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Research Article

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System of Inspection; IUU fishing; Port inspections; At-sea inspection; MCS tools

Corresponding author:Chong Feng; Email: fengchong422@163.com**Abstract**

The CCAMLR System of Inspection has been in place for more than 30 years, but its implementation and impact have yet to be summarised and analysed. The purpose of the research is to clarify the legal basis, analyse the implementation and make suggestions for further improvements. By analysing the CAMLR Convention and historical files, the System of Inspection has been further improved and many details have been added based on some international fisheries agreements and domestic laws regulating fisheries. Article XXIV of the CAMLR Convention, various Conservation Measures and documents form the legal basis of the System of Inspection. The System is divided into two types, namely At-sea inspection and Port inspection. Combined with the annual reports of CCAMLR meetings over the past 30 years, the System has become relatively complete as a “Compliance Monitoring Mechanism” under the CCAMLR Compliance Evaluation Procedure with other monitoring, control and surveillance (MCS) tools. However, inspection data have not been stable over the years. Since 2017, the increase in catches has not led to an increase in the number of inspections in the annual reports. In addition, At-sea inspections do not cover all Subareas of the Convention. At present, the objects of inspection have been extended to Non-Member vessels, so that it should also be sanctioned through various mechanisms. In addition, the System of Inspection is different from the Compliance Evaluation Procedure and the relationship between the two needs to be confirmed in practice. Due to the change in inspection methods, the lack of inspection data and the increase in other MCS tools, At-sea inspection does not cover all Subareas of the Convention. The System of Inspection is constantly being practised and improved. The study calls on Members to continue to carry out inspections and to improve the System in order to achieve the conservation and rational use of fishery resources.

Introduction

The Convention on the Conservation of Antarctic Marine Living Resources (hereinafter referred to as “CAMLR Convention”) entered into force in 1982, following its adoption in 1980. Article XXIV of the CAMLR Convention provides that the System of Observation and Inspection shall be used to regulate fishing activities in the Convention Area. In 1989, the System was divided into the “CCAMLR System of Inspection” and the “CCAMLR Scheme of International Scientific Observation” (SISO). In the case of the former, scholars from the fields of fisheries and marine sciences have been involved. However, as a “Compliance Monitoring Mechanism”, the legal basis and the implementation process of the System should be analysed from the perspective of international law. Combined with the implementation data of more than 30 years, this research mainly analyses the implementation purpose, effect and future directions for improvement from the theoretical and practical levels. The System of Inspection in the CAMLR Convention can be further improved and developed, and the effective regulation and development of Antarctic fisheries can be realised.

The overview of the CCAMLR System of Inspection

The System of Inspection in the CAMLR Convention allows inspectors to board fishing vessels in the Convention Area and vessels that have been fishing in the Convention Area to verify that their catches and fishing gear comply with the requirements of the CAMLR Convention and its Conservation Measures (CMs). At present, the legal basis for the CCAMLR System of Inspection (hereinafter referred to as the “System of Inspection”) consists mainly of the CAMLR Convention, the CMs adopted by the Commission for the Conservation of Antarctic Marine Living Resources (hereinafter referred to as the “Commission”) and some normative documents relating to the System of Inspection.

The origins of the CCAMLR System of Inspection

The CAMLR Convention is one of the earliest known international treaties to establish a Compliance Monitoring Mechanism in an international fishery (Laurence et al., 2007).

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Article XXIV of the Convention provided the legal basis for the establishment of the System of Inspection. The System took 7 years to be agreed and entered into force in 1989. In fact, by analysing the System of Inspection in the international fisheries agreements and national fisheries laws before the CAMLR Convention, the System of Inspection in the CAMLR Convention is its refinement and development (Rayfuse, 1998).

At the level of international law, the Convention on the Conduct of Fishing Operations in the North Atlantic (1967) was the first fisheries agreement to provide for inspection (Rayfuse, 1998). It stipulates that “authorised officers shall observe whether the provisions of the Convention are being carried out, inquire into and report violations of the provisions of the Convention, obtain information in cases of damage and, where desirable, bring the provisions of the Convention to the attention of the vessels of Contracting Parties and shall cooperate for these purposes with the authorised officers of other Contracting Parties” (CCFONA, 1967). However, the Convention does not refer to the parties involved as “inspectors”, nor does it provide details of the system. Subsequently, the Convention on Future Multilateral Cooperation in Northwest Atlantic Fisheries (1978) clearly defined the System of Inspection as an integral part of the scheme of joint international enforcement (NAFO, 1978). At the level of domestic law, the United States was the first state to establish a fisheries inspection. In the 1970s, the domestic legislation of the United States established a mechanism for fisheries inspectors to achieve regulation of fishing activities. In this mechanism, the Fisheries Service regularly follows fishing vessels to collect relevant data, especially to regulate fishing techniques and manage fishing quotas to determine the environmental situation of national waters and fishing conditions (Rayfuse, 1998). The functions of fisheries inspectors include tracking fishing vessels, confirming fishing activities and boarding vessels to check that their facilities comply with regulations (Rayfuse, 1998). On the one hand, inspectors can determine whether the fishing behaviour of fishing vessels is compliant (NOAA, 2017). On the other hand, they can also collect relevant fisheries data and information (NOAA, 2017). Among them, in fisheries surveillance activities, inspectors can conduct law enforcement on suspected illegal fishing vessels by contacting nearby law enforcement vessels (Wang, 2003).

Although there is no direct evidence that the CAMLR Convention directly refers to the System of Inspection in these two fisheries conventions or to the domestic mechanism for fisheries inspectors in the United States, the System of Inspection in the CAMLR Convention is similar to those and the content is refined. At present, at the global level, such as the “Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing and the Fisheries Management treaties” and the “Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks”, which provide more detailed provisions on the regulation of fishing objects, fishing methods and inspection procedures (Zhang & Han, 2007). The System of Inspection is an important part of monitoring, control and surveillance (hereinafter referred to as “MCS”) (Miller & Elise, 2019). The importance of the MCS in achieving CMs was identified by a United Nations Food and Agriculture Organization Expert Consultation (Flewellling, 2001). As a result, the System of Inspection has become an important compliance mechanism in current regional or global fisheries agreements.

The purpose of the CAMLR Convention is the Conservation of Antarctic Marine Living Resources (CAMLR Convention, 1980). The Commission allows Members of the Commission (hereinafter referred to as “Members”) to fish for certain species in the Convention Area. Therefore, allowing inspections to ensure compliance with fishing quotas, methods and species, and the prevention of illegal, unreported and unregulated fishing (hereinafter referred to as “IUU fishing”) is the direct purpose of Article XXIV of the CAMLR Convention, and the collection of fisheries information data and the monitoring of compliance are the two required functions. Following the entry into force of the CAMLR Convention, these two functions were generally set out in Article XXIV of the “CCAMLR System of Observation and Inspection”. In 1984, the Commission decided that, in the first instance, Members could carry out fisheries observation and information collection through bilateral agreements (SC-CCAMLR, 1985). Implementation of the full system would then be encouraged after further study by the CCAMLR Scientific Committee (CCAMLR, 1984). At that time, the Commission noted that the number of Members conducting observer coverage was limited and that the purpose of monitoring compliance with Article XXIV of the CAMLR Convention could not be achieved through bilateral agreements alone (M. Howard, 1989). For the purpose of monitoring the implementation of the CAMLR Convention, the Commission decided to divide the “System of Observation and Inspection” into the “CCAMLR System of Inspection” and the “CCAMLR Scheme of International Scientific Observation” (CCAMLR, 1984). The CCAMLR SISO is designed to collect the data necessary to achieve the objectives of the CAMLR Convention, and the System of Inspection is designed to ensure that Members comply with the CMs adopted by the Commission (Rayfuse, 1998). Subsequently, the Commission first sought to advance the CCAMLR SISO by requiring each Member State’s commercial fishing vessels to carry inspectors to collect fisheries data and information (CCAMLR, 1985). Later, in 1986 and 1987, the United States proposed that the System of Inspection should be implemented as soon as possible (CCAMLR, 1986), expressed Members concern about inspection procedures, personnel and plans (CCAMLR, 1986) and proposed the establishment of the Standing Commission on Observation and Inspection (hereinafter referred to as “SCOI”) to determine the design of the System and to review its operation on an ongoing basis once it was in place (Rayfuse, 1998). The SCOI was finally established in 1988 and preparatory work was carried out, with the Secretariat preparing the necessary materials, checklists, reporting forms, terminology dictionaries, etc. for use by inspectors (CCAMLR, 1988). As a result, it was not until 1989 that the System of Inspection was finally ready for implementation. In the 1989/1990 season, Argentina, Chile, the United States and the Soviet Union deployed inspectors under the System of Inspection for the first time (Laurence, 2008). Since 2003, the SCOI has changed its name to the Standing Commission on Implementation and Compliance (SCIC). Currently, the System of Inspection is the Compliance Monitoring Mechanism in the CCAMLR Compliance Evaluation Procedure (hereinafter referred to as “CEP”) (Miller & Elise, 2019), which aims to improve the implementation of CMs and better achieve the objectives of the CAMLR Convention (Miller & Elise, 2019). The CEP evaluates the System of Inspection to facilitate its implementation. It is an important system for vessels to operate in accordance with fishable area, species and share and to promote compliance with CMs (CCAMLR, 2002).

The legal basis for the CCAMLR System of Inspection

The legal basis of the System of Inspection consists mainly of the CAMLR Convention, the CMs and several normative documents related to the System of Inspection.

First, Article XXIV of the CAMLR Convention stipulates that the entire system of observation and inspection is under the responsibility of the Commission and states that 1. The work of observation and inspection shall be carried out in accordance with international practice, and the inspectors designated by the Members shall carry out law enforcement. 2. Inspectors shall be under the jurisdiction of Members only, and inspections shall be reported to the Member that sent the inspector, which shall report to the Commission. 3. Based on inspection findings, the flag state imposes sanctions on the fishing vessel concerned in accordance with its national law (CCAMLR, 1980).

Second, CMs are the important part of the legal foundation. At the level of international law, CMs are legally binding on all Members. The Commission implements a comprehensive set of CMs to support the Conservation of Antarctic Marine Living Resources and the management of fisheries in the Southern Ocean (CCAMLR, 2021). Article IX.1.(f) of the CAMLR Convention states that “Conservation Measures shall be formulated and adopted on the basis of the best scientific evidence available in order to implement the objectives and principles of Article II of the CAMLR Convention” (CCAMLR, 1980). CMs are discussed and developed at the annual meeting of CCAMLR, and new or revised CMs are received at the end of the meeting in early November and are usually implemented by 1 December to coincide with the start of the fishing season (CCAMLR, 1980). Regarding the entry into force of CMs, the Commission provides that CMs shall enter into force around the beginning of May of the year following the annual meeting (180 days after the CMs are first notified to Members) (CCAMLR, 2021). In practice, the entry into force of relevant CMs is similar to general international law and must be incorporated or transformed by Members. Depending on the content of the annual report, Members will provide feedback to the Commission on the direct incorporation of CMs into national law or the transformation of CMs into national fisheries management measures, which are the basis for the legal effect of CMs. On the one hand, the CMs for commercial and scientific fishing licences and quotas for related species are the basic reference for the implementation of the System of Inspection. The species currently fished in the Convention Area are mainly *Dissostichus eleginoides*, *Dissostichus mawsoni*, *Champsocephalus gunnari* and *Euphausia superba*. The relevant CMs specify the species, areas, quotas and fishing methods (CCAMLR, 2011). On the other hand, the Commission has adopted two CMs that directly regulate the implementation of the System of Inspection. These two CMs, namely “Conservation Measure 10-02 Licensing and Inspection Obligations of Contracting Parties with Regard to their Flag Vessels Operating in the Convention Area” and “Conservation Measure 10-03 Port inspections of Fishing Vessels Carrying Antarctic Marine Living Resources”, correspond to the two forms of the System of Inspection, namely At-sea inspection and Port inspection, and have been updated several times to specify the obligations of members, the objects of inspection and standard procedures.

Finally, at the level of normative documents, the Commission has compiled documents to support the implementation of the System of Inspection. The current normative documents are mainly based on the “Text of the CCAMLR System of Inspection” and the “Inspector Manual”. The “Text of the CCAMLR System of

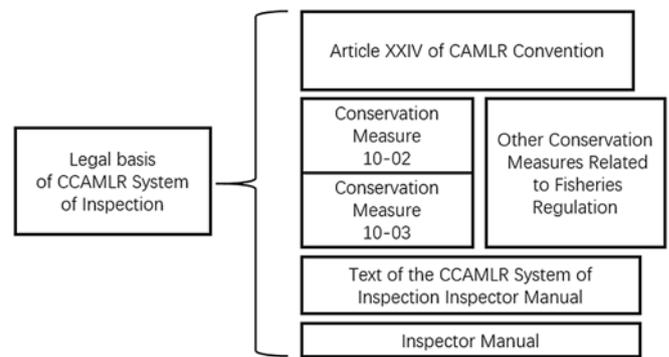


Figure 1. Inspection legal basis framework.

Inspection” is one of the “Basic Documents” listed on the CCAMLR website (CCAMLR, 2021). It sets out the functions, rights and obligations of inspectors, the rights and obligations of the fishing vessels subject to inspection and their respective legal responsibilities (CCAMLR, 2020). It also sets out the legal responsibilities of the vessel concerned and its flag state (CCAMLR, 2019). At the same time, it includes the identification, certificate and inspection report required by the inspector to carry out the inspection. However, from the point of view of implementation, it cannot be concluded that all States have conducted and received inspections in full compliance with this document. For example, the 1989 SCOI Annual Report referred to the “Text of the CCAMLR System of Inspection” (1989 version) for the conduct of inspections and the submission of reports (CCAMLR, 1989). However, to date, the annual reports show that the number of inspection reports submitted does not correspond to the number of inspections (CCAMLR, 2021). In other words, many inspections are completed without the required inspection reports. The “Inspector Manual” is referred to as the “Manual” on the CCAMLR website. These two documents were originally drawn up at the CCAMLR annual meeting in 1989 and have undergone several revisions. The Text of CCAMLR System of Inspection and the Inspector Manual provide the means for assessing compliance (Fig. 1).

The implementation of the CCAMLR System of Inspection

The System of Inspection is specific to the fishing activities of fishing vessels. Since fishing vessels carry out their fishing activities at sea, they will eventually dock in port, so the inspection methods are divided into two types: “At-sea inspection” and “Port inspection”, which are specified in CMs 10-02 and 10-03, respectively.

The process of the CCAMLR System of Inspection

According to the requirements of the CCAMLR website, the development of System of Inspection requires the selection of inspectors according to the relevant requirements and the submission of the list to the Commission and other Members. In the case of At-sea inspection, the vessel carrying the inspectors shall enter the Convention Area and the fishing vessel shall be boarded for inspection. The specific fishing vessel observed and the fishing vessel inspected shall be recorded. Inspections are not required for all vessels. In the case of Port inspection, inspectors shall, in accordance with the number of vessels required by the

CMs, inspect inbound fishing vessels that have fished in the Convention Area and fishing vessels carrying Convention Area catches in the ports of Members, and shall complete the inspection report and submit it to the Commission. During the inspection process, inspectors board and inspect fishing vessels and complete relevant forms to record the information as “Inspection Reports” (CCAMLR, 2011). The inspection report is submitted directly to the Commission and to the Members and sent back to the flag state. Upon completion of the inspection and submission of the report, the Member concerned may communicate the content of the inspection through diplomatic channels and may follow national procedures to deal with the responsible Member. Finally, at the following year’s annual meeting of CCAMLR, the Commission and Members will review and discuss the inspection report, and all Members will state and respond to the contents of the inspection report. If the report mentions illegal activities by vessels and inspectors, the meeting will discuss the above-mentioned actions and invite the parties concerned to provide information on the progress of the work.

Specifically, the implementation steps include Members selecting and assigning inspectors and submitting the list to the Commission and other Members; conducting inspections (including boarding fishing vessels, conducting inspections, completing relevant information and reports, etc.); preparing and submitting reports; providing feedback and resolving problems and discussing at meetings. If the inspecting Member or the inspected Member violates the law during the inspection process, the violation must also be reported to the Member’s State of nationality and prosecution must be pursued in accordance with its national law.

At-sea inspection

Unlike general pelagic fisheries, Antarctic fishing activities place higher performance demands on fishing vessels (Nicol et al., 2012). Thus, vessels carrying out At-sea inspection also need to be able to carry out inspections under difficult and costly conditions. As can be seen from documents such as the CCAMLR annual meeting reports, there are not many Members that conduct At-sea inspections. At the same time, At-sea inspection requires vessels to carry out inspections in the wider Convention Area, and vessels are far from their own ports. In addition, inspection voyages can take several months, the number and difficulty of final inspections are uncertain and accidents can occur. CM 10-02 sets out the specific requirements for At-sea inspection, including: (1) Members shall prohibit their own vessels that do not have a fishing licence from fishing in the Convention Area or in a marine protected area. (2) Members may issue fishing licences in the Convention Area only to vessels that fly their flag, have an IMO number and are able to comply with the CAMLR Convention and CMs. (3) Fishing vessels should always carry a fishing licence or a copy thereof for inspection. Flag States should be notified when vessels enter and leave ports, enter and leave the Convention Area and each subarea, report fishing information data and report other fishing vessels encountered, as appropriate. Flag States should operate vessel monitoring systems (VMS) and implement international rules for safe operation of vessels and prevention of pollution. (4) Fishing vessels should be equipped with communication equipment, immersion suits, medical equipment, emergency supplies, insurance, etc. (5) Members should provide the CCAMLR Secretariat with relevant information on fishing vessels, including relevant data and photographs, and information such as changes in fishing licences should be reported to the CCAMLR

Secretariat. (6) Members should inspect all fishing vessels at departure, entry and port and within their exclusive economic zones, to ensure compliance with the CAMLR Convention and related CMs, and provide relevant information based on violations. Sanctions under national law require Members to investigate “extremely serious maritime incidents” involving flag State fishing vessels in the Convention Area (CCAMLR, 2016).

Port inspection

The full name of the Port inspections is “Port inspections of Fishing Vessels Carrying Antarctic Marine Living Resources”. CM 10-03 sets out the details of its implementation, including: (1) Members should inspect all incoming vessels carrying *Dissostichus* spp. to determine whether their fishing activities in the Convention Area are in accordance with the CAMLR Convention and the CMs. If *Dissostichus* spp. is to be landed or transhipped in port, the *Dissostichus* spp. catch document required by CM 10-05 shall be attached and the catch shall be consistent with the information recorded on the document. (2) Members shall inspect fishing vessels carrying species caught in the Convention Area other than small toothfish, at a rate of not less than 50% of the total number of such vessels, to verify that their fishing activities in the Convention Area are conducted in accordance with the CAMLR Convention and CMs. Members shall focus on verifying whether the fishing vessel has ever been denied access to port for violating CMs, whether other Members have requested the vessel to be inspected, and whether it is suspected of engaging in or supporting IUU fishing. (3) For the inspection of the two types of fishing vessels referred to above, Members should require vessels entering their ports to provide the information set out in CM 10-03 and to submit a declaration that they are not engaged in or supporting IUU fishing within the time limit specified. (4) In accordance with CMs 10-06 and 10-07, Members should, as a general rule, refuse entry to IUU fishing vessels and fishing vessels that have not submitted relevant documentation for inspection. If the inspection process reveals violations of CMs or the presence of IUU fishing vessels, Members should prohibit the vessels from entering port or transshipping fish, or impose other monitoring and control measures of equal or greater severity, surveillance or law enforcement measures. Members should inform the flag state of violations and cooperate with the flag State to investigate and, where appropriate, impose sanctions in accordance with national law (CCAMLR, 2016). Members must submit reports and related documents in a timely manner and in the prescribed format following port inspections to explain the results of the inspection, and the CCAMLR Secretariat will forward the report to the flag state of the fishing vessel involved (CCAMLR, 2019). There are dedicated pages on the CCAMLR website to regularly update the list of IUU vessels, namely “Conservation Measure 10-06 Contracting Party IUU Vessel List” (CCAMLR, 2011) and “Conservation Measure 10-07 Non-Contracting Party IUU Vessel List” (CCAMLR, 2011).

The practice of the CCAMLR System of Inspection

The System of Inspection was discussed at the SCOI annual meeting in 1988 and Members agreed to conduct inspections in 1989. The SCOI existed until 2002 and was officially renamed the SCIC in 2003 to continue to be responsible for the implementation of the System of Inspection. In 2013–2016, the reports of the SCIC annual meetings were included in the report of the CCAMLR

annual meeting. And in 2020, COVID-19 precluded the formal annual meeting of the SCIC, but some SCIC items were included in the report of the CCAMLR annual meeting. An analysis of the annual meeting reports of SCOI, SCIC and CCAMLR shows how the System works in practice.

The evolution of the CCAMLR System of Inspection (1988–2021)

The System of Inspection has been in operation since the Commission established the SCOI in 1988. Both the SCOI and later the SCIC have improved the System of Inspection by summarising the practice of the System of Inspection at annual meetings (Table 1).

During the annual meetings of CCAMLR from 1988 to 2021, the Commission made continuous and targeted improvements to the System of Inspection. The evolution of the System of Inspection can be divided into three phases.

The first phase, from 1988 to 1990, was the preparatory phase of the System of Inspection and saw the completion of the Text of the System of Inspection and the Inspector Manual. However, the overall implementation of the CAMLR Convention was still unclear, with only 11 CMs being implemented in 1989/1990 (CCAMLR, 2001). Inspections encountered problems such as language barriers in carrying out their work (CCAMLR, 1990).

The second phase, from 1991 to 2002, was the phase of development and improvement of the System of Inspection. The Text of the System of Inspection and the Inspector manual had been revised several times. The inspection process, discussion of violations, handling, reporting and many other details had been clarified. The diversity of fishing states in the Convention Area had resulted in several versions of inspection documents. During this period, there were three important developments in the System of Inspection. The first was the use of VMS to determine the position of Member vessels. Initially, VMS determined the position of fishing vessels and reported relevant information to flag states and the CCAMLR Secretariat. In this way, regulation of the fishing activities of fishing vessels is partially achieved. Subsequently, the VMS was further revised and the relevant data were also made available to Members conducting inspections. According to CMs 10-04 (2018), Members may request VMS data from the CCAMLR Secretariat for use in active surveillance operations or inspections (CCAMLR, 2018). VMS data include vessel positioning data, which facilitates the ability of Members to board fishing vessels during At-sea inspections (CCAMLR, 2018). The use of VMS reduces the cost of direct communication with the flag state or fishing vessels. The second is that the inspection involves Non-Member fishing vessels, making the CAMLR Convention applicable to third parties. The third is the introduction of the concept of IUU fishing, which corresponds to the three situations of violation of CMs, poaching and fishing by Non-Member vessels, and includes both Member and Non-Member vessels in the inspection targets. The concept of IUU fishing will make it possible to keep a continuous record of illegal vessels, thereby improving the effectiveness and relevance of inspections.

From 2003 to the present, there has been a third phase of continuous development of the System. In terms of its legal nature, all Members have recognised the System of Inspection as a “Compliance Monitoring Mechanism” under the CAMLR Convention. The Text of the System of Inspection and the Inspector Manual have been revised several times. The importance

of Port inspections has gradually increased and the focus of inspection is on the type and quantity of catch.

From the above improvement process, it can be seen that the Committee first implemented the System of Inspection, and the system has been continuously improved with practice (Rayfuse, 1998). In fact, this is closely related to the overall development of the CAMLR Convention and CMs. It is the norm in CCAMLR’s multilateral process that CMs are constantly being modified and updated in order to achieve the Convention’s objectives in the Convention Area. The regulations governing species, quantities, areas, tools and methods of fishing are continually refined and expanded. The System of Inspection therefore ensures compliance with CCAMLR CMs and needs to be constantly updated to ensure the accuracy of monitoring. Secondly, the scope of the System of Inspection has gradually expanded from simple members fishing in contravention of CMs in the Convention Area to members fishing without authorisation in the Convention Area, and then to Non-Members fishing in the Convention Area. The application of relevant high-tech means has facilitated the regulation of Members’ fishing vessels. At present, the System of Inspection has focused mainly on the regulation of IUU fishing vessels of Non-Member States. Finally, the structure of the legal basis for the System of Inspection tends to be stable, namely Article XXIV of the CAMLR Convention at the treaty level, CMs 10-02 for At-sea inspections, CMs 10-03 for port inspections, the Text of the CCAMLR System of Inspection and the Inspector Manual, and the relevant CMs in force for the year under review.

The data on the implementation of the CCAMLR System of Inspection

It has been 31 years since the first inspections were carried out in 1989/1990, and the year’s inspections are discussed at the annual meetings of SCOI and SCIC. In addition to the partial disclosure of information such as the Members that assign inspectors, the number of inspectors and the Members, the main content of the annual report is the report and sanctions on violations of CMs during the inspection process. However, in some years the reports only briefly described the inspection situation and did not disclose the data, which is why some data are missing in the figure below. In combination with the improvement process of the System of Inspection, the published data on fishing in the Convention Area and by analysing the data on the implementation of the System of Inspection over the years, as well as the inspection states and subareas, it is possible to analyse the effectiveness and shortcomings of the System of Inspection.

Figure 2 is based on data on the System of Inspection in the annual meeting reports of SCOI, SCIC and CCAMLR from 1990 to 2021. The reports provide some information on the inspections carried out during the year, mainly the number of inspectors, the number of inspections, the number of reports and the number of violations of CMs found during the inspection process. In addition, some details may be included, such as the country of designation of the inspector, the country of nationality of the vessel, the place where the inspection was carried out, as well as some breaches of CMs and sanction procedures.

At the beginning of the implementation of the System of Inspection, the USSR carried out a large number of inspections (CCAMLR, 1990, 1991). Since 1992, the number of inspections recorded in the SCOI and SCIC reports has declined significantly and remained unstable. The number of designated inspectors remained relatively stable between 1995 and 2012, with a gradual

Table 1. Key points for improvement of the inspection in annual meeting.

Year	Major improvement details
1988	Established SCOI, the System of Inspection. Stipulated inspection content and procedures, and determined that inspections would be carried out in 1989/1990 (CCAMLR, 1988)
1989	Decided that inspections would be carried out in 1989/1990. Clarified inspection details. Prepared the Text of the CCAMLR System of Inspection and Inspector Manual (CCAMLR, 1989)
1990	Amended Inspector Manual (CCAMLR, 1990)
1991	None (CCAMLR, 1991)
1992	None (CCAMLR, 1992)
1993	Amended the Text of the CCAMLR System of Inspection, specifying the time for the deployment of inspectors and the time for Members to report the status of inspections (CCAMLR, 1993)
1994	Clarified fishing vessels and expeditionary fishing vessels acceptable for inspection, but not applicable to waters around Kerguelen and Crozet Islands (CCAMLR, 1994)
1995	Amended the Text of the CCAMLR System of Inspection: added presumptive fishing situation, specified that inspection does not apply to <i>Euphausia superba</i> fisheries, and specified that the inspection report shall be transmitted to the Committee and the flag state (CCAMLR, 1995)
1996	Amended the Text of the CCAMLR System of Inspection: provided for the flag state to explain and respond, and clarified the fishing situation (CCAMLR, 1996)
1997	Provisions for pre-fishing Port inspections, Port inspections of Non-Member vessels and VMS (CCAMLR, 1997)
1998	Provisions are made for notifying Non-Member vessels of infringements, inspecting vessels in their own exclusive economic zones and imposing sanctions. VMS is to be introduced in 1999 (CCAMLR, 1998)
1999	Amended Inspector Manual. Increased exchange of information on IUU vessels. Amended the Text of the CCAMLR System of Inspection: increased the obligation of inspectors and Members to report their own vessels (CCAMLR, 1999)
2000	Amended Inspector Manual (CCAMLR, 2000)
2001	Amended Inspector Manual. Revised Inspection Report Form (CCAMLR, 2001)
2002	Amended Inspector Manual. Emphasised the distinction between the CCAMLR inspection scheme and the CCAMLR Scheme of International Scientific Observation (CCAMLR, 2002)
2003	Renamed SCOI to SCIC. Amended Inspector Manual (CCAMLR, 2003)
2004	Amended Inspector Manual. All parties are required to submit Port inspection reports (CCAMLR, 2004)
2005	Consideration of multilateral law enforcement cooperation in the context of UNCLOS (CCAMLR, 2005)
2006	Clarified the terms “Designated State” and “Designated Member”. Allowed inspectors of designated members to submit inspection reports identical to those submitted by inspectors of flag states (CCAMLR, 2006)
2007	Amended the Text of the CCAMLR System of Inspection (CCAMLR, 2007)
2008	Amended Conservation Measure 10-02: Demanded High-Definition Color Photo Permit. Amended Conservation Measure 10-03: Definition of “fishing vessel”, including motherships and supply vessels (CCAMLR, 2008)
2009	Amended Conservation Measure 10-03: Clarification of the standard reporting format for Port inspections and the timing of submission of inspection reports (CCAMLR, 2009)
2010	None (CCAMLR, 2010)
2011	None (CCAMLR, 2011)
2012	None (CCAMLR, 2012)
2013	Amended Conservation Measure 10-02: Clarified the licensing and inspection obligations of all Members, requiring vessels to implement IMO numbers and to provide inspection reports to the flag state of the inspected vessel (CCAMLR, 2013)
2014	None (CCAMLR, 2014)
2015	Amended Conservation Measure 10-03/A: Record details of ALC seals for Port inspection inspectors (CCAMLR, 2015)
2016	None (CCAMLR, 2016)
2017	Modified and introduced standardised radio inspection forms to strengthen the fight against IUU fishing (CCAMLR, 2017)
2018	None (CCAMLR, 2018)
2019	Amended Conservation Measure 10-03: Provides for safety-related exemptions to Port inspection times when fishing vessels enter port (CCAMLR, 2019)
2020	Clarifications to the System of Inspection are contained in the “Compliance and Management” (Conservation Measures) of Article II of the CAMLR Convention (CCAMLR, 2020)
2021	None (CCAMLR, 2021)

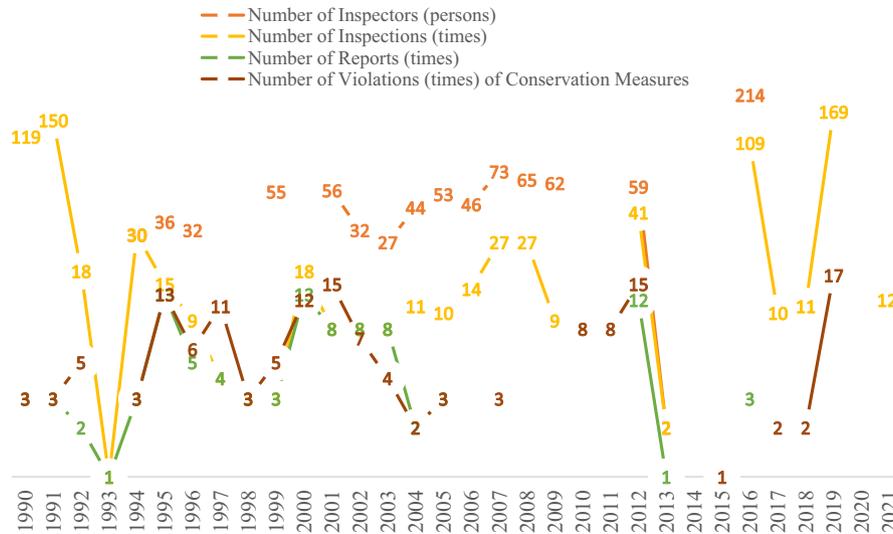


Figure 2. Inspection implementation data from 1990 to 2021.

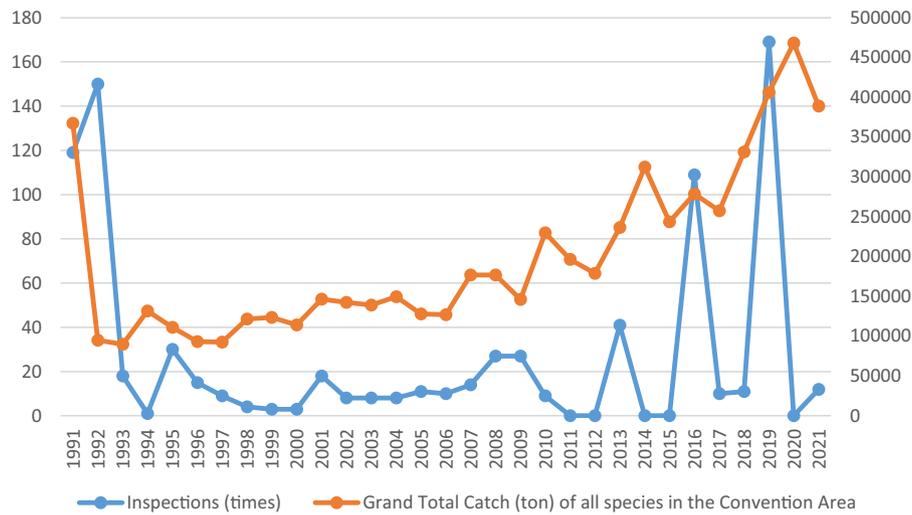


Figure 3. Inspections and Grand Total Catch (tonne) of all species in the Convention Area data from 1990 to 2021.

upward trend. In particular, according to the data disclosed in 2016, the number of inspectors had reached an all-time high. However, the subsequent report did not disclose the number of inspections carried out in that year. As far as the number of inspectors is concerned, the SCOI and SCIC reports are only available for a few years. Since 2001, the number of inspectors has been published continuously and gradually stabilised. However, since 2010, the number of inspectors has not been disclosed in the report. In addition, the number of inspectors is often recorded according to the information provided by the members who carried out the inspections. When the number of inspections is not disclosed, there is no information on the number of inspectors. Furthermore, the total number of reports submitted by the System of Inspection is relatively low. In fact, some Members did not submit inspection reports after inspections as required, a situation also faced by the Commission (CCAMLR, 2016). In addition to the number of inspections, inspectors and inspection reports, the SCOI and SCIC reports also include the number of vessels found to have violated CMs and flag state information. Since 2005, this part

of the information is no longer consistent, as the other three types of data are no longer published in a coherent way. Overall, the inspection information recorded in the SCOI and SCIC reports from 1990 to 2021 was seriously lacking.

Inspection focuses on whether fishing activities in the Convention Area comply with CMs, so the number of inspections is related to the catch. Figure 3 compares the total number of inspections carried out each year from 1990 to 2021 with the total catch in the Convention Area. Over the 30 years, the total catch in the Convention Area shows an upward trend, and the number of inspections shows some correlation with the total catch (CCAMLR, 2022). Indeed, data from 1990 to 2016 show that the total catch has increased and the number of inspections has also increased, which is consistent with the purpose of inspections. However, with the rapid increase in total catch in 2017, the inspection data showed an imbalance.

Based on the annual reports, it is also possible to analyse which Members have carried out At-sea inspections and which areas have been inspected. Figure 4 summarises the number and Members of

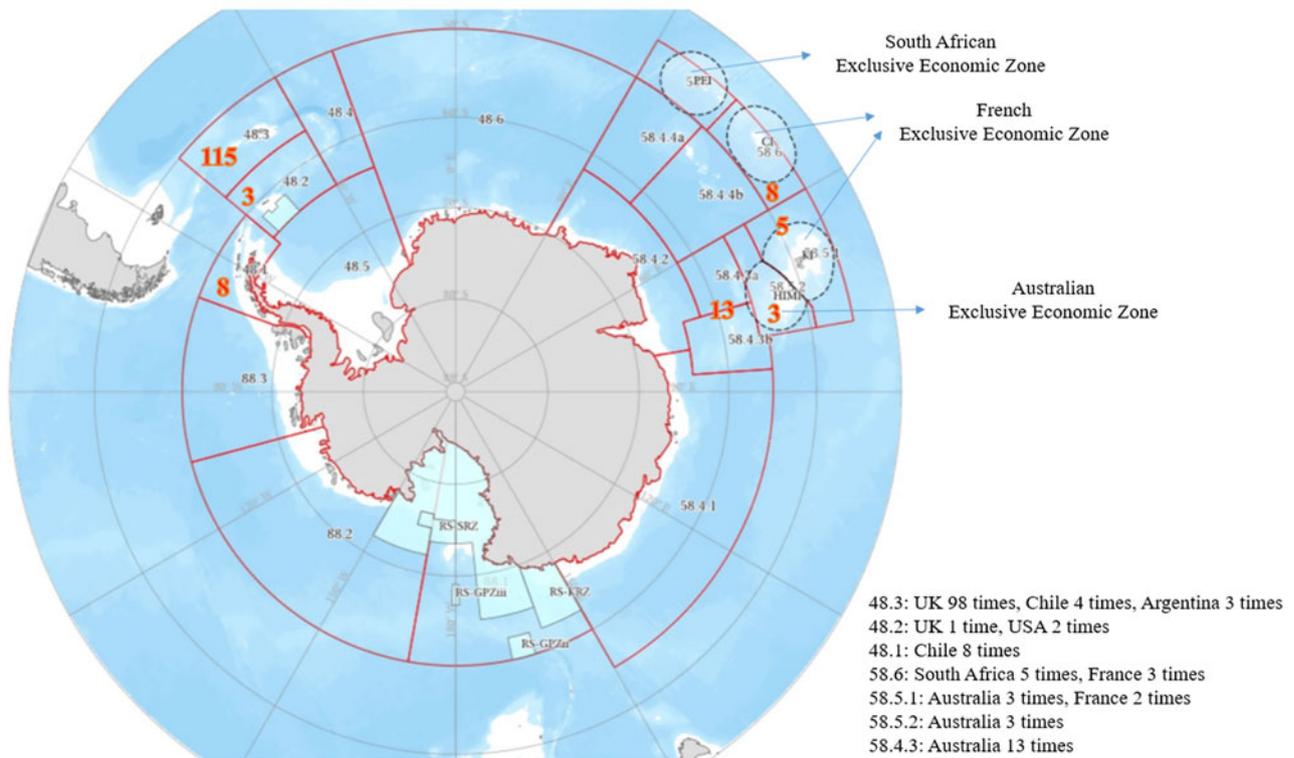


Figure 4. Inspection implementing states and regions from 1990 to 2021.

the At-sea inspections carried out in the various Subareas of the Convention Area mentioned in the annual reports. The At-sea inspections are mainly concentrated in the Scotia Sea, the Weddell Sea, Bellingshausen near the Antarctic Peninsula and the Davis Sea and part of the Indian Sea, in particular in Subarea 48.3, which is adjacent to an area over which there is a sovereignty dispute between Argentina and the United Kingdom. The UK has carried out 98 inspections over the 30 years (CCAMLR, 2021). In the Northeast Antarctic region, Australia and France have also carried out several inspections in their own exclusive economic zones in recent years, and the number and scale of inspections are increasing (CCAMLR, 2019). The scope of At-sea inspections does not cover the entire Convention Area but is concentrated in some areas. None of the reports so far have mentioned that At-sea inspections have been carried out in the Ross Sea, Amundsen Sea, etc.

In fact, the annual catch of each subarea in the Convention Area is unbalanced. Subareas 48.1, 48.3, 58.6 and 88.2 are representative subdivisions. Figure 5 summarises the changes and trends in catches in the representative Subareas 48.1/48.3/58.6/88.2 from 1990 to 2021. Subarea 48.1 has the highest catch in the Convention Area over the last 30 years (CCAMLR, 2022). The catch in Subarea 48.3 is the second largest and includes the earliest Antarctic Marine Protected Area in the Convention Area. Catch in Subareas 58.6 and 88.2 is small compared to Subareas 48.1 and 48.3 (CCAMLR, 2022). In addition, Subarea 58.6 includes the French Exclusive Economic Zone. Overlaying the data on the number of inspections, Subarea 48.1, which has the largest total catch, was reported to have carried out 8 At-sea inspections, while Subarea 48.3, which has a large fluctuation in catch and a significant reduction in 2021, was reported to have carried out 115 At-sea inspections. Subarea 58.6, with low catch and small size, was also reported to have carried out 8 At-sea inspections. However, Subarea 88.2, which covers a large

area and catches slightly less than Subarea 58.6, did not report any At-sea inspections. When analysing the four representative subdivisions, the At-sea inspection is not balanced. In addition to the catch, the target of the At-sea inspection – fishing vessels – is also one of the indicators for considering the number of inspections. In fact, taking the catch and number of fishing vessels of Mawsoni in Subarea 88.1 as an example, in the ten years from 2012 to 2021, Subarea 88.1 caught more than 3000 tonnes of Mawsoni on average every year, and the average number of fishing vessels per year was 15.8. However, to date there are no published data showing that At-sea inspections have been carried out in this area (CCAMLR, 2022).

The improvements to the CCAMLR System of Inspection

The System of Inspection was established in 1988 and implemented in 1990. More than 30 years have passed since then. There have been major changes in fishing activities in the Southern Ocean. The legal basis and procedures of the System have also been continuously improved and standardised. However, an analysis of the practice of the System of Inspection shows that its implementation is uneven and unstable due to a lack of relevant data in the annual reports. At the same time, due to the coupling in the CAMLR Convention, other fisheries organisation agreements (such as SPRFMO, SEAFO, SOIFA) and domestic fisheries management of relevant states, the System of Inspection is constantly adjusting its positioning and implementation scale, which adds uncertainty to the development and implementation effect of the System of Inspection. In particular, there are some details in the current System of Inspection that need to be clarified and improved.

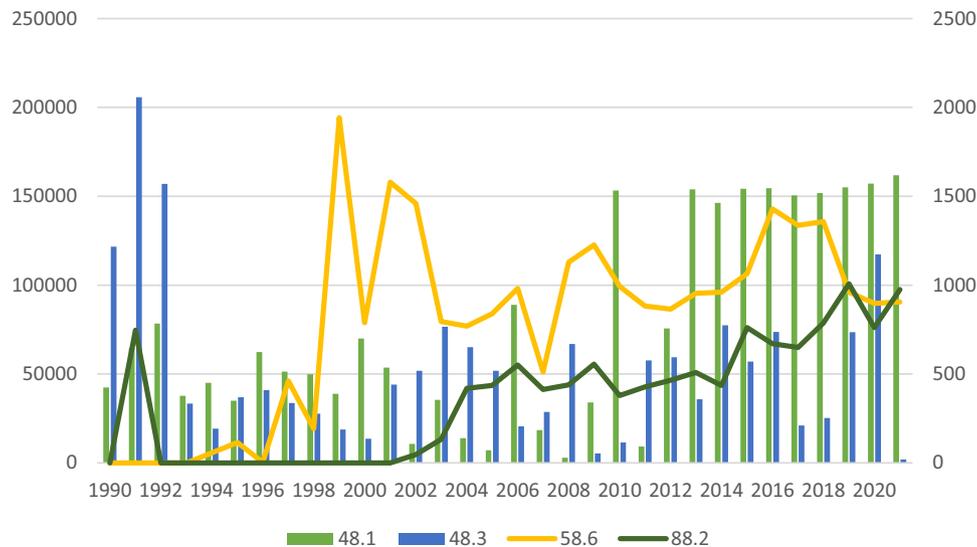


Figure 5. Total catch (tonne) of all species in Subareas 48.1/48.3/58.6/88.2 from 1990 to 2021.

The Scope of Inspection objects and sanctions

At present, CMs 10-02 and 10-03 under the System of Inspection have clearly extended the objects of inspection to Non-Member fishing vessels operating in the Convention Area and to fishing vessels carrying relevant catches in the Convention Area. Even if the vessel in question refuses to be inspected, the inspector may check the vessel, record its condition and report it to the Commission, and may also identify it as an IUU fishing vessel. In the case of IUU vessels, the CCAMLR website will be updated in particular as inspections are carried out. The list of Member IUU fishing vessels, namely CM 10-06, is mainly based on fishing vessels that are flag States of Members but have reduced the effectiveness of the CCAMLR CMs in force (CCAMLR, 2016). The list of Non-Member IUU fishing vessels is CM 10-07, i.e. fishing vessels with Non-Member flag states without fishing licences (CCAMLR, 2016). According to the latest IUU vessel list, most of the vessels on the list are Non-Member vessels. Therefore, the current scope of inspection objects is not limited to Member vessels. However, in addition to accepting inspections, the System of Inspection also requires the flag state to sanction the fishing vessels involved (CCAMLR, 1980), but currently only the flag state can sanction the illegal behaviour of its own fishing vessels under national law. The fact that vessels are inspected, but the investigation process is delayed, also affects the outcome of the disposal, and some vessels have been fishing illegally for as long as a year without being held accountable (Laurence, 2008). Therefore, since 1992, the SCOI, the SCIC and the Commission have called upon Members to implement more actively the System of Inspections to ensure that their flag states operate in the Convention Area in accordance with existing CMs and that violations are dealt with in a timely and effective manner (CCAMLR, 1994).

On this basis, the System of Inspection should further strengthen the monitoring of sanctions for violations in the future and consider standardising sanction mechanisms in accordance with the Commission through the sanction procedures of the national laws of the Members under the Commission, or establishing a special sanction mechanism. At the same time, the Commission should strengthen cooperation with other

fisheries management organisations in the Southern Ocean with regard to illegal fishing vessels of Non-Members (CCAMLR, 2021) and cooperate with fisheries management agreements at the global level in order to maximise sanctions imposed on illegal fishing vessels of Non-Members in the Convention Area.

The relationship between the Inspection and the CEP

The Commission uses the System of Inspection as a “Compliance Monitoring Mechanism” at the level of international law. In terms of the conservation of fisheries resources, it is also an important part of the MCS to achieve the objectives of the CAMLR Convention in Article II (Miller & Elise, 2019). IUU fishing activities in the 1990s encouraged the formal development of a CCAMLR CEP in 2006 (Miller & Elise, 2019). In 2012, the Commission adopted CM 10-10 and formally implemented the CEP (CCAMLR, 2012). Currently, the System of Inspection is an MCS tool under the CEP (Miller & Elise, 2019). It should be noted, however, that the CEP does not simply subsume the System of Inspection.

There are three main differences between the two mechanisms:

First, the System of Inspection was established earlier than the CEP. In fact, the establishment of the CEP is precisely to coordinate multi-party cooperation, including the System of Inspection, to improve Members’ compliance with CMs and prevent violations (Miller & Elise, 2019). The CEP has a broader scope than the System of Inspection and is an assessment of the implementation of all CMs. CM 10-10 reflects the implementation of all CMs by Members through self-assessment reports and SCIC compliance grade reports (CCAMLR Compliance Report) submitted by Members and the CCAMLR Secretariat (CCAMLR, 2019). Given the scope of the CEP regulation, it also incorporates the “System of Inspection” into the compliance assessment (Miller & Elise, 2019). For example, South Africa undertook four CM 10-03 inspections for an event documented in the 2014 draft compliance report and subsequently agreed to improve its fisheries inspection capacity (CCAMLR, 2014).

Second, in terms of the implementation of CMs, the System of Inspection focuses on the monitoring of fishing activities. It is based on on-site inspections, which require Members to designate

Table 2. Total catch (tonne) of all species and total inspections in subareas 48.1/48.3/58.6/88.2 from 1990 to 2021.

	Subarea 48.1	Subarea 48.3	Subarea 58.6	Subarea 88.2
Total catch (tonne)	2463438	1730895	25452	11563
Inspections (time)	8	115	8	0

inspectors to approach or board fishing vessels, and even airborne inspections are controversial (CCAMLR, 2020). The CEP, on the other hand, is an evaluation mechanism based on various types of information, in particular written documents from various mechanisms, rather than on-site activities. It aims to improve CCAMLR's ability to enforce compliance through an objective assessment of fisheries control inputs and compliance enforcement actions by cooperating Members (Miller & Elise, 2019). The CEP is an assessment of the implementation of all CMs (Miller & Elise, 2019). For example, the CCAMLR SISO, which runs in parallel with the Inspection Mechanism, is the main assessment object of the CEP but is not part of the Compliance Monitoring Mechanism.

Thirdly, the CMs for the Compliance Monitoring Mechanism under CCAMLR include 1. Vessel Licensing (CM 10-02); 2. Monitoring of Vessel Movements (CM 10-04); 3. Monitoring of Vessel Transshipments (CM 10-09); 4. VMS (CM 10-04); 5. Catch Documentation Scheme (CM 10-05) and 6. The System of Inspection (CCAMLR, 2020). As can be seen from the CCAMLR website, the System of Inspection is an integral part of the Compliance Monitoring Mechanism. Rather, the CEP is an evaluation mechanism for the tools of the MCS, which includes measures, legal actions and procedures to address non-compliant activities (Harvey, 1995). The MCS ensures that (a) CMs are complied with and (b) regulatory actions/sanctions address non-compliance (Miller, 2010). The CEP does not monitor and control these activities but evaluates them.

The System of Inspection is therefore the subject of the CEP evaluation, not part of it. The System of Inspection is the earliest "Compliance Monitoring Mechanism" under the CCAMLR Compliance, and other mechanisms have been established gradually thereafter. In fact, the CEP is still evolving due to its short implementation period (Miller & Elise, 2019).

The Scope of Inspections in the Convention Area

The System of Inspection is implemented throughout the Convention Area. However, as shown in Figure 4, the areas where At-sea inspections have been carried out are concentrated in a few subareas, and the annual reports do not record whether inspections have taken place in most areas. However, areas where inspections are not documented are not free of fishing. This can also be seen from Figure 5 and Table 2. So why are the reported At-sea inspections concentrated in a few areas? Whether it is due to a preference for inspections by some Members, or related port inspections covering other areas, or whether it is not documented in the annual reports for some reason, requires further analysis.

Firstly, the focus of Port and At-sea inspections is different. At-sea inspection is an inspection of the fishing process but also includes an inspection of the catch, whereas Port inspection focuses more on the inspection of the catch. Compared with At-sea inspection, Port inspection requires Members to inspect fishing vessels in their own ports, which is less difficult and costly. Not only do Port inspections play a prominent role in updating the IUU vessel list, but the Commission has clearly called for Port inspections to achieve full coverage of fishing vessels that meet

inspection standards (CCAMLR, 2017). Indeed, when the System of Inspection was first established, At-sea inspections were the only form of inspection. In 1997, the SCOI began to discuss the conduct of Port inspections (CCAMLR, 1997). In 1998, the European Community submitted draft CMs for the conduct of Port inspections, which were implemented in 1999 (CCAMLR, 1998). An analysis of inspection reports since the introduction of Port inspections shows that Port inspections have been carried out significantly more frequently than At-sea inspections, indicating that Port inspections are highly valued by Members. The annual reports mention Port inspections more often than At-sea inspections, and most of the inspections carried out in practice are also Port inspections. The proportion of these two types of inspection has changed over the last 30 years. Port inspections determine whether CMs have been breached by examining the nature of catches and information on fishing vessels, not on the basis of the area in which the vessel operates but on the basis of the port of destination. To some extent, it can be shown that the concentration of At-sea inspections in a few Subareas does not mean that there is no regulation of fishing in other parts of the Convention Area. However, this does not mean that At-sea inspection is less important. It continues to play an irreplaceable role in the Compliance Monitoring Mechanism. Neither aerial surveillance nor satellite imagery can replace on-the-spot inspection. In addition to the inspection of fishing licences, fishing gear and the number of catch types of fishing vessels, data from At-sea inspection are an important basis for updating the list of IUU fishing vessels on the CCAMLR website (CCAMLR, 2017). CCAMLR must continue to encourage Members to carry out At-sea inspections and Port inspections.

Second, more inspection data need to be disclosed in the annual reports. As a multilateral Compliance Monitoring Mechanism under CCAMLR, the System of Inspection relies on Members to conduct inspections and provide data. If members do not carry out inspections or provide relevant information, the data in the annual reports will certainly be lacking (CCAMLR, 2014). Compared with the SCOI Annual Report of 1990, the content of the SCIC Report of 2021 is several times more extensive. However, its inspection data are not more comprehensive. An analysis of more than 30 years of data shows that some years are missing for unknown reasons and that some years with data reflect only the data submitted by some inspecting Members. In particular, most of the inspection data is classified according to the Member that carried out the inspection, and only in some years it is indicated whether it is At-sea inspection or Port inspection. Due to the lack of inspection data, the location and number of some At-sea inspections cannot be fully indicated in the figure and table above. This may also be a reason why At-sea inspections are concentrated in certain Subareas of the Convention Area.

Thirdly, other MCS instruments implemented under CCAMLR provide Members with options other than inspection. There is also coordination and complementarity between different MCS tools, so that inspection is no longer the only Compliance Monitoring Mechanism under the Convention (Miller & Elise, 2019). For example, VMS as an MCS tool under CCAMLR provides vessel

information for inspection (CCAMLR, 2018). The CEP evaluated the implementation of MCS tools under the CAMLR Convention, which further integrated the implementation of various MCS tools and impacted the conduct of inspections (Miller & Elise, 2019).

Consequently, for a variety of reasons, the At-sea inspections in the report are limited to a few subareas within the Convention Area. Nevertheless, it is the responsibility of all Members to ensure the conservation of fishery resources. As stated in the Annual Reports over the years, the Commission has repeatedly called upon Members to carry out inspections. Therefore, in addition to the above-mentioned Members, Members currently engaged in fishing activities in the Convention Area should also carry out At-sea or Port inspections or actively participate in other CCAMLR MCS systems. On the one hand, other Members exercise their rights and fulfil their obligations under the Convention and, on the other hand, protect their own fishing rights and interests by regulating illegal activities.

Conclusion

Observation and Inspection is established in accordance with Article XXIV of the CAMLR Convention and CCAMLR CMs and is divided into the CCAMLR System of Inspection and the CCAMLR SISO, which are discussed in this article. The current legal basis consists mainly of Article XXIV of the CAMLR Convention, CMs 10-02 and 10-03 relating to the System of Inspection and other CMs governing various fishing activities, as well as the “Text of CCAMLR System of Inspection”, the “Inspector Manual” and other normative documents. The current System of Inspection comprises two types of inspection: At-sea inspection and Port inspections. Inspectors appointed by Members conduct inspections of fishing vessels of Members and Non-Members in the Convention Area, and Members inspect fishing vessels engaged in fishing activities in the Convention Area in their own ports.

The System of Inspection is currently the Compliance Monitoring Mechanism in the CEP. The CEP is evaluating the System of Inspection to facilitate its implementation. Over the past 30 years, the System of Inspection has been gradually improved and perfected, and it forms a certain synergy with the various MCS instruments. From 1990 to 2021, the inspection data in the CCAMLR or SCIC annual reports are not stable and are missing in many years. With the increase in catches in the Convention Area, the number of inspections also showed a trend of growth, but since 2017 these two data have diverged. In addition, At-sea inspections did not cover all Subareas during this period.

So far, the scope of inspection objects has been extended from Members to Non-Members, but it is still difficult to impose sanctions on IUU fishing vessels from Non-Members. The System of Inspection should further strengthen the monitoring of sanctions against infringements. The Commission should strengthen cooperation with other fisheries management organisations regarding illegal fishing vessels from Non-Members. At present, the System of Inspection is a tool of the MCS under the CEP. The Commission has evaluated the implementation of the System of Inspection. As the CEP has only recently been established, the relationship between the two needs to be further clarified in practice. The Convention Areas not covered by inspection can be summarised as follows: 1. the change in the ratio of At-sea inspection and Port inspections; 2. missing data submitted by Members and 3. the implementation of other MCS tools.

The System of Inspection has been in place for more than 30 years, which is of great importance in achieving the purpose of the CAMLR Convention and promoting compliance by Members in the fisheries sector. However, it still needs to be improved and further coordinated with other MCS tools under the CEP. As an important Compliance Monitoring Mechanism under CCAMLR, the System of Inspection will play a more important role in the future in regulating fishing activities in the Convention Area.

References

- CCAMLR. (1980). *Article. II.* CAMLR Convention. Retrieved from <https://www.ccamlr.org/en/document/publications/text-convention-conservation-antarctic-marine-living-resources>.
- CCAMLR. (1980). *Article. XXIV.* CAMLR Convention. Retrieved from <https://www.ccamlr.org/en/document/publications/text-convention-conservation-antarctic-marine-living-resources>.
- CCAMLR. (1980). *Article. IX.* CAMLR Convention. Retrieved from <https://www.ccamlr.org/en/document/publications/text-convention-conservation-antarctic-marine-living-resources>.
- CCAMLR. (1984). *CCAMLR-III.* Report of the Third meeting of the Commission. Retrieved from <https://meetings.ccamlr.org/system/files/e-cc-iii.pdf>.
- CCAMLR. (1985). *CCAMLR-IV.* Report of the Fourth meeting of the Commission. Retrieved from <https://meetings.ccamlr.org/system/files/e-cc-iv.pdf>.
- CCAMLR. (1985). *SC-CCAMLR-IV.* Report of the Fourth Meeting of the Scientific Commission. Retrieved from <https://meetings.ccamlr.org/system/files/e-sc-iv.pdf>.
- CCAMLR. (1986). *CCAMLR-V.* Report of the Fifth meeting of the Commission. Retrieved from <https://meetings.ccamlr.org/system/files/e-cc-v.pdf>.
- CCAMLR. (1988). *CCAMLR-VI.* Report of the Seventh meeting of the Commission. Retrieved from <https://meetings.ccamlr.org/system/files/e-cc-iv.pdf>.
- CCAMLR. (1988). *CCAMLR-VII.* Report of the Seventh meeting of the Commission. Retrieved from <https://meetings.ccamlr.org/system/files/07%20e-cc-vii%201988.pdf>.
- CCAMLR. (1989). *CCAMLR-VIII.* Report of the Eighth meeting of the Commission. Retrieved from <https://meetings.ccamlr.org/system/files/e-cc-viii.pdf>.
- CCAMLR. (1990). *CCAMLR-IX.* Report of the Ninth meeting of the Commission. Retrieved from <https://meetings.ccamlr.org/system/files/e-cc-ix.pdf>.
- CCAMLR. (1990). *SCOI-90.* Report of the Standing Commission on Observation and Inspection. Retrieved from <https://meetings.ccamlr.org/system/files/e-cc-ix-a8.pdf>.
- CCAMLR. (1991). *CCAMLR-X.* Report of the Tenth meeting of the Commission. Retrieved from <https://meetings.ccamlr.org/system/files/e-cc-x.pdf>.
- CCAMLR. (1992). *CCAMLR-XI.* Report of the Eleventh meeting of the Commission. Retrieved from <https://meetings.ccamlr.org/system/files/e-cc-xi.pdf>.
- CCAMLR. (1993). *CCAMLR-XII.* Report of the Twelfth meeting of the Commission. Retrieved from <https://meetings.ccamlr.org/system/files/e-cc-xii.pdf>.
- CCAMLR. (1994). *CCAMLR-XIII.* Report of the Thirteenth meeting of the Commission. Retrieved from <https://meetings.ccamlr.org/system/files/e-cc-xiii.pdf>.
- CCAMLR. (1995). *CCAMLR-XIV.* Report of the Fourteenth meeting of the Commission. Retrieved from <https://meetings.ccamlr.org/system/files/e-cc-xiv.pdf>.
- CCAMLR. (1996). *CCAMLR-XV.* Report of the Fifteenth meeting of the Commission. Retrieved from <https://meetings.ccamlr.org/system/files/e-cc-xv.pdf>.
- CCAMLR. (1997). *CCAMLR-XVI.* Report of the Sixteenth meeting of the Commission. Retrieved from <https://meetings.ccamlr.org/system/files/e-cc-xvi.pdf>.

- CCAMLR. (1998). *CCAMLR-XVII*. Report of the Seventeenth meeting of the Commission. Retrieved from <https://meetings.ccamlr.org/system/files/e-cc-xvii.pdf>.
- CCAMLR. (1999). *CCAMLR-XVIII*. Report of the Eighteenth meeting of the Commission. Retrieved from <https://meetings.ccamlr.org/system/files/e-cc-xviii.pdf>.
- CCAMLR. (2000). *CCAMLR-XIX*. Report of the Nineteenth meeting of the Commission. Retrieved from <https://meetings.ccamlr.org/system/files/e-cc-xix.pdf>.
- CCAMLR. (2001). *CCAMLR-XX*. Report of the Twentieth meeting of the Commission. Retrieved from <https://meetings.ccamlr.org/system/files/e-cc-xx.pdf>.
- CCAMLR. (2001). *Schedule of Conservation Measures in Force 1989/90*. Retrieved from <https://www.ccamlr.org/en/system/files/e-cons-meas-90.pdf>.
- CCAMLR. (2002). *CCAMLR-XXI*. Report of the Twenty-first meeting of the Commission. Retrieved from <https://meetings.ccamlr.org/system/files/e-cc-xxi.pdf>.
- CCAMLR. (2002). *SCOI-96*. Report of the Standing Commission on Observation and Inspection. Retrieved from <https://meetings.ccamlr.org/system/files/e-cc-xv-a5.pdf>.
- CCAMLR. (2002). *SCOI-97*. Report of the Standing Commission on Observation and Inspection. Retrieved from <https://meetings.ccamlr.org/system/files/e-cc-xvi-a5.pdf>.
- CCAMLR. (2003). *CCAMLR-XXII*. Report of the Twenty-second meeting of the Commission. Retrieved from <https://meetings.ccamlr.org/system/files/e-cc-xxii.pdf>.
- CCAMLR. (2004). *CCAMLR-XXIII*. Report of the Twenty-third meeting of the Commission. Retrieved from <https://meetings.ccamlr.org/system/files/e-cc-xxiii.pdf>.
- CCAMLR. (2005). *CCAMLR-XXIV*. Report of the Twenty-fourth meeting of the Commission. Retrieved from <https://meetings.ccamlr.org/system/files/e-cc-xxiv.pdf>.
- CCAMLR. (2006). *CCAMLR-XXV*. Report of the Twenty-fifth meeting of the Commission. Retrieved from <https://meetings.ccamlr.org/system/files/e-cc-xxv.pdf>.
- CCAMLR. (2007). *CCAMLR-XXVI*. Report of the Twenty-sixth meeting of the Commission. Retrieved from <https://meetings.ccamlr.org/system/files/e-cc-xxvi.pdf>.
- CCAMLR. (2008). *CCAMLR-XXVII*. Report of the Twenty-seventh meeting of the Commission. Retrieved from <https://meetings.ccamlr.org/system/files/e-cc-xxvii.pdf>.
- CCAMLR. (2009). *CCAMLR-XXVIII*. Report of the Twenty-eighth meeting of the Commission. Retrieved from <https://meetings.ccamlr.org/system/files/e-cc-xxviii.pdf>.
- CCAMLR. (2010). *CCAMLR-XXIX*. Report of the Twenty-ninth meeting of the Commission. Retrieved from <https://meetings.ccamlr.org/system/files/e-cc-xxix.pdf>.
- CCAMLR. (2011). *CCAMLR-XXX*. Report of the Thirtieth meeting of the Commission. Retrieved from <https://meetings.ccamlr.org/system/files/e-cc-xxx.pdf>.
- CCAMLR. (2011). *Contracting Party IUU Vessel List*. Retrieved from <https://www.ccamlr.org/en/compliance/iuu-vessel-lists>.
- CCAMLR. (2011). *Fisheries*. Retrieved from <https://www.ccamlr.org/en/fisheries/fisheries>.
- CCAMLR. (2011). *Non-Contracting Party IUU Vessel List*. Retrieved from <https://www.ccamlr.org/en/compliance/contracting-party-iuu-vessel-list>.
- CCAMLR. (2011). *Service Portal for Inspectors*. Retrieved from <https://www.ccamlr.org/en/compliance/service-portal-inspectors>.
- CCAMLR. (2012). *CCAMLR-XXXI*. Report of the Thirty-first meeting of the Commission. Retrieved from <https://meetings.ccamlr.org/system/files/e-cc-xxxi.pdf>.
- CCAMLR. (2013). *CCAMLR-XXXII*. Report of the Thirty-second meeting of the Commission. Retrieved from <https://meetings.ccamlr.org/system/files/e-cc-xxxii.pdf>.
- CCAMLR. (2014). *CCAMLR-XXXIII*. Report of the Thirty-third meeting of the Commission. Retrieved from <https://meetings.ccamlr.org/system/files/e-cc-xxxiii.pdf>.
- CCAMLR. (2015). *CCAMLR-XXXIV*. Report of the Thirty-fourth meeting of the Commission. Retrieved from <https://meetings.ccamlr.org/system/files/e-cc-xxxiv.pdf>.
- CCAMLR. (2016). *Annex 6 of CCAMLR-XXXV*. Report of the Thirty-fifth meeting of the Commission. Retrieved from <https://meetings.ccamlr.org/system/files/e-cc-xxxv.pdf>.
- CCAMLR. (2016). *CCAMLR-XXXV*. Report of the Thirty-fifth meeting of the Commission. Retrieved from <https://meetings.ccamlr.org/system/files/e-cc-xxxv.pdf>.
- CCAMLR. (2016). *Conservation Measure 10-02*. Licensing and Inspection Obligations of Contracting Parties with Regard to their Flag Vessels Operating in the Convention Area. Retrieved from https://cm.ccamlr.org/sites/default/files/10-02_31.pdf.
- CCAMLR. (2016). *Conservation Measure 10-06*. Scheme to promote compliance by Contracting Party vessels with CCAMLR Conservation Measures. Retrieved from <https://cm.ccamlr.org/sites/default/files/2022-11/10-06-2016.pdf>.
- CCAMLR. (2016). *Conservation Measure 10-07*. Scheme to promote compliance by non-Contracting Party vessels with CCAMLR Conservation Measures. Retrieved from <https://cm.ccamlr.org/sites/default/files/2022-11/10-07-2016.pdf>.
- CCAMLR. (2017). *CCAMLR-XXXVI*. Report of the Thirty-sixth meeting of the Commission. Retrieved from <https://meetings.ccamlr.org/system/files/e-cc-xxxvi.pdf>.
- CCAMLR. (2018). *CCAMLR-XXXVII*. Report of the Thirty-seventh Meeting of the Commission. Retrieved from <https://meetings.ccamlr.org/system/files/e-cc-xxxvii.pdf>.
- CCAMLR. (2018). *Conservation Measure 10-04*. Automated satellite-linked Vessel Monitoring Systems (VMS). Retrieved from https://cm.ccamlr.org/sites/default/files/10-04_43.pdf.
- CCAMLR. (2019). *CCAMLR-38*. Report of the Thirty-eighth Meeting of the Commission. Retrieved from <https://meetings.ccamlr.org/system/files/e-cc-38.pdf>.
- CCAMLR. (2019). *Conservation Measure 10-03*. Port inspections of Fishing Vessels Carrying Antarctic Marine Living Resources. Retrieved from <https://cm.ccamlr.org/sites/default/files/2022-11/10-03-2019.pdf>.
- CCAMLR. (2019). *Conservation Measure 10-10*. CCAMLR Compliance Evaluation Procedure (CEP). Retrieved from <https://cm.ccamlr.org/sites/default/files/2022-11/10-10-2019.pdf>.
- CCAMLR. (2019). *Text of CCAMLR System of Inspection. Basic Documents – Part 9*. Retrieved from https://www.ccamlr.org/en/system/files/e-pt9_3.pdf.
- CCAMLR. (2020). *CCAMLR-39*. Report of the Thirty-ninth Meeting of the Commission. Retrieved from <https://meetings.ccamlr.org/system/files/e-cc-39-rep.pdf>.
- CCAMLR. (2020). *Compliance*. Retrieved from <https://www.ccamlr.org/en/compliance/conformite>.
- CCAMLR. (2020). *Manuals*. Retrieved from <https://www.ccamlr.org/en/publications/manuals-and-procedures>.
- CCAMLR. (2021). *Basic Documents*. Retrieved from <https://www.ccamlr.org/en/document/publications/basic-documents-december-2011>.
- CCAMLR. (2021). *CCAMLR Statistical Bulletin, Vol. 34*. Retrieved from <https://www.ccamlr.org/en/document/data/ccamlr-statistical-bulletin-vol-34>.
- CCAMLR. (2021). *CCAMLR-40*. Report of the Fortieth Meeting of the Commission. Retrieved from <https://meetings.ccamlr.org/system/files/e-cc-40-rep.pdf>.
- CCAMLR. (2021). *Conservation Measures*. Retrieved from <https://www.ccamlr.org/en/conservation-and-management/conservation-and-management>.
- CCAMLR. (2021). *Cooperation with Others*. Retrieved from <https://www.ccamlr.org/node/74517>.
- CCAMLR. (2022). *Measures and Resolutions*. Retrieved from <https://cm.ccamlr.org/>.
- CCFONA. (1967). *Article VIII (4)*. Retrieved from <https://leap.unep.org/en/countries/be/national-legislation/convention-conduct-fishing-operations-north-atlantic>.
- Flewelling, P. (2001). *An Introduction to Monitoring, Control and Surveillance Systems for Capture fisheries*. Retrieved from <http://www.fao.org/DOCREP/003/V4250E/V4250E00.HTMS>.

- Harvey.** (1995). *Enforcement and Compliance Framework. Environment and Resource Management*. Wadena, Canada: Saskatchewan Ministry of the Environment, 28.
- Howard, M.** (1989). The convention for the conservation of Antarctic Marine living resources: A five-year review. *International and Comparative Law Quarterly*, 104(38), 144.
- Laurence, C.** (2008). Environmental protection in Antarctica drawing lessons from the CCAMLR Model for the implementation of the Madrid protocol. *Ocean Development & International Law*, 29(2), 134–161.
- Laurence, C., Alan, D., & Lorne, K.** (2007). Nexus and Imbroglia: CCAMLR, the Madrid protocol and designating Antarctic Marine protected areas in the southern ocean. *The International Journal of Marine and Coastal Law*, 30(4), 41.
- Miller Denzil, G. M.** (2010). *Occupying the high ground: Technology and the war on IUU fishing*. Brill, Netherlands, 77–99.
- Miller Denzil, G. M., & Elise, M.** (2019). The CCAMLR compliance evaluation procedure. *Australian Journal of Maritime & Ocean Affairs*, 11(1), 1–36.
- NAFO.** (1978). *Article XVIII*. Retrieved from <https://leap.unep.org/en/countries/eu/national-legislation/convention-future-multilateral-cooperation-northwest-atlantic>.
- Nicol, S., Foster, J., & Kawaguchi, S.** (2012). The fishery for Antarctic krill—recent developments. *Fish and Fisheries*, 13(1), 31.
- NOAA.** (2017). *Magnuson-Stevens Fishery Conservation and Management Act, Title II—Foreign Fishing and International Fishery Agreements, Sec.206. Large-Scale Driftnet Fishing*. Retrieved from <https://fws.gov/law/fishery-conservation-and-management-act>.
- Rayfuse, R.** (1998). Enforcement of high seas fisheries agreements: Observation and inspection under the convention for the conservation of Antarctic Marine living resources. *The International Journal of Marine and Coastal Law*, 13(4), 47–76.
- Wang, C.** (2003). *Canadian Fisheries Legal System*. Retrieved from <http://e-nw.shac.gov.cn/wmfw/hwzc/hwzc/200312/t20031225-92865.htm>.
- Zhang, X., & Han, Y.** (2007). A brief analysis of the status quo and development trend of world fishery. *Modern Fisheries Information*, 10, 25.