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Title: Summary of VME related management measures adopted by adjacent Regional Management Bodies in the context of SIOFA

Relates to agenda item: 3 Working paper ☒ Info paper ☐

Delegation of [European Union]

Abstract

This paper briefly draws comparisons between management and mitigation measures regarding Vulnerable Marine Ecosystems and their encounters with benthic fisheries and Management Organisations adjacent to SIOFA, with particular focus on those in place in the Commission for Conservation of Antarctic Marine Living Resources (CCAMLR). This paper aims to facilitate discussions around these and similar measures and approaches to limit and reduce Significant Adverse Impacts on VMEs in the SIOFA area.

Recommendations *(working papers only)*

1. Consider a comparative analysis of VME related measures adopted in other R(F)MOs and assess their adequacy within SIOFA

2. Consider the utility and suitability of approaches developed in other R(F)MOs, including CCAMLR, to the SIOFA BPA designation process

In 2006, The United Nations General Assembly resolution 61/105 called upon States to take action immediately to sustainably manage fish stocks and protect vulnerable marine ecosystems from destructive fishing practices, to be implemented by R(F)MOs through closing areas to bottom fishing where cold water corals and other Vulnerable Marine Ecosystems (VME) are known to occur or are likely to occur. Implementation of this resolution was also to ensure that once management measures around bottom fishing activities exist, these prevent significant adverse impact on VMEs. In 2009, the Food and Agriculture Organisation (FAO) published the International Guidelines for the Management of Deep-Sea fisheries in the High Seas, providing tools and guidance on the application of the developed guidelines to support States and R(F)MOs in the development of management measures aimed at preventing significant adverse impacts on deep-sea VMEs, and the protection of the marine biodiversity within these ecosystems. The document provides guidelines on what constitutes Significant Adverse Impacts, as well as definitions of criteria for Vulnerable Marine Ecosystems, and guidelines for management measures.

The discussion around the management and mitigation measures for avoiding and/or reducing Significant Adverse Impacts on VMEs centres around three key questions:

1) Which species indicate VME presence (VME indicator species)?

2) How much, or what combinations of VME indicator species constitute a Vulnerable Marine Ecosystem?

3) What management needs to be in place to avoid Significant Adverse Impact on these communities?

The approaches to these three questions differ between different RFMOs and RMOs, including different definitions of VME indicator species between regions.

SIOFA developed a Bottom Fishing Impact Assessment Standard based on the FAO guidelines in 2016. The Conservation and Management Measure for the Interim Management of Bottom Fishing (CMM-2018-01) sets out an area-wide response to encountering VMEs, whereby trawls or other net fisheries cease bottom fishing activities within two nautical miles at either end and on either side of the fishing track, while for longline and trap fisheries or any other type of fishery a radius of 1 nautical mile in a radius around the mid-point of the line segment/pot is immediately closed to further fishing activities. While the management and

mitigation measure in response to an encounter is consistent across the area (question 3), the decision of threshold when a VME was encountered (as opposed to a VME indicator species, question 2) is currently the responsibility of each CCP whose vessels are engaging in fishing activities with potential to encounter VMEs. Several regions have been provisionally closed to benthic fishing activities (given in Annex 2 of CMM-2018-01), and the Meeting of Parties has the option to further close areas to all or some benthic fishing activities if these are considered to have a Significant Adverse Impact on VMEs in areas where VMEs are known to occur or are likely to occur.

CCAMLR

The Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) implemented its first Conservation Measures (CM) on VME protection in 2006, restricting bottom trawling and deep-sea gillnetting activities and specifying conditions for new and exploratory fisheries, such as an assessment of likely impact on benthic ecosystems. In 2008, the first Conservation Measure detailing consistent approaches to VME encounters came into force (CM 22-07). The CM addressed all three questions; Indicator Species were identified (CCAMLR 2009), and the thresholds for VMEs defined based on encountered VME indicator species units. Management and mitigation measures were introduced to reduce further impact on the identified VME regions. CCAMLR acknowledges that due to the nature of longline fishing methods, which are not designed to collect or retain benthic sessile organisms such as VME indicator species, an absence of VME indicator species does not necessarily mean an absence of VMEs. The developed approach, therefore, is a precautionary approach to balance both the useful information on species distribution gained through incidental by-catch on longlines, and the need to implement measures that avoid Significant Adverse Impacts on VMEs. Additional CMs introduced limits on depth, protecting shallower regions (CM 22-08), and permanently closed regions based on registered and verified VME locations (CM 22-09).

- VME taxa: defined and provided in a guide available for download (https://www.ccamlr.org/en/document/publications/vme-taxa-classification-guide)
- VME indicator species thresholds: VME indicator units are defined as either one (1) litre of VME indicator species that can be placed in a 10-litre container, or one (1)

kilogram for VME indicator species that are too large to be placed in a 10-litre container.

- VME encounter management and mitigation: Ten or more indicator units caught in a line segment of 1000 hooks result in the immediate declaration of a risk area of 1nm around the mid-point of the line segment. The Risk Area remains closed until reviewed by the Scientific Committee and management actions determined by the Commission. Additionally, areas of registered and confirmed VMEs are closed.
- VME information distribution: Through VME registry (https://www.ccamlr.org/en/document/data/ccamlr-vme-registry) and CCAMLR GIS (https://gis.ccamlr.org)

Other adjacent management bodies

CCAMLR is relatively unique in its approach to VME encounter management for several reasons. As with all bycatch, the approach by CCAMLR is to, if possible, avoid then mitigate, and finally limit the impact on VME indicator species. The prohibitions on benthic trawling and the introduced depth limitations remove much of the conflict and encounter potential between bottom fishing gear activities and VMEs, placing emphasis on avoidance as a mitigation measure. The nature of longlines, whereby target species actively take a bait rather than be swept into a net, means that bycatch of VME indicator species is incidental and several magnitudes lower than bycatch in benthic trawls. The closures of Risk Areas and Registered VME sites finally limit further impact on these identified ecosystems.

Unlike CCAMLR which has strict limitations on benthic trawling, the other southern adjacent R(F)M)Os to SIOFA, the South East Atlantic Fisheries Organisation (SEAFO) and the South Pacific Regional Fisheries Management Organisation (SPRFMO), allow both longlines and benthic trawls in their benthic fisheries. Within SPRFMO, a guide to VME indicator species similar to the guide of CCAMLR is available (Tracey et al. 2008), and SEAFO considers corals and sponges as VME indicator species (SEAFO, 2009). In both Organisations, Benthic Impact Assessments need to be undertaken as part of following exploratory fisheries protocols. Both Organisations have taken inspiration from CCAMLR in the management of longline encounters with VME indicator species. SEAFO uses the same definitions and thresholds, triggering a move-on rule for the vessel of at least 1 nautical mile from the position closest to

the encounter location on the line. Within SPRFMO, longlines are included in the definition of "bottom fishing" in SPRFMO CMM 03-2019 which sets out thresholds of VME indicator species encounters which trigger an interim closure of 1 nautical mile around the trigger point. The thresholds adopted in CMM 03-2019 were based on data derived from trawls, and Members proposing to longline fish for toothfish (*Dissostichus* spp., same species as in adjacent CCAMLR), have further adapted the CCAMLR thresholds to trigger move-on rules in their exploratory fisheries as a precautionary measure.

The same CMM also provides for managing VME encounters in existing trawl fisheries within SPRFMO. The management and mitigation measures encompassed in this CMM draw on a complex approach taking into account regions that are considered ecologically similar in the SPRFMO area, best available data to predict potential habitat suitability for VMEs, evaluation of fishing footprint and derivation of areas that have likely been subject to substantial habitat modification by past benthic trawl activities. This results in different zones throughout the SPRFMO area where benthic fishing is not likely further damage potential VME habitat due to historical impact, as well as zones that are highly or less highly likely to provide suitable conditions for VME development, according to the model predictions. The threshold level is set at 99% for triggering encounter protocols. The management implementation has led to much discussion, in particular the choice of threshold levels and thus the volume of VME indicator species caught in trawls before an encounter protocol is triggered. The CMM has provisions for short-term revisions and adjustments in the coming years.

Concluding thoughts

Comparing the different approaches to the implementation of UNGA 61/105 shows that a single approach across all regions may not, at present, be appropriate, as each Organisation faces different challenges, encompasses different habitats, and manages different types of fisheries. A key component in the management of fishery encounters with VMEs is a good understanding of what species indicate VME presence, which will vary regionally and their spatial distribution in relation to the areas being fished (fishing footprint). CCAMLR has provided an example where indicator species are defined in some detail, and a similar detail is available in SPRFMO. SEAFO, on the other hand, focusses on corals and sponges as indicator taxa for encountered VMEs. Other concepts introduced by CCAMLR could also warrant further consideration. The CCAMLR approach to limiting Significant Adverse Impacts once

VME indicator species are encountered in the longline fishery, and the associated thresholds, have already inspired similar measures in adjacent R(F)MOs, either by the Organisation or by its Members, and could also be relevant for longline operations within SIOFA, which target the same species (toothfish) with the same gear (longline) as in CCAMLR. The depth zonation and/or minimum depth limitation is another measure that could, in regions of highly suitable VME habitat, provide additional tools for managing encounters with VMEs and limiting Significant Adverse Impact. A key question that would benefit from research and investment, and from further collaboration, is the question of actual impact and footprint of different fishing gears on potential VME habitat, and on VMEs themselves, for example through camera deployments. Examples of such research have been conducted in many R(F)MOs in the northern hemisphere. Such approaches would allow to gain a better understanding of the uncertainty associated with predictive VME models, the scaling between impact on the seabed and VME indicator species bycatch brought on board, or the actual impact on the seabed of fishing gears, including in VMEs. Clearly understanding spatially where the VMEs are (and likely to be) in relation to the fishing areas and footprint is fundamental in determining risk and possible other area-based management measures to mitigate SAI.

Not summarised or considered further in this short paper are approaches, definitions, and measures developed and in place in the northern hemisphere, for example NAFO, NEAFC, or ICES. These Organisations manage fisheries that have often been operating for many decades, including in regions that historically have hosted, are currently hosting, or are highly likely to contain VMEs. As such, the approaches and measures developed for those regions could also provide further insight on limitation of Significant Adverse Impacts. A comparative analysis of VME related measures adopted in other R(F)MOs, and in particular CCAMLR, as well as an assessment of their adequacy in the context of SIOFA would provide a better understanding of these approaches and how they could inspire and be useful within the scientific element of the SIOFA BPA designation process. This paper aims to facilitate discussions around these ideas and approaches.

References

CCAMLR. 2009. VME Taxa Classification Guide. 4pp.

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