gears and subsequently closed these areas to bottom fishing (ref. NAFO CEM Article 17). NAFO has also delineated existing bottom fishing areas (footprint), and adopted exploratory fishing protocols for all remaining areas outside the footprint, which apply to any proposed fishing activity to determine if it will have significant adverse impacts on VMEs.

Northeast Atlantic Fisheries Commission (NEAFC)

The North East Atlantic Fisheries Commission (NEAFC) is the RFMO for the northeast Atlantic, one of the most abundant fishing areas in the world.

NEAFC's objective is to ensure the long-term conservation and optimum utilisation of the fishery resources in the Convention Area, providing sustainable economic, environmental and social benefits. NEAFC adopts management measures for various fish stocks and control measures to ensure that they are properly implemented. NEAFC also adopts measures to protect other parts of the marine ecosystem from potential negative impacts of fisheries.

These measures can cover, for example, fish stocks or individual species, or a specific area or time-period, depending on what policy makers want to achieve. NEAFC may define VMEs and establish closures to ensure the sustainability of the fishing grounds and the protection of vulnerable ecosystems.

To operate within the regulations, fishing vessels must abide by both the current Management Measures and the NEAFC Scheme of Control and Enforcement.

NEAFC's general approach for the protection of VMEs was adopted in 2008 with a Recommendation that specifies that established bottom fisheries can only take place in areas that are delineated as "existing bottom fishing areas", which are defined by historical catches from a specific reference period. Outside these areas, only exploratory bottom fisheries are authorised, and these are subject to restrictions similar to those of NAFO.

Areas where VMEs are identified as occurring, or being likely to occur, are closed to all bottom fishing, and this includes areas both within and outside "existing bottom fishing areas". Some closures are based on the identification of specific VMEs, while others cover larger areas where VMEs are considered likely to occur.

NEAFC also has protocols to address the encounter of VME indicator species by fishing vessels during the normal course of their operations. Upon the encounter, the area is temporarily closed until the area can be further assessed for the presence of VMEs, and may remain closed or may reopen to fishing.

In 2014, NEAFC adopted a Recommendation that encompasses all previous VME-related regulations, including general rules regarding the protection of VMEs, and details on "existing bottom fishing areas" and "areas closed to bottom fishing". The Recommendation also includes VME data collection protocols, details for VME indicator species, and protocols for the assessment of exploratory bottom fishing activities.

Convention for the Protection of the Marine Environment of the North-east Atlantic (OSPAR)

Fifteen Governments & the EU cooperate to protect the marine environment of the northeast Atlantic under the 1992 OSPAR Convention. An annex (V) on biodiversity and ecosystems was adopted in 1998 to cover non-polluting human activities that can adversely affect the sea.

Within OSPAR, marine protected areas (MPAs) are understood as areas for which protective, restorative or precautionary measures are needed for protecting and conserving species, habitats,

ecosystems or ecological processes of the marine environment.

The establishment of a network of ecologically coherent MPAs was agreed in 2003. The OSPAR network of MPAs aims:

- ⚙️ to protect, conserve and restore species, habitats and ecological processes which have been adversely affected by human activities;
- ⚙️ to prevent degradation of, and damage to, species, habitats and ecological processes, following the precautionary principle;
- ⚙️ to protect and conserve areas that best represent the range of species, habitats and ecological processes in the maritime area.

The progress made by Contracting Parties in identifying and establishing MPAs as components of the OSPAR network is summarised in progress reports on the network.

To assist work by Contracting Parties on developing the network, OSPAR 2003 adopted guidance documents on identifying and selecting sites to include in the network and on managing MPAs as part of the network. OSPAR has since augmented this guidance through the development of the concept of ecological coherence, a scorecard to assist with MPA network design, and a background document on assessment of ecological coherence as well as a scorecard to assess the effectiveness of management of MPAs and a guidance document on good practice for communicating with stakeholders in the establishment and management of MPAs.

SponGES

One component of the EU funded SponGES project addresses resource management and conservation. Apart from economic valuation of goods and services and capacity building in management frameworks, the project establishes round-table meetings to promote a science-stakeholder dialogue and involvement.

ANNEX

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