European Commission

The Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR)

in the Southern Ocean

Case Study Summary Report

Service Contract: EASME/ECFF/2014/1.3.1.8/SI2.717082

UN environment WCMC

ENVIRONMENTAL RESEARCH INSTITUTE SOUTH ATLANTIC

May, 2017

Maritime Affairs

EUROPEAN COMMISSION

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Acknowledgements: May we first thank all interview participants, stakeholders, authorities, communities - your time and dedication have been invaluable to capture the range of views that this report has attempted to synthesise. We also wish to thank Andrew Wright, Mark Belchier and Sarah Lenel of CCAMLR for their engagement; IUCN and UN Environment respectively for facilitating Drin Lutchman's and Hannah Thomas' CCAMLR involvement. This report and the Global MSP Inventory developed for this study use information from the UN Environment *MSP in Practice Initiative* and its associated database of MSP processes. We thank UN Environment for its support in sharing this information.

Nota Bene
This document is part of the "STUDY ON INTERNATIONAL BEST PRACTICES FOR CROSS-BORDER MARITIME SPATIAL PLANNING ". In order to get a complete understanding of the concepts, definitions and methodology used in this document it is advised to read the main report first.

EUROPEAN COMMISSION

The Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) in the Southern Ocean

Case Study Summary Report

Reporting on the Service Contract: EASME/EMFF/2014/1.3.1.8/SI2.714082: Study on international best practices for cross-border Maritime Spatial Planning

Coordinator: NIRAS

Project Partners:

UNEP-WCMC, RI CRC, TNC, Xiamen University, SAERI, WMU, QED

Directorate-General for Maritime Affairs and Fisheries
MARE/2014/40

2017 EN

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Luxembourg: Publications Office of the European Union, 2017

ISBN 978-92-9202-251-8
doi: 10.2826/77867

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LIST OF ABREVIATIONS AND ACRONYMS

ABNJ	Areas Beyond National Jurisdiction
ACAP	Agreement on the Conservation of Albatrosses and Petrels
ARK	Association of Responsible Krill harvesting companies
ASOC	Antarctic and Southern Ocean Coalition
ATCM	Antarctic Treaty Consultative Meeting
ATCPs	Antarctic Treaty Consultative Parties
ATS	Antarctic Treaty Secretariat
ASMAs	Antarctic Specially Managed Areas
ASPAs	Antarctic Specially Protected Areas
CBD	Convention on Biological Diversity
CCAMLR	Commission for the Conservation of Antarctic Marine Living Resources
CAMLR Convention	Convention for the Conservation of Antarctic Marine Living Resources
CCAS	Convention for the Conservation of Antarctic Seals
CDS	Catch Documentation Scheme
CEMP	CCAMLR Ecosystem Monitoring Program
CEP	Committee on Environmental Protection
CLCS	Commission on the Limits of the Continental Shelf
COLTO	Coalition of Legal Toothfish Operators
EC	European Commission
EEZ	Exclusive Economic Zone
EU	European Union
GEF	Global Environmental Facility
IUCN	International Union for Conservation of Nature
IUU	Illegal, Unreported and Unregulated (fishing)
IWC	International Whaling Commission
MPA	Marine Protected Area
MSP	Maritime/Marine Spatial Planning
RFMO	Regional Fisheries Management Organisation
SATCM	Special Antarctic Treaty Consultative Meeting
SCAF	Standing Committee on Administration and Finance
SCAR	Scientific Committee on Antarctic Research

SCIC	Standing Committee on Implementation and Compliance
SCOR	Scientific Committee on Oceanic Research
SG-ASAM	Subgroup on Acoustics, Survey and Analysis Methods
SGSSI	South Georgia and South Sandwich Islands
SISO	Scheme for International Scientific Observation
UNCLOS	United Nations Convention on the Law of the Sea
UNEP	United Nations Environment Programme (now known as UN Environment)
VME	Vulnerable Marine Ecosystem
WG-EMM	Working Group on Ecosystem Monitoring and Management
WG-FSA	Working Group on Fish Stock Assessment
WG-IMAF	Working Group on Incidental Mortality Associated with Fishing
WG-SAM	Working Group on Statistics, Assessments and Modelling
WWF	Worldwide Fund for Nature

EXECUTIVE SUMMARY

Completely surrounding Antarctica, the Southern Ocean covers approximately 15% of the world's ocean area and extends from the continent itself northwards to the seasonally shifting Antarctic Convergence or Polar Front (where the Southern Ocean's cold waters meets the warmer waters of the Pacific, Atlantic and Indian Oceans). The primary driver for the adoption of the Convention on the Conservation of Antarctic Marine Living Resources (CAMLR Convention) in 1980[1] was the need for a multi-lateral response to a history of over-fishing in the Southern Ocean, in particular, for marbled rock cod (*Notothenia rossii*) and mackerel icefish (*Champsochephalus gunnari*), and the threat of increased unregulated fishing on krill (*Euphausia superba*) in the future.

As the boundary of the CAMLR Convention area is an approximation of the Antarctic Convergence, the CAMLR Convention area roughly corresponds to the Southern Ocean. From the perspective of the international law of the sea, the CAMLR Convention area includes both *de facto* and *de jure* high seas[2], as well as coastal State maritime zones (e.g. territorial seas and EEZs) around the sub-Antarctic islands south of latitude 60°S. The Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR), was chosen as a case study primarily because of the unusual intergovernmental governance arrangements in place, which represent collaborative joint management of resources between a considerable number of States with differing cultural characteristics, and secondly because the spatial scope of the CCAMLR Convention consists largely of 'common waters', CCAMLR presents an excellent example of how management of common areas can be successfully structured.

The sole objective of the CAMLR Convention is the conservation of Antarctic Marine Living Resources (including rational use), which in practice provides for the intergovernmental management of open and closed fisheries, establishment of protected areas and regulation of scientific study. As such, the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) itself could be regarded as the application of cross-border Maritime/Marine Spatial Planning (MSP) for the conservation of Antarctic marine living resources. Cross-border MSP in CCAMLR is, *inter alia*, manifested where coastal State maritime zones adjacent to sub-Antarctic islands within the CAMLR Convention area require **planning and management across jurisdictional boundaries**, but also conceptually through a **system of joint management of common waters – either *de facto* or *de jure* high seas - by multiple States and the EU**, with each Member each state having its own interests and preferences in all or some (e.g. closed areas or MPAs) of these common waters. Unlike many MSP processes which are designed to develop a single plan that is then implemented, CCAMLR represents a well-developed adaptive management system that regularly and constantly revises management measures according to the ecological and human activity signals that are monitored.

CCAMLR currently has 25 Members (24 States and the European Union). States do not need to have a fisheries interest, and such 'non-user States' can accede to the CAMLR Convention based on their interest in science, and can apply for membership of CCAMLR based upon their actual engagement in science. CCAMLR is the principal decision-making body responsible for agreeing and adopting conservation measures and has representation from all Members. CCAMLR meets annually and decisions are agreed – in the form of adopted conservation measures or resolutions – based on the advice of its subsidiary bodies – in particular its Scientific Committee, but also its Standing Committee on Implementation and Compliance (SCIC), - and by consensus among the 25 Members. Upon the entry into force of the conservation measures, the Members are bound to the obligations they contain. This will often require them to implement the conservation measures into their laws and regulations. The eleven Acceding States are also bound to the Convention and adopted conservation measures, but are not entitled to participate

[1] Convention on the Conservation of Antarctic Marine Living Resources, Canberra, 20 May 1980. In force 7 April 1982, 1329 United Nations Treaty Series **47** (1983); www.ccamlr.org

[2] see Introduction for further detail

in decision-making process and are not required to make annual contributions to the CCAMLR budget. States whose sub-Antarctic islands are included in the CAMLR Convention area can choose to exempt the maritime zones adjacent to their islands from the scope of application of conservation measures. All CCAMLR and Scientific Committee meetings have interpreters and translators to ensure that meeting proceedings, discussion and documentation is accessible in English, Spanish, French and Russian.

Key issues that have affected the 'cross-border' collaboration in CCAMLR are:

1. **Different interpretations of the Convention and Conservation Measures** – There are different interpretations among the Members with regard to key provisions of the CAMLR Convention (e.g. on the conservation objective, its inclusion of rational use, and the relative weight of both) and certain conservation measures (e.g. the significance of the absence of a definition for marine protected area (MPA) in CM 91-04 (2011), which may have caused delays in the establishment of CCAMLR MPAs).

2. **The implications of spatial planning with regard to unresolved jurisdictions** – the jurisdictional disputes and conflicting claims within the CAMLR Convention area (e.g. overlapping Antarctic claims and the dispute over South Georgia) have in the past taken up considerable CCAMLR meeting time and energy and presented a significant challenge to cross-border cooperation in CCAMLR. In recent years, however, cooperation between particular Members has improved considerably (CCAMLR 2016a, paras 12.5 and 12.6) and the agreement to disagree over jurisdictions does not currently appear to pose problems for joint management of the CAMLR Convention area. Nevertheless, unresolved jurisdictions does mean that, unlike other regional fisheries management organisations, CCAMLR cannot apply the zonal attachment principle (allocating total catch according to the proportion of the total shared fish stock that resides in each States' EEZ) to allocate fisheries catch limits. Instead, CCAMLR adopts the 'Olympic fisheries' approach, where a total allowable catch (TAC) limit is not divided amongst members, but is freely available to Members until the catch limit is reached. This approach results in significant economic inefficiency and affects the equitability of access to fisheries by Members.

3. **The challenge of managing across jurisdictions –** While there is the expectation that CCAMLR Members with sub-Antarctic islands in the CAMLR Convention area will make every effort to align the fisheries management in their maritime zones adjacent to these sub-Antarctic islands with CCAMLR's fisheries management, making them equally or more robust, this does not necessarily occur in practice, and management measures are therefore not consistent across the CCAMLR Convention area.

4. **Language and cultural barriers** – In some of CCAMLR's subsidiary bodies, language barriers present a barrier to fluid negotiations over important topics, and exacerbate the existing cultural differences in how negotiations are traditionally conducted by different Members.

Good practices pioneered by CCAMLR are:

a) International cooperation between Members, but also between CCAMLR and other intergovernmental bodies, as well as non-Contracting Parties engaged in harvesting, landing and trade of toothfish;

b) Combining monitoring, control and surveillance to address the challenges of Illegal, Unregulated and Unreported (IUU) fishing;

c) Ensuring that the best available science underpins the CCAMLR approach to management (e.g. the Ecosystem Approach) and is built in to CCAMLR decision-making (e.g. MPA identification);

d) Implementing ecosystem-based and precautionary approaches to fisheries management;

e) Implementing by-catch reporting and seabird mortality mitigation measures; and

f) Establishing high seas MPAs.

Lessons learned with respect to cross-border MSP from CCAMLR are:

- **Ensure there is a common understanding and shared approach to goals –** The CCAMLR experience demonstrates that cross-border collaboration can bring together very different perspectives, even on the interpretation of the objective of the CAMLR Convention. In order to ensure positive cooperation, shared goals should be very carefully defined to ensure a common understanding.
- **A strong scientific foundation plays a key role in enhancing cross-border collaboration –** the structure of CCAMLR is designed to ensure that decisions are based upon the best available scientific advice. This strong scientific aspect supports collaboration between Members in a number of ways:
    - **De-politicises decisions –** In a forum such as CCAMLR, where cross-border collaborations are subject to wider inter-governmental tensions, the strong scientific discussion can provide an equitable platform for successful negotiations.
    - **Provides a common language –** Many proposals submitted to the Commission by a Member or Members must be examined by the Scientific Committee, providing an environment where international experts can exchange ideas.
    - **Builds capacity –** Members implementing research programmes often invite other Members' scientists to join research missions, thus building capacity and increasing the knowledge base and the quality of Members' research programmes.
- **Combine traditionally sectoral approaches in a single mandate –** CCAMLR has a mandate for the conservation of marine living resources (in the context of the Convention, 'conservation includes rational use'), which is essentially conservation, fisheries management and scientific research. Relative to other regional competent authorities (e.g. fisheries management organisations) CCAMR's mandate is very broad and highly conservation focused, and as such, it has very effectively supported a distinct move away from target-species management to the successful implementation of an ecosystem approach to fisheries management. CCAMLR's conservation objective also represents a cross-sectoral management approach, successfully combining both conservation and rational use together in a single mandate.
- **Remove language barriers to collaborative negotiation –** CCAMLR and Scientific Committee meetings benefit from translation and interpretation. In contrast, CCAMLR working group meetings do not have such benefits and are held in English, which may mean technical details are not sufficiently understood by non-English native speakers at this level. The importance of a good understanding of the issues, as the basis of negotiation between stakeholders in MSP, would be enhanced by removing language barriers at all levels of decision-making. Cross-border MSP is likely to require negotiation between different nationalities, and every opportunity to facilitate the fluent negotiation between parties should be considered as a high priority.
- **Consider the impact of the decision-making process** – In the case of CCAMLR, the consensus-based decision-making model has had some negative impacts. Consensus-based decision-making creates delays and the opportunity for decisions to be blocked by a single Member. For example, this has resulted in CCAMLR missing its international deadline with respect to establishing a network of MPAs. However, as CCAMLR is linked closely to the Antarctic Treaty and its agreement to disagree on territorial sovereignty in Antarctica, consensus-based decision making is a fundamental part of ensuring that

CCAMLR Members can block any measure that might interfere with their sovereign rights. Therefore, Members would be unlikely to support the adoption of other decision-making mechanisms, such as qualified majority voting and/or opt-out measures used by many regional fisheries management organisations. Consequently, the consensus-based decision-making approach needs to be assessed in terms of how it can best deliver articulated goals, as the combination of both is likely to cause considerable challenges. This is particularly important for cross-border processes, where varying opinions are likely to emerge from the different national perspectives involved.

- **Ensure that there are incentives in place to establish consistent management measures across jurisdictions –** Some Members with sub-Antarctic islands in the CAMLR Convention area have chosen to exempt the maritime zones adjacent to their islands from the scope of application of conservation measures, and incentives need to be found to encourage consistency of conservation measures across the entire CAMLR Convention area.
- **Collaboration can exert a positive influence on Members' behaviour –** Shared discussion of landings data, and associated infringements, between all CCAMLR Members appears to have improved compliance by exerting influence on Members to adhere closely to conservation measures. As it seems likely that many cross-border MSP processes will not have complete enforcement control, ways to harness the influence produced by collaborative working practices should be encouraged.

1. INTRODUCTION

The Study on international good practices for cross-border Maritime Spatial Planning (MSP) (hereafter referred to as 'the Project') has been designed to compile and assess experiences of approaches to MSP, in order to assist the European Commission (EC) and EU Member States in implementing the EU MSP Directive[3]. The Project's second objective involves conducting four case studies from international locations outside of Europe, in order to identify good practices that are relevant for the implementation of the MSP Directive, with a particular focus given to cross-border cooperation. These case studies are: (i) Rhode Island/New England, (ii) China/Xiamen, (iii) the Coral Triangle and (iv) the Southern Ocean, where managed through CCAMLR.

The Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR), was chosen as a case study primarily because of the unusual intergovernmental governance arrangements in place, which represent collaborative joint management of resources between a considerable number of States with differing cultural characteristics, and secondly because the spatial scope of the Convention on the Conservation of Antarctic Marine Living Resources (CAMLR Convention) consists largely of 'common waters', CCAMLR presents an excellent example of how management of common areas can be successfully structured. In addition, the presence of several sub-Antarctic islands and their adjacent maritime zones in the CAMLR Convention area means that CCAMLR's governance arrangements must aim to overcome the challenge of multi-jurisdictional control. Several sea-basins under European influence fall within the jurisdictions of multiple but very different States (e.g. Baltic Sea), and some contain areas that are considered to be *de facto* or *de jure* high seas (e.g. Mediterranean, Arctic). As a result, the lessons learned from the CCAMLR case may be particularly valuable when considering how cross-border collaboration and MSP in Europe may be strengthened.

The CAMLR Convention – under which the Commission operates – entered into force in 1982 as an international treaty with the aim of conserving Antarctic marine living resources. The CAMLR Convention implicitly prescribes ecosystem-based[4] and precautionary approaches to fisheries management that provide for the harvesting of marine living resources as long as such activities are conducted in a sustainable manner. To achieve its objective, the Convention mandates the Commission to adopt and amend legally binding conservation measures, including spatial measures for purposes of scientific study or conservation.

The CAMLR Convention is designed to ensure the conservation of all Antarctic populations of finfish, molluscs, crustaceans and all other living organisms including sea birds found south of the Antarctic Convergence. To achieve its objective, the CAMLR Convention prescribes the types of conservation measures that can be taken, including the following spatial measures:

- The designation of regions based on the distribution of populations of Antarctic marine living resources;
- The designation of the quantity which may be harvested from the populations of regions and sub-regions;
- The opening and closing of areas, regions or sub-regions for purposes of scientific study or conservation, including special areas for protection and scientific study.

In this respect, cross-border MSP occurs in the truest sense where States controlling EEZs falling within the CAMLR Convention area collaborate with CCAMLR towards an acceptable level of consistency in management across jurisdictional borders. In the more conceptual sense, however, cross-border MSP is embodied by the joint, multiple State Party decision-making process undertaken by CCAMLR across the entire CCAMLR area (with the exception of EEZs).

[3] Directive 2014/89/EU of the European parliament and of the Council of 23 July 2014 establishing a framework for maritime spatial planning

[4] For more information on Ecosystem-based Management, see http://web.unep.org/ecosystems/resources/publications/taking-steps-toward-marine-and-coastal-ecosystem-based-management

Therefore, for the purposes of this study, CCAMLR itself is considered to be the application of cross-border MSP for the sustainable use of Antarctic marine living resources, involving the designation of areas for fisheries, scientific study and conservation. Members, Acceding States and Observers to CCAMLR are considered as the relevant stakeholders.

This document presents a summary of the CCAMLR case study, presenting the key findings, conclusions and lessons learned, according to the structure of the analytical framework developed for the Project. Together with the reports for the other three case studies, it is one of the inputs to the consolidated analysis and the final report of the Project.

2. METHODOLOGY

In order to describe and assess the four different MSP initiatives in a consistent manner, a standardised analytical framework applicable to all four case studies was developed (see Annex 1).

The MSP attributes have been spread out across eight different sections, including: 1) Context; 2) Driver, issues and goals; 3) Overview of the MSP; 4) Scope and design of the MSP; 5) Collaboration and consultation in the MSP planning phase; 6) Features of the MSP process implementation phase; 7) Implications of the application of MSP in areas beyond national jurisdiction (ABNJ); and 8) Outcomes and lessons learned.

Under the established analytical framework, the MSP attributes have been investigated by means of both descriptive facts about the MSP process, collated through literature review, and assessment questions, which were addressed using information collated through interviews to key stakeholders. The collection of data took place between July and November 2016 and consisted of:

a) Literature review

Following the guiding questions and structure adopted by the analytical framework, the facts of the matter questions were addressed through literature review, including both peer reviewed and grey literature, identified by the Regional Expert as well as through online search engines.

b) Interviews

A total of 25 interviews were conducted for this case study. Of those, 23 interviews were conducted face-to-face during a field trip to Hobart, Tasmania conducted between the 19-26th October 2016 at the 35th CCAMLR Scientific Committee and Commission meetings. Two interviews were conducted remotely. Interviews were with representatives from:

- **Contracting Party delegations**: Australia; Chile; European Union; France; Germany; Namibia; Netherlands; New Zealand; South Africa; Sweden; Ukraine; United Kingdom; United States; Uruguay
- **CCAMLR Secretariat**: Head of Science; Compliance and Fisheries Enforcement Officer
- **CCAMLR Observers**: ACAP (Agreement on the Conservation of Albatrosses and Petrels); ARK (Association of Responsible Krill harvesting companies); ASOC (Antarctic and Southern Ocean Coalition); ATS (Secretariat of the Antarctic Treaty); COLTO (Coalition of Legal Toothfish Operators); IUCN (International Union for Conservation of Nature)
- **Other associated individuals:** Interpretation Service

The full list of participants and schedule followed can be found in Annex 2.

This case study has been supported by the Project's regional experts, Indrani Lutchman and Megan Tierney, who facilitated access to relevant literature, set up interviews with key stakeholders and individuals involved in the development of the CCAMLR and associated work, and contributed to data gathering and analysis. All interviews were conducted with a single interviewee. With the exception of three interviews, the case study lead and Project Marine Spatial Planning Expert, Hannah Thomas, led all the interviews, supported by Indrani Lutchman. A semi-structured interview format was employed to ensure a degree of comparability across interviews but also to allow important themes arising to be explored in more detail. Accordingly, interview questions were flexible, aiming to cover the range of MSP attributes contained in the analytical framework. All participants were given the "participant information sheet" and "consent form", and the latter was signed by all interviewees, providing consent for interview recording and subsequent publication of findings. Interviews were summarised in writing and reviewed by interviewees, and the information was then used to grade assessment questions for the case study as a whole. Data collected through both literature review and interviews was then used to summarise the attributes of CCAMLR and distil key lessons learned, as presented in this document.

3. KEY FINDINGS

Key findings are presented in 7 subsections which thematically group aspects of interest for the case study: Subsection 3.1 presents an **overview of CCAMLR**, covering its Members, MSP objectives, cross-border cooperation elements, legal basis and funding; Subsection 3.2 examines the environmental, socio-economic and governance **context of CCAMLR** at its initiation to describe the baseline from which the CCAMLR MSP started; Subsection 3.3 describes the **drivers, goals and issues** relevant to CCAMLR; Subsection 3.4 outlines the **scope and design** of CCAMLR's spatial planning process; Subsection 3.5 presents the **collaboration and consultation** aspects of CCAMLR; Subsection 3.6 highlights **features of implementation**, including results and good practices; and Subsection 3.7 describes the **implications of MSP in the high seas**. Within each of these subsections, factual information from the literature review and interviews is presented alongside responses to the analytical framework questions, which explore the extent to which a particular condition is met. These analytical framework questions are grouped in table form where the graded response appropriate to CCAMLR has been indicated by green shading and is accompanied by justification text derived mainly from case study interviews but also from the literature review.

3.1. Overview of CCAMLR

As noted in the introduction, CCAMLR itself can be considered to be the application of cross-border MSP for the conservation of Antarctic marine living resources, involving the designation of areas for fisheries, scientific study and conservation of living resources. As the boundary of the CAMLR Convention area is an approximation of the Antarctic Convergence, the CAMLR Convention area roughly corresponds to the Southern Ocean. From the perspective of the international law of the sea, the CAMLR Convention area includes three types of spatial areas in the CAMLR Convention area:

a) The waters adjacent to the Antarctic continent (land territory south of latitude 60° South). Due to the agreement to disagree on the question of territorial sovereignty over the Antarctic continent, these waters are ***de facto* high seas**.

b) **Coastal State maritime zones** (e.g. territorial seas and 200 nautical mile zones such as Exclusive Economic Zones (EEZs)) adjacent to sub-Antarctic islands (Heard and McDonald Islands (Australia), Kerguelen and Crozet Islands (France), Bouvet Island (Norway), Prince Edward and Marion Islands (South Africa), and South Georgia and the South Sandwich Islands and Shag Rocks (claimed by Argentina and the United Kingdom, but under 'effective control' by the latter), provided they do not extend South of 60° South; and

c) The waters that do not fall under (a) or (b), which are **(*de jure*) high seas**.

Cross-border MSP in CCAMLR is, *inter alia*, manifested where coastal State maritime zones adjacent to sub-Antarctic islands within the CAMLR Convention area require planning and management across jurisdictional boundaries (see Section 3.1.1 below), but also conceptually through a system of joint management of common waters – either *de facto* or *de jure* high seas - by multiple States and the EU, with each Member each state having its own interests and preferences in all or some (e.g. closed areas or MPAs) of these common waters (see Section 3.1.2 below). Unlike many MSP processes which are designed to develop a single plan that is then implemented, CCAMLR represents a well-developed adaptive management system that regularly revises management measures according to the monitored ecological and human activity signals.

The CAMLR Convention entered into force in 1982 and covers 35,716,100 km2 of Southern Ocean. The CAMLR Convention was originally signed by the States who attended the 1980 'Conference on the Conservation of Antarctic Marine Living Resources', but a number of other States and the EU have subsequently become Contracting Parties (Acceding States) to the Convention and some of these Acceding States have successfully applied for Membership. CCAMLR currently has 25 Members (including the European Union), as well as 11 Acceding States (Table 1).

Table 1 - Contracting Parties to the CAMLR Convention

(Source: E. J. Molenaar[5])

Contracting party	Signature	Consent to be bound* (Ratification (no mark); Succession (s); Accession; (a) Acceptance (A))	Membership CCAMLR
Australia	11 Sep 1980	6 May 1981	7 Apr 1982
Argentina	11 Sep 1980	28 May 1982	27 Jun 1982
Belgium	11 Sep 1980	22 Feb 1984	23 Mar 1984
Brazil		28 Jan 1986 (A)	8 Sep 1986
Bulgaria		1 Sep 1992 (a)	-
Canada		1 Jul 1988 (a)	-
Chile	11 Sep 1980	22 Jul 1981	7 Apr 1982
China		19 Sept 2006 (a)	2 Oct 2007
Cook Islands**		20 Oct 2005 (a)	-
European Union**		21 Apr 1982 (a)	21 May 1982
Finland		6 Sep 1989 (a)	-
France	16 Sep 1980	16 Sep 1982	16 Oct 1982
Germany	11 Sep 1980	23 Apr 1982	23 May 1982
Greece		12 Feb 1987 (a)	-
India		17 Jun 1985 (A)	29 Jun 1986
Italy		29 Mar 1989 (a)	30 Jun 1990
Japan	12 Sep 1980	26 May 1981 (A)	7 Apr 1982
Korea, Republic of		29 Mar 1985 (a)	19 Nov 1985
Mauritius**		2 Sep 2004 (a)	-
Namibia**		29 Jun 2000 (a)	5 Feb 2001
Netherlands		23 Feb 1990 (a)	-
New Zealand	11 Sep 1980	8 Mar 1982	7 Apr 1982
Norway	11 Sep 1980	6 Dec 1983	5 Jan 1984
Pakistan		24 Jan 2012 (a)	-
Panama**		20 Mar 2013 (a)	-
Peru		23 Jun 1989 (a)	-
Poland	11 Sep 1980	28 Mar 1984	27 Apr 1984
Russian Federation	11 Sep 1980	26 May 1981	7 Apr 1982
South Africa	11 Sep 1980	23 Jul 1981	7 Apr 1982
Spain		9 Apr 1984 (a)	21 Oct 1987
Sweden		6 Jun 1984 (a)	30 Dec 1989
Ukraine		22 Apr 1994 (s)	14 Dec 1994
United Kingdom	11 Sep 1980	31 Aug 1981	7 Apr 1982
United States	11 Sep 1980	18 Feb 1982	7 Apr 1982
Uruguay		22 Mar 1985 (a)	26 Aug 1996
Vanuatu**		20 Jun 2001 (a)	-

*The dates indicate on which date the instrument was deposited; not the date on which the CAMLR Convention entered into force for that contracting party in accordance with Art. XVIII(2) of the CAMLR Convention.

**Non-party to the Antarctic Treaty

Since the inception of CCAMLR, the proportion of members who have active fishing interests has changed considerably, from 37% in 1985 to 68% in 2017 (Table 2).

Table 2 - Proportion of fishing to non-fishing members of CCAMLR.

Year	Total Members	No. of fishing Members	% Fishing States
1985	16	6	37
1995	22	9	41
2005	24	16	67
2017	25	17	68

3.1.1. Cross-border management between jurisdictions in the CCAMLR Area

Several sub-Antarctic islands and associated coastal State maritime zones lie within the CCAMLR Area, namely the Crozet & Kerguelen Islands of France; the Prince Edward and Marion Islands of

[5] Information mainly obtained from http://www.austlii.edu.au/au/other/dfat/treaty_list/depository/CCAMLR.html (accessed 18 March 2015), which is indicated to be last updated on 11 December 2013.

South Africa; the Heard & McDonald Islands of Australia; and South Georgia and the South Sandwich Islands, claimed by both UK and Argentina but under the effective control of the UK.

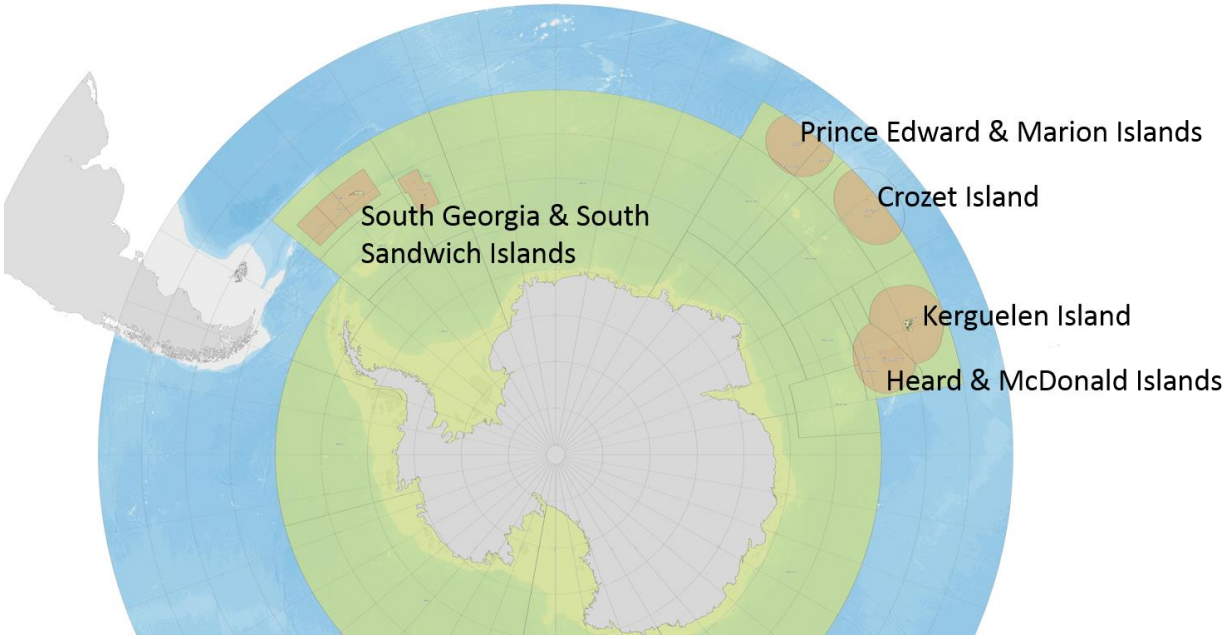

Figure 1. Areas (in red) under the jurisdiction or effective control of States within the CCAMLR Convention area (green). Source: CCAMLR GIS

In addition, Bouvet Island is under sovereign control of Norway, but no EEZ has been proclaimed around it (Figure 1). Therefore, the presence of coastal State waters within the CCAMLR area and the consideration of cross-border management between jurisdictions has been part of CCAMLR's approach from the very beginning. At the conclusion of the Conference on the Conservation of Antarctic Marine Living Resources in 1980, at which the CAMLR Convention was signed, the Chairman of the conference made a statement to outline the agreed position with regard to national jurisdictions within the CAMLR Convention area. This 'Chairman's Statement' indicates that States whose sub-Antarctic islands are included in the CAMLR Convention area can choose to exempt the maritime zones adjacent to their islands from the scope of application of conservation measures. Further discussion on this aspect of cross-border management can be found in section 3.6.

3.1.2. Multi-state management of the CCAMLR Area

CCAMLR is the decision-making body responsible for agreeing and adopting conservation measures and has representation from all Members. The CAMLR Commission meets annually and decisions are agreed – in the form of adopted and legally binding conservation measures or non-binding resolutions – by consensus among the 25 Members. Such directives must then be implemented by all 25 Members and Acceding States, where the latter agree to be bound by the Convention text, but are not involved in the decision-making process and are not liable for subscription costs.

From the inception of CCAMLR, conservation measures have been adopted to manage Antarctic fisheries and by-catch, which predominantly concerns Antarctic Krill, and species of Antarctic Toothfish, Patagonian Toothfish, icefish, lanternfish and grenadiers (see Table 3 for a detailed list of species mentioned in conservation measures currently in force).

Table 3 - Scientific and common names of species mentioned in CCAMLR conservation measures currently in force

(Source: CCAMLR. www.ccamlr.org/en/system/files/e-schedule2016-17.pdf.

Species name	Common name
Squalidae	
Somniosus spp.	Sleeper sharks
Myctophidae	
Electrona carlsbergi	
Macrouridae	
Macrourus caml	Caml grenadier
Macrourus carinatus	Ridge-scaled rattail
Macrourus holotrachys	Bigeye grenadier
Macrourus whitsoni	Whitson's grenadier
Macrourus spp.	Rattails, grenadiers
Nototheniidae	
Dissostichus eleginoides	Patagonian toothfish
Dissostichus mawsoni	Antarctic toothfish
Dissostichus spp.	Toothfish
Gobionotothen gibberifrons	Humped rockcod
Notothenia rossii	Marbled rockcod
Lepidonotothen squamifrons	Grey rockcod
Patagonotothen guntheri	Patagonian rockcod
Channichthyidae	
Chaenocephalus aceratus	Blackfin icefish
Champsocephalus gunnari	Mackerel icefish
Channichthys rhinoceratus	Unicorn icefish
Pseudochaenichthys georgianus	South Georgia icefish
Euphausiidae	
Euphausia superba	Antarctic krill

For the reporting of fisheries data for individual stocks and the implementation of management measures on a stock-by-stock basis, the Convention Area is divided into statistical areas, subareas and divisions (Figure 2).

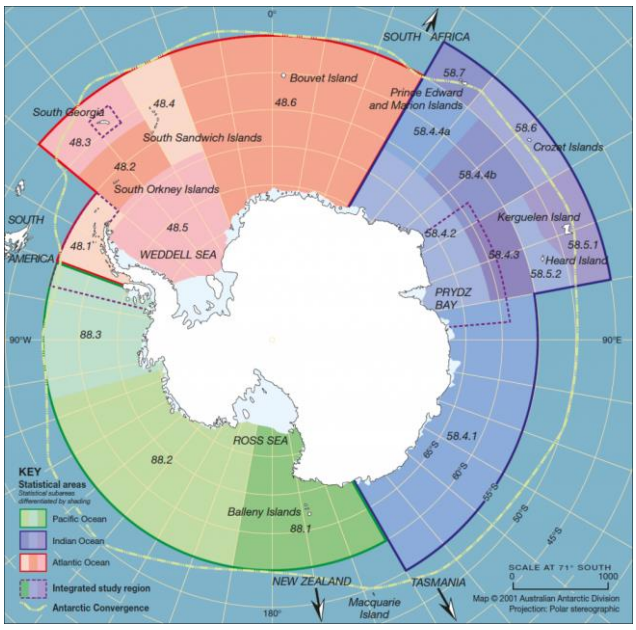

Figure 2 - CCAMLR statistical areas and sub-areas for fisheries management (Source: Australian Antarctic Division).

In 2003, and in accordance with the Convention aims and objectives, discussions began on the need for Marine Protected Areas (MPAs), and in 2005, the first proposal for the South Orkney Islands Southern Shelf MPA (in statistical area 48.2) was submitted to the Commission and accepted in 2009, making it the first high seas MPA (

Figure 3).

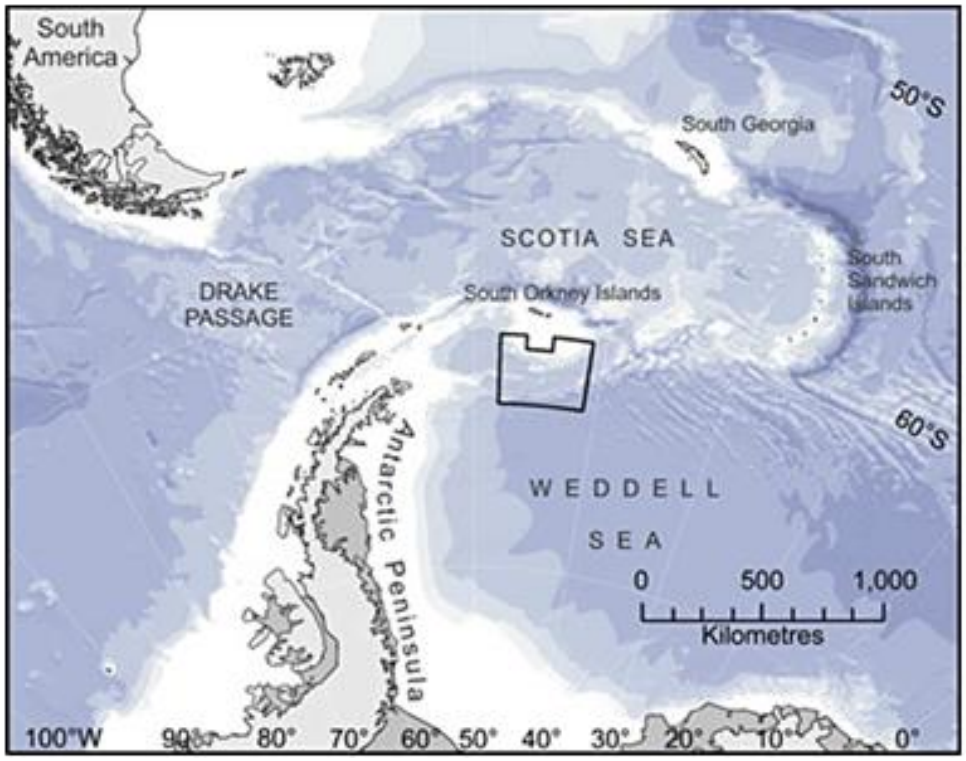

Figure 3 - South Orkneys Southern Shelf Marine Protected Area (Source: British Antarctic Survey).

In 2011, CCAMLR Members agreed a conservation measure to establish a network of MPAs within the Convention Area. For the planning of the MPA network, the Convention Area is divided into 9 planning domains (Figure 4). They are:

- Domain 1: Western Peninsula-South Scotia Arc
- Domain 2: North Scotia Arc
- Domain 3: Weddell Sea
- Domain 4: Bouvet Maud
- Domain 5: Crozet – del Cano
- Domain 6: Kerguelen Plateau
- Domain 7: Eastern Antarctica
- Domain 8: Ross Sea
- Domain 9: Amundsen- Bellingshausen

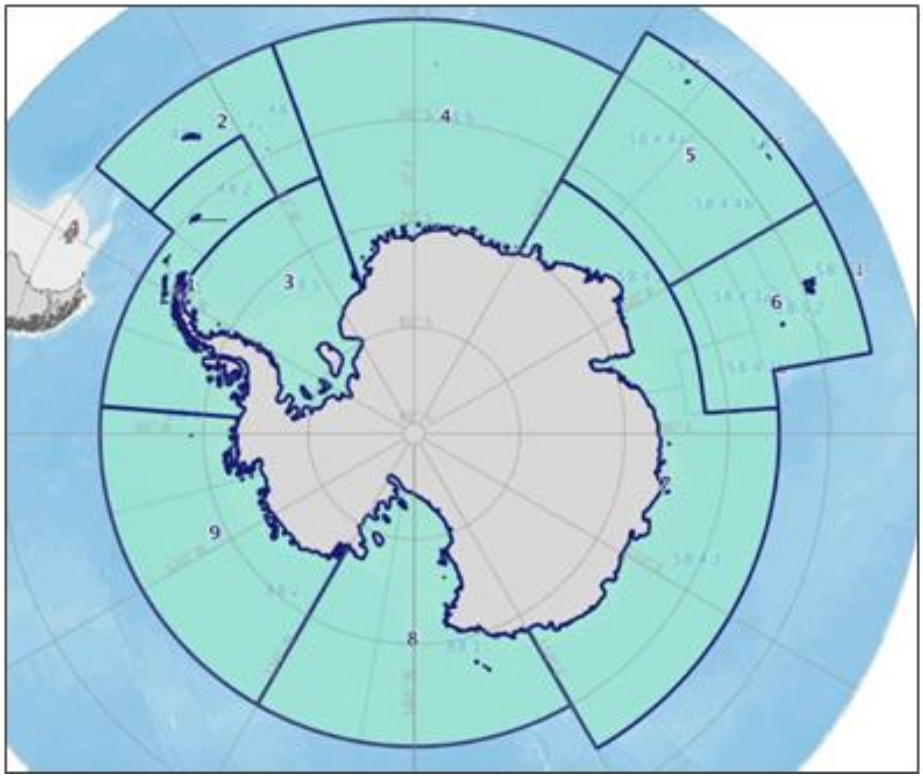

Figure 4 - CCAMLR MPA planning domains (Source: CCAMLR www.ccamlr.org/en/science/marine-protected-areas-mpas)

Since the adoption of the South Orkney Southern Shelf MPA, several other MPAs have been proposed in the CAMLR Convention Area, including more recently the East Antarctic System MPA, the Ross Sea Region MPA and the Weddell Sea MPA. The Scientific Committee and Commission have debated revisions and consolidations to proposals since 2012. In 2016, CCAMLR adopted the Ross Sea Region MPA proposal prepared by New Zealand and the US, making this MPA the largest in the world (Figure 5). Discussions continue with regard to the other MPA proposals.

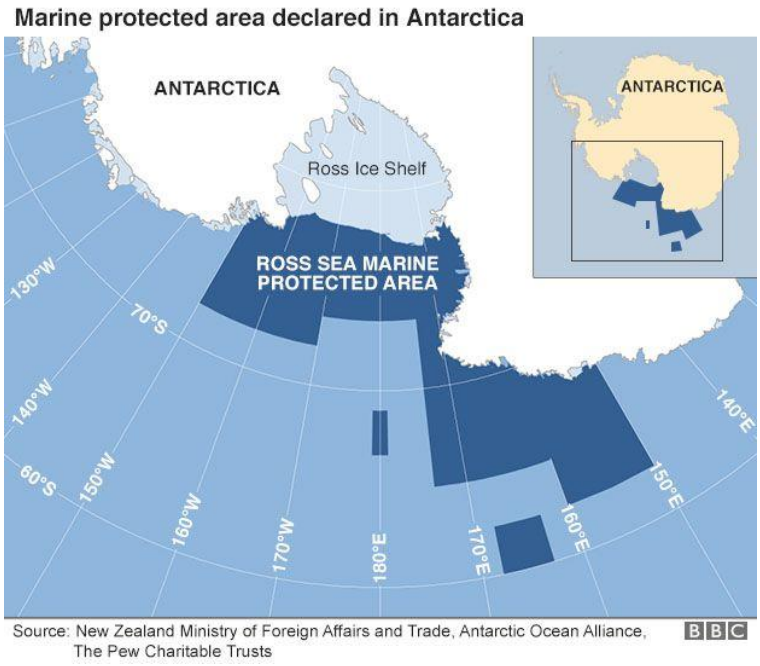

Figure 5 - Map of the Ross Sea Region Marine Protected Area. (Image courtesy of the BBC).

In 2016, a conservation measure[6] was agreed to provide for the establishment of a time-limited Special Area for Scientific Study, particularly for research on the effects of climate change on ecosystem processes, following the fresh exposure of marine areas after ice shelf collapse or retreat. Research conducted in these areas is permitted according to specific regulations (e.g. CCAMLR Conservation measure 24-01). Fishing activities are also permitted in these Special Areas, subject to a research plan agreed by the Commission with advice from the Scientific Committee and its appropriate Working Groups.

Unlike many MSP processes which are designed to develop a single plan that is then implemented, CCAMLR represents a well-developed adaptively managed system that regularly and constantly revises management measures according to the environmental and fishing activity signals that are monitored. CCAMLR views MPAs as one part of its approach to marine spatial protection to complement a variety of management tools, such as fishing limits and gear restrictions. In addition, CCAMLR continues to improve the efficacy of this adaptive management system, for example, implementing the CCAMLR System of Inspection in 1990 and the CCAMLR Scheme of International Scientific Observation in 1992.

3.1.3. Legal basis

The legal framework for resource management in the Southern Ocean is underpinned by the CAMLR Convention, which is a multi-state treaty arrangement. The Convention is closely linked to the Antarctic Treaty and binds Contracting Parties to Articles IV and VI of the Antarctic Treaty, which includes putting all existing and future territorial claims to the Antarctic continent into abeyance. This 'agreement to disagree' is also contained within the CAMLR Convention Article IV(2), which is tailored to the specific application of the Convention to the waters adjacent to the sub-Antarctic islands in the CAMLR Convention area.

Annex 3 provides further details on the legal aspects of CCAMLR.

3.1.4. Funding CCAMLR

The CCAMLR Secretariat and their activities are funded entirely by the Members, through their annual subscriptions as well as through payments for certain or all fishery notifications. Members also provide significant additional funds to support collaboration, the provision of scientific expertise and the achievement of specific CCAMLR objectives through their research programmes or national policies. There are no licence fees associated with Southern Ocean activities within CCAMLR, although States with sub-Antarctic islands may charge fees for licences. For example, South Georgia, whose government (The Government of South Georgia and South Sandwich Islands) receives income from fishing licences in its EEZ to fund research, monitoring and enforcement, as well as the implementation of CCAMLR conservation measures. Funding for conservation measures proposed under CCAMLR comes primarily from national funding from the proponent nation. Proponents (including the Secretariat) provide funding for the preparation of proposals and for the collation of science for each individual site proposal. Following proposal acceptance, CCAMLR allocates a budget for workshops and meetings to discuss the proposal. There are specific funds established for supporting the implementation of specific measures, including training and capacity building.

[6] CCAMLR 24-04 (2016)

Assessment questions for the overview of CCAMLR (green shading indicates the answer selected as most appropriate for CCAMLR)					
Assessment Questions	0	1	2	**3**	**Justification**
a) To what extent have cross-border issues shaped the collaboration in this MSP from its inception?	*The cross-border dimensions of this MSP were not a feature of this MSP at its inception*	*Cross-border features of this MSP have been present from initiation but not a central feature*	*Cross-border features have been one of several important features of this MSP*	*Cross-border collaboration has been central to the design of this MSP from the beginning*	Since much of the Southern Ocean area managed under CCAMLR is considered to be 'high seas', and therefore cross-border (in the conceptual sense), collaboration has been the most fundamental part of the management mechanism. The Convention itself also makes explicit reference to the presence of jurisdictions within the Convention area, and therefore the cross-border management issues that result are also a significant consideration for CCAMLR.
b) To what extent are the institutions responsible for MSP planning and management working independently or collaboratively?	*Planning and management of each country's zone is conducted by that nation's institutions in an independent manner*	*The cross-border coordinating mechanisms define the goals and principles of this MSP that individual nations tailor to their needs; the agenda for cross-border collaborative management is limited to a few issues*	*Major policies and features of this MSP are negotiated by representatives of each nation (state) convened by a cross-border coordinating institution*	*Planning and management is centralized and the responsibility of the lead cross-border institution*	With the exception of the areas within jurisdiction, the entire Convention Area is managed through CCAMLR's centralised decision making infrastructure. All states that have sovereign waters within the CCAMLR Area are also CCAMLR members.
c) To what extent has external funding enabled this MSP process?	*External funding has been a barrier to achieving the objectives of this MSP.*	*Despite important contribution in some areas, external funding has been generally detrimental to this MSP process.*	*Despite some detrimental effects in some areas, external funding has made an overall positive contribution to this MSP process.*	*External funding has been a primary enabler of this MSP process.*	[Grade not applicable] There is no external funding at present, although there is a proposal to the Global Environmental Facility (GEF) in the pipeline, which seeks to build the capacity of particular Members to participate more fully in CCAMLR meetings and activities.

3.2. Context

To a certain extent, assessing the progress of any management regime must acknowledge the environmental, socio-economic and governance baselines from where any interventions have started.

3.2.1. Environmental context

Resource use in the Southern Ocean began with the hunting of fur seals in 1790 and grew to include penguins, elephant seals and, from 1904, all seven of the whale species found in the Southern Ocean. In the face of appreciable population declines in these species, conventions were established in 1946 and 1972 to more sustainably manage the commercial hunting of these whales and seals, respectively. In the late 1960s, large-scale fishing was underway for krill and finfish and a decade later, certain species of finfish had been severely overfished in some areas, leading to declines in catches (CCAMLR 2012). In the absence of any Southern Ocean fisheries regulations, concerns were raised by Antarctic Treaty Consultative Parties that increasing unregulated krill catches, and other fishing activity, posed a threat to the health and sustainability of the Antarctic marine ecosystems. As a result, negotiations began within Antarctic Treaty Consultative Meetings and concluded in a conference on the Conservation of Antarctic Marine Living Resources was convened, which resulted in the signing of the Convention on the Conservation of Antarctic Marine Living Resources (CAMLR Convention) in 1980 and its entry into force in 1982 (CCAMLR 2014a). The CAMLR Convention and the CCAMLR itself are part of the Antarctic Treaty System (see Annex 3).

Prior to the establishment of CCAMLR, target fin-fish populations had been heavily impacted and were declining. Additionally, the majority of fish stocks had been over-exploited (Kock 1994). Other than fishing, scientific research was the only substantial activity occurring prior to the establishment of CCAMLR. Tourist trips to Antarctica began in the late 1950s but remained at low levels until the early 1990s (around 4,500 visitors per year) when tourist numbers began to increase significantly.

In the face of severe over-exploitation of living resources, climate change was not a primary concern at the time of CCAMLR's initiation. However, the polar regions are thought to be amongst the first regions to experience profound ecosystem changes as a consequence of climate change, most notably through ocean acidification (McNeil and Matear 2008). Over the last 50 years, the Antarctic marine ecosystem has been subject to warming waters and declines in sea ice as a result of climate change (Convey *et al.* 2009). The consequences of such changes are highly complex, with declines in krill stocks and phytoplankton, plus subsequent knock-on effects to the rest of the ecosystem, being observed in various areas. Over the past decade, therefore climate change has emerged as an important topic for consideration in Antarctic research (CCAMLR 2008), and CCAMLR's founding principles (the precautionary principle and an ecosystem-based approach) provide a framework through which climate change can be addressed (ASOC, no date).

3.2.2. Governance context

Several management and regulatory systems were in place prior to the establishment of CCAMLR and contribute to the overall management of the Southern Ocean (see Annex 3).

The International Whaling Commission (IWC) was established under the International Convention for the Regulation of Whaling (1946)[7]. The purpose of the IWC is to "provide for the proper conservation of whale stocks and thus make possible the orderly development of the whaling industry". The IWC sets out specific measures to regulate whaling and conserve whale stocks, for example, setting catch limits by species and area; designating whale sanctuaries; protection for calves and mothers; or restrictions on hunting methods. In 1982, the IWC adopted a global moratorium on commercial whaling, which came into effect in 1985-86. However, States such as

[7] International Convention for the Regulation of Whaling (1946) Adopted in Washington, USA on 2 December 1946. Available at: http://iwcoffice.org/commission/convention.htm

Norway, Iceland and Japan are opposed to the moratorium. At the time of writing, Norway and Iceland engage in commercial whaling in the North-East Atlantic under objection or reservation to the moratorium, and Japan engages in scientific research whaling in the Southern Ocean Whale Sanctuary established in 1994 by the IWC, under objection of Japan (IWC 2016).

The Antarctic Treaty was signed in 1959 by the 12 States whose scientists had been active in the region during the International Geophysical Year (1957-1958), and entered into force in 1961. The primary function of the Antarctic Treaty is to ensure "*in the interests of all mankind that Antarctica shall continue forever to be used exclusively for peaceful purposes and shall not become the scene or object of international discord*"[8]. As such, any territorial claims (Argentina, Australia, Chile, France, New Zealand, Norway and UK) to Antarctica are put into abeyance. The Antarctic Treaty applies to both terrestrial and marine areas south of latitude 60°S.

The broad mandate of the Antarctic Treaty led to the agreement of two other independent instruments. In 1964, **Agreed Measures for the Conservation of Antarctic Fauna and Flora** were negotiated. To address the heavy hunting of seals, the **Convention for the Conservation of Antarctic Seals (CCAS)** [9] was signed in 1972 and entered into force in 1978. CCAS established permissible catch limits for certain species of seal, and a zoning system was set up with closed hunting seasons in order to help seal populations recover. As a result, no commercial seal hunting has taken place since 1972.

In 1991, Parties to the Antarctic Treaty signed the **Madrid Protocol**[10], which is the protocol for environmental protection in Antarctica and which supersedes the 1964 Agreed measures for the conservation of Antarctic Fauna and Flora. The Protocol, amongst other things, establishes environmental principles for governance, prohibits mining, requires environmental impact assessments of activities to be undertaken, established a Committee for Environmental Protection which requires the development of contingency plans for environmental emergencies, and outlines the liabilities for environmental damage.

The decision to establish **CCAMLR** and its Convention was also made within the framework of the Antarctic Treaty, when Antarctic Treaty Consultative Parties (ATCPs) agreed in 1977 that a definitive conservation regime was necessary to address the threat of overfishing in the Southern Ocean.

The resulting combination of governance instruments that all bind signatories to aspects of the Antarctic Treaty itself, is referred to as the Antarctic Treaty System, comprising:

- The Antarctic Treaty (1959) and its Measures, Decisions and Resolutions
- The Convention on the Conservation of Antarctic Seals (1972)
- The Convention on the Conservation of Antarctic Marine Living Resources (1980, CAMLR Convention) and its Conservation Measures and Resolutions
- The Environmental (Madrid) Protocol to the Antarctic Treaty (1991)

The Antarctic Treaty System therefore represents a nested system of governance for the Southern Ocean. There are several advantages of such a nested system. The fundamental Antarctic Treaty pillars of peace and science are clearly identifiable within the objectives of the other instruments, notably CCAMLR's conservation and rational use mandate, unique amongst other intergovernmental organisations. The broad environmental mandate of the Antarctic Treaty means that it is able to address any issues that may not fall within the competencies of the other instruments, making all instruments complementary to one another. Coordination between

[8] Antarctic Treaty: www.ats.aq/documents/ats/treaty_original.pdf

[9] Convention on the Conservation of Antarctic seals: www.ats.aq/documents/recatt/att076_e.pdf (1972)

[10] Protocol on Environmental Protection to the Antarctic Treatywww.ats.aq/e/ep.htm; Annexes I-IV, Madrid, 4 October 1991. In force 14 January 1998; Annex V (adopted as Recommendation XVI-10), Bonn, 17 October 1991. In force 24 May 2002; Annex VI (adopted as Measure 1(2005)), Stockholm, 14 June 2005. Not in force.

instruments is facilitated by design, making it easier than between other separately negotiated instruments. The disadvantages are that the membership composition is not the same across the different instruments. While the original ATCPs were also the original signatories to each of the instruments, additional members have subsequently joined who may choose not to be signatories to the Antarctic Treaty. Later members may therefore not be fully committed to the overarching Antarctic Treaty principles, which may influence the outcome of decisions under ATS agreements.

Assessment questions related to the context of CCAMLR at initiation (green shading indicates the answer selected as most appropriate for CCAMLR)					
Assessment Question	**0**	**1**	**2**	**3**	**Justification**
a) *At initiation, to what extent was there support for MSP within the relevant government institutions?*	*Several institutions critical to the functioning of this MSP were initially resistant to its establishment*	*Support for this MSP has been uneven among the institutions involved*	*With few exceptions the responsible institutions have supported the development and implementation of this MSP*	*All responsible institutions have strongly supported the formulation of this MSP from its inception*	At the time of inception, all 12 of the original signatory governments were strongly supportive.
b) *At initiation, to what extent was there support for MSP among the different marine users/sectors?*	*Several marine users/sectors have strongly resisted or been skeptical of the benefits of establishing this MSP*	*Resistance and/or opposition to this MSP has been limited to a minority of the marine users affected*	*With minor exceptions, marine users have supported this MSP*	*All affected marine users (sectors?) have supported the development and implementation of this MSP from its inception*	Marine users/sectors are limited to fisheries, conservation and scientific research. In general, both the conservation and scientific research sectors were fully supportive of a spatial planning mechanism. The fisheries sector was mostly supportive, but since IUU fishing remained a problem, there were certainly exceptions to this, namely non-parties to CCAMLR.
c) *At initiation, to what degree did marine users conform to the pre-existing rules within the MSP focal area?*	*There were no governance mechanisms (laws, user rights) or significant rules affecting the activities of users of the focal area*	*There were traditional and/or governmental rules, but non-conformance was common*	*Conformance with rules was generally good with only occasional exceptions*	*Rules were widely known to all users and conformance was high*	In this context, marine users are considered to be fishing fleets operating in the CCAMLR Convention area. At inception, IUU fishing was a significant issue, which has been targeted by CCAMLR through the implementation of national regulations.
d) *To what extent have the historical/political contextual factors constrained cross-border collaboration?*	*Expressions of cross-border tensions and/or disagreements have been a major constraint on the MSP process*	*Historical/political tensions have been significant but largely overcome during this MSP process*	*Cross-border MSP collaboration has been somewhat constrained by cross-border tensions*	*There is a history and tradition of cross-border collaboration*	While there have been considerable tensions between the Members themselves, the Antarctic Treaty has provided a model for joint management in the Antarctic and CCAMLR has successfully followed that approach.
e) *To what extent have the socio-economic contextual factors*	*The socio-economic context has been a powerful*	*The socio-economic context has presented some challenges*	*Apart from some specific issues, the socio-economic context*	*Cross-border cooperation has benefited from, or not been in any way*	The lack of coastal States in the Southern Ocean significantly reduces the socio-economic factors at play within CCAMLR, and at inception, collaboration was unaffected. However, access to the valuable krill and fin fisheries in the Southern

Assessment questions related to the context of CCAMLR at initiation (green shading indicates the answer selected as most appropriate for CCAMLR)					
Assessment Question	**0**	**1**	**2**	**3**	**Justification**
affected cross-border cooperation on MSP?	*factor in making cross-border cooperation towards a consistent MSP across borders very challenging*	*to cross-border cooperation, with mixed results*	*has not affected successful cross-border cooperation*	*adversely affected by the socio-economic context of the MSP area.*	Ocean has increased over time, and as membership has grown, this aspect has had an impact on the cross-border collaboration.
f) To what extent have the environmental contextual factors affected cross-border cooperation on MSP?	*The environmental context has been a powerful factor in making cross-border cooperation towards a consistent MSP across borders very challenging*	*The environmental context has presented some challenges to cross-border cooperation, with mixed results*	*Apart from some specific issues, the environmental context has not affected successful cross-border cooperation*	*Cross-border cooperation has benefited from, or not been in any way adversely affected by the environmental context of the MSP area.*	The Southern Ocean remains one of the most pristine ocean areas, and therefore there has been strong collaboration to protect and manage resources without affecting such environmental conditions.
g) To what extent have governance structures of contributing countries/states/ provinces been capable of facilitating cross-border collaboration on MSP-relevant matters?	*Existing governance structures have not been capable of aligning the management of MSP-relevant matters across the border.*	*Existing governance structures have been capable of aligning management on some, but not on the most important MSP-relevant matters.*	*Existing governance structures have faced some challenges in cross-border collaboration, but have been capable of aligning the management of the most important MSP-relevant matters.*	*Existing governance structures have been capable of sharing good practices across borders or establishing a specific governance structure for the MSP area*	The establishment of CCAMLR as a specific governance mechanism has been very successful. All Members contribute to the functioning of CCAMLR and participate equally in the management process.

3.3. Drivers, issues and goals

3.3.1. Drivers behind the establishment of CCAMLR

The primary driver behind the establishment of the CCAMLR was the need to multi-laterally respond to the threats associated with increasing yet unregulated commercial fishing interests, and a history of over-fishing in the Southern Ocean. In particular, concerns surrounding unregulated krill catches and the associated implications for the functioning of Antarctic marine ecosystems, for example the trophic impacts on Antarctic whales, seals, seabirds and fish that rely on krill as their primary food source (see Figure 6).

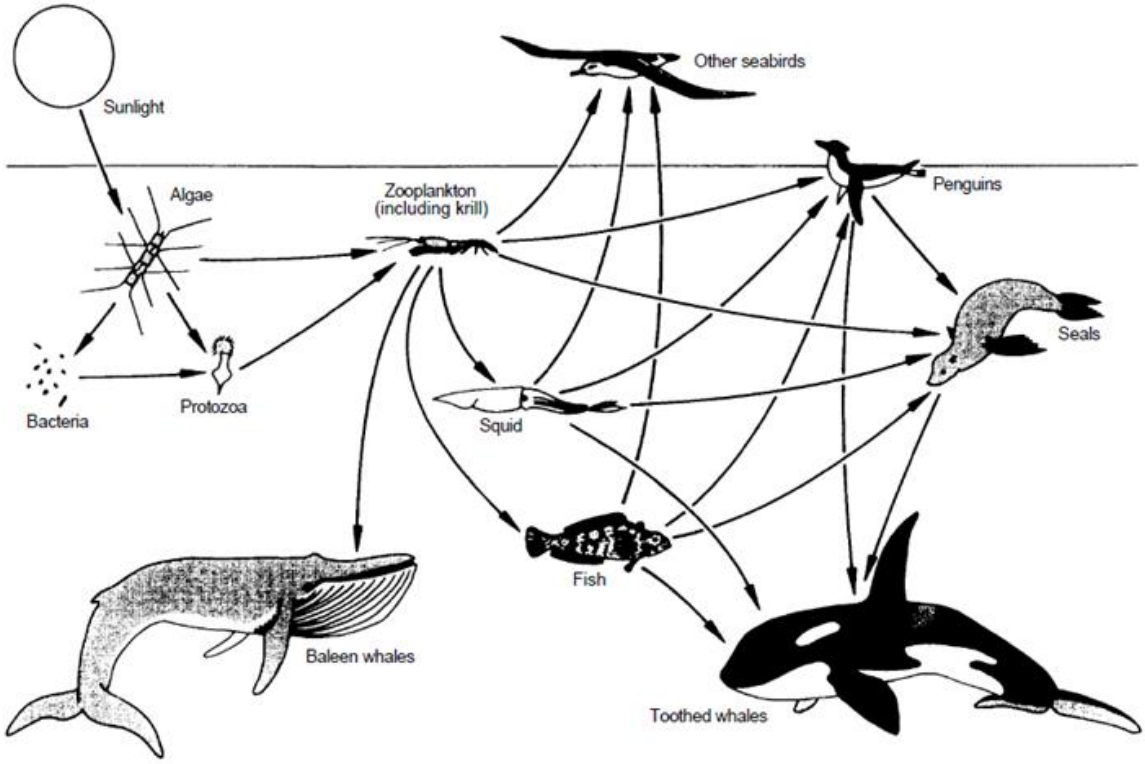

Figure 6 - Simplified trophic relationships in the Southern Ocean (Source: Kock 2000).

The main ecosystem services provided in the Southern Ocean include the provision of fisheries products (including krill resources), the maintenance of biodiversity, and nutrient cycling (Grant *et al.* 2013). In addition, the cold waters of the Southern Ocean play an important role in regulating global climate and sea level (Grant et al. 2013). The Southern Ocean also provides tourism and recreational services based on its remote location, rich biodiversity and aesthetic beauty.

Scientific research has been a very significant activity in Antarctica since the establishment of the first Antarctic research base in 1903 and is equally important in the Southern Ocean. Despite having no fishing interests in the Southern Ocean, some CCAMLR Members have large research programmes operating in the CAMLR Convention area. The desire by most state parties to maintain a strong research presence and ensure that fisheries management is underpinned by robust scientific information and evidence remains a significant driver for CCAMLR management practices.

3.3.2. Goals and principles of CCAMLR

CCAMLR has the overarching goal of conserving Antarctic marine living resources. This overarching goal, and the three main principles of CCAMLR are stated in the Convention text (Article II):

1) The objective of this Convention is the conservation of Antarctic marine living resources.

2) For the purposes of this Convention, the term 'conservation' includes rational use.

3) Any harvesting and associated activities in the area to which this Convention applies shall be conducted in accordance with the provisions of this Convention and with the following principles of conservation:

a. prevention of decrease in the size of any harvested population to levels below those which ensure its stable recruitment.

b. maintenance of the ecological relationships between harvested, dependent and related populations of Antarctic marine living resources and the restoration of depleted populations to the levels defined in (a);

c. prevention of changes or minimisation of the risk of changes in the marine ecosystem which are not potentially reversible over two or three decades, taking into account the state of available knowledge of the direct and indirect impact of harvesting, the effect of the introduction of alien species, the effects of associated activities on the marine ecosystem and of the effects of environmental changes, with the aim of making possible the sustained conservation of Antarctic marine living resources.

This objective has remained the same ever since the Convention came into force and is not time-bound. Through Conservation Measures and resolutions consensually agreed by the Commission, CCAMLR has adopted additional targets that are directly relevant to marine spatial planning and management, such as the 2011 '*General framework for the establishment of CCAMLR Marine Protected Areas*'[11] (CM 91-04-2011). This framework was developed in accordance with Article IX of the Convention and notes that MPAs in the CCAMLR area shall be established upon the fulfilment of various requirements, including the need for proposals to be based upon the best available scientific evidence and the full consideration of the definition of conservation (which includes 'rational use'), in order to achieve the following objectives:

I. The protection of representative examples of marine ecosystems, biodiversity and habitats at an appropriate scale to maintain their viability and integrity in the long term;

II. The protection of key ecosystem processes, habitats and species, including populations and life-history stages;

III. The establishment of scientific reference areas for monitoring natural variability and long-term change or for monitoring the effects of harvesting and other human activities on Antarctic marine living resources and on the ecosystems of which they form part;

IV. The protection of areas vulnerable to impact by human activities, including unique, rare or highly biodiverse habitats and features;

V. The protection of features critical to the function of local ecosystems;

VI. The protection of areas to maintain resilience of the ability to adapt to the effects of climate change.

3.3.3. Issues addressed by CCAMLR

While no formal log frame approach has been used to identify the drivers, issues or goals of the CCAMLR process, an adaptive management cycle has emerged and is certainly present, visible through the establishment of stock assessment baselines, implementation of conservation measures, and monitoring. Table 4 lists the major issues addressed by CCAMLR.

Some of these issues and drivers have changed over time. Extensive unregulated fishing practices within the Southern Ocean were the main driver resulting in the establishment of CCAMLR. Since the implementation of CCAMLR, fishing activities in the Southern Ocean have diversified due to increases in country capacity and technological advances. For example, in the 1990s, long-line

[11]CCAMLR CM 91-04-2011: www.ccamlr.org/en/measure-91-04-2011

fishing methods resulted in significant seabird bycatch mortality. CCAMLR addressed and eliminated the significant impacts associated with this practice through the application of specific conservation measures. Other issues, such as marine mammal entanglement in marine debris, and the impact of bottom trawling fisheries, have also arisen in recent years and are currently being addressed by the CCAMLR process. As technology and capacity increase and new threats arise, CCAMLR responds through adaptive measures.

Table 4 - Major issues addressed by CCAMLR.

Issue	How CCAMLR addresses these issues
Illegal, Unreported and Unregulated (IUU) fishing	Unregulated fishing was a major issue prior to CCAMLR, and the primary driver of the establishment of the Convention. Following the establishment of CCAMLR, fishing in the Southern Ocean was managed through conservation measures applicable to CCAMLR members and acceding states. In an effort to detect, deter and eliminate IUU fishing, CCAMLR has adopted a range of conservation measures, including catch and effort reporting, vessel licensing (CM 10-02), monitoring of vessel movements (CM 10-04), monitoring of vessel trans-shipments (CM 10-09), the CCAMLR System of Inspection, the Vessel Monitoring System (CM 10-04), the Catch Documentation Scheme (CM 10-05), Contracting Party and non-contracting Party IUU Vessel Lists (CMs 10-06 and 10-07), control of nationals (CM 10-08), and compliance evaluation (CM 10-10).
Overfishing	The overfishing of Antarctic finfish stocks, and therefore the potential for overfishing of krill, was another significant issue in the initial years after the adoption of CCAMLR. As a result, krill stocks have been managed in a precautionary manner, through the establishment of a 'trigger level' that fixes the regulated catch to 620,000 tonnes, significantly lower than the total allowable catch as calculated by CCAMLR. CCAMLR Members must submit catch and effort data at regular intervals. To ensure this limit is not exceeded, CCAMLR requires catch and effort reporting and VMS data (as well as measures defined above) and has established its Scheme for International Scientific Observation (SISO) which places an observer on every vessel to monitor gear, effort and biological data, amongst other things.
Seabird bycatch	The expansion of long-line fishing into areas close to seabird breeding colonies and feeding grounds resulted in high levels of seabird mortality. Multiple conservation measures were established, including adding weights to long-line hooks, minimising vessel lights at night, prohibiting the dumping of discards and offal when placing long-lines; affixing streamer lines long-lines to deter birds, using bird exclusion devices, making every effort to return birds caught alive (CM 25-02), which have reduced this problem to near zero incidence.
Marine mammal entanglement in debris	Discarded fishing gear or accessories has caused significant seal mortality within the Convention area (Kock 2000). Conservation measures to phase out certain fishing materials, to avoid jettisoning fishing gear, and to require the use of mitigation measures (e.g. escape panels in nets), as well as having observers on board to ensure that mitigation measures are used effectively have had a positive impact. Seal mortality has been reduced to zero observations where mitigation measures and observers have been used effectively.
Impact of fishing on the seabed	Bottom trawling has a significant effect on benthic fauna and flora. Conservation measures have been put in place to regulate bottom trawling, which has been prohibited from the entire Convention Area (with the exception of Heard & McDonald Islands EEZ under Australian jurisdiction).
Conservation of biodiversity	Conservation of marine life more broadly, in order to preserve Antarctic ecosystems and mitigate against the future risks of climate change and acidification, has been addressed through the establishment of MPAs, both individually and in biogeographically representative areas towards an MPA network.

Assessment questions for the drivers, issues and goals of CCAMLR (green shading indicates the answer selected as most appropriate for CCAMLR)					
Assessment Questions	**0**	**1**	**2**	**3**	**Justification**
a) To what extent has the ecosystem based management approach been used in the design of the MSP?	*The ecosystem approach had little or no influence upon the design and scope of this MSP*	*The ecosystem approach has informed this MSP but has not been a central feature of its design*	*The ecosystem approach was one of several principles incorporated in this MSP but others were equally important*	*The ecosystem approach has been a central feature of the design, scope and process of this MSP since its inception.*	The ecosystem approach is arguably the fundamental feature of CCAMLR's management approach. It is clearly incorporated into the Convention text and catalysed the establishment of the CCAMLR Ecosystem Monitoring Program (CEMP). A large number of interviewees felt that CCAMLR has made significant progress towards an ecosystem approach, and should demonstrate successful experiences and inspiration to other similar organisations aiming for the same approach.
b) To what extent do the MSP goals address desired social, economic and environmental outcomes?	*MSP goals are defined in general terms*	*Goals define one of the variables but not the other two*	*Goals define two of the variables*	*Goals define desired outcomes in terms of all three variables*	By design, CCAMLRs goals are specifically designed to deliver specifically ecological outcomes rather than broader environmental outcomes. Although this issue is currently a matter of contention between Members (between fishing and non-fishing nations), the original interpretation of the Convention by its signatory parties has been to ensure that social or economic goals do not challenge the achievement of ecological outcomes, as these are the most important in the pristine Antarctic environment.
c) To what extent have (would have) time bounded and quantitative goals enabled or constrained this MSP process?	*Time bounded and quantitative goals have (would have) been a key constraint in this MSP process.*	*Time bounded and quantitative goals have had/would have had some minor benefits, but overall their use has/would have been detrimental to the MSP process.*	*Time bounded and quantitative goals (would) have posed some minor challenges, but their use would have/has been overall positive for the MSP process.*	*Time bounded and quantitative goals have been a key enabling factor of this MSP process.*	CCAMLR goals have not been time bound, but a large number of objectives are quantitative and some of the objectives have had timeframes allocated to them, specifically the decision to have a network of MPAs established by 2012 to follow the deadline set by the Convention on Biological Diversity (CBD). Some interviewees felt that the MPA timeframe was too ambitious for CCAMLR, which has had considerable problems designating MPAs through its consensus-based decision making process. While a number of interviewees felt that the decision making process was painfully slow, they considered it to be the best approach for CCAMLR. This would suggest that time bound goals and objectives would probably be constraining to the MSP process.

3.4. Scope and design

3.4.1. Structure of CCAMLR

The responsibility for marine resource planning and management (both joint and cross-border) in the Southern Ocean belongs primarily to CCAMLR (see Annex 3). The CAMLR Convention (Article IX) states that the function of the Commission is to give effect to the objective and principles set out in Article II of this Convention. To this end, it shall:

a) facilitate research into and comprehensive studies of Antarctic marine living resources and of the Antarctic marine ecosystem;

b) compile data on the status of and changes in population of Antarctic marine living resources and on factors affecting the distribution, abundance and productivity of harvested species and dependent or related species;

c) ensure the acquisition of catch and effort statistics on harvested populations;

d) analyse, disseminate and publish the information referred to in sub-paragraphs (b) and (c) above and the reports of the Scientific Committee;

e) identify conservation needs and analyse the effectiveness of conservation measures;

f) formulate, adopt and revise conservation measures on the basis of the best scientific evidence available, subject to the provisions of paragraph 5 of this Article;

g) implement the system of observation and inspection established under Article xxiv of this Convention;

h) carry out such other activities as are necessary to fulfil the objective of this Convention.

The Convention establishes the Scientific Committee as a consultative body to the Commission. The Scientific Committee has been designed to "provide a forum for consultation and cooperation concerning the collection, study and exchange of information with respect to the marine living resources" under the Convention. It encourages cooperation between Members within the field of scientific research so as to increase knowledge of marine living resources of the Antarctic marine ecosystem.

CCAMLR must 'take full account of the recommendations and advice of the Scientific Committee in making its decisions'. The Scientific Committee meets annually just prior to the Commission meeting to review data from national scientific research programmes, as well as from CCAMLR's own research programmes into fisheries monitoring, scientific observers on fishing vessels, ecosystem monitoring and marine debris. The Scientific Committee has established four working groups and one specialist sub-group addressing and providing advice on thematically specific areas of the scientific research:

- Working Group on Ecosystem Monitoring and Management (WG-EMM)
- Working Group on Fish Stock Assessment (WG-FSA)
- Working Group on Statistics, Assessments and Modelling (WG-SAM)
- Working Group on Incidental Mortality Associated with Fishing (WG-IMAF)
- Subgroup on Acoustics, Survey and Analysis Methods (SG-ASAM)

Under Article XX of the CAMLR Convention, Members are required to provide (where possible) statistical, biological and other data and information to the Commission and the Scientific Committee annually. This research can then be used by the Scientific Committee to advise the Commission on conservation measures and management decisions. CCAMLR scientists meet once a year in the various working groups, where data is presented and reviewed and used in the annual preparation of scientific advice for all areas and subdivisions within the CCAMLR Convention Area (Figure 7).

Two subsidiary bodies also provide recommendations to the Commission:

- **Standing Committee on Implementation and Compliance (SCIC):** reviews and assesses the implementation of, and compliance with, CCAMLR's conservation measures.
- **Standing Committee on Administration and Finance (SCAF):** provides budget forecasts for future years; annual budget operations and audited financial statements.

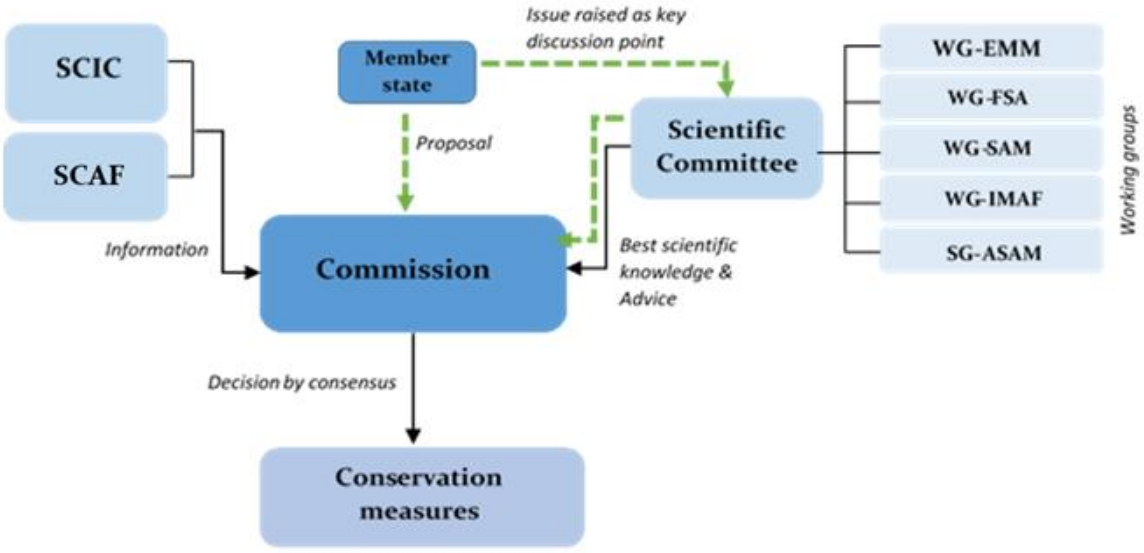

Figure 7 - Schematic showing how decisions regarding conservation measures are made. Green (dashed) lines represent the pathways through which new measures can be proposed and discussed. See paragraph above for description of the working groups and both SCIC and SCAF.

3.4.2. Resource issues linking land and sea

More than any other ocean area on earth, the Southern Ocean has very little human impact from land-based sources given the extremely low levels of human development across the continent, and the complete prohibition under the Antarctic Treaty (and its Madrid Protocol) of high impact land-based activities such as mining and nuclear testing (see Annex 3).

Terrestrial management, and general environmental protection more broadly, is the responsibility of the Antarctic Treaty. Therefore, the comprehensive linkage between land and sea issues is determined by the level of integration between the Antarctic Treaty and CCAMLR.

Albeit at very low levels, shipping does occur in the Southern Ocean, and presents a risk of pollution to the pristine Antarctic environment. At the 3rd Antarctic Treaty Consultative Meeting (ATCM), binding Agreed Measures for the Conservation of Antarctic Fauna and Flora were adopted (now superseded by the Madrid Protocol), which includes the responsibility to 'take all reasonable steps towards the alleviation of pollution of the waters adjacent to the coast and ice shelves' (McCreath 2015).

In addition, Antarctic Specially Managed Areas (ASMAs) and Antarctic Specially Protected Areas (ASPAs) have been designated under the Antarctic Treaty for the protection of biodiversity and ecosystem health, as well as for long-term ecosystem monitoring. Some ASMAs and ASPAs are fully marine or have a marine component to them. In 2011, concern was raised that authorised CCAMLR fishing vessels were found to be unknowingly fishing in ASPAs, which could compromise the 'high scientific value of the sites and undermine their management goals'. To overcome this issue, the Antarctic Treaty Secretariat (ATS) agreed to share data with CCAMLR on the location of ASMAs and ASPAs. CCAMLR agreed a conservation measure (CM 91-02) on Protection of the values of Antarctic Specially Managed and Protected Areas, which recommends that "*a multi-level hierarchical approach to area management could harmonise decisions made at the ATCM and*

CCAMLR" and allows for ASPAs and ASMAs to be designated by the ATCM Members within CCAMLR MPAs.

Recognising the risk that fishing vessels also pose to the environment with regard to pollution, CCAMLR members' concern 'that collisions with ice could result in oil spills and other adverse consequences for Antarctic marine living resources and the pristine Antarctic environment' resulted in the adoption of non-binding Resolution 20/XXII (McCreath, 2015) that requires vessels to have ice-strengthening measures in place.

Assessment questions related to the scope and design of CCAMLR (green shading indicates the answer selected as most appropriate for CCAMLR)					
Assessment Questions	**0**	**1**	**2**	**3**	**Justification**
a) To what extent does the MSP process have the authorities required to successfully implement the plan?	MSP implementing authority is as yet undefined	The distribution of authorities/responsibilities required for MSP implementation are being negotiated	The major roles and responsibilities for MSP implementation are known but some responsibilities and/or coordinating mechanisms remain unclear	Implementing authorities are clear and sufficient to fully implement this MSP	CCAMLR is the implementing authority for the MSP in the Southern Ocean and through decisions made by its members, CCAMLR establishes Conservation Measures that are binding for members and Acceding States. On the whole, interviewees report that CCAMLR has the institutional capability to successfully implement its ecosystem approach to marine resource management. However, CCAMLR only has jurisdiction over countries who have signed or ratified the Convention, but not non-contracting parties.
b) To what extent does the MSP possess the human resources required to implement the plan?	The necessary human resources for implementation have not yet been assigned	Staffing for MSP implementation is inadequate	Staffing for implementation is present in some institutions but not others	Sufficient human resources are in place to fully implement this MSP	Interviewees mentioned the high technical competence and capacity of the CCAMLR Secretariat in terms of supporting Members to deliver the objectives of the Convention.
c) To what extent has there been coordination of planning between land and sea in this MSP?	Connections between land and sea processes and issues have not been addressed in the planning.	Connection between land and sea have been recognized but addressing them is not within the scope of this MSP	Connections between the land and sea have been recognized and some are addressed by the policies and regulations of this MSP	The major interconnections between land and sea processes and issues have been recognized and addressed	Given that Antarctica has so few inhabitants, there are very few human land-based threats to the marine realm. While the low level of human terrestrial impact means there is no specific need to coordinate between planning on land and at sea in the Antarctic, the communication established between the ATS and CCAMLR with regard to joint planning of MPAs is evidence that such a mechanisms exists should it be necessary in the future.

3.5. Collaboration and consultation in the planning phase

3.5.1. Key stakeholders in CCAMLR

The permissible human activities and associated management regimes actually occurring in the Southern Ocean are essentially fishing, conservation, scientific research, shipping and tourism. The CAMLR Convention has the mandate to manage with the first three in the Southern Ocean, although has passed some measures that affect others. CCAMLR manages activities as an intergovernmental body, meaning that the main stakeholders in CCAMLR are its Contracting Party Members, as represented by their respective Government ministries.

The criterion for accession to the CAMLR Convention is an interest in science, and States do not need to have any fishing interests whatsoever. Acceding States can then apply for membership to CCAMLR based upon their actual engagement in science.

Resource users (i.e. the fishing industry) can be represented both within Member State delegations (as decided by the Members themselves), or as independent bodies, such as the Coalition of Legal Toothfish Operators (COLTO), or the Association of Responsible Krill harvesting companies (ARK). Civil society interests, such as environmental protection, conservation and research, are represented by non-governmental organisations and partnerships such as Antarctic and Southern Ocean Coalition (ASOC) and the International Union for Conservation of Nature (IUCN). There are also a large number of other intergovernmental bodies with an interest in Southern Ocean management, such as the Antarctic Treaty Secretariat (ATS); the International Whaling Commission (IWC); and the Agreement for the Conservation of Albatrosses and Petrels (ACAP). These organisations, or their relevant committees (e.g. Scientific Committee on Antarctic Research (SCAR); Scientific Committee on Oceanic Research (SCOR); Committee on Environmental Protection (CEP)) are also considered to be stakeholders. Only CCAMLR Members are able to participate in CCAMLR decision making, and all other organisations attending CCAMLR do so as observers.

3.5.2. Collaboration and consultation between Members

The CAMLR Commission is comprised of representatives from its 25 Members (including the European Union) and is the principal mechanism through which decision-making occurs. Membership of the Commission entitles Members to participate in, agree and veto decisions of the Commission, which are made by consensus, including the right to fish in the CAMLR Area.

CCAMLR Members meet annually at the Commission meeting to adopt management measures for the marine resources within the Convention Area. Annual research and data collected through national science programmes by Members is submitted to CCAMLR's various working groups, which prepare annual reports to submit to CCAMLR's Scientific Committee. The Committee then formulates advice which is then presented to the Commission for consideration and adoption. Commission decisions must be agreed by consensus among CCAMLR Members. Once adopted, Members are obliged to implement conservation measures, and to report on compliance through CCAMLR's SCIC on an annual basis.

All CCAMLR Commission and Scientific Committee meetings have interpreters and translation to make meeting discussions and documents accessible in English, Spanish, French and Russian. The same individual interpreters are used consistently, year on year, which not only develops very high quality of technical interpretation, but also strengthens the collaborations between individual Member State delegates and their respective interpreters, thus enhancing interpretation of verbal mannerisms. Interpreters have produced guidelines for CCAMLR delegates to ensure sufficient time and good interpretation of long speeches, and CCAMLR itself has been the subject of academic interpretation studies.

3.5.3. Collaboration and consultation with non-Member stakeholders

Collaboration and consultation with non-Member stakeholders occurs in two main ways. Firstly, Members are responsible for creating their delegations, and may choose to have representation from their national NGOs, scientific research organisations or fishing industry bodies on their government delegations. Secondly, inter-governmental and non-governmental organisations, such

as ARK, ASOC, ATS, IUCN, COLTO and United Nations Environment can participate as observers in Commission and Scientific Committee meetings, and can therefore contribute to discussions but cannot make decisions. More recently, industry representatives (e.g. COLTO, ARK) have been permitted to attend Working Group meetings, although environmental NGOs have not.

3.5.4. Collaboration and consultation with Non-Contracting Parties (Third countries)

Non-Contracting Parties that harvest, land or trade toothfish in the CCAMLR area are regarded as undertaking IUU fishing if they do not adhere to any of the conservation measures that relate to such practices. However, CCAMLR has a very inclusive policy towards Non-contracting Parties, inviting them to cooperate with CCAMLR in a number of ways:

- By monitoring toothfish trade through limited access to the electronic CDS (e-CDS)
- By becoming a non-Contracting Party cooperating with CCAMLR by participating in the CDS
- By becoming a Contracting Party to CCAMLR

In addition, the CCAMLR Secretariat will organise workshops in Non-contracting Party countries to raise awareness of IUU issues and to encourage membership of CCAMLR. Unlike some intergovernmental regulatory bodies, therefore, CCAMLR represents a highly accessible institution, accepting most applications to become members and engaging fully with Non-contracting Parties.

3.5.5. Mechanisms for cross-border planning and management

A number of mechanisms exist for data reporting and data sharing between Members. With some exceptions, data stored and maintained by CCAMLR is governed by Rules for the Access and Use of CCAMLR Data. The first paragraph of the Rules for Access and Use recognises that "All data submitted to the CCAMLR Secretariat, and maintained by the CCAMLR Data Centre, shall be freely available to Members for analysis and preparation of documents for the Commission, Scientific Committee and their subsidiary bodies"[12]. The Data Centre holdings include fishery data (catch and effort reports, Vulnerable Marine Ecosystem (VME) indicator data, fishery and trade statistics); scientific observer data; fishery survey data; CCAMLR VME Registry; marine debris data; CEMP data; compliance data (vessel information, licensing, inspectors and inspections, fishery notifications); research notifications; GIS shape files and data layers; and reference data.

Although there is no regular sharing of detailed data between CCAMLR and the Antarctic Treaty (the Antarctic Treaty is not a data custodian), CCAMLR data may be requested, and are available to Members for Antarctic Treaty use, subject to the rules of access.

The CCAMLR website and document portal are the principal ways in which the Commission shares information and data with its Members. Moreover, CCAMLR are about to launch a section on their website on MPAs and to release data that supported the proposals to Members.

3.5.6. Barriers to cross-border collaboration

There are a number of issues that affect the collaboration in CCAMLR:

1. **Differing interpretations of the Convention text** – Article II of the Convention describes the objective of the organisation as *"the conservation of Antarctic marine living resources" (Para 1)* and clarifies that *"the term 'conservation' includes rational use" (Para 2).* Numerous conservation measures have been adopted to achieve this objective. However, there are subtly different interpretations among the Members with regard to the relative weight given to the application of conservation and rational use in both the Convention objective and certain conservation measures (e.g. the significance of the absence of a definition for marine protected area (MPA) in CM 91-04 (2011)), which may have caused delays in the establishment of CCAMLR MPAs).

[12] Rules for Access and Use of CCAMLR Data: www.ccamlr.org/en/system/files/e-pt11.pdf

2. **The implications of spatial planning with regard to unresolved jurisdictions** – the jurisdictional disputes and conflicting claims within the CAMLR Convention area (e.g. overlapping Antarctic claims and the dispute over South Georgia) have in the past taken up considerable CCAMLR meeting time and energy and presented a significant challenge to cross-border cooperation in CCAMLR. In recent years, however, cooperation between particular Members has improved considerably (CCAMLR 2016a, paras 12.5 and 12.6) and the agreement to disagree over jurisdictions does not currently appear to pose problems for joint management of the CAMLR Convention area. Nevertheless, unresolved jurisdictions does mean that, unlike other regional fisheries management organisations, CCAMLR cannot apply the zonal attachment principle (allocating total catch according to the proportion of the total shared fish stock that resides in each States' EEZ) to allocate fisheries catch limits. Instead, CCAMLR adopts the 'Olympic fisheries' approach, where a total allowable catch (TAC) limit is not divided amongst members, but is freely available to Members until the catch limit is reached. This approach results in significant economic inefficiency and affects the equitability of access to fisheries by Members.

3. **The challenge of managing across jurisdictions –** While there is the expectation that CCAMLR Members with sub-Antarctic islands in the CAMLR Convention area will make every effort to align the fisheries management in their maritime zones adjacent to these sub-Antarctic islands with CCAMLR's fisheries management, making them equally or more robust, this does not necessarily occur in practice, and management measures are therefore not consistent across the CCAMLR Convention area.

4. **Language and cultural barriers** – Much of the detailed scientific discussions occur between Members in the Working Groups, where discussions occur in English and are not interpreted. While the Working Group reports are translated, there have been some indications that the lack of interpretation during the meetings may well present a barrier to fluid discussions over important topics, and exacerbate the existing cultural differences in how negotiations are traditionally conducted in different Member States.

Assessment questions related to collaboration and consultation in the planning phase (green shading indicates the answer selected as most appropriate for CCAMLR					
Assessment Question	**0**	**1**	**2**	**3**	**Justification**
a) To what extent was the design process and schedule made explicit to all parties in the initial phase of the MSP process?	*The procedures and schedule evolved over time and changed significantly as the planning process matured*	*While the design process proceeded as expected there were some unexpected issues that delayed or interrupted the schedule*	*With minor exceptions the design process unfolded as anticipated*	*The procedures and schedule for consultation have been widely known from the initiation of this MSP and they have been followed*	The CCAMLR design process here refers to both the establishment of CCAMLR itself, as a mechanism for adopting spatial measures for fisheries, research and environmental protection, and the specific programme of adopting measures relating to spatial planning for MPAs. The process for establishing fisheries spatial management measures were in place from the inception of CCAMLR, but MPAs were not considered on the CCAMLR agenda until 2003. With regard to CCAMLR itself, the original signatory Member State stakeholders were fully involved in the design process and related schedule of adopting measures. However, other stakeholders, such as NGOs and industry were not included in this initial process. With regard to the MPA designation process, the first MPA proposal was tabled in 2005, followed in 2009 by an agreement to establish a network of MPAs by 2012. Although both Member and non-Member stakeholders were engaged in the discussions with regard to the design process and schedule, the next set of MPA proposals have been delayed for several years, due to disagreements between Members on some of the fundamental principles underpinning the MPA agenda (e.g. whether MPAs should have a sunset clause; whether MPAs should have exploratory fishing zones within them; whether the entire CCAMLR Convention area should be considered as an MPA).
b) To what extent do the affected user groups and the public understand and support the MSP process goals and strategies?	*Those affected, and the public have a range of impressions on the goals and procedures of the MSP, some of them contradictory*	*Well informed support for the MSP is present in either the user groups or the public, but not both*	*With some exceptions, there is a good understanding and support for the goals and strategies of the MSP*	*There is strong support among both user groups and the public for the goals and procedures of this MSP*	The key user groups – i.e. the fishing industry, scientific community and conservation advocates – are represented as observers within the CCAMLR meetings, and provide constructive support and information to the discussions. The general public is not represented within CCAMLR. However, the Antarctic and Southern Ocean Coalition (ASOC) has a high profile within certain sectors of the general public through its media and campaigns. From industrial sized banners hung in full view of the CCAMLR Commission meeting and billboard sized postcards 'sent' to CCAMLR urging Commissioners to designate Southern Ocean MPAs, it's clear that the general public support the goals and procedures of CCAMLR, and in some areas, would like to see greater progress.
c) To what extent were	*Governmental/public/non-*	*Governmental/public/non-*	*Governmental/public/non-*	*Governmental /public/non-*	• As CCAMLR is an intergovernmental management organisation, the key stakeholders are governments, who have been fully involved in the

Assessment questions related to collaboration and consultation in the planning phase (green shading indicates the answer selected as most appropriate for CCAMLR					
Assessment Question	**0**	**1**	**2**	**3**	**Justification**
stakeholders involved in designing and shaping the MSP process, incl. its cross-border elements? (governmental, non-governmental and the public)	*governmental stakeholders were not involved in the design process*	*governmental stakeholders and the public were informed of the development of this MSP but were not contributors to its design*	*governmental stakeholders were invited to comment; their suggestion and/or concerns were acted upon in some instances but not others*	*governmental stakeholders were active participants in the planning process and significantly shaped the resulting plan*	planning process from the start, although membership has increased from 14 to 25. • NGO stakeholders are invited observers to the CCAMLR process. Although NGOs cannot contribute to decisions, their views and concerns are presented, and NGO stakeholder interviewees considered the process a highly collaborative one. NGOs have participated in the design and shaping of the MSP process through the funding of workshops (e.g. the first bio-regionalisation workshop funded by the World Wildlife Fund [WWF]). However, NGOs are not invited to the working group meetings, which means that they are not engaged in the substantial negotiations that underpin the development and revision of proposals in the decision making bodies. • The general public was not involved in the design process at all, although there is a significant amount of media coverage that highlights the progress of CCAMLR. Various civil society bodies push for CCAMLR to address specific issues through their public-funded campaigns.
d) *To what extent were barriers to cross-border collaboration resolved?*	*Cross-border collaboration remains a major challenge*	*Some significant barriers to cross-border collaboration have been resolved but others persist*	*The major barriers to cross-border collaboration have been resolved but minor difficulties remain*	*All significant barriers to cross-border collaboration have been resolved*	The presence of the Antarctic Treaty has provided a peaceful foundation for all Antarctic management discussions and CCAMLR operations benefit from a mechanism where multiple Members are able to discuss issues of importance without requiring jurisdictions to be in place. However, unspoken jurisdictional claims have become an issue in various CCAMLR discussions (e.g. suggestion that MPAs are strengthening claims). In addition, the fact that there are no jurisdictions has resulted in the 'Olympic fishing' approach to fisheries management, where quotas are established on a first-come-first-served basis because there are no coastal state borders upon which to calculate proportional catch quotas. Another cross-border problem is the different interpretations of the Convention by Members, which has caused significant delays to MPA designation, and profound changes to the way in which MPAs are ultimately designated (e.g. Ross Sea MPA has a sunset clause and an exploratory fishing zone inside).
e) *To what*	*There are major*	*Significant*	*While there are*	*The quality*	Given that there are no country/state zones in CCAMLR, this question

Assessment questions related to collaboration and consultation in the planning phase (green shading indicates the answer selected as most appropriate for CCAMLR					
Assessment Question	**0**	**1**	**2**	**3**	**Justification**
extent are there significant differences in the type and quality of information available for the country (state) zones?	*differences in the quality and scope of information for the different country (state) zones*	*differences in the quality of information on the different country zones are limited to a few topics*	*differences in the scope and quality of information this is not seen as a major constraint on the formulation of this MSP*	*and scope of information for each country (state) zone is similar*	should be related to the type and quality of the data provided by the different Members. Interviewees generally recognized a difference between Members' data holdings where certain countries had long-running research programmes and Antarctic bases collecting data (e.g. UK, Australia, US, Argentina, Chile etc). These countries tend to be those who provide the strongest evidence base behind proposals. However, having a research programme in place prior to establishing any fishing activity is a criteria required by Members, and the CCAMLR Scientific Committee must review all research programme proposals, so there is a mechanism for ensuring that the type and quality of data are of similar levels.

3.6. Features of the implementation phase

Since the inception of CCAMLR, the number of Members has grown considerably, from an original 14 signatories to 25 current Members (including the European Union). As a consequence, resource management within the Southern Ocean has become increasingly complex due to the wider range of conservation and economic interests of Members. Through its binding conservation measures and non-binding Resolutions, CCAMLR has changed the nature of resource use in the Southern Ocean.

3.6.1. Good practices in resource use advocated by CCAMLR

a) Combining monitoring, control and surveillance to address the challenge of Illegal, Unregulated and Unreported (IUU) fishing

IUU fishing poses a direct and significant threat to effective conservation and management of fish stocks and has adverse consequences on fisheries themselves. For CCAMLR, IUU fishing compromises the objectives of the CAMLR Convention. IUU fishing for toothfish in the CCAMLR Area was identified in the early 1990s and it resulted in the implementation of a range of measures, including IUU vessel lists, the Catch Documentation Scheme (CDS), the Vessel Monitoring System (VMS) and the System of Inspection (SOI) to specifically address this issue.

Despite such measures, it is clear that six IUU-listed vessels, usually supported by a reefer vessel, were persistently engaged in IUU fishing over the last 10 years. Like many IUU-listed vessels, they use flags of convenience, frequently change name, cooperate with each other and use destructive fishing gear (gillnets). These vessels were the target of considerable international efforts to combat their IUU activities. Some 15 countries, with the support of INTERPOL, initiated investigations into the activities of these vessels and the operators behind them. Five of the vessels are now detained or have been sunk (Figure 8). One vessel remains at large.

Figure 8 - Sinking of the 'Thunder', one of six vessels responsible for persistent IUU fishing in the CCAMLR Area (Source: Sea Shepherd Global)

There is no doubt that IUU fishing has declined as a result of CCAMLR's monitoring, control and surveillance measures, as well as the additional collective efforts of Members. However, IUU fishing remains a concern for CCAMLR and is the focus of ongoing efforts. For example, the Scientific Committee has requested that the CCAMLR Secretariat annually map IUU fishing activity in an attempt to understand the temporal and spatial extent of IUU fishing, particularly given the limitations of using sightings data alone for calculating IUU catch estimates. CCAMLR continues its efforts including exploring new technologies with the implementation of a radar satellite imagery project and the adoption of a new resolution to address vessels without nationality.

b) Implementing ecosystem and precautionary approaches to fisheries management

The ecosystem approach to fisheries management 'seeks to minimise the risk of fisheries adversely effecting dependent and related species' to the target species fished (Kock 2000). Because of the fundamental role that krill play in supporting the Antarctic ecosystem, many other species would be negatively affected by overharvesting of krill. Through its description of conservation principles in Article II(3), the Convention implicitly requires the application of an ecosystem approach (and the precautionary approach) to its fisheries management. CCAMLR has espoused the ecosystem approach almost from its inception, and has pioneered its application at a time when the concept was relatively unfamiliar. While the term 'ecosystem approach' was not yet in common usage at the time of the CAMLR Convention entering into force, the goals and objectives of the Convention are undoubtedly embracing an ecosystem based management system. In the early 1990s, uncertainty in the impacts of krill fishing effort caused CCAMLR to agree a 'trigger level' for krill catch limits across the CCAMLR area, which was an early implementation of the precautionary approach to fisheries management and one that catalysed CCAMLRs ecosystem approach.

As a fundamental part of ensuring the delivery of an ecosystem approach to managing commercial harvesting of marine resources, the CCAMLR Ecosystem Monitoring Program (CEMP) was established in 1989 with the aim of detecting and recording significant changes in critical marine ecosystem components, and distinguishing between the causes of such changes (either due to commercial species harvesting, or environmental variability). The CEMP has established monitoring sites to support stock assessment processes and to monitor indicator species, selected as dependent upon the commercially targeted species with measurable responses to changes in prey availability. The Working Group on Ecosystem Management and Monitoring oversees CEMP-related activities and provides advice to the Scientific Committee, or other Working Groups, on the results from CEMP.

As a result, CCAMLR now has the following characteristics of an ecosystem approach:

- Goals and objectives are ecosystem based
- The geographical scope of the CAMLR Convention – an approximation of the Antarctic convergence - is based on the geographical scope of the Antarctic marine ecosystem
- Management of fish stocks is based on stock assessments underpinned by robust scientific research and the best available evidence
- A precautionary approach is applied to fisheries management and catch limits where there is uncertainty on data and impacts
- An ecosystem monitoring programme (CEMP) is in place to monitor key indicator species in the Antarctic food chain and the impact on predators
- Monitoring results feed back into management decisions

In recent years, CCAMLR members have been debating the value of introducing 'feedback management', where krill can be spatially and temporally managed, although this approach introduces a much greater level of complexity, and is therefore not universally supported by CCAMLR members.

c) Reducing seabird mortality from fishing

Over the past 15 years, seabird mortality arising from fishing operations has been reduced from thousands of birds annually to almost zero in fisheries regulated by CCAMLR. This has been achieved through the implementation of a combination of measures, including seasonal closures, night setting, the deployment of streamer lines, additional line weights to increase sink rates, prohibition on the discharge of offal during setting and hauling and the use of bird exclusion devices around the hauling point. While the reduction of seabird mortality in the CAMLR Convention area is exceptional, seabird populations remain at risk in the Southern Ocean because fishing operations in waters north of the CAMLR Convention area are not required to employ the same suite of measures that would achieve similar levels of protection for non-target species.

d) Using a rigorous scientific approach to support the establishment of marine protected areas

Through its conservation measure for establishing MPAs in the CCAMLR area (CM 91-04), CCAMLR has taken a scientifically rigorous approach to how MPAs should be developed in order to maximise their effect, including principles such as basing proposals on the best-available science, ensuring that MPAs are representative of the suite of ecosystems and habitats in the area, targeting areas that are particularly vulnerable to human impacts, considering ecosystem structure and function as well as resilience, and ensuring that MPAs are of the appropriate scale to maintain population viability in the long-term.

However, as CCAMLR membership has grown from the original 12 signatories to the 25 Members at the present time, and the proportion of fishing Members to non-fishing Members has also increased from just under 40% to roughly 70%, there has been an increasingly perceptible difference in the interpretation of the Convention, particularly Article II, which states that CCAMLR's objective is conservation of Antarctic marine living resources and 'for the purposes of the Convention, conservation includes rational use'. Since there is no further description within the Convention of exactly what rational use means in practice, and how it relates to conservation, this subtle disparity has caused significant delays to decisions over MPA proposals, with a lack of agreement on the necessity of MPAs in the CCAMLR region, their optimal duration, the suitability of fishing zones within MPAs and the robustness of the scientific data underpinning MPA proposals. Most CCAMLR members, and certainly those who have a strong association with the Antarctic Treaty responsibilities, consider Article II to be primarily about conservation and any fishing activity must not negatively impact upon Antarctic marine living resources in any way. A few Members, however, place greater emphasis on the inclusion of rational use within the Convention text, and object to any part of the CCAMLR area being off limits to fishing through the establishment of MPAs. Since CCAMLR's decision making process is consensus-based, all MPA proposals have been mired in lengthy discussions over several years.

3.6.2. Monitoring and Evaluation

CCAMLR has identified a range of environmental and human activity indicators that it uses to monitor ecosystem health, fish stocks, fishing activity and compliance.

The Standing Committee on Implementation and Compliance is responsible for fisheries monitoring and compliance issues using the CCAMLR System of Inspection and Scheme of International Scientific Observation, in addition to other compliance tools. Once a year, this body reviews and assesses the implementation of conservation measures and compliance with them.

Through CEMP, environmental and economic indicators are being monitored to track CCAMLR's progress towards its MSP goals and targets.

3.6.3. Consistent regulations and policies across borders

Where there are coastal State maritime zones adjacent to sub-Antarctic islands within the Convention area, those States are expected to implement measures that are the same as, or at least as rigorous as, the CCAMLR conservation measures. In many cases this expectation is upheld although these States can choose to exempt the maritime zones adjacent to their islands from the scope of application of conservation measures. This position is outlined in the 'Chairman's Statement', which was made in the 1980 'Final Act of the Conference on the Conservation of Antarctic Marine Living Resources' that preceded the establishment of the Convention.

Recalling the Chairman's Statement, reservations to CCAMLR conservation measures are increasingly made by both France and South Africa for the EEZs around the Iles Kerguelen/Iles Crozet and the Prince Edward Islands respectively (Miller 2015). While Australia does not formally make reservations under the Chairman's Statement, it makes statements to affirm its unilateral management of sovereign areas. Under these reservations and statements, some management measures within EEZs are less stringent than CCAMLR conservation measures, such the occurrence of certain fishing practices (e.g. bottom trawling) where they are prohibited by CCAMLR

conservation measures, or not reporting specific data (e.g. fine scale catch data) from EEZs to enable CCAMLR to make comprehensive stock assessments across the Convention Area.

In practice, therefore, the occurrence of sovereign territories within the CCAMLR Convention Area means that management measures are not always consistent across the entire management area. Interviews with CCAMLR stakeholders indicated that this inconsistency is perceived as a challenge for CCAMLR. Indeed, a CCAMLR Performance Review Panel in 2007 raised the issue that conservation measure reservations under the Chairman's Statement were being used to regularly re-assert sovereignty within the Convention Area, and that this situation could undermine important efforts as well as CCAMLR's ability to meet its objectives consistently across its area of intervention (Miller 2015).

Assessment questions related to features of the implementation phase (green shading indicates the answer selected as most appropriate to CCAMLR)					
Assessment Question	**0**	**1**	**2**	**3**	**Justification**
Impacts on the behaviour of institutions					
a) *To what extent are implementing institutions collaborating effectively to implement the MSP process?*	*There is some MSP collaboration but this is no more than the methods employed by institutions before MSP initiation*	*More integrated forms of MSP planning and decision making are apparent but there are still some conflicts or inefficiencies*	*MSP collaboration and integrated planning between institutions are generally good but issues arise from time to time*	*There is effective cross-border collaboration between implementing institutions to ensure that management is integrated throughout the MSP area*	Overall the CCAMLR decision making mechanism is considered by interviewees as a strong one, and collaboration is felt to be strong. However, the difficulties that have been faced during the discussions to designate new MPAs in the Southern Ocean have clearly frustrated a number of Members, and there is a feeling that this particular element of collaboration could be improved.
b) *To what extent are MSP policies, procedures and regulations being enforced?*	*Enforcement is weak and non-compliance with rules is widespread*	*Enforcement is uneven; some rules are enforced more effectively than others and enforcement targets some groups more than others*	*Enforcement is generally effective but there are notable exceptions*	*Enforcement is effective and compliance is high throughout the MSP area*	CCAMLR itself cannot enforce its Conservation Measures, so must rely upon Members to carry that responsibility into their own national laws, policies and enforcement practices. Interviewees felt there is generally good compliance, and CCAMLR's SCIC is a strong mechanism for encouraging good practices in compliance. However, some interviewees felt that there were different levels of commitment by Members to enforce CCAMLR practices. Furthermore, non-contracting parties are not bound by CCAMLR and so can conduct unregulated activities that would be illegal to Members. Where this occurs, non-contracting parties are approached to join CCAMLR or cooperate.
c) *To what extent is the MSP's legal framework, and other laws and regulations that apply within the MSP area (including international law), contributing to achieving the goals of this MSP?*	*The existing legal framework has had a largely detrimental effect, and constrained progress towards the MSP goals in important ways.*	*The legal framework has enabled some progress towards the goals of the MSP, but important gaps remain to be addressed.*	*The legal framework has constrained some achievements of the MSP, but it has supported important developments towards its goals.*	*The legal framework has been a key contributing factor for the success of this MSP. Outstanding gaps are being addressed.*	As a treaty organisation, CCAMLR requires Members to transpose Conservation Measures into national law. Given that much of the Southern Ocean lies beyond the effective control of Members, the legal framework is a major contributor to collaborative management in high seas. However, the legal framework of CCAMLR, as outlined in the Convention, puts conservation at the heart of CCAMLR activities and considerations, which requires CCAMLR to go above and beyond the fisheries measures that characterize other RFMOs, and move towards a much stronger ecosystem approach. There are issues with how CCAMLR's legal framework aligns with international fisheries law and whether it contradicts the freedom to fish on the high seas as outlined by UNCLOS. However, these issues have not negatively impacted on the success of CCAMLR's management.
d) *To what extent*	*MSP regulations*	*Some efforts*	*Efforts have been*	*Regulations and*	Regulations and management measures are consistent throughout the

Assessment questions related to features of the implementation phase (green shading indicates the answer selected as most appropriate to CCAMLR)					
Assessment Question	**0**	**1**	**2**	**3**	**Justification**
are the MSP regulations and management measures consistent across the border and do they enable coordinated cross-border/multi-national implementation of the plan?	*and management measures are inconsistent across the borders and this presents considerable challenges to implementing the plan*	*have been made to standardize cross-border regulations and management measures for some sectors but not all*	*made to standardize regulations and management measures across all sectors involved, but there are still inconsistencies between their implementation across borders*	*management measures are consistent throughout the MSP area and implementation is well coordinated*	CCAMLR Convention Area, with the exception of where national jurisdictions fall within the boundaries (South Georgia & South Sandwich Islands; Heard & Macdonald Islands; Kerguelen & Crozet Islands; Prince Edwards Islands). Most of the regulations within these EEZs are consistent with CCAMLR regulations, but there are some exceptions (e.g. bottom trawling is prohibited throughout the Convention Area but Australia permits bottom trawling within Heard & Macdonald EEZ; Licences are not provided for fishing except within South Georgia EEZ; France reserves the right to implement different management measures to CCAMLR).
e) *To what extent has having a monitoring programme/M&E framework across borders affected MSP cooperation?*	*The monitoring/ M&E framework (or lack thereof) has not facilitated or has actively challenged the implementation of the cross-border MSP plan*	*The monitoring /M&E has caused some major issues; some of which have been overcome and others which still need addressing.*	*In parts, the monitoring/M&E has been a successful means of establishing cooperative and cross border MSP*	*The monitoring/M&E has been well established and is a notable area of success in terms of cross-border MSP.*	There is extensive monitoring and evaluation within CCAMLR, with the most relevant examples being through the CCAMLR CEMP and the SCIC. Some interviewees expressed frustration with the change to the feedback management approach, which would require greater complexity in the monitoring and evaluation, but this does not diminish the 'cross-border' element of success that the M&E has achieved.
f) *To what extent is the MSP process practicing adaptive management by using monitoring results to shape future management decisions?*	*No systematic monitoring is in place and there is little or no visible adjustment of management practices*	*Indicator results are used to adjust management practices in either social, economic or environmental ways but not in more than one*	*Adaptive management is practiced and has produced some significant adjustments to the MSP process*	*Adaptive management is widely practiced and good practices are shared across borders*	CCAMLRs management structure provides a strong mechanism for adaptive management, where analysis of data and indicators are discussed by the Scientific Committee, which must then provide recommendations to the Commission on future conservation measures.
g) *To what extent is support within the political structure at the*	*Political support at national levels is weak*	*Political leaders recognize the MSP process but public*	*Political support is strong, well-informed and frequently*	*There is clear political support for the MSP plan across the*	CCAMLR has very strong political support from Members despite some differences in opinion with regard to certain aspects of CCAMLR management. Members have strong investment in their research programmes, contribute considerable time and in-kind funding for collaborative and independent

Assessment questions related to features of the implementation phase (green shading indicates the answer selected as most appropriate to CCAMLR)					
Assessment Question	**0**	**1**	**2**	**3**	**Justification**
national level being maintained?		*statements supporting the process are rare*	*expressed but this is not consistent across borders*	*borders*	research.
h) *To what extent is there integrated management of sectors within the country zones of the MSP?*	*The management of sectors occurs in silos with little or no consideration of interactions and interdependencies*	*There are some examples where management strategies are linked between sectors but overall management is done mostly sector by sector*	*There is integration between the management strategies of most sectors, and work is underway for integrating the outstanding sectors*	*Sectoral management strategies are integrated across all sectors in the country zones*	The CCAMLR situation is unusual, in that there are very few activities taking place in the Southern Ocean and others are prohibited under the Antarctic Treaty (e.g. mining). Fishing, scientific research and biodiversity conservation are the key sectoral activities, and CCAMLR is the only regional management organisation that has a mandate to regulate all three, as outlined in the terms of the Convention. As a result, there is a very strong management integration between the sectors. However, some interviewees felt that the balance between conservation and rational use within CCAMLRs regulatory framework had been shifting towards a greater trend for exploitation.
i) *To what extent is there evidence of implementation/ management coordination between land and sea?*	*There is no coordination between the MSP and terrestrial coastal planning;*	*There is some coordination between terrestrial and marine planning but major issues remain unresolved*	*There are many examples of coordination between terrestrial and marine planning;*	*There is coordinated and adaptive management of the land-sea linkage and all land-based sources of threat/damage have been successfully addressed*	Management coordination between land and sea requires cooperation between the Antarctic Treaty responsible for terrestrial and coastal activities and CCAMLR. Evidence of coordination can be demonstrated by the participation of both Secretariats at each other's' meetings during the planning phases. For implementation and management, evidence is less obvious and there are some noticeable gaps: e.g. Tourism is a rapidly growing activity, both land-based and ship-based, but only the Antarctic Treaty deals with tourism. There may therefore be a risk that marine ecosystems are impacted by increasing tourist vessel passage and potentially pollution from vessels.
Impacts upon financial investments					
a) *To what extent are necessary investments in infrastructure being made?*	*Infrastructure investments are minimal and necessary infrastructure is missing or inadequate*	*Infrastructure investments have begun but are not consistent across borders*	*Infrastructure required is in place but maintenance is poor; there is uneven distribution of investment across borders*	*Infrastructure required by the MSP process is in place and well maintained throughout the MSP area*	Within the Antarctic context, where physical infrastructure is limited to Antarctic bases and fishing vessel technology, and organisational infrastructure could include scientific research programmes and observer programmes on vessels, there is considerable investment from Members. The 'Olympic fishing' approach has also incentivized regular improvements to fishing vessel technology.
b) *To what extent is the funding of this MSP*	*The sustainability of funding is a*	*Funding for the short term is adequate but*	*Some long-term funding mechanisms are*	*Short term and long-term sustainable*	CCAMLR Members contribute regular funds to support the Secretariat in its entirety, and also in the form of supplementary funds, to support the implementation of CCAMLR activities. In addition, there is a significant

Assessment questions related to features of the implementation phase (green shading indicates the answer selected as most appropriate to CCAMLR)					
Assessment Question	**0**	**1**	**2**	**3**	**Justification**
sustainable over the long term?	*major unresolved issue*	*long-term funding mechanisms are not in place*	*in place but their outcomes or sustainability are uncertain;*	*funding mechanisms are in place and secure throughout the MSP area*	amount of in-kind funding provided through Members' research programmes and government support.
c) To what extent is cross-border collaboration on MSP factored into the budget or funding mechanisms?	*Cross-border collaboration only minimally factored in to budget or funding mechanisms*	*Cross-border collaboration has been considered in the budget but funds are insufficient*	*Funds have been allocated to cross-border collaboration but not consistently across the borders*	*All collaborating countries/states have allocated sufficient and funds for collaboration across borders*	Via the Secretariat, Member contributions fund the annual Commission and Scientific Committee meetings, as well as the other working group meetings that take place throughout the year. In addition, Members support international workshops designed to support discussions and evidence base for CCAMLR proposals.
Impacts on the behaviour of user groups and businesses					
a) To what extent are the good practices called for by the MSP process being adopted by target groups?	*Good practices advocated by the MSP have not been adopted by target groups*	*There are a few instances where MSP good practices have been adopted but most are not operational*	*Some good practices are consistently practiced, but others are not*	*All MSP process good practices are being applied by target groups*	Good practices such as the on-vessel observer programme have been successfully adopted by all Members, but interviews suggested that some Members are reticent to have two observers on 100% of their vessels, as is being suggested within CCAMLR as the most rigorous measure. Interviews also revealed that some Members do not enforce CCAMLR regulations as diligently as others or sanction infringements. The impasse over specific MPA designations is also evidence that some international good practices are not consistent across all CCAMLR priority areas.
b) To what extent are destructive forms of resource use being reduced?	*Several destructive resource uses of concern to the MSP process continue unabated*	*Resource users are aware of destructive practices but efforts to change behaviour are mixed*	*With some important exceptions, user groups have ceased destructive practices of concern*	*Destructive resource use practices have been eliminated*	Figures for IUU Toothfish fishing demonstrate that this practice has been dramatically reduced. Seabird bycatch was a significant issue with the use of particular gear types, but following the establishment of a specific working group to tackle the issue, conservation measures were adopted to require mitigation measures in the form of streamers and weights on long-lines, which has significantly reduced the number seabirds caught as bycatch. Fixed quotas for krill have capped exploitation at precautionary levels.
c) To what extent are conflicts among user groups being reduced?	*User conflicts are widespread and have not been reduced*	*No./severity of user conflicts appears to be declining*	*Decline in important user conflicts has been documented*	*Major use conflicts have been resolved*	Disagreements between Members on the balance struck between conservation and rational use were delaying the adoption of MPA proposals. However, with the recent adoption of the Ross Sea MPA proposal, there is evidence to suggest that compromises have been reached between Members.

3.7. Implications for the application of MSP in the High Seas

3.7.1. Jurisdictional areas within the CCAMLR area

Jurisdiction within the CCAMLR Convention area is determined by the international law of the sea and, accordingly, the terms of the CAMLR Convention. The CAMLR Convention states that:

> "Nothing in the Convention and no acts or activities taking place while present Convention is in force shall… affect the provision of Article IV, paragraph 2, of the Antarctic Treaty that no new claim, or enlargement of an existing claim, to territorial sovereignty in Antarctica shall be asserted while the Antarctic Treaty is in force" (Article IV of the CAMLR Convention).

From the perspective of the international law of the sea, there are three types of spatial areas in the CAMLR Convention area (Section 3.1), a) *de facto* high seas, b) Coastal State maritime zones and c) (*de jure*) high seas.

However, there are a number of claims to territorial sovereignty over the Antarctic continent - several of which are overlapping - as well as implicit and explicit claims to the adjacent waters. Australia and Argentina have also made submissions to the Commission for the Limits of the Continental Shelf (CLCS) in relation to the extended continental shelf off their Antarctic claims, while asking the CLCS not to process their submissions. Other countries (e.g. UK and New Zealand) have not made fully-fledged submissions to the CLCS, but have reserved the right to do so. Figure 9 shows the territorial claims to the Antarctic continent.

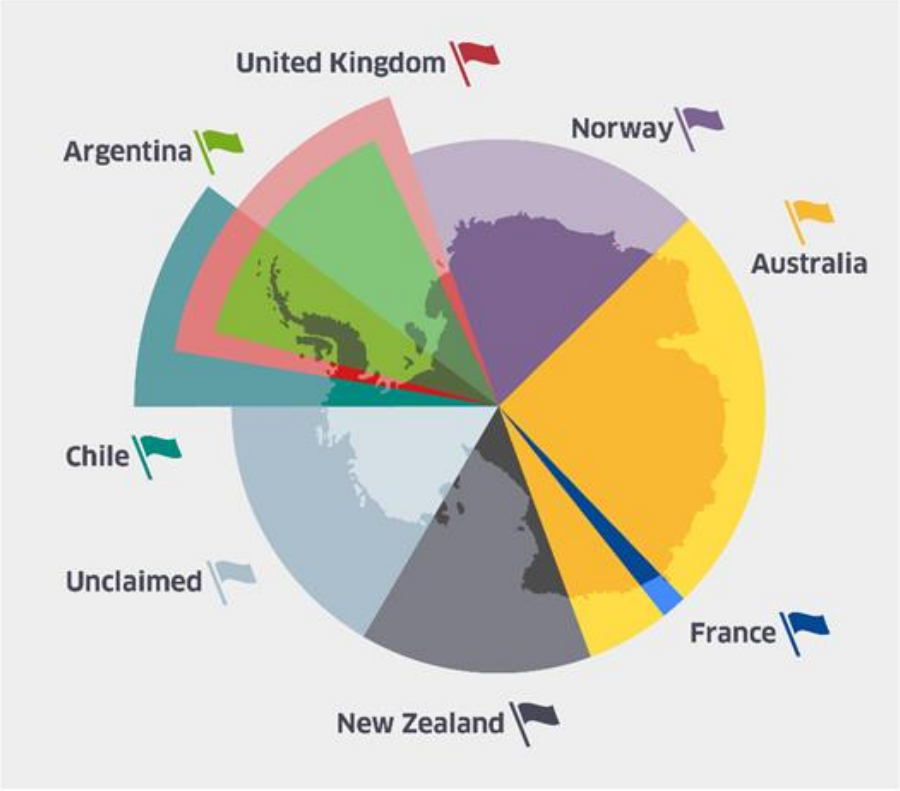

Figure 9 - Jurisdictional claims made over the Antarctic continent and Southern Ocean waters. Source: discoveringantarctic.gov.uk

CCAMLR members make decisions jointly across the Convention area (while some Members may invoke the 'Chairman's Statement' with regard to the maritime zones adjacent to their sub-Antarctic islands) without prejudice.

3.7.2. Compliance in CCAMLR

Responsibility for compliance and enforcement rests with the CCAMLR members themselves. Through the SCIC, which monitors performance towards compliance and draws the attention of the Commission to instances in which compliance is unsatisfactory, CCAMLR has established a process through which Members self-regulate their respective performances against CCAMLR Conservation Measures.

Assessment questions related to the implications for MSP in the high seas (green shading indicates the answer selected as appropriate to CCAMLR)					
Assessment Questions -	**0**	**1**	**2**	**3**	**Justification**
a) *To what extent are the MSP policies and/or regulations consistent between parties and do they enable coordinated multi-national implementation of the plan?*	*MSP policies and/or regulations are inconsistent between parties and this presents considerable challenges to implementing the plan*	*Some efforts have been made to standardize policies and/or regulations for some sectors but not all*	*A coordination mechanism/treaty is in place to standardize policies and/or regulations across all sectors and parties involved, but there are still inconsistencies between their implementation*	*Policies and/or regulations are consistent throughout the MSP area and implementation is well coordinated*	The CAMLR Convention ensures that policies and regulations are adopted by all Members. Regulations and management measures are therefore consistent throughout the CCAMLR Convention Area, with the exception of where national jurisdictions fall within the boundaries (South Georgia & South Sandwich Islands; Heard & McDonald Islands; Kerguelen & Crozet Islands; Prince Edwards Islands). Regulations within these EEZs may not necessarily be consistent with CCAMLR regulations, as the Members may unilaterally exercise their sovereignty or make reservations to CCAMLR conservation measures.
b) *To what extent are main stakeholders and third-country resource users adhering to the practices specified in the MSP plan in the high seas?*	*There is no discernible change to resource use in the high seas; there are no institutional arrangements to ensure compliance*	*Some of the main stakeholder sectors are adhering to the MSP plan in the high seas but not all; institutional arrangements to ensure compliance are very weak*	*All of the main stakeholder sectors are adhering to the MSP plan but third country resource users are not; institutional arrangements to ensure compliance are in place for some sectors but not others*	*Main stakeholders and third country resource users are complying with the MSP plan; institutional arrangements to ensure compliance are in place for all relevant sectors*	Main stakeholders – considered to be the CCAMLR Members – are responsible for transposing CCAMLR conservation objectives into their national legislations and for enforcing these practices. Interviews revealed the opinion that some Members uphold the CCAMLR practices more diligently than others. However, figures for IUU toothfish fishing demonstrate that compliance has increased significantly since the mid-1990s. Because CCAMLR measures are binding to CCAMLR Members and Acceding States only, third party stakeholders do not have to adhere to the CCAMLR regulations. When non-contracting party vessels are identified, however, CCAMLR will encourage the relevant State to become CCAMLR members.
c) *To what extent is the cooperation mechanism for MSP in the high seas ensuring a balanced representation of all stakeholders?*	*Most stakeholders are represented but there are still major stakeholder sectors that are not*	*Most stakeholders are represented, but some stakeholders do not necessarily have equal decision-making abilities*	*With some notable exceptions, all stakeholders have representation in decision-making opportunities*	*All stakeholders are well represented and have decision making opportunities within the cooperation mechanism*	CCAMLR's sectoral engagement is limited to fisheries, scientific research and conservation. CCAMLR Members are State representatives. Present in the CCAMLR proceedings but unable to participate in decision making are the environmental NGOs and industry representatives. Notable absences are the general public and the tourism sector.

4. OUTCOMES AND LESSONS LEARNED

4.1. Outcomes from CCAMLR

CCAMLR has implemented a number of good practices (Subsection 3.6.1), which include strong international cooperation, the implementation of ecosystem and precautionary approaches to fisheries management, using the best available scientific data, and developing a successful monitoring, control and surveillance scheme.

As a result of good practices noted in Section 3.6.1, CCAMLR's main achievements have been:

- Significantly reducing illegal, unreported and unregulated (IUU) fishing
- Reducing seabird mortality
- Careful management of Vulnerable Marine Ecosystems (VMEs)
- Establishing two MPAs in the Southern Ocean (including the largest in the world to date)

4.2. Lessons learned from CCAMLR

Having been established in 1982, CCAMLR has over thirty years' experience of multi-state conservation and fisheries management in the Southern Ocean. Lessons that can be learned from CCAMLR with regard to implementing an MSP process, and specifically cross-border collaboration, have been identified here.

- **A common understanding of the objectives and shared approach to goals is critical**– In recent CCAMLR discussions, Members have subtly disagreed on the interpretation of the Convention text, particularly the clause: 'for the purposes of the Convention, conservation includes rational use'. Since there is no specific definition within the Convention of exactly what rational use means in practice, time-consuming analysis of archive data has been undertaken to see the interpretation of Convention text in all previous Commission discussions, and original CCAMLR signatories are required to share what institutional knowledge might remain after successive Commissioners. With the inclusion of new Members to CCAMLR, it is likely that the Convention text will be revisited to reflect national interests. However, the CCAMLR experience demonstrates that cross-border collaboration can bring together very different perspectives, and in order to ensure positive cooperation, shared goals should be very carefully defined to ensure a common understanding.
- **A strong scientific foundation plays a key role in enhancing cross-border collaboration –** the structure of CCAMLR is designed to ensure that decisions are based upon high quality and evidence-based scientific advice. This strong scientific aspect supports collaboration between Members in a number of ways:
    - **De-politicises decisions –** by focusing on the scientific rigour of proposals to the Commission, the Scientific Committee provides a forum for politically impartial discussion. In a forum such as CCAMLR, where multiple states are jointly responsible for ocean areas that have multiple jurisdictional claims, this strong scientific discussion refocuses what could otherwise result in geopolitically tense negotiations.
    - **Provides a common language –** CCAMLR's Scientific Committee has representation from all Members, and is attended by the expert scientists and researchers on each Member State delegation. Each proposal submitted to the Commission by a Member State or States must be examined by the Scientific Committee, providing an environment where international experts can exchange ideas.
    - **Builds capacity –** interviews suggested that due to resource challenges, there are noticeable differences between the quality of Members' research programmes that support input into the CCAMLR Scientific Committee. In an endeavour to ensure transparency and collaboration, the Member State implementing the research

programmes may then invite other Member State join research missions, thus building capacity and increasing the knowledge base and the quality of Members' research programmes

- **Successful application of the ecosystem approach requires integration between sectoral governance systems –** CCAMLR is widely considered to be a pioneer in the implementation of the ecosystem approach and its unique mandate has doubtless facilitated CCAMLRs progress in this endeavour. Despite its agreed success, however, more could be done to address emerging issues and to engage more substantively with related governance systems.
    - **Combining traditionally sectoral approaches in a single mandate supports ecosystem-based management –** unlike almost all other regional management authorities, CCAMLR has a mandate for both conservation and sustainable resource use (in the context of the Convention, 'conservation includes rational use'), which has shaped its Member decisions and resulted in a membership that is not entirely driven by resource use interests alone. This fine balance between fishing and non-fishing interests has facilitated ecosystem-based management decisions and the application of the precautionary approach.
    - **Maintaining successful ecosystem-based management in the face of emerging issues will require greater engagement and collaboration between related instruments and conventions –** CCAMLR has a mandate to conserve 'Antarctic marine living resources', but in practice does not actively manage whales or seals, which have their own independent regulatory instruments. However, new issues are emerging that may have implications for CCAMLRs management actions. For example, some whale species are heavily reliant upon Southern Ocean krill as a food source, and with the steadily increase in whale populations under the global moratorium, CCAMLR must consider the impact of fishing activities on whale populations, which will require close engagement with the IWC. Likewise, tourism activities are on the increase, and visitors to Antarctica may increasingly find themselves sharing Antarctic views with fishing vessels. To avoid potential conflict between the tourism and fishing sectors, CCAMLR will need to collaborate with the Antarctic Treaty on these specific cross-sectoral issues.
- **Remove language barriers to collaborative negotiation wherever possible** –all communication within the Scientific Committee and Commission meetings of CCAMLR are interpreted into the four official CAMLR languages: English, French, Spanish and Russian. However, interviewees commented that CCAMLR working groups are not interpreted, even though these meetings form some of the most significant opportunities to understand the technical and operational proposals being tabled. Interviewees felt that by not interpreting the working groups, there was a likelihood that technical details were not sufficiently understood by non-English speakers. This might be contributing to the fact that during interpreted Commission meetings, certain non-English speaking Members had presented strongly opposing positions that had not been presented in working groups. The financial implications of translating all CCAMLR's working groups would be enormous and there are counter arguments to suggest that language barriers are used strategically in political negotiations. However, given the importance of negotiation between stakeholders in MSP, cross-border MSP is likely to require additional negotiation skill between different nationalities, and every opportunity to facilitate the fluent negotiation between parties should be considered as a high priority.
- **Consider the impact of the decision-making process -** the CCAMLR decision to adopt a network of MPAs had a target date of 2012 in order to align with the CBD MPA network decision, and as such it aligned with international targets and good practice. However, the target was not met due to considerable delays in CCAMLR MPA designation caused by disagreements between Members on fundamental principles. Interviewees cited the very slow progress as one of the major challenges and areas for improvement within CCAMLR, and noted that the consensus-based decision-making process was the major contributor to such delays by allowing decisions to be blocked by a single Member. However, almost all felt that consensus-based decision making was still the best approach within CCAMLR, as it

ensured that all Members fully supported the decisions taken, particularly when the views of such Members varied considerably. Should this decision making approach be considered appropriate, it needs to be weighed up against the need to deliver goals to a strict schedule, as the combination of both is likely to cause considerable challenges. This is particularly important for cross-border processes, where varying opinions are likely to emerge from the different national perspectives involved.

- **Ensure that there are incentives in place to establish consistent management measures across jurisdictions** – The presence of sovereign waters in the CCAMLR Convention Area, but specifically the CAMLR Convention's provision (the 'Chairman's Statement') for reservations to be made to conservation measures, could potentially undermine CCAMLR's ability to achieve its objectives. As reservations are increasing not decreasing in number (Miller 2015), incentives need to be found to encourage consistency of management measures across the entire CCAMLR area.
- **Collaboration can exert a positive influence on Members' behaviour** – CCAMLR does not have any responsibility for enforcement of its conservation measures, as this is the responsibility of each Member State. However, several interviewees felt that CCAMLR has been extremely successful in achieving compliance with conservation measures through the implementation of its Catch Documentation Scheme, where landings data are documented and then shared with all SCIC Members. The shared discussion of landings data, and associated infringements, between all Members appears to have improved compliance by exerting influence on Members. As it seems likely that many cross-border MSP processes will not have complete enforcement control, ways to harness the influence produced by collaborative working practices should be encouraged.

Assessment questions in relation to CCAMLR outcomes (green shading indicates the answer selected as appropriate to CCAMLR)					
Assessment Questions	***0***	***1***	***2***	***3***	***Justification***
a) To what extent has this MSP fulfilled its stated goals?	*No goals have been achieved*	*Progress has been made towards some goals but not others*	*Most goals have been achieved*	*All goals have been achieved*	Most interviewees felt that CCAMLR, relative to other similar marine management organisations, demonstrates exemplary progress towards its goals. However, some respondents commented that there was still work to be done to achieve a true ecosystem approach to fisheries management for some particular species.
Impacts of this MSP on social and environmental conditions					
b) To what extent are cumulative impacts (across time and space) being successfully managed?	*Cumulative impacts are not considered by this MSP*	*Cumulative impacts are assessed and managed within some individual sectors but not for the MSP as a whole*	*There are mechanisms for evaluating cumulative impacts between sectors over time but there are significant gaps in the scope of such assessments*	*All countries/states have effective mechanisms for managing cumulative impacts across sectors and over time*	Although there has been a history of cumulative impacts from multiple overfishing practices, currently, cumulative impacts are less of a problem in the Southern Ocean, given the few human activities occurring. Cumulative impacts of fishing activity on Vulnerable Marine Ecosystems (VMEs) are addressed within CCAMLRs conservation measures.
c) To what extent has this MSP had an impact on the sustainability of social and economic conditions?	*There has been no discernible impact on the sustainability of social and economic conditions attributable to this MSP*	*Some sectors report improvements to the sustainability of socio-economic conditions that are attributable to the MSP*	*Significant advances towards sustainable socio-economic conditions have been made in some sectors but not others.*	*Significant advances towards socio-economic sustainability have been made across this MSP*	While socio-economics are not a key objective within CCAMLR, which focuses primarily on conservation and rational use, the status of some of the Southern Ocean fisheries that were heavily overfished prior to CCAMLR have improved and sustainable management of their stocks will be improving the socio-economic conditions resulting from the fisheries. However, there remain some fisheries that have still not recovered from the pre-CCAMLR overfishing effort. In addition, the tourism sector is rapidly growing, but its impact does not fall within CCAMLRs remit, so it is difficult to say if this sector's socio-economic conditions have improved.
d) To what extent are the flows of ecosystem goods and services being sustained within this MSP?	*There has been no change to the provision of ecosystem services attributable to this MSP*	*Provision of a few ecosystem services has reportedly improved, but others have not changed or declined*	*An improvement in the provision of ecosystem services has been attributed to this MSP the contributions made by the MSP are not clear*	*A diverse range of ecosystem services is being improved or maintained across this MSP*	The main ecosystem service is the provision of food products (fin-fish and krill) and this has been sustained through CCAMLRs ecosystem approach and precautionary approach to resource management.
e) To what extent is this MSP having	*There has been no change to the*	*Some threats to biodiversity have*	*Some significant advances*	*Biodiversity has significantly*	Regular monitoring of CCAMLR species demonstrated mortality rates were increasing due to fishing practices

Assessment questions in relation to CCAMLR outcomes (green shading indicates the answer selected as appropriate to CCAMLR)					
Assessment Questions	***0***	***1***	***2***	***3***	***Justification***
an impact on biodiversity?	*biodiversity in the MSP area attributable to this MSP*	*been reduced but progress attributable to the MSP are very limited*	*attributable to the MSP have been made but other important threats are unchanged or worse.*	*increased across taxonomic groups and habitats throughout the MSP area*	(particularly bird species due to long-lining and seals due to fishing gear). These issues have been addressed through gear changes and data reveal that mortality rates have been dramatically reduced (to near zero for long-line mortality).
Cross-border collaboration					
f) To what extent is there consistent and equitable use of marine space across-borders?	*Resource use and rights differ significantly across the borders;*	*Efforts have been made to ensure the MSP plan is consistent across borders, but in practice there are still some significant challenges*	*With a few key exceptions, resource use and rights are consistent across the borders*	*Resource use and rights are consistent across the borders*	CCAMLR Members technically have equal access to the Southern Ocean fisheries resources. However, interviews suggested that some of the management practices and regulations within CCAMLR mean that some Members who have fewer financial and technical capacity are at a disadvantage in the 'Olympic fishing' stakes.
g)To what extent is there successful cross-border sharing of good practices within the MSP process?	*Each national (state) zone has its own version of good practices and there is little cross border integration*	*In a few instances good practices applied in one zone have been adopted in other zones*	*Integration of good practices across zones is increasing and generating significant positive outcomes.*	*Good practices are regularly shared between sectors/across borders and there is evidence of transfers among national (state) zones*	Due to the joint management nature of CCAMLR, all meetings are an opportunity for sharing information and approaches. Rather than transfers across national zones, the joint management approach serves to encourage good practices across all Members, and to put peer pressure upon Members to demonstrate good practices.

REFERENCES

ASOC (no date) CCAMLR's *Response to Climate Change.* ASOC Discussion paper for Session 4 Submitted by ASOC. Available at: http://www.asoc.org/storage/documents/Meetings/CCAMLR/symposium/CCAMLR-and-Climate-Change-2-ASOC.pdf

Convention for the Conservation of Antarctic Marine Living Resources (Adopted 1980, May 20; entered into force 1982, April 7). 1982 ATS 9.

CCAMLR (2008) *Report of the Twenty-Seventh Meeting of the Commission*

CCAMLR (2012) *History of CCAMLR*. Available at: https://www.ccamlr.org/en/organisation/history. (Accessed: 10th October 2016)

CCAMLR (2014a) *CCAMLR Convention*. Available at: www.ccamlr.org/en/organisation/camlr-convention (Accessed: 10th October 2016)

CCAMLR (2014b). Membership. Available at: https://www.ccamlr.org/en/organisation/membership

CCAMLR (2016a) *Report of the Thirty-fifth Meeting of the Commission.*

CCAMLR (2016b). Explanation of terms. Retrieved from https://www.ccamlr.org/en/organisation/explanation-terms

Convey P, Bindschadler R, Di Prisco G, Fahrbach E, Gutt J, Hodgson DA, Mayewski PA, Summerhayes CP, Turner J and ACCE Consortium (2009) *Antarctic Climate Change and the Environment.* Earth Science Faculty Scholarship. Paper 165, 25pp. Available at: http://digitalcommons.library.umaine.edu/ers_facpub/165

Grant SM, Hill SL, Trathan PN and Murphy EJ (2013) Review of ecosystem services of the Southern Ocean: trade-offs in decision-making. *Antarctic Science* **(25)**: 603–617 (2013).

IWC (1946) *International Convention for the Regulation of Whaling*. Int. Conv. Regul. Whal. Washington.

Kock KH (1994) Fishing and conservation in southern waters. *Polar Record*, **30(172):** 3-22.

Kock KH (2000) *Understanding CCAMLR's approach to management*. CCAMLR Report

McNeil BI and Matear RJ (2008) Southern Ocean acidification: A tipping point at 450-ppm atmospheric CO2. *Proc. Natl. Acad. Sci.* **105:** 18860–18864

McCreath M (2015) *Protecting the Antarctic marine environment from the impacts of shipping. Enhancing compliance with regulations for environmental protection and maritime safety*. MSc Thesis. Faculty of Law, The Arctic University of Norway.

Miller DGM (2015) CCAMLR Conservation Measures: How the Chairman's Statement Works. *The Yearbook of Polar Law* ***VII*****:** 501-503.

Molenaar EJ (2001) CCAMLR and Southern Ocean fisheries. *International Journal Of Marine And Coastal Law*, **16(3)**: 465-500

NERC (2015) *Convention for the Conservation of Antarctic Seals* (1972) - The Contracting Parties.

Rose G and Milligan B (2011) Law for the management of Antarctic marine living resources: from normative conflicts towards integrated governance? *Yearbook of International Environmental Law*, **20(1)**, 41-87.

SCAR (2016) *Antarctic Treaty System*. Available at: www.scar.org/antarctic-treaty-system.

ANNEX 1 – ANALYTICAL FRAMEWORK (ABRIDGED VERSION)

Facts of the matter	Analytical questions ('To what extent...')
1. Context for this MSP process	
Social: major activities, number of people (incl. spatial distr.), poverty Economic: Major goods and services, gross value of activities and resources Environmental: Environmental status, CC effect (current and future) Governance: Management and regulatory systems, institutional setup	- have different factors constrained cross-border collaboration: historical/political, socio-economic, environmental? - was there support for MSP at govt. institutions, at initiation? - did marine users conform to existing regulations, at initiation? - have governance structures facilitated cross-border collaboration on relevant issues?
2. Drivers, issues and goals	
Issues and drivers: identification, changes and spatial distribution (incl. map) Ecosystem services: identification and spatial distribution (incl. map) Goals: identification, changes over time, time-bounded & quantitative Process: approach to identifying drivers, issues and goals	- has EBM been used in the design of the MSP? - do goals address social, economic and environmental outcomes? - have time-bounded & quantitative goals enabled or constrained the MSP?
3. Overview of this MSP	
Introduction: description and map (incl. size) Timing: Start of the process, and time spent in each phase; transition from planning to formal adoption and implementation Funding: Sources , total and current annual funding, user-fees contribution Legal basis Mechanisms for cross-border data exchange Leadership: 'champions' and leadership changes over time	- has external funding enabled this MSP? - have cross-border issues shaped the collaboration in this MSP? - are responsible institutions working collaboratively or independently?
4. Scope and design of this MSP	
Institutions: structure, resource mgmt. responsibilities, MSP authority Land-sea: linkages re. resource mgmt. measures Adaptive management.: yes/no, how (pilot, neighbouring cases)	- does the MSP have the required authorities for successful implementation? - does the MSP have the human resources necessary for implementation? - has there been coordination of planning between land and sea?
5. Collaboration and consultation in the MSP planning phase	
Stakeholders: identification (govt., non-govt.) Process: mechanism for consultation, participation & collaboration, communication plan Cross-border: mechanisms for cooperation, major barriers	- were the different stakeholders involved in designing and shaping the MSP? - was the design and schedule made explicit to all stakeholders, in initial phase? - do affected user groups understand and support MSP goals and strategies? - are there significant differences in type and quality of information in the different country zones? - have stakeholders engaged in planning the cross-border process? - were barriers to cross-border collaboration resolved?

Facts of the matter	Analytical questions ('To what extent...')
6. Features of the MSP implementation phase	
MSP institutions: differences planned vs. actual	- are institutions collaborating effectively in implementation? - is political support for the MSP being maintained? - is the long-term funding sustainable? - is cross-border collaboration factored into budget/funding mechanisms?
Resource use: Good practices advocated, changes (formal, informal) after implementation	- are regulations & mgmt. measures consistent across border, and enable coordinated cross-border implementation? - is sector management integrated within the country zones? - are policies, procedures and regulations being enforced? - are the good practices being adopted by target user groups?
M&E: environ./economic/social indicators and their use	- are destructive forms of resource use being reduced? - are conflicts between user groups being reduced? - is the MSP practicing adaptive mgmt. (based on monitoring results)? - has having a cross-border M&E framework affected cooperation? - is there (evidence of) management coordination between land and sea? - are necessary investments in infrastructure being made?
7. Application of MSP in the high seas	
Key features: Issues & drivers, proportion beyond natl. jurisdiction, seabed & water column Stakeholders: 'third-country' stakeholders affected Institutions: agreements necessary for MSP implementation, agreement with international/ABNJ law Resource use regime: decision-making process, establishment & enforcement of mgmt. measures, coverage	- are the mgmt. measures consistent between parties, and enable coordinated implementation? - are the main stakeholders and third-country resource users adhering to the plan?
8. Outcomes and lessons learned	
Overall: - Major lessons of potential usefulness to other MSP initiatives? Cross-border: - How have cross-border collaborations contributed to consistent and equitable resource use? - What have been the key barriers to cross-border collaboration? - What are the major lessons on cross-border collaboration emerging from this MSP?	- has the MSP fulfilled its stated goals? - are cumulative impacts (across time & space) being successfully managed? - has the MSP impacted on the sustainability of social and economic conditions? - are the flows of ecosystem goods and services being sustained within the MSP? - is the MSP having an impact on biodiversity? - is there consistent and equitable use of marine space across borders? - is there successful cross-border sharing of good practices within the MSP process?

ANNEX 2 – LIST OF PARTICIPANTS AND SCHEDULE

Date	Interview location	Time	Interviewee	Position	Relevance to the Case Study
19/10/16	CCAMLR Secretariat, Hobart	16:00 – 17:00	Claire Christian	Acting Executive Director, Antarctic and Southern Ocean Coalition (ASOC)	ASOC is an observer to the CCAMLR Scientific Committee and Commission meetings.
20/10/16	CCAMLR Secretariat, Hobart	13:00 – 13:30	Gennadii Milinevskyi	CCAMLR Scientific Committee Representative, Ukraine	Ukraine acceded to CCAMLR in 1994. Gennadii has been an advisor to the Ukrainian CCAMLR delegation for 10 years.
		16:00 – 17:00	Dr Manfred Reinke	Executive Secretary, Antarctic Treaty Secretariat	ATS is an observer to the CCAMLR Scientific Committee and Commission meetings
		15:00 – 17:00	Stephen Nichol	Scientific Advisor to the Association of Responsible Krill Harvesting Companies (ARK),	ARK is an observer to the CCAMLR Scientific Committee and Commission meetings
21/10/16	CCAMLR Secretariat, Hobart	08:00 – 08:30	Dr Keith Reid	Science Manager, CCAMLR	Secretariat to CCAMLR
		11:00 – 12:00	Carl-Gustaf Lundin	Director, IUCN Global Marine and Polar Programme	IUCN is an observer to the CCAMLR Scientific Committee and Commission meetings
	Gone AWOL café, Hobart	13:00 – 13:30	Prof. Bo Fernholm	CCAMLR Scientific Committee Representative, Sweden	Sweden acceded to CCAMLR in 1984. Bo has been a Swedish delegate at CCAMLR since 1989.
22/10/16	CCAMLR Secretariat, Hobart	13:00 – 13:30	Dr Andrew Constable	CCAMLR Scientific Committee Representative, Australia	Andrew has been attending CCAMLR on the Australian delegation for 30 years
24/10/16	Gone AWOL café, Hobart	08:00 – 08:30	Titus Iilende	CCAMLR Commission Adviser , Namibia	Namibia acceded to CCAMLR in 1990. Titus has been attending CCAMLR as a Namibian delegate since 2003.
	CCAMLR Secretariat, Hobart	13:00 – 13:30	Lisolomzi Fikizolo	CCAMLR Scientific Committee Alternative Representative, South Africa	Has been coming to CCAMLR on the South African delegation since 2007. He works for the South African department for Environment and Affairs.
		15:15 – 15:45	Karl Herman Kock	CCAMLR Scientific Committee Representative, Germany	Karl has been attending CCAMLR since 1984 (first meeting). He is currently a German delegate but was an EU delegate in 1986. He was Head of Germany delegation to Scientific Committee until 2015 and is now an adviser to the German delegation
25/10/16	CCAMLR Secretariat, Hobart	11:00 – 12:30	Chris Jones	CCAMLR Commission Adviser , USA	Christopher is on the US delegation, but has been involved since 1998, as various roles: Previous Chair of Scientific Committee (2011-2015) Previous Convener of WG-FSA and WG-SAM
		16:00 – 17:00	Denzil Miller	CCAMLR Commission Adviser , Australia	Denzil has had several roles within CCAMLR: Member of South Africa delegation (18 years) Adviser Australian delegation (4 years) Convener Ad Hoc WG-Krill & WG-Krill (8 years) Chair of Scientific Committee (4 years) Executive Secretary CCAMLR (8 years)
		15:00 – 17:00	Oswaldo Urratia	CCAMLR Scientific Committee Representative, Chile	Oswaldo is on the Chilean delegation, and is also Chairman of the Standing Committee for Implementation and

Date	Interview location	Time	Interviewee	Position	Relevance to the Case Study
					Compliance.
		16:00 – 17:00	Martin Exel	Chairman of the international Coalition for Legal Toothfish Operators (COLTO)	COLTO is an observer to the CCAMLR Scientific Committee and Commission meetings
26/10/16	CCAMLR Secretariat, Hobart	10:00 - 10:30	James Clark	CCAMLR Scientific Committee Representative, EU	James is a Scientific Advisor on the EU delegation and has been attending CCAMLR meetings for two years.
	The Duke, Hobart	13:00 – 13:30	Prof. Oscar Pin	CCAMLR Scientific Committee Representative, Uruguay	Oscar is the head of the scientific delegation for Uruguay and has been involved with CCAMLR for 11 years.
	CCAMLR Secretariat, Hobart	14:00 – 15:00	Prof. Erik Molenaar	CCAMLR Commission Representative , Netherlands	Erik has been engaged in CCAMLR since 1999. He is Deputy Director at the Netherlands Institute for the Law of the Sea at Utrecht University and is currently the legal advisor on the delegation of Netherlands as an observer and acceding state to CCAMLR
27/10/16	CCAMLR Secretariat, Hobart	8:00- 8:30	Dr George Watters	CCAMLR Scientific Committee Representative, USA	US is an original signatory to CCAMLR.
	CCAMLR Secretariat, Hobart	10:00- 10:30	Prof. Ludmila Stern	Associate Professor, School of Humanities & Languages, UNSW Australia	Interpretation Services to CCAMLR. Ludmilla has worked with CCAMLR since 1989 and does simultaneous interpretation (and translates) French and English into Russian
	CCAMLR Secretariat, Hobart	10:00- 10:30	Sarah Lenel	Fishery Monitoring and Compliance Manager, CCAMLR	Member of the CCAMLR Secretariat
	CCAMLR Secretariat, Hobart	15:15- 15:45	Prof. Phillipe Koubii	CCAMLR Scientific Committee Representative, France	France is one of the original signatories to CCAMLR. Philippe Koubii is a marine ecology professor at the Pierre et Marie Curie University
	CCAMLR Secretariat, Hobart	16:00- 17:00	Dr Marco Favero	Executive Secretary, Agreement on the Conservation of Albatrosses and Petrels (ACAP)	ACAP is an observer to the CCAMLR Scientific Committee and Commission meetings
03/11/16	Skype	22:00- 23:00	Barry Webber	CCAMLR Commission Representative , New Zealand	Barry Webber works for ASOC but has been on the New Zealand delegation since 1990.
04/11/16	Phone	13:30- 14:30	Jane Rumble	Head of Delegation, CCAMLR Commission Representative, United Kingdom	UK is one of the original signatories to the Convention, and is also a signatory of the Antarctic Treaty. Jane Rumble is only the third Commissioner to CCAMLR and has been the head of delegation for 10 years.

ANNEX 3 – LEGAL AND GOVERNANCE ANALYSIS

(by Dr Aref Fakhry, Associate Professor, World Maritime University, Malmo)

1. Introduction

This Annex provides an overview of the legal underpinnings of the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR), and implications on the legal plane for a wider discussion of cross-border maritime spatial planning models.

The legal analysis of the case study is built around 6 specific questions:

1. Legal status: What is the legal status of the maritime spatial plan?

2. Legal content: What are the essential legal measures (other than those related to institutional and enforcement matters) introduced as part of the maritime spatial plan?

3. Relationship with other applicable legislation: How does the maritime spatial plan fit alongside other applicable legislation in the relevant coastal area?

4. Institutional aspects: What are the essential institutional measures introduced as part of the maritime spatial plan?

5. Effectiveness and enforcement: How effective is the maritime spatial plan from the legal point of view, and what enforcement measures are available for implementing its provisions?

The report concludes highlighting salient legal innovations as learned from the case study.

2. Legal status

A distinction should be made between CCAMLR (1980) itself and any measures adopted pursuant to its provisions[13].

The CAMLR Convention (1980) is an international convention adopted by several countries as well as the European Union. The Convention is an instrument of international law—an international treaty. As such, the Convention is part of the corpus of international law.

Article IX of the Convention enumerates measures which may be taken by CCAMLR, being the principal governance body established under the Convention (art. VII(1)). Those measures encompass regulatory and executive measures. In particular, "conservation measures" (referred to in article IX(1)(f) of the CAMLR Convention, 1980) may be considered as regulations in a full legal sense.

It is important to emphasise that the CAMLR Convention is part of the Antarctic Treaty System. The negotiation of CCAMLR took place largely within the Second Special Antarctic Treaty Consultative Meeting (SATCM II), and was concluded at an autonomous diplomatic conference.

As indicated in the main text of the report, there are three types of spatial areas in the CAMLR Convention Area:

a. Waters and the seabed adjacent to the Antarctic continent (land territory South of 60° South). As a result of the agreement to disagree on the question of territorial sovereignty over the Antarctic continent, there are no universally recognized coastal States. As a consequence, the waters and seabed adjacent to the Antarctic continent can be regarded as de facto high seas and the seabed as de facto Area, and thereby de facto areas beyond national jurisdiction (ABNJ);

b. Maritime zones (e.g. internal waters, territorial seas, EEZs or other 200 nm maritime zones, and (outer) continental shelves) adjacent to sub-Antarctic islands, provided they do not extend South

[13] Reference should also be made to the CCAMLR Resolutions, which are non-legally binding

of 60° South. The relevant coastal States have sovereignty, sovereign rights and jurisdiction over these maritime zones; and

c. The waters and seabed in marine areas that are included in the geographical scope of the CAMLR Convention but are not part of (a) or (b). These are (de iure) high seas or (de iure) Area; and thereby (de iure) ABNJ.

2.1. Adoption

The CAMLR Convention has been ratified, accepted, acceded to or succeeded to by 36 sovereign States as well as the European Union. Contracting Parties[14] to the Convention include 25 "Members" with decision-making and budgetary powers as well as 11 "Acceding States." Both Members and Acceding States are bound by the Convention, although their respective rights and obligations vary, in accordance with the provisions of the Convention.

The CAMLR Convention is a binding instrument of international law, but its effect is relative to its 36 Contracting Parties only. Non-Contracting Parties to the Convention are in principle not bound by its provisions (or by the measures adopted under it), although there may be assertions of a binding effect toward non-Contracting Parties based on the argument that the Convention has formed a body of regional customary international law that may be opposed to non-Contracting Parties.

Vis-à-vis Contracting Parties, conservation measures adopted by the CAMLR Commission under article IX(1)(f) of the Convention acquire a binding effect, as provided for in article IX(6). Such binding effect relates only to Contracting Parties that are accorded the status of Members of CCAMLR. Members have nonetheless the ability to expressly opt out of conservation measures adopted by CCAMLR, but they must do so within 90 days following notification of the adoption of those measures (CAMLR Convention, 1980, art. IX(6)(c)).[15]

Acceding Parties that are not Members of the Commission have no voting right in the Commission and are, by the same token, exempted from the application of the conservation measures that it adopts. Nevertheless, the Commission is obliged to 'draw the attention of all Contracting Parties' to any activity which 'affects the implementation by a Contracting Party of the objective of this Convention or the compliance by that Contracting Party with its obligations' (CAMLR Convention, 1980, art. X(2))).

Similarly, CCAMLR is obliged to draw the attention of non-Parties to any activity undertaken by its nationals or vessels which, in the opinion of the Commission, affects the implementation of the objective of the Convention (CAMLR Convention, 1980,art. X.1).

3. Legal content

3.1. Scope

Article I(1) of the CAMLR Convention reads:

[14] The term 'Contracting Party' is used to refer to a State or regional economic integration organisation that has expressed its consent to be bound by the CAMLR Convention. Original Members are those Contracting Parties that signed the Convention at the 1980 Conference on the Conservation of Antarctic Marine Living Resources which adopted the Convention (CAMLR Convention, 1980, art. VII(2)(a)), while other Members are those Contracting Parties that have since acceded to the Convention and have been granted membership in the CCAMLR (CAMLR Convention, 1980, art. VII(2)(b), (c) and (d)). Only Members may participate in decision-making or contribute to the budget of CCAMLR (CAMLR Convention, 1980, arts. XII and XIX(3)). Accession to the CAMLR Convention is open to any State or regional economic integration organisation (CAMLR Convention, 1980, art. XXIX).

[15] See also CAMLR Convention, art. IX(6)(d).

> This Convention applies to the Antarctic marine living resources of the area south of 60° South latitude and to the Antarctic marine living resources of the area between that latitude and the Antarctic Convergence which form part of the Antarctic marine ecosystem.

The term "marine living resources" is defined in Article I(2):

> Antarctic marine living resources means the populations of fin fish, molluscs, crustaceans and all other species of living organisms, including birds, found south of the Antarctic Convergence.

It may be observed from the above that the focus is on "populations" rather than individual organisms. Furthermore, the enumerated examples do not seem to detract from the comprehensive catch-all phrase "and all other species of living organisms." It is clear that flora as well as fauna is covered.

The Convention does not explicitly apply to the habitats of those living resources although conservation is targeted within "the Antarctic marine ecosystem," defined as "the complex of relationships of Antarctic marine living resources with each other and with their physical environment."[16]

This being said, the Antarctic marine living resources covered by the Convention are those occurring in "the area south of 60° South latitude and … [in] the area between that latitude and the Antarctic Convergence."[17] Beyond that, CCAMLR cooperates with Contracting Parties to harmonise conservation measures in relation to species in marine areas that overlap the Convention area and areas adjacent to it that are under the jurisdiction of those Contracting Parties (CAMLR Convention, 1980, art. XI).

3.2. Sectors

From its inception, the CAMLR Convention's framework has been regarded as covering three sectors, namely, conservation, fisheries and scientific research. Unlike other overarching MSP's, the CAMLR system does not purport to govern the multiple uses of the seas, but pursues conservation as a primary objective. It is however clear that fisheries and scientific research have throughout the history of the CAMLR system served as major tools for furthering that objective.

3.2.1. Conservation

Conservation of Antarctic marine living resources is the stated principal objective of the Convention.[18] All the measures called for by the Convention are ultimately intended to achieve that objective.[19] Conservation has a specific meaning in the Convention, in that it "includes rational use."[20] The concept is further informed by certain principles of conservation articulated in the Convention.[21]

There is an important provision in the Convention regarding two other treaties which regulate conservation and sustainable use of whales and Antarctic seals. The CAMLR Convention is stated not to "derogate from the rights and obligations of Contracting Parties under the International Convention for the Regulation of Whaling and the Convention for the Conservation of Antarctic Seals." The intent of CCAMLR is therefore not to affect the balance of rights and obligations under those other Conventions.

[16] CAMLR Convention, Art. I(3)

[17] CAMLR Convention, Art. I(3)

[18] Art. II(1). See also preamble

[19] Art. IX(1)

[20] Art. II(2)

[21] Art. II(3)

The Conservation objective is implemented through the adoption by the CCAMLR "conservation measures," as envisaged under Article IX(1)(f) of the Convention. Nevertheless, the other activities referred to in the same Article IX(1) will also seek to fulfil the stated objective of conservation.

Reference should be made to Conservation Measure 91-04 (2011), which established the 'General Framework for the Establishment of CCAMLR Marine Protected Areas (MPA).' The CAMLR Convention area is divided into nine MPA planning domains. Two CCAMLR MPAs have been established so far. These are the South Orkney Islands MPA (Conservation Measure 91-03 (2009)), which was adopted in 2009, prior to the development of the MPA framework, and is the first high seas marine protected area in the world. The other is the Ross Sea Region MPA (Conservation Measure 91-05 (2016)), declared in 2016 and which is the largest marine protected area in the world (9400,000 km²).

In 2004, CCAMLR established a procedure for according protection to sites for the CAMLR ecosystem monitoring program (Conservation Measure 91-01 (2004)).

Finally, the CAMLR system of protection for vulnerable marine environments seeks to protect sensitive marine ecosystem features, such as cold water corals, sponge fields, seamounts and hydrothermal vents, particularly from encounters with fishing vessels such as bottom trawlers. Protection of vulnerable marine environments occurs under a range of CAMLR conservation measures, e.g., Conservation Measure 22-07 (2013) and Conservation Measure 22-09 (2012).

3.2.2. Fisheries

Fishing lies at the core of the activities targeted through the CAMLR system. CCAMLR is given the mandate to give effect to the principal objective of conservation by tackling inter alia fishing effort and the status of the resources.[22]

As stated earlier, sealing and whaling are largely left outside the purview of the CAMLR system by virtue of Article VI.

3.2.3. Scientific research

The CAMLR system has emphasised scientific research as a means for attaining its conservation goal.[23] Almost all the actions that CCAMLR is charged with under Article IX refer explicitly or implicitly to scientific research, and, in fact, engagement in scientific research is one of the two grounds for applying for membership in the CCAMLR. A broad research mandate stems from paragraph 1(a), which calls for the Commission to "facilitate research into and comprehensive studies of Antarctic marine living resources and of the Antarctic marine ecosystem." Other subparagraphs refer to catch-related research.[24]

3.3. Typology of measures

From its inception, the CAMLR system has set forth a gamut of measures which the Commission may adopt in furtherance of the Convention's goals. These measures range from the mere but essential dissemination of information through to prescriptive conservation measures that are binding on Members. As such, the CAMLR system incorporates a regional regulatory coercive framework.

In deciding on any such measures, the Commission must consider any relevant measures or regulations adopted under other frameworks, including the Antarctic Treaty or existing fisheries commissions.[25]

[22] Arts. IX–X

[23] Preamble

[24] Art. IX(1)(b), (c) and (d)

[25] Art. IX(5)

3.3.1. Communication and information

The CAMLR Commission has an important function in the collection and communication of relevant information within the Convention's framework. The CAMLR Commission is expected to gather, analyse and disseminate relevant data.[26]

An important extension to these communication and information measures is provided through the arm of the Scientific Committee,[27] which is a consultative body to the Commission.[28]

The Commission has a specific responsibility to call the attention of Parties and non-Parties to the Convention to activities under their jurisdiction which affect its implementation.[29]

3.3.2. Administration

CCAMLR enjoys legal personality.[30] It is granted powers of administration over its own programmes and affairs.[31]

The Commission does not carry out the actual implementation or enforcement of conservation measures. These responsibilities rest on Parties to the Convention. However, the CAMLR Commission does draw the attention of the Contracting Parties to instances of non-compliance (art. X).

3.3.3. Cooperation

Much cooperation is envisaged between CAMLR institutions and other bodies or States.[32] Cooperation is essential for CAMLR as a whole since measures adopted within CAMLR need to be tuned to developments outside the area, and to measures adopted by other bodies that may apply in the CAMLR region.

The Commission and the Scientific Committee are called upon to develop cooperation with relevant global and regional intergovernmental and non-governmental institutions.[33]

A further instance of cooperation is called for between the Commission and a Party to the Convention exercising jurisdiction in marine areas adjacent to the CAMLR region where there is a need to harmonise policies and rules regarding the conservation of stocks of straddling species.[34]

3.3.4. Recommendations

The Scientific Committee's advice and recommendations are in turn to be taken into account by the Commission in deliberating on new measures.[35]

3.3.5. Prescriptions

[26] Art. IX(1)(b), (c) and (d)

[27] Art. XV

[28] Art. XIV

[29] Art. X

[30] Art. VIII

[31] Arts. IX (conservation and related measures), XIII (meetings and subsidiary bodies), XVII (Executive Director and Secretariat), XIX (budget and financial activities), and XXIV (elaboration of system of observation and inspection)

[32] Preamble

[33] Art. XXIII

[34] Art. XI

[35] Art. IX(4)

A primary example of prescriptive measures that may be taken by the Commission consists of "conservation measures,"[36] which constitute the highest tier of regional coordination by that body in furtherance of the Convention's objectives.

Article IX(6) defines the procedure by which conservation measures may be adopted, and ultimately acquire a binding effect on Members of the Commission. Article IX(2) gives a non-exhaustive list of examples of conservation measures. Conservation measures must be based on the best scientific evidence available.[37]

4. Relationship with other applicable legislation

The CAMLR Convention (1980) was adopted in the backdrop of the Antarctic Treaty (1959), and two years prior to the conclusion of the United Nations Convention on the Law of the Sea (UNCLOS) (1982). The Agreement for the Implementation of the Provisions of UNCLOS of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks, together with the Convention on Biological Diversity (CBD) have provided further impetus to the development maritime spatial planning. Ongoing discussions for the adoption of a regime covering ocean areas beyond national jurisdiction are likely to be of significant relevance to the plan.

4.1. Antarctic Treaty

The Antarctic Treaty holds a strong legal significance for purposes of the CAMLR process, which itself emanated from the former.[38]

Article III of the CAMLR Convention recognises the prevalence of the Antarctic Treaty by providing:

> The Contracting Parties, whether or not they are Parties to the Antarctic Treaty, agree that they will not engage in any activities in the Antarctic Treaty area contrary to the principles and purposes of that Treaty and that, in their relations with each other, they are bound by the obligations contained in Articles I and V of the Antarctic Treaty.

Although the above Article does not go as far as rendering the whole text of the Antarctic Treaty applicable within the CAMLR framework itself—something that would be incongruous given that the Antarctic Treaty does not extend north of 60° South Latitude[39] and that the Parties to the two Conventions are not necessarily the same, there is a clearly stated obligation on the part of the CAMLR Convention Parties to refrain from engaging in any activities in the Antarctic Treaty area contrary to the principles and purposes of the Antarctic Treaty. Short of making the Antarctic Treaty technically applicable therefore in the relations between CAMLR Convention Parties, the necessity of respecting the essential goals of the Antarctic Treaty, its principles and purposes, is required from those Parties. The only provisions of the Antarctic Treaty which are "imported" and made directly applicable between Parties to the CCAMLR Convention are Articles I and V, which affirm that Antarctica must be used for peaceful purposes only and that it must be spared nuclear explosions or disposal of radioactive waste material. These two Articles apply to the CAMLR framework, regardless of whether the Parties to the CAMLR Convention are Parties or not to the Antarctic Treaty.

Another set of provisions which are made applicable between Parties to the CAMLR Convention are Articles IV and VI of the Antarctic Treaty.[40] As far as "the AT area"[41] is concerned, Parties to the CAMLR Convention agree that no territorial claims may be asserted, reinforced, denied or

[36] Art. IX(1)(f)

[37] Art. IX(1)(f)

[38] CAMLR Convention, preamble. See also 9th Antarctic Treaty Consultative Meeting, Recommendation XI-2.

[39] AT, Art. VI

[40] CAMLR Convention, Art. IV(1)

[41] AT, Art. VI

prejudiced as a result of anything found or conducted under the Antarctic Treaty. This extends to Antarctica proper[42] as well as the high seas.[43]

The CAMLR Convention does not aim at modifying the status of rights or claims to territorial sovereignty or coastal jurisdiction of any State, over the Antarctic Treaty area.[44]

As far as the primary objective of the CAMLR Convention is concerned, however, it is recognised under its Article V that the Antarctic Treaty Consultative Parties have special obligations and responsibilities for the protection and preservation of the environment of the Antarctic Treaty area.[45]

Parties to the CAMLR Convention undertake furthermore to observe the conservation measures adopted by the Antarctic Treaty Consultative Parties.[46] This includes the Agreed Measures for the Conservation of Antarctic Fauna and Flora,[47] as well as the Convention for the Conservation of Antarctic Seals, which grew out of the Antarctic Treaty system, but is a self-standing international treaty and the International Convention for the Regulation of Whaling.

Article IX(5) of the CAMLR Convention reads as follows:

> The Commission shall take full account of any relevant measures or regulations established or recommended by the Consultative Meetings pursuant to Article IX of the Antarctic Treaty or by existing fisheries commissions responsible for species which may enter the area to which this Convention applies, in order that there shall be no inconsistency between the rights and obligations of a Contracting Party under such regulations or measures and conservation measures which may be adopted by the Commission.

Reference should be made in this regard to the establishment of Antarctic specially managed areas and specially protected areas under the 1991 Madrid Protocol on Environmental Protection to the Antarctic Treaty, for which a framework for coordination with the CAMLR Commission was adopted in 2012 (Conservation Measure 91-02 (2012)).

There are also linkages between the Madrid Protocol to the Antarctic Treaty and CCAMLR.[48]

Drafters of the CAMLR Convention envisaged the potential of conflict between measures developed within the CAMLR framework, and rules and regulations adopted by other instances.

4.2. UNCLOS

The CAMLR Convention does not aim at modifying the status of rights or claims in territorial sovereignty or coastal jurisdiction of any State, over the area covered by the Convention.[49]

4.3. International Convention for the Regulation of Whaling

The CAMLR Convention provides that it is not meant to derogate from the rights and obligations of Contracting Parties under the International Convention for the Regulation of Whaling.[50] The CAMLR Convention thus preserves the system of checks and controls established under that instrument.

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[42] AT, Art. IV

[43] AT, Art. VI

[44] CAMLR Convention, Art. IV(2)

[45] See also CAMLR Convention, preamble

[46] CAMLR Convention, Art. V(2)

[47] CAMLR Convention, Art. V(2)

[48] See arts. 4-5 of the Madrid Protocol and arts. 5-6 of Annex V to the Madrid Protocol

[49] CAMLR Convention, Art. IV(2)

[50] CAMLR Convention, Art. VI

4.4. Other frameworks

In deciding on its own conservation measures, the CAMLR Commission must consider any relevant measures or regulations adopted under existing fisheries commissions, with a view to avoiding any inconsistency.[51]

4.5. National law

The CAMLR Convention says little about its interrelations with national laws. This is not unusual in treaty drafting. The rules and principles of the general international law will operate to inform the delimitation of the respective spheres of application between national and international law.

The Convention has interestingly dealt directly with one aspect of the interrelation between the conventional regime and the law of a Contracting Party *outside* the Convention's area. As such, cooperation is called for between CCAMLR and a Contracting Party exercising jurisdiction in marine areas adjacent to the CAMLR region where there is a need to harmonise policies and rules regarding the conservation of stocks of straddling species.[52]

Although it is not part of the Convention's text, an important document which was included in the Final Act of the Conference that adopted the CAMLR Convention[53] sheds light on the relationship between the conventional regime and conservation measures applicable in *waters adjacent to Kerguelen and Crozet over which France has jurisdiction as well as waters adjacent to other islands within the area to which the CAMLR Convention applies over which the existence of State sovereignty is recognised by all Contracting Parties*. The document in question essentially preserves the right of States exercising sovereignty over such islands to veto the adoption by CCAMLR of conservation measures in those waters. Alternatively, the document grants such States the option to work within CCAMLR in adopting conservation measures covering those waters.

Reference should finally be made to MPAs which were established by CCAMLR Members in waters within their respective national jurisdictions, adjacent to Heard, McDonald, South Georgia, Prince Edward and Marion Islands.

4.6. Third parties

Parties to the CAMLR Convention are specifically called upon to exert influence on non-Parties with a view to preventing any action that is contrary to the objectives of the Convention.[54]

5. Institutional aspects

The CAMLR system establishes a purpose-built institutional machinery featuring intergovernmental cooperation. This machinery lies side by side with national institutions of Members and Acceding States.

5.1. Intergovernmental institutions

5.1.1. CCAMLR

CCAMLR is the principal organ established under the CAMLR Convention. It is an intergovernmental body, which meets periodically with a view to implementing the objectives of the Convention.[55]

[51] Art. IX(5)

[52] Art. XI

[53] Statement by the Chairman of the Conference on the Conservation of Antarctic Marine Living Resources

[54] CAMLR Convention, Art. XXII

[55] CAMLR Convention, Art. IX(1)

The Commission is funded by the Members[56], which can establish subsidiary bodies[57], and consensus is the rule by which decisions on matters of substance are made within the Commission.[58] Decisions on other matters are taken by simple majority.[59]

5.1.2. Scientific Committee

The Scientific Committee is established under the CAMLR Convention as "a forum for consultation and co-operation concerning the collection, study and exchange of information with respect to the marine living resources to which th[e] Convention applies."[60]

The Scientific Committee may transmit recommendations to the Commission as requested or on its own initiative regarding measures and research to implement the objective of the Convention.[61]

It serves as a consultative body to the CAMLR Commission.[62] Each Member of the Commission is automatically a member of the Scientific Committee.[63]

5.1.3. Secretariat

To serve CCAMLR Commission and its Scientific Committee, a Secretariat was established.[64]

5.2. National authorities

The list of Parties to the CAMLR Convention is not closed. Additional States (as well as regional economic integration organisations) interested in research or harvesting activities in relation to the marine living resources to which the Convention applies may accede to the treaty.[65]

6. Effectiveness and enforcement

6.1. Effectiveness

As already stated, the conservation measures adopted by CCAMLR have a binding effect on Contracting Parties.[66]

The CCAMLR is called upon to draw the attention of Parties to the Convention to activities under their jurisdiction which affect its implementation.[67]

Parties to the CAMLR Convention undertake in turn to provide the Commission with scientific, catch and enforcement-related information that could be useful to the Commission in carrying out its mandate.[68]

6.2. Enforcement

[56] CAMLR Convention, Art. XIX(3)

[57] CAMLR Convention, Art. XIII(6)

[58] Art. XII(1)

[59] Art. XII(2)

[60] CAMLR Convention, Art. XIV(1)

[61] CAMLR Convention, Art. XV(2)(e)

[62] CAMLR Convention, Art. XIV(1)

[63] CAMLR Convention, Art. XIV(2)

[64] CAMLR Convention, Art. XVII

[65] Art. XXIX

[66] CAMLR Convention, Art. IX(6)

[67] Art. X(2)

[68] CAMLR Convention, Arts. XX and XXI(2)

The conservation measures adopted by CCAMLR must be implemented and enforced by Parties to the Convention.[69] Parties must report to the Commission on the implementation and enforcement measures they have taken.[70]

Conservation measures are subject to the normal principles and rules regarding enforcement jurisdiction. Flag state control is arguably the only effective enforcement mechanism in the Southern Ocean, except in maritime zones appendant to sub-Antarctic islands where territorial claims are recognised and coastal state jurisdiction may be enforced by vessels on government service. However, in waters adjacent to the Antarctic continent itself, where territorial claims are disputed, there is no claimant coastal state practice of enforcement against foreign-flagged vessels. The relative effect of the CAMLR Convention towards the Contracting Parties would mean that vessels of non-Contracting Parties are exempt from the conservation measures anyway. There is little scope for port state control in the area under consideration, although some impact might be made if CCAMLR Commission were to blacklist non-compliant vessels which would then be banned from the ports of Contracting Parties where they might have sought provisioning.[71]

A System of Inspection and a Scheme of International Scientific Observation have thus been established.[72] The Commission was charged with developing the terms for such a system, which relies on observers and inspectors designated by and working under the authority of the Parties to the Convention.[73]

7. Conclusion and recap of salient legal innovations

- the de facto ecosystem approach to fisheries management included in Article II(3)
- the Chairman's Statement adopted at the CCAMLR Conference, which is particularly relevant in relation to transboundary resources.
- the delimitation of the competence of CCAMLR on the one hand, and the ICW and CCAS on the other
- the cooperation and coordination between CCAMLR and CCSBT
- the willingness of CCAMLR to protect the Antarctic marine ecosystem against impacts of fishing vessels that are not associated with fishing (e.g. discharging waste; see CM 26-01 (2015)), ballast water exchange (Resolution 28/XXVII) and maritime accidents (Resolution 29/XXVIII), without prejudice to the 'primacy' of the International Maritime Organization (IMO)
- the willingness of the Antarctic claimant States to accept the competence of CCAMLR in the waters adjacent to the Antarctic continent.

[69] CAMLR Convention, Art. XXI(1)

[70] CAMLR Convention, Arts. XX(3) and XXI(2)

[71] See Conservation Measure 10-03 (2015)

[72] CAMLR Convention, Art. XXIV

[73] See CCAMLR Scheme of International Scientific Observation

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EA-01-17-517-EN-N

ISBN: 978-92-9202-251-8
doi: 10.2826/77867