



**Food and Agriculture  
Organization of the  
United Nations**

**FIPI/FIRF/R1118 (En)**

**FAO  
Fisheries and  
Aquaculture Report**

**ISSN 2070-6987**

**Report of the**

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**FAO WORKSHOP ON THE VULNERABLE MARINE ECOSYSTEM  
PROCESSES AND PRACTICES PUBLICATION**

**Swakopmund, Namibia 2-4 March 2015**

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ISBN 978-92-5-109076-3

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## PREPARATION OF THIS DOCUMENT

This is the report of the FAO Workshop on the Vulnerable Marine Ecosystem Processes and Practices publication that took place in Swakopmund, Namibia, on 2–4 March 2015. The workshop was organized by FAO with support from the Southeast Atlantic Fisheries Organisation (SEAFO). A total of 17 participants attended the workshop as regional experts.

The workshop was organized as part of the FAO Deep-sea Fisheries Programme to coordinate and move forward on the upcoming publication on *VME Processes and Practices*. The workshop participants are co-authors of the report and the Workshop was used as a coordinating meeting to agree on the chapter outlines and general components of the publication framework.

**FAO. 2016.**

*Report of the workshop on the vulnerable marine ecosystems processes and practices publication, Swakopmund, Namibia, 2–4 March 2015.*

FAO Fisheries and Aquaculture Report No. 1118. Rome, Italy.

### ABSTRACT

The FAO Workshop on the Vulnerable Marine Ecosystem (VME) Processes and Practices publication took place in Swakopmund, Namibia, from the 2–4 of March, 2015. The workshop mainly focused on the *VME Processes and Practices in the High Seas* publication that is intended to facilitate a better understanding of the extensive work that has been done in the different ocean regions on the management of VMEs to date. This publication will be a sister volume to the publication of a revised second edition of the *Worldwide Review of Bottom Fisheries in the High Seas*. Regional experts were invited to review the chapters of the *VME P&P* publication, and these experts convened at this workshop, along with the FAO unit coordinating the publication. The aim of the workshop was to: present and discuss the draft regional chapters; identify revisions required for each chapter; agree on an introductory chapter and a concluding chapter covering a global summary of VME actions taken to date; and agree on a plan of work for completing the drafts and a deadline for publishing the document. The workshop concluded with the identification of additional regional co-authors and reviewers, and a timeline for completing, reviewing, and publishing the *VME P&P* publication.

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## BACKGROUND

The management of bottom fisheries and the protection of ecosystems in the high seas have received increased attention at the international level during the last decade. Following the World Summit on Sustainable Development in 2002, the United Nations General Assembly (UNGA) in 2003 requested:

“the Secretary-General, in close cooperation with the Food and Agriculture Organization of the United Nations, and in consultation with States, regional and subregional fisheries management organizations and arrangements and other relevant organizations, in his next report concerning fisheries to include a section outlining current risks to the marine biodiversity of vulnerable marine ecosystems including, but not limited to, seamounts, coral reefs, including cold water reefs and certain other sensitive underwater features, related to fishing activities, as well as detailing any conservation and management measures in place at the global, regional, subregional or national levels addressing these issues” (UNGA Res. 58-14, Art. 46).”

Three years later, UNGA adopted a resolution that called for, among other things, various actions to be taken by States and the appropriate Regional Fisheries Management Organizations or Arrangements (RFMO/As) that regulate bottom fisheries on the identification and protection of vulnerable marine ecosystems by the end of 2008 (UNGA Res. 61/105, para. 83). The FAO Committee on Fisheries (COFI), at its 27<sup>th</sup> session in 2007, agreed that FAO would prepare guidelines through a consultative process to assist states and RFMOs in this process. These were adopted in 2008 as the International Guidelines for the Management of Deep-Sea Fisheries in the High Seas (Deep-sea Fisheries Guidelines).

UNGA also invited FAO to consider creating a global database of information on VMEs in areas beyond national jurisdiction (ABNJ) to assist States in assessing impacts to VMEs (UNGA Res. 61/105, para 90). This database contains all the information relevant to the VME processes undertaken globally in ABNJ (<http://www.fao.org/in-action/vulnerable-marine-ecosystems/en/>). The VME DataBase facilitates information sharing among regions and makes information on VME-type areas readily available to the general public. However, there is still a need to consolidate, in a single document, the work on VME processes and practices undertaken in each ocean region to implement the Deep-sea Fisheries Guidelines and address the UNGA Resolution in relation to VMEs.

To facilitate a better understanding of the extensive work that has been undertaken and enable the sharing of experience among the regions, FAO is compiling a publication entitled *Deep-sea fisheries and vulnerable marine ecosystems: processes and practices in the high seas* (VME P&P) detailing the development of the assessment and management of VMEs in each region to date. This will form a sister volume to the 2<sup>nd</sup> edition of the *Worldwide Review of Bottom Fisheries in the High Seas. The first edition* was based on information covering 2003-2006 (FAO Technical Paper 522 (Rev. 1), 2009). FAO also plans to update the latter publication using information covering the period 2007-2014.

It is expected that the VME DataBase and the *VME P&P* publication will provide information on the actions taken to protect VMEs that will be of use for the upcoming UNGA review on bottom fisheries in 2016 (UNGA Res. 66/68, para. 137). Contributions for the *VME P&P* publication will be developed by regional experts and coordinated by the FAO Deep-sea Fisheries Team.

## WORKSHOP ARRANGEMENTS AND OPENING SESSION

### Venue and participation

The workshop took place at the Swakopmund Sands Hotel in Swakopmund, Namibia from 2 – 4 March 2015, with support from the South East Atlantic Fisheries Organisation (SEAFO). The workshop had 17 participants attended in their individual capacity as regional experts (Appendix 1). Some regional experts were unable to attend the meeting and joined for specific sessions through video conferencing.

## **Welcome remarks**

Jessica Sanders (FAO) opened the meeting. Ben van Zyl provided welcoming remarks and welcomed the workshop participants on the behalf of the SEAFO Secretariat and expressed that these discussions on the VME practices and processes from the different regions is very useful for SEAFO and the South East Atlantic (SE Atlantic), and hoped that it would be useful to other regions as well.

## **Appointment of Chair and rapporteur**

Craig Loveridge was elected as Chair for the meeting. He asked the participants to introduce themselves and requested they contribute a brief paragraph from their regional sessions for the workshop report, to support the notes by the rapporteur whose duties would be collectively fulfilled by FAO. The draft agenda was presented and adopted (Appendix 2).

## **Workshop objectives and expected outputs**

Jessica Sanders presented the workshop objectives and expected outputs, and described the chapter outline used to develop the zero drafts of the regional chapters for the *VME processes and practices* publication. The zero drafts were developed by FAO and circulated to potential regional authors prior to the meeting. This workshop aimed to present and discuss the circulated zero draft regional chapters, and to identify necessary changes and agree on an initial plan of work for completing the document.

The expected outputs of the workshop will be an FAO workshop report, an agreed outline for the introductory and regional chapters for the *VME P&P* publication, and agreement on the concluding chapter summarizing the regional actions under suitable subject headers. It was also noted that the *VME P&P* publication will be an FAO technical document that will be published in 2015. Suggestions for potential authors and contributors are welcome and these people would be contacted later.

## **VME PRACTICES AND PROCESSES (VME P&P) PUBLICATION**

Jessica Sanders presented an overview of the context behind the *VME Process and Practices in the High Seas* (VME P&P) document and the *Worldwide Review of Deep-sea Fisheries in the High Seas (1<sup>st</sup> WWR)*.

The purpose of the *VME P&P* publication is to showcase the work that has been done in the ocean regions in ABNJ to address the identification and protection of VMEs. This publication is aimed at a diverse audience that includes managers, decision makers, scientists, NGOs, and the general public. The publication will complement the FAO VME Portal and DataBase, which was launched in December 2014.

The *VME P&P* publication could also be used to inform upcoming global processes such as the UN review of bottom fisheries, which will now take place in 2016 (UNGA Res. 66/68, Art. 137).

During the discussion, the importance of maintaining the neutrality of the publication was stressed, which could be achieved by focusing on process and not on reviewing actions or outcomes. It was re-emphasized that the purpose of the *VME P&P* publication is to provide a snapshot of the actions taken in the regions from around 2006 to the present in terms of identifying and protecting VMEs from any possible significant adverse impacts caused by bottom fisheries.

Some aspects of the updated edition of the *Worldwide Review on Bottom Fisheries in the High Seas (2007-2014)* (hereinafter *2<sup>nd</sup> WWR*) were discussed and it was explained that information would be collected both through published reports and also through a questionnaire circulated to States and others. This process had already started in the Western Central Atlantic during a workshop that was held by FAO in Barbados on 30 September-2 October 2014. This approach would not be followed for the *VME P&P* publication, but the inclusion of specific actions by individual States should be included when known.

## **CHAPTER OUTLINES FOR VME P&P PUBLICATION**

Tony Thompson presented the chapter outline for the *1<sup>st</sup> WWR*, explaining that these were organised by large ocean regions that covered the Pacific Ocean, Atlantic Ocean (except western and eastern central regions), Mediterranean Sea, Indian Ocean, and Southern Ocean. Each regional chapter followed the same format and

provided information on the region's geography, management regime, bottom fisheries, stock status, bycatch and VMEs, conservation and management regimes, and sources of data and information.

Dr Thompson emphasized that this was the first publication that has presented a global overview of deep-sea bottom fisheries. The publication, although technical in nature, was aimed at a wide target audience that would include fisheries and conservation biologists, managers, and the wider public with an interest in the fishing industry and the management of our oceans in the high seas. This publication was based on information collected largely from States through a circulated questionnaire covering the period 2003-2006. It is recognized that there have been technical developments within the fishing industry supported by greatly improved and enforced management regimes that result in cleaner catches with reductions in bycatch and impacts. It is therefore timely to update and revise this original publication.

Two new publications were planned, with one covering the management of deep-sea fisheries and their associated targeted fish stocks and bycatch, and the other covering the protection of Vulnerable Marine Ecosystems (VMEs). The chapter outlines were presented and in general followed the format of the earlier publication with an extended regional coverage that includes the western and eastern central Atlantic regions. Detailed outlines for both publications were presented noting that it was important to maintain consistency among the regional chapters to promote readability and allow for regional comparisons.

The content will be factual and present information on what has occurred in each region during the 2007-2014 period in the fishery with respect to the exploitation, management and scientific advice. The publications will not attempt to evaluate, assess or critique the fishery, the scientific advice and management measures, nor would it provide advice on future actions. They simply aim to provide interested readers with a clear up-to-date global overview of bottom fisheries in the high seas since 2007. This current meeting will further develop the publication on the VME Process and Practices. The chapter outlines were reviewed during the course of meeting with the agreed version being shown in Appendix 3.

To assist in the writing of the chapters, drafts of the *VME P&P* publication were developed for the northwest, northeast and southeast Atlantic Ocean, the north and south Pacific Ocean, and Southern Ocean, and circulated prior to the meeting with the hope that this would increase consistency across regions and provide a basis for regional experts to further develop these drafts to a final version. These will be modified accordingly to fit into the agreed outline.

Participants discussed the way in which the topics are separated between the *VME P&P* and 2<sup>nd</sup> *WWR* publications and were in agreement with the outline presented in Appendix 3. It was noted that there is overlap for some topics, but that it should generally be possible to separate by what is, ~~respectively~~, most relevant to VMEs and to the fisheries.

Participants discussed this approach and agreed that it was the most efficient way to develop the *VME P&P* publication. It was suggested that there could be individual chapters from stakeholders on, for example, the industry prospectus. However, it was generally felt that this would not easily fit into the existing regional approach and that such information is better distributed among the regional chapters.

In the *VME P&P* draft chapters some participants noted that there seemed to be repetition in some of the sections within the regional chapters. However, it was explained that this was because there is a section on regulations and measures and then subsequent sections providing details of the implementation of these regulations and measures. For example, there is a section in the measures to describe the rules that allow for the establishment of VMEs, and then later a section that informs readers on the actual VME areas that have been declared with some details on each of them.

The inclusion of new or clarification of existing topics for the regional chapters was further discussed. The areas to be covered are given in Appendix 4 and guidelines for the chapter contents are in given in Appendix 5.

### **Introductory chapter**

The outline of the introductory chapter was expanded to include additional topics that introduce the VME topic to the reader and better place the regional chapters in a global context.

It was noted that the introductory chapter should include a section on VMEs and VME criteria as outlined in the Deep-sea Fisheries Guidelines, and it was stressed that this would not re-interpret any of the negotiated terms in the text. The introduction would, as far as possible and practical, place the VME concept into operational terms that could be better understood by a general readership. The style of this should align with the VME P&P publication in general and be appropriate for an FAO technical document.

It was also noted the VME P&P publication should include a paragraph on policies and measures that describe global oceans management – e.g. UNCLOS, UNFSA, RFB frameworks, International Seabed Authority, etc.

### **Regional chapters**

Participants discussed the regional chapters in general terms focusing on the layout and the content for the various sub-sections of the regional chapters. It was agreed that the publication should focus on the measures adopted to safeguard known or likely VMEs and the scientific basis behind these measures. Some additional elements that participants thought would be relevant to add to the regional chapters include:

- Protocols for research to identify areas where there are known or likely VMEs, include research undertaken by the fishing industry (fishery dependent) and governments (fisheries independent).
- Studies on gear-specific impacts to benthic ecosystems
- Processes and agreements relating to data sharing and data confidentiality
- Impacts on VMEs other than from fishing, such as from deep sea mining and drilling
- Inclusion of other spatial measures that protect VMEs
- Information on regional use of different gears including gear related restrictions (in design or use)

### **Concluding summary chapter**

Discussions on the format and content of the final chapter centered around what was most useful to the intended readership and what was possible to achieve within the time frame of the development of the *VME P&P* publication. It was mentioned that there is a need for a review of the actions taken by regional bodies to protect VMEs, and through this review, a list of “best” or “good” practices could be developed. However, it was also felt that this is outside of the scope of the intended publication that does not aim to “review” the actions taken, but simply to document them within a single publication. This would allow readers to make informed choices without providing any recommended directions.

It was agreed that the concluding chapter could take the form of a concise summary of the current regional practices (Appendix 6).

### **Framework for the concluding summary chapter**

Tony Thompson (FAO) made a brief presentation on possible formats for the concluding chapter to the *VME P&P* publication. It was explained that this chapter should bring together, in a concise and readable way, summaries from the regional chapters that provide readers with the range of practices that had been developed and used to address the various topics, tasks and issues. This should be ordered under logical headers and, following the general principle of the publication, be factual in nature. The chapter should offer assistance to scientists, decision makers and informed readers by simply providing the range of options that have been developed to address particular issues.

The assessment of any of these options, or the preferred choice that may work well in any particular region, is subject to many considerations and would not be elaborated upon in this publication. This can only be done at the regional level according to the situation that is occurring at the time. A draft list of proposed topics was presented and it was agreed that this was a good starting point from which to develop the chapter.

Participants discussed the possible options for the concluding summary chapter and felt that the above “factual and neutral” approach was the best way forward and would be useful to readers. Participants requested that it would be helpful if some initial text for sections of this concluding chapter was prepared

and presented to the meeting on the final day. This could then be discussed on the final day and further developed after the meeting. FAO agreed to provide initial drafts for presentation on the final day.

During the discussion, it was noted that this chapter should be written with caution in order to avoid reviewing, criticizing or ranking the practices of certain regions. An option to avoid this would be to simply write the chapter on what has been done in the region, and then when appropriate make note of the challenges and successes. This option is in line with the overall objective of the *VME P&P* publication, which is to show the work or progress made in responding to calls by the UNGA to protect VMEs.

## **REGIONAL PERSPECTIVES**

### **Industry perspectives on VMEs for the Indian Ocean and South Pacific Ocean regions**

Ross Shotton (Southern Indian Ocean Deepsea Fishers Association (SIODFA) and High Seas Fisheries Group (HSFG)) gave a presentation on industry perspectives of VMEs for the Indian Ocean and South Pacific Ocean regions. He noted that there are many efforts taken by the deep-sea fishing industry to operate responsibly, but that often there is confusion on the concepts and practices within the industry. In particular, the term VME is often used as a blanket term when discussing the impacts of bottom fishing activities, but from a fishing industry perspective understanding the specifics of impacts on VMEs would help them understand the issue in a more tangible way. For instance, when looking at the impacts of bottom fishing on coldwater corals, which can extend beyond fishing depths (e.g. down to 4 000 m depth in Tasmania), are the impacts being considered at the population or species level? Are they being protected from extinction? In this context, what does an ecosystem approach to fisheries (EAF) mean? When talking about fragile specimens from benthic communities is every individual coral fragile? Or is it that the populations or ecosystems fragile?

With this perspective, it was noted that accurate and specific information allows the industry vessels to more easily comply with the RFMO regulations. For example, when accurate and specific information is available area-based closures should be easy to comply with as industry vessels can usually position themselves with a 20 m accuracy. However, other regulations can be much more difficult to comply with and vary considerably among RFMOs, such as protocols for VME encounters or thresholds

Discussions focused on how an industry perspective, i.e. a practical and operational perspective, can best be incorporated into the *VME P&P* publication. It was agreed by all that there is a need to review the actions taken in managing impacts to VMEs from various perspectives, including an industry perspective, but that this would necessarily involve passing opinions on what works and what does not. This is not the focus of this *VME P&P* publication, but will be taken up in the near future when reviews of actions are discussed in more appropriate fora. It was recommended that the responsible actions and work undertaken by industry in developing and supporting VME related measures should be reflected throughout the regional chapters.

### **Regional presentation – Southern Ocean**

Chris Jones presented the regional summary for the Southern Ocean. During the discussion, it was noted that there are guidelines in the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) for assessments of bottom fishing activities. The pre-assessment steps include developing a rationale that needs to be presented, discussed, and adopted by the Working Group on Ecosystem Monitoring and Management. It was further clarified that any Members wishing to conduct exploratory fishing are required to submit a preliminary assessment based on best available knowledge. With regards to closed areas, CM 22/06 includes a recommendation on limiting the impact of fishing on closed areas, and CM 22/07 operationalizes this measures. In this case, none of the currently closed areas have been reopened because the VME taxa that were encountered there are considered long-lived. If those areas are to be reopened, extensive research on the area must be done first to determine if the closed areas is really considered at risk. In the CCAMLR Working Group meetings, skippers and other industry representatives are invited as part of national delegations to help scientists understand the operations of the fishing gear.

### **Regional presentation - the Northeast Atlantic**

Terje Lobach presented the regional summary for the northeast Atlantic. The North East Atlantic Fisheries Commission (NEAFC) is responsible for the management of fisheries within its Convention Area 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 can adopt legally-binding measures for the conservation and management of fisheries resources under its mandate in the portion of its Convention Area beyond national jurisdiction (i.e. outside the national EEZs), collectively known as the Regulatory Area. Even though the NEAFC Regulatory Area covers a long latitude range, the main fishing effort in the deep areas has been over the mid-Atlantic ridge, where most pelagic fisheries occur. The primary target species for deep sea seamount fisheries is alfoncino (*Beryx* spp.), and to a lesser extent this is supplemented by smaller catches of Orange roughy (*Hoplostethus atlanticus*). There is also a midwater redfish fishery in the central north Atlantic that is mainly targeted by Norway, the Russian Federation, Spain, and France. At present, 55% of the NEAFC area above 2 000m is closed to fishing with bottom contact gears. Most of these closures relate to the protection of VMEs for significant adverse impacts that may arise from fishing. The first VMEs were established in 2005. Considerable effort has been directed towards identifying VMEs and reducing impacts through specific closures to prohibit fishing with bottom contact gears. The regulatory area, including the VME closures, are regularly reviewed by ICES who, based on the best scientific advice available, make recommendations to NEAFC for appropriate management actions. The relationship between NEAFC and OSPAR was also further clarified, with OSPAR focusing on the environmental conservation in the area, and NEAFC focusing on fisheries. This relationship has been assessed as balanced from invited stakeholders, in terms of both letting fishing continue and protecting VMEs.

### **Regional presentation for the South Pacific**

Geoff Tingley gave the regional presentation for the south Pacific. He noted that limiting catch had led to an effective cap on effort, and there is high quality science behind: VME taxa identification, trigger thresholds for some VME taxa, defining the distribution of indicator taxa used as a “VME proxy”, and the identification guides for VME taxa used in the region. Furthermore, the region has been effective at defining and modifying fishing footprints and in cases where there was no conservation measure yet in place there was an effective interim measure for spatial management. Finally, all fishing operations in the South Pacific Regional Fisheries Management Organisation (SPRFMO) Convention Area have 100% observer coverage and the negotiations and discussions have had a high level of stakeholder engagement.

However, SPRFMO has struggled with the VME criteria and as of yet there is no working definition for VMEs, as well as there being a lack of clarity on objectives for VME protection. While procedures are in place to define a fishing footprint, it is difficult to change the boundaries of the footprint, and the different move-on provisions cause confusion between different Members.

During the discussion, it was noted that it is challenging to manage bottom fishing in the south Pacific to protect VMEs because the two countries that do deep-sea fishing, Australia and New Zealand, have different arrangements for fishing in the high seas and at the national level that integrate with their EEZs. It was also clarified that SPRFMO allows for a fishing footprint, such as a trawl footprint, to be split into open and closed areas. This is specific to the bottom fishing CMM of SPRFMO as a way to encompass the wide concerns of the fishing industry and other stakeholders in the area. It was explained that the data used to map the fishing footprints are layers of fishing data (e.g. the start and end of a trawl), observer data, and VMS data.

### **Regional presentation for the Mediterranean**

Federico Alvarez gave the regional presentation for Mediterranean. The General Fisheries Commission for the Mediterranean (GFCM) Convention area can be characterized by its high marine biodiversity. (>17000 sps, ~ 20% endemic species), the relatively high impacts from human activities, climate change and biological invasions (nearly 1000 marine alien sps, ~ 50% established and spreading) and a strong contrast of political-socio-economic factors. The GFCM has 24 Members and an elaborate structure that includes a variety of relevant sub-committees to the Scientific Advisory Committee, in particular the sub-committee on Marine Environment and Ecosystems (SCMEE).

In 2005, the GFCM prohibited the use of any towed gear for fishing purposes below 1000 m depth. The GFCM also implements other spatial tools including the Fishery Restricted Area (FRA). The establishment of a FRAs- implies fisheries restrictions (limit or prohibit certain fisheries/gears) within delimited areas.

FRAs typically have goals related to preserving fisheries resources or protecting specific or vulnerable habitats. There are four existing FRAs in the GFCM area.

### **Regional presentation for the North Pacific**

Shannon Dionne gave the regional presentation for the North Pacific. She noted that the North Pacific Fisheries Commission (NPFC) was established because of the need to implement the UNGA resolutions for managing deep-sea fisheries in ABNJ. Initially the interim NPFC focused on bottom fisheries in the North Western Pacific Ocean. In 2009 the geographical area was expanded to include the North Eastern Pacific Ocean, and the scope was expanded to include other fisheries (not just bottom fisheries). It is expected that the NPFC Convention will enter into force around July 2015.

During the interim phase of NPFC, there are a number of differences in the requirements of the interim measures between the high seas of the Northwest and Northeast Pacific areas. Interim measures for the North Western Pacific requests information from participated States on fished areas, gear deployed, and fishing footprint for the period 2002-2006, in order to determine the fishing footprint, but the interim measures for the North Eastern Pacific do not define fished and unfished areas. There is no requirement for observers on vessels fishing in established fishing grounds for the northwestern Pacific, though exploratory bottom fishing in the northwestern Pacific requires 100% observer coverage. All bottom fisheries in the northeastern Pacific require observers, through there are very few actual fishing grounds here. In 2009 and 2011, interim exploratory fishing protocols were adopted for the western and eastern North Pacific, respectively. The North Western Pacific interim measures contain a provision for encounters with cold water corals.

The interim measures are voluntary and exist to guide the Participants into adopting national measures for their flagged fishing vessels. The Interim Secretariat functions to support the work of the Participants, who meet during Inter-Governmental Meetings (initially) and Preparatory Conferences (currently). A Scientific Working Group was established in 2007 to provide scientific support and advice to Participants.

The fisheries in the North Pacific have been relatively small, with bottom fisheries targeting alfoncino (*Beryx* spp.), slender (pelagic) armourhead, warty oreo, channeled rockfishes and rockfishes nei, skilfish, and deep-sea sharks. There is also a pot fishery for deep-sea crabs (*Geryon* spp. and *Paralomis* spp.). The bottom trawl fisheries in the region were first initiated on the Emperor seamounts with participants from the Russian Federation, the United States, and Japan.

### **Regional presentation for the South East Atlantic**

The regional management body for deep-sea fisheries in the SE Atlantic is the South East Atlantic Fisheries Organisation (SEAFO) that consists of seven Contracting Parties: Angola, European Union, Japan, Republic of Korea, Namibia, Norway, and South Africa. The Commission is the highest decision making body. Decision of matters of substance is by consensus. The Commission has established three subsidiary bodies namely the Compliance Committee, the Standing Committee on Administration and Finance, and the Scientific Committee. The Convention Area covers the southeast Atlantic Ocean outside the EEZ of the Coastal States. The process to established areas that might contain VMEs started in 2006. Based on advice from the Scientific Committee, the Commission adopted measures to protect 10 unexploited or lightly exploited seamounts that were closed to fishing during 2007-2010 (CM 06/06). These VME closures were reviewed by the Scientific Committee in 2010, and the Commission agreed, effective 1 January 2011, to re-open one existing seamount complex to fishing (Discovery seamounts in division D0), change the boundaries of six others which combined some into larger areas, and close five new areas along the mid-Atlantic ridge (CM 18/10). Currently, SEAFO has closed a total of 11 areas (CM 29/14).

The Conservation Measure pertaining to bottom fishing was reviewed in 2014 and definitions of VME indicator species, significant adverse impact and vulnerable marine ecosystems were included (CM 29/14).

The Commission delineated and adopted the existing bottom fishing areas as the fishing footprint with a reference period from 1987 to July 2011. The area outside the fishing footprint is subject to the exploratory fishery protocol. Furthermore, the Commission adopted rules and procedures for the opening of new fishing areas. During 2012, two areas were reopened according to the established protocols. These areas are open for longline fisheries only subject to strict effort controls.

SEAFO adopted the non-binding Guidelines for fisheries research and basic marine science activity in the SEAFO Convention Area in 2014. Additionally, Article 30 of the System of Observation, Inspection, Compliance and Enforcement (2014) provides the protocols for vessels conducting fishing research in the Convention Area. A few fisheries research surveys have been conducted in the SEAFO Convention Area, the most recent being the R/V *Dr. Fridjof Nansen* survey in January-February 2015.

### **Regional presentation for the North West Atlantic**

Neil Campbell gave the regional presentation on the northwest Atlantic. He described the considerable work and advancement in the northwest Atlantic by the Northwest Atlantic Fisheries Organisation (NAFO) to management VMEs which has been supported by a considerable amount of scientific information and advice. He noted that a recently developed joint fisheries commission-scientific council Working Group on Ecosystem Approach Framework to Fisheries Management (FC-SC WG-EAFFM) had been formed and was regarded as a useful forum to address the use of the scientific advice in the formulation of new regulations. There is a clearly defined “roadmap” to an ecosystem approach to fisheries management. In addition, there is an effective Joint Advisory Group on Data Management between NAFO and NEAFC.

The Convention area of NAFO extends from the Canadian-United States coast to the west tip of Greenland, and south to 32°N, and the Regulatory Area includes all areas within that boundary and outside of the EEZs of Canada, the United States, Greenland, Saint Pierre, and Bermuda. The main fisheries in this area occur on and around the parts of the Grand Bank in the international waters, and the Flemish Cap.

With regards to management measures, NAFO has articles that address: exploratory fishing protocols, VME indicators, VMEs, encounter protocols, thresholds, impact assessments, and observers, among others.

### **PRESENTATION ON THE VME DATABASE**

Aureliano Gentile delivered the presentation - VME DataBase – Training and Data input - on the VME portal/database web interface which was published online on December 2014. The VME Database is a global inventory of fisheries measures adopted in areas beyond national jurisdiction (ABNJ) to prevent significant adverse impacts of bottom fisheries on vulnerable marine ecosystems. The content of the database is disseminated in form of maps and fact sheets.

The database is aiming to facilitate communication among RFMO/As and States and raise public awareness for civil society with regards to VME issues. The Database contains all and only those areas for which a management action has been taken in relation of the 61/105 UNGA resolution or the FAO Deep-sea guidelines by a management authority. In terms of database responsibilities, RFMO/As and States provide data and information on VMEs (input), FAO provides a collaborative platform and access and dissemination of the VME information (output).

A simplified data model was described in relation to the main components of the interface. It was highlighted that the content is up to date until approximately September 2014 and the new regulations and measures for 2015 and onwards (e.g., from the various Commissions meetings held during September-December 2014) are expected to be submitted.

A hands-on session followed. NAFO, SEAFO and SPRFMO participants had the opportunity to access the iMarine Report Manager and learn how to enter new data. iMarine – an EU funded project under FP7 [www.i-marine.eu](http://www.i-marine.eu) – is a data e-infrastructure with a web-based set of applications including web services, data and computational facilities.

The VME Database is a secure module within iMarine and only registered users nominated by RFMO/As are able to enter the Report Manager through login credentials and to modify the content of the database. Instructions were given on editing, creating and deleting information in the VME Database, and some new records were added during the session.

### **FOLLOW-UP DISCUSSIONS ON VME P&P CHAPTER OUTLINES**

On the final day of the workshop, participants revisited the proposed chapter outlines, and discussed

outstanding issues related to the content and outline of the introductory, regional and concluding summary chapters of the *VME P&P* publication.

Example paragraphs were drafted by FAO and shown to participants for the purposes of developing the style to be used when drafting text for the publication. It was agreed that the drafted text should be in a formal style appropriate to the explanation of negotiated texts and in line with editorial guidelines for FAO technical documents. The example provided for the summary chapter was considered appropriate as it showed the most common action taken by regions under a particular topic and included supplementary descriptions when other actions had been taken or when actions had evolved through time. It was agreed that this should be achieved without reference being made to specific regions.

General agreement was reached on the *VME P&P* publication for the:

- chapter outlines for this and the proposed 2<sup>nd</sup> WWR publications (Appendix 3),
- oceans regions to be covered (Appendix 4)
- descriptions of details to include for each chapter and under each header (Appendix 5), and
- list of topics for the concluding summary chapter (Appendix 6).

The authorship of the VME P&P publication was discussed and two options were proposed. Participants agreed that it would be preferable to clearly identify authorship and to have each chapter separately authored with editors for the whole publication. There would also be, in the preamble, acknowledgements to those who contributed to the chapters and to the external reviewers. The people mentioned in the acknowledgements would not be identified to any of the chapters.

## PLAN OF WORK TO COMPLETE PUBLICATION

The following timeline was agreed for the completion of the VME P&P publication:

Date	Drafts	Supplementary actions and notes
28 February 2015	Zero draft completed by FAO	Circulated to regional experts
30 April 2015	1 <sup>st</sup> draft completed by regional authors	Comments made by regional experts incorporated into text
31 May 2015	2 <sup>nd</sup> draft completed by FAO	FAO to draft maps and figures and to review text for consistency by FAO editor
June/July 2015	Final draft completed by regional authors	External reviewers comments received and incorporated into text by regional authors
October/November 2015	Publication by FAO	

## ADJOURNMENT AND WORKSHOP CLOSURE

The Chair thanks all participants for their support throughout the workshop and their favorable comments on the process used by FAO in the development of this *VME P&P* publication. The Chair noted that, in general, the production of a zero draft by FAO would improve consistency across chapters and greatly reduce the required workload of the regional authors. The Chair did however note that there was still considerable work that was needed to complete the chapters and wished FAO and the regional authors every success in achieving this.

The Chair then thanked Ben van Zyl and his team at the SEAFO Secretariat for the local organization and arrangements which were exemplary.

The meeting was adjourned at 16:30 on 4 March 2015.

## APPENDIX 1. LIST OF WORKSHOP PARTICIPANTS

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**APPENDIX 2. AGENDA****FAO Workshop on VME Processes and Practices**

Swakopmund, Namibia, 2 – 4 March 2015

*Venue: Swakopmund Sands Hotel, 3 Strand Street South*

## Agenda

Day 1: Monday 2 March

09:00	Arrival
09:00 – 9:45	Opening session <ul style="list-style-type: none"> <li>- Welcome addresses</li> <li>- Appointment of Chair and Rapporteur</li> <li>- Adoption of Agenda</li> <li>- Introductions from participants</li> </ul>
9:45 – 10:00	Workshop objectives and expected outputs
10:00 – 10:30	Background to publication on VME processes and practices (e.g. needs, links to global processes, audience, etc.) as well as the relationship to the Worldwide Review on Bottom Fisheries in the High Seas ( <a href="http://www.fao.org/docrep/012/i1116e/i1116e00.htm">http://www.fao.org/docrep/012/i1116e/i1116e00.htm</a> ) <ul style="list-style-type: none"> <li>- Presentation (15 min)</li> <li>- Discussion</li> </ul>
10:30 – 11:00	Group photo and Coffee break
11:00 - 11:30	<i>Continued session on background, etc.</i>
11:30 – 12:00	VME processes chapter outlines and WWR chapter outlines Discussions on revising the two types of chapter outlines <ul style="list-style-type: none"> <li>- Group discussions and editing of chapter outlines</li> </ul>
12:00 – 12:30	Initial discussion on the framework for the VME “regional examples” chapter – what has worked well in each region <ul style="list-style-type: none"> <li>- FAO presentation (10 min) and handout</li> <li>- Discussions (agenda item to be revisited on Day 3)</li> </ul>
12:30 – 13:30	Lunch
13:30 – 14:00	Continued discussions on chapter outlines
14:00 – 14:30	Presentation on industry perspectives on VMEs for the Indian Ocean and South Pacific Ocean regions
14:30 – 15:30	CCAMLR <ul style="list-style-type: none"> <li>- Chapter presentation/discussion (15 min)</li> <li>- Examples of what has worked in the region</li> <li>- Discussions</li> </ul>
15:30 – 16:00	Coffee break
16:00 – 17:00	NEAFC <ul style="list-style-type: none"> <li>- Chapter presentation/discussion (15 min)</li> <li>- Examples of what has worked in the region</li> <li>- Discussions</li> </ul>

17:00	Day closure
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### Day 2: Tuesday 3 March

09:00 – 9:15	Overview of day plan <i>Goals and objectives for the day</i>
09:15 – 10:15	SPRFMO <ul style="list-style-type: none"> <li>- Chapter presentation/discussion (15 min)</li> <li>- Examples of what has worked in the region</li> <li>- Discussions</li> </ul>
10:15 – 10:45	Coffee break
10:45 – 11:45	GFCM <ul style="list-style-type: none"> <li>- Chapter presentation/discussion (15 min)</li> <li>- Examples of what has worked in the region</li> <li>- Group discussions</li> </ul>
11:45 – 12:45	NPFC <ul style="list-style-type: none"> <li>- Chapter presentation/discussion (15 min)</li> <li>- Examples of what has worked in the region</li> <li>- Discussions</li> </ul>
12:45 – 13:45	Lunch
13:45 – 15:15	VME DataBase <ul style="list-style-type: none"> <li>- Training</li> <li>- Data input</li> </ul>
15:15 – 15:45	Coffee break
15:45 – 16:45	SEAFO <ul style="list-style-type: none"> <li>- Chapter presentation/discussion (15 min)</li> <li>- Examples of what has worked in the region</li> <li>- Discussions</li> </ul>
16:45 – 17:45	NAFO <ul style="list-style-type: none"> <li>- Chapter presentation/discussion (15 min)</li> <li>- Examples of what has worked in the region</li> <li>- Discussions</li> </ul>
17:45	Day closure

### Day 3: Wednesday 4 March

09:00 – 10:00	Follow up discussion and agreement on “regional examples” chapter framework
10:00 – 10:30	Draft conclusions for regional examples section – e.g. content of above chapter <ul style="list-style-type: none"> <li>- Regional examples – contributions from workshop participants</li> <li>- Key outcomes of the VME regional examples</li> <li>- Plan for regional examples inclusion in VME processes publication</li> </ul>
10:30 – 11:00	Coffee break
11:00 – 12:30	Continued conclusions

12:30 – 13:30	Lunch
13:30 – 15:30	Breakout sessions – comments on draft chapters by participating experts and finalisation of chapter content and outlines Final discussions on outlines and sections
15:30 - 16:00	Coffee break
16:00	Plan of work for finishing chapters
16:30	Any other business
17:00	Adjournment and Workshop closure

### APPENDIX 3. CHAPTER OUTLINES FOR VME P&P AND WITH THE PROPOSED 2ND WWR

VME Processes and Practices	2 <sup>nd</sup> WWR
<p>Introduction</p> <ul style="list-style-type: none"> <li>○ Reason for VME processes publication <ul style="list-style-type: none"> <li>▪ Recognize the ongoing process to reduce impact on biodiversity from RFMO/As</li> </ul> </li> <li>○ Scope <ul style="list-style-type: none"> <li>▪ Years covered by the publication</li> </ul> </li> <li>○ Regional approach for this publication <ul style="list-style-type: none"> <li>▪ RFMO vs. RFB</li> <li>▪ Differences between established and new bodies</li> </ul> </li> <li>○ Explain VME and SAI (based on the agreed language)</li> <li>○ Other activities potentially impacting the sea floor</li> <li>○ The international framework</li> <li>○ The nature of fisheries management</li> </ul>	<p>Introduction</p> <ul style="list-style-type: none"> <li>○ Policies and measures</li> <li>○ Global perspective</li> <li>○ Fisheries resources</li> <li>○ Fisheries management (and Ecosystem Approach to Fisheries)</li> <li>○ National regulations and requirements in the high seas (in RFMO areas include only examples)</li> </ul>
<p>Regional Chapters</p> <ul style="list-style-type: none"> <li>○ Regional geography and bathymetry</li> <li>○ Regional body (give name) <ul style="list-style-type: none"> <li>▪ Mandate (convention)</li> <li>▪ Regulatory capacity</li> <li>▪ Structure</li> <li>▪ Requests for advice, recommendations and proposals</li> <li>▪ Relationship with other bodies</li> </ul> </li> <li>○ Overviews <ul style="list-style-type: none"> <li>▪ History of bottom fisheries</li> <li>▪ History of VMEs</li> </ul> </li> <li>○ Regulations related to VMEs <ul style="list-style-type: none"> <li>▪ Deep sea fishing areas</li> <li>▪ Exploratory fishing protocol</li> <li>▪ VME indicators</li> <li>▪ Area management</li> <li>▪ Encounter protocols</li> <li>▪ Thresholds</li> <li>▪ Impact assessments</li> <li>▪ Observers</li> <li>▪ Review procedures</li> <li>▪ Data sharing protocol</li> <li>▪ Scientific research</li> </ul> </li> <li>○ Other regulations that also protect benthic areas <ul style="list-style-type: none"> <li>▪ Gear restrictions</li> <li>▪ Other spatial management measures</li> </ul> </li> <li>● Research and Surveys <ul style="list-style-type: none"> <li>▪ Fishery Dependent</li> <li>▪ Fishery Independent</li> <li>▪ Analysis</li> </ul> </li> <li>○ Managed areas</li> </ul>	<p>Regional Chapters</p> <ul style="list-style-type: none"> <li>○ Geographical description</li> <li>○ Management regimes</li> <li>○ National regulations and requirements in the high seas</li> <li>○ Description of major current fisheries</li> <li>○ Status of stocks (target and bycatch) (link to or use info from FIRMS when possible)</li> <li>○ Bycatch</li> <li>○ Information on Illegal, Unreported and Unregulated (IUU) fishing</li> <li>○ Conservation and management measures (link to or use info from FIRMS when possible) <ul style="list-style-type: none"> <li>▪ Exploratory fishing – including applications</li> </ul> </li> <li>○ Information and reporting gaps</li> <li>○ Maps of the region and of protected areas</li> </ul>

<ul style="list-style-type: none"> <li>○ Closed areas</li> <li>○ Bottom fishing areas</li> <li>○ Other access regulated areas</li> <li>○ Other information <ul style="list-style-type: none"> <li>▪ Reported encounters</li> <li>▪ Exploratory fishing [results]</li> <li>▪ Identification guides</li> <li>▪ Other activities that might impact VMEs</li> </ul> </li> </ul>	
Summary of regional actions	Conclusions
Glossary	
References	References

**APPENDIX 4. OCEAN REGIONS COVERED BY THE VME P&P PUBLICATION**

<b>Chapter</b>	<b>Region</b>	<b>Body</b>	<b>Type</b>
Pre-amble			
1	Introduction		
2	North East Atlantic	NEAFC	RFMO
3	North West Atlantic	NAFO	RFMO
4	Eastern central Atlantic	CECAF	RFB
5	Western central Atlantic	WECAFC	RFB
6	South East Atlantic	SEAFO	RFMO
7	South West Atlantic	-	None
8	Mediterranean	GFCM	RFMO
9	North Pacific	iNPFC NPFC	Interim RFMO
10	South Pacific	iSPRFMO SPRFMO	interim RFMO
11	Indian Ocean	SIOFA	RFMA
12	Antarctic	CCAMLR	Regional body
13	Summary of regional actions	Global	-
APPENDICES			

## APPENDIX 5. DETAILS OF CHAPTER CONTENT BASED ON THE OUTLINE

### INTRODUCTION CHAPTER

#### a) Reason for VME processes publication

Recognize the ongoing process to reduce impact on biodiversity from RFMO/As; High seas bottom fisheries – contact seafloor – concerns on impacts to benthos; No need to specify depth, gear does or may contact sea floor

#### b) Policy Background

#### c) Scope

In high seas, 2007-2014

#### d) Regional approach for this publication

RFMO vs. RFB, Differences between established and new bodies

#### e) Explain VME and SAI

In simple language, based on agreed language, don't give definition, may use examples to illustrate if helpful, VME Criteria; Including potential impact of IUU fishing/non-compliance/etc

#### f) Other activities potentially impacting the sea floor

Cables, mining, oil, gas, ...

#### g) The International Framework

UNCLOS, FSA, Multi-lateral conventions (RBs, ISA), ...

#### h) The nature of fisheries management

Explain what fisheries management is and that it is an on-going and dynamic process. Briefly explain major changes.

### CHAPTER OUTLINE – REGIONS

#### a) Regional geography and bathymetry

An introduction to the region including a general description of bottom habitats and their suitability for various bottom contact fishing gears, concluding with the occurrence of known or likely VME elements (features that could have VMEs e.g. Seamounts, canyons, slopes, vents, etc). Possibly 3 paragraphs:

#### b) Basic geography

Bathymetry with an overall summary and then areas that are suitable for fishing and for VMEs

#### c) Fisheries statistical divisions of the area.

Try to keep to physical features and not mention fisheries of VMEs in this section. Probably no need to go into oceanography or any biology, unless it controls in a specific way the presence of VMEs.

#### d) Regional body

##### i) Mandate (convention)

History of the regional body responsible for managing bottom fisheries including descriptions of mandate of the convention in force (and any adopted "new or amended" conventions). Do in chronological order and go from the more general mandates to manage benthic fish stocks, through to an EAF approach and finishing with management of bycatch species and non-fish species, ending with environmental protection and benthic habitats. Description of the exact area covered in the chapters. [note: The end focus is on managing VMEs from SAI caused by bottom fishing, and to set the scene that we are dealing with fisheries organisations who manage fisheries (CCAMLR is an exception to this). Under the VME initiatives, it is the avoidance of SAI that is important.]

##### ii) Regulatory capacity

Outlines if the RFB can set binding or voluntary measures and in what areas and how States are to respond to support and implement measures. This would start of in general terms and then become more directed at VMEs and deepsea fishing areas. [note: I am not sure the drafts go into the links between the regional measures and the national measures very well.]

##### iii) Structure

Management body, advisory body, working groups, frequencies of meetings, etc. Say how the structure has adapted to EAF and VMEs. It should explain briefly to the uninformed readers how the regional body functions. Communications between the committees is dealt with below.

##### iv) Requests for advice, recommendations and proposals

Outline the operational process of the regional body and the way in which members, the fisheries commission and scientific body communicate. Depending on space, provide some of the key specific requests, recommendations and proposals relating to DSF and VMEs. [note: may need to expand on the last part in some of the draft chapters] [note: this is for the process not to list measures here – give readers an idea of how it works in general terms within RFBs].

v) *Relationship with other bodies*

Briefly include a mention of other regional/international bodies that have a related or complimentary function in the region and the best way to do this may be to say how the fisheries body interacts with the other bodies present in the area.

e) **Overviews**

i) *History of bottom fisheries*

A brief history of the deep sea bottom fisheries in ABNJ part of the region. Focus on gear types used that do or may contact seafloor. Provide effort if possible, catch, and relate this to bottom type. This should give readers an idea of the type and extent of the bottom fisheries, what gears they use and on what habitats they fish. (brief text on type and scale of fishing). [Note: Remembering that there will be another publication that covers the fisheries and is an update of the *Worldwide Review of Bottom Fisheries in the High Seas*) so keep very brief here].

ii) *VMEs*

Overview of the development of the process to declare and manage VMEs in the region. Give in chronological order and start number of VMEs declared and boundary changes, but don't go into individual details of actual VMEs (done later).

f) **Regulations/measures related to VMEs**

The idea here is to have an initial paragraph that talks only about the development of the measure and then a second paragraph explaining any scientific advice provided and the basis for it. These sections cannot be too long though. Suggest figures or tables as appropriate. The overall purpose is to provide the reader with an idea of the process used in the region. Try not to review or comment on the suitability of the measure.

i) *Deep sea fishing areas*

History and development of regulations on existing and new deepsea fishing areas (and other categories (Exploratory, research, etc)).

ii) *Exploratory fishing protocols*

History and development of regulations

iii) *VME indicators*

History and development of regulations

iv) *Area management*

History and development of regulations for VME areas (known or likely). Do not include the actual declared areas here (these are dealt with under “managed areas”).

v) *Encounter protocols*

History and development of regulations

vi) *Thresholds*

History and development of regulations

vii) *Impact assessments*

History and development of regulations on impact assessments as undertaken or how handled within the region. Most important in exploratory fisheries, etc.

viii) *Observers*

History and development of regulations on mandatory and voluntary use of observers on vessels and the information they collect.

ix) *Review procedures*

How measures are reviewed, sunset clauses, etc.

x) *Data sharing policies and protocol*

Development of data sharing agreements within RFBs and for WGs, etc.

xi) *Scientific research regulations*

Explain the regulations and procedures for the undertaking of scientific research (remembering that commercial vessels can be declared as research vessels).

g) **Other regulations that also protect benthic areas**

Include other measures that also serve more indirectly to protect benthos/reduce bycatch

*i) Gear restrictions*

Keep here to measures or practices that apply to fishing gears that help reduce impact to benthos.

*ii) Other spatial management measures*

Include here general spatial bans on gears that would help to protect benthos.

**h) Research and surveys**

Information on surveys and related research from routine or directed surveys undertaken by Governments or projects collecting information that is useful in identifying/delineating VMEs from both research cruises and on board fishing vessels. Include the contributions made by observers and the information they collect.

Include any significant work on biological studies that improve our understanding of the biology of VMEs and their response to impact.

Include list of surveys if possible

*i) Fishery Dependent – Research done in association with fishing*

*ii) Fishery Independent (eg new regulations in NEAFC/SEAFO)*

*iii) Analysis*

Any significant and agreed on scientific methods to assist in the management and conservation of VMEs

**i) Managed areas**

List and dates of regulated areas to protect VMEs from SAI including information on: physical description of environment, general biology, and past human activities. This text will go in (or come from) the VME DataBase.

[*Note: maybe better just to refer to the online VME DB for the detailed information*].

*i) Closed areas*

*ii) Bottom fishing areas*

*iii) Other access regulated areas*

**j) Other information**

*i) Reported encounters*

List encounters above threshold and actions taken.

*ii) Exploratory fishing*

There will be a more detailed section on this in the WWR 2.

*iii) Identification guides*

Development and use of ID guides and how they link in with measures

*iv) Other activities that might impact VMEs*

List here other major activities occurring in the region that could affect VMEs – gas, oil, cables, mining,

**k) Glossary**

Take regional glossaries from VME database that have already been agreed by RFMOs, RBs, etc

**l) References**

Each regional chapter will have its own reference list.

[Include RFMO reports if necessary]

**CONCLUDING CHAPTER “SUMMARY OF REGIONAL ACTIONS”**

This will briefly describe the range of actions taken in each region under headers provisionally listed in the contents table.

*Note: IUU fishing - issue in relation to VMEs at the global level*

**APPENDIX**

[Global glossary – if this works]

## **APPENDIX 6. LIST OF TOPICS FOR CONCLUDING SUMMARY CHAPTER**

### **Interactions with fisheries**

- Submitted commercial fishing plans/assessments
- Gear specific impacts / substrate impacts / SAI
- Risk assessment relative to fishing pressure and VME elements
- Retention by gears

### **Identification of VMEs**

- VME Indicators (and thresholds)
- Distribution of VME indicators (taxa/elements)
- Classification based on concentrations
- Predictive modelling
- Survey designs, data requirements
- Precautionary and temporary closures
- Monitoring of long-term VME health
- Review of closed area(s)

### **Vessel transmitted information (VMS)**

- Reporting requirements/frequency
- Access to VMS
- For compliance

### **GIS mapping on web sites/reports**

- Of VME elements
- Of VME taxa
- Of fisheries

### **Measures**

- Fishing Area – by gear, by effort
- Closures (to bottom/all fishing)
- Exploratory fishing
- Assessments – exploratory fishing
- Encounters (thresholds, move on rules, immediate “temporary” closures)
- Observers
- Mapping VMEs
- Re-assessments (reviews)
- Research

**This is the report of the FAO “Workshop on Vulnerable Marine Ecosystems (VME) Processes and Practices”** took place in Swakopmund, Namibia, from 2 to 4 March 2015. The workshop focused on the *VME Processes and Practices in the High Seas* publication that is intended to facilitate a better understanding of the extensive work that has been done in the different ocean regions on the management of VMEs to date. This publication will be a sister volume to the publication of a revised second edition of the *Worldwide Review of Bottom Fisheries in the High Seas*. The aim of the workshop was to: present and discuss the draft regional chapters; identify revisions required for each chapter; agree on an introductory chapter and a concluding chapter covering a global summary of VME actions taken to date; and agree on a plan of work for completing the drafts and a deadline for publishing the document. The workshop concluded with the identification of additional regional co-authors and reviewers, and a timeline for completing, reviewing, and publishing the Fisheries and Aquaculture Department technical publication.