



# The use of corrective action frameworks in international fisheries management

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## ABSTRACT

Compliance frameworks are important to promoting sustainable management of shared fisheries resources through the robust and transparent assessment of the implementation of conservation measures by States that are party to international agreements. This paper provides a review of existing compliance frameworks, with a special focus on corrective actions to respond to non-compliance in regional fisheries management organisations or arrangements, as well as a selection of multilateral environmental organisations. The analysis of the surveyed schemes of corrective actions identifies common themes and practices, which can provide a foundation on which to support the development of, or refinement of existing, schemes of corrective actions by other international organisations or arrangements.

## 1. Introduction

Sustainable fisheries management relies on effective compliance frameworks, promoting transparency, and market confidence [14,16]. The way compliance is assessed often depends on the mechanics of the organisation itself [8]. Compliance responses, including feedback mechanisms and schemes of responses to non-compliance, have been identified as essential elements of well-designed compliance assessment processes [19]. In particular, if a regional fisheries management organisation or arrangement (RFMO/A) does not have a feedback system that promotes fairness and cooperation in ensuring that non-compliance or challenges experienced in the implementation of an obligation are identified and addressed, the compliance process itself can lose value [19]. Similarly, if there are no mechanisms for ensuring non-compliance is effectively mitigated, RFMO/As participants may lose confidence in these systems. While RFMO/A members have the basic legal obligation to implement the adopted measures, RFMO/As as institutions also have a role in promoting compliance and addressing non-compliance through mechanisms like schemes of responses, incentives, or follow-up actions to non-compliance. In some cases, these have been classified as “corrective actions.” For the purpose of this communication, we will use the term “scheme of corrective actions”, which refers to responses to non-compliance that have been ideally

outlined in advance, including actions to be taken by members<sup>1</sup> and, for continued or serious non-compliance, by the Commission itself (e.g., loss of fishing rights, lower quotas, or possibly trade restrictions). Overall, it is important that the design and operation of any scheme of corrective actions are equitable, impartial, legitimate, transparent, targeted, effective, efficient, and cooperative (see [19] for a detailed description of these principles).

This paper reviews the schemes of corrective actions developed by RFMO/As and three multilateral environmental agreements: the Convention on International Trade and Endangered Species of Wild Fauna and Flora (CITES), the Montreal Protocol, and the International Whaling Commission (IWC). These three multilateral environmental agreements were chosen because they address environmental transboundary issues or wildlife, cover large geographic areas, and have members with diverse interests and capacities. RFMO/As have been criticised as lacking effective compliance frameworks or having weak oversight and thus weak compliance by members (e.g., [1,6,10,16]; Pentz et al. [18]). While all RFMO/As analyzed in this article have compliance assessment processes in place, improvements are needed [15,19], including in the areas of designing and applying schemes of corrective actions as a follow-up to identified areas of non-compliance. The aim of this communication piece is to support RFMO/As in their development, or refinement, of schemes of corrective actions as part of a

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<sup>1</sup> Throughout this paper the general term “members” is used to cover contracting parties and cooperating non-contracting parties to an RFMO.

comprehensive compliance system, by reviewing existing systems and identifying common themes and practices.

## 2. Compliance frameworks

### 2.1. RFMO/As

Compliance with conservation and management measures (CMMs) is imperative to RFMO/As' performance and promoting sustainably managed fisheries. All RFMO/As have compliance assessment processes, and many have developed schemes of corrective actions (Table 1). These schemes generally fall into two categories: (1) actions to be taken by a member of the organisation to address its own identified non-compliance and (2) actions that can be taken by the organisation itself (e.g., the Commission in the case of RFMO/As) and applied to a member to address identified non-compliance. Both types are important components for a robust feedback system as part of a well-designed compliance process. In some schemes, remedies can be applied by members themselves and the Commission also has the ability to impose remedies. Other schemes only identify actions a member is to take to address its own identified non-compliance.

The International Commission for the Conservation of Atlantic Tunas (ICCAT) has the most comprehensive compliance framework in place. ICCAT ranks compliance issues according to their severity (i.e., minor non-compliance; considerable non-compliance; significant non-compliance; and very significant non-compliance) and links them with corresponding responses/actions [11,12]. These actions include, for example, a letter of concern requesting rectification of the issue for minor non-compliance, the potential recommendation adopted by ICCAT of additional fisheries restrictions for significant non-compliance, and potential trade measures under Rec. 06–13 'Recommendation by ICCAT Concerning Trade Measures for very significant non-compliance' [11]. Similarly, the Commission for the Conservation of Southern Bluefin Tuna (CCSBT) also elaborated a set of corrective actions that depend on the degree of non-compliance, such as skills training, quota payback, public disclosure, or trade and market restrictions [3]. In both

cases, ICCAT and CCSBT have enumerated follow-up corrective actions that include actions by members and actions that could be applied by the RFMO's Commission.

The Western and Central Pacific Fisheries Commission (WCPFC) has developed a scheme for establishing a compliance status to include in its Provisional Monitoring Report (see Annex I of CMM 2023–04; [23]). The scheme includes criteria and considerations for assessing a compliance status for each individual obligation by members (i.e., compliant, non-compliant, priority non-compliant, capacity assistance needed, and CMM review). Members provide a status report regarding the identified non-compliance and, if applicable, the completion of steps in any Capacity Development Plan, in their Annual Report Part II [23]. However, the existing compliance scheme does not detail specific responses to be taken by a member for each compliance status category [23]. The Indian Ocean Tuna Commission (IOTC) [13] has elaborated corrective actions to be taken by members depending on the category of non-compliance (i.e., non-compliant categories 1 and 2), as well as some actions that can be recommended by the Compliance Committee. The Inter-American Tropical Tuna Commission (IATTC) has not yet elaborated specific corrective action responses [9].

The Northwest Atlantic Fisheries Organisation (NAFO) provides a list of potential actions to address non-compliance for which the flag State member can choose what actions it will take. These actions include judicial or administrative actions, seizure of the vessel, or reduction of any fishing allocation ([17]; Article 39). NAFO is the only RFMO where the Commission has no role in potentially imposing additional corrective compliance remedies [17]. The General Fisheries Commission for the Mediterranean (GFCM) sets out the use of corrective actions in its rules of procedures [7]. The Compliance Committee may recommend corrective actions that will then be adopted at the annual meeting, including, for example, technical assistance and capacity-building programmes by the GFCM, or 'the adoption of a multiannual process that shall identify remedies to non-compliance applying to relevant' members ([7]; p.10). The South Pacific Regional Fisheries Management Organisation (SPRFMO) and the Southern Indian Ocean Fisheries Arrangement (SIOFA), have established a more comprehensive

**Table 1**

The progress of the establishment of corrective actions (CA) responses in RFMO/As.

RFMO/As <sup>a</sup>	No standalone corrective actions scheme	No specific remedies have been elaborated as part of the standalone corrective actions scheme	Only actions for members have been identified as part of the standalone corrective actions scheme	Specific remedies to be taken by members and, if recommended by the Compliance Committee, by the Commission have been determined or are possible
CCSBT				
IATTC				
ICCAT				
IOTC				
WCPFC				
CCAMLR				
GFCM				
NAFO				
NEAFC				
NPFC				
SEAFO				
SIOFA				
SPRFMO				

<sup>a</sup> CCSBT – Commission for the Conservation of Southern Bluefin Tuna; IATTC – Inter-American Tropical Tuna Commission; ICCAT – International Commission for the Conservation of Atlantic Tunas; IOTC – Indian Ocean Tuna Commission; WCPFC – Western and Central Pacific Fisheries Commission; CCAMLR – Convention for the Conservation of Antarctic Marine Living Resources; GFCM – General Fisheries Commission for the Mediterranean; NAFO – Northwest Atlantic Fisheries Organisation; NEAFC – North East Atlantic Fisheries Commission; NPFC – North Pacific Fisheries Commission; SEAFO – South East Atlantic Fisheries Organisation; SPRFMO – South Pacific Regional Fisheries Management Organisation

compliance monitoring scheme, where corrective actions for members and the Commission have been outlined [20,21].

## 2.2. Other multilateral environmental arrangements

The CITES and the Montreal Protocol have compliance frameworks with schemes of corrective actions in place, while the IWC does not. In CITES, the standing committee determines actions in response to non-compliance, based on a pre-determined, although not exhaustive, list [5]. These actions include written cautions, recommending specific capacity-building actions, provision of in-country assistance, or the request for a compliance action plan [5]. CITES can use these different actions depending on the severity, frequency, and duration of the non-compliance - an "Onion Compliance Model" (e.g., graduated layers of CITES compliance measures that get progressively more significant) ([4]; p. 5). For the Montreal Protocol, an indicative list of actions has been established that could be taken by the Meeting of the Parties in response to non-compliance by members [22].

## 3. Existing practices

In this section, common themes and practices of RFMO/As and other non-fisheries multilateral environmental agreements that have schemes of corrective actions are identified.

- 1. Compliance assessments cover the whole spectrum of situations of non-compliance but categorise types of non-compliance.** For example, ICCAT divides non-compliance into four categories (i.e., minor non-compliance; considerable non-compliance; significant non-compliance; and very significant non-compliance) [12]. WCPFC also uses graduated categorisations and includes a specific status designation for when there is a lack of clarity regarding the requirements of a CMM obligation (e.g., compliant, non-compliant, priority non-compliant, capacity assistance needed, and CMM review). Similar approaches can be found in the CCSBT, IOTC, NAFO, GCMF, SPRFMO, CITES and the Montreal Protocol.
- 2. The response to non-compliance is determined by the seriousness of the non-compliance.** ICCAT has adopted a severity table with corresponding responses/actions that are to be taken by the respective member, as well as the Commission or Panel under specific circumstances [12]. In ICCAT the actions in response to non-compliance are determined by the area of non-compliance (e.g., lack of data reporting, overcatch etc). For example, when catch or landing limits have been exceeded the action for a minor non-compliance would be for the Commission to send a letter of concern and the respective member is required to rectify the overcatch within two years. In the case of significant non-compliance, the relevant ICCAT Panel would consider recommending additional fishery restrictions [12]. The corrective actions in the CCSBT also depend on the degree of non-compliance and non-compliant members have the opportunity to suggest corrective actions, which will then be assessed by the Compliance Committee [3]. The Compliance Committee then provides recommendations to the Commission for adoption.

SPRFMO, IOTC and CCAMLR link specific follow-up actions with the compliance status. In both SPRFMO and CCAMLR [2,21], minor non-compliance requires a compliance review, while serious and/or persistent non-compliance is followed by recommendations of action by the Compliance Committee and the Commission. CITES' 'Onion Compliance Model', requires different actions depending on the level of non-compliance, with the CITES Standing Committee writing a caution as the first step [4].

In the case of more serious or persistent non-compliance, corrective actions can include additional fishery restrictions (e.g., ICCAT), increased monitoring requirements (e.g., CCSBT, IOTC), public disclosure (e.g., CCSBT, CITES), requesting a compliance action plan

(e.g., CITES, IOTC), or the potential for trade or market restrictions for egregious situations of non-compliance (e.g., see CCSBT, ICCAT, CCAMLR, GFCM)

- 3. Corrective action schemes include a mix of incentives and disincentives.** A common and important component of a scheme of corrective actions is capacity building or training as a response to addressing non-compliance. In the CCSBT, one of the corrective actions regarding minor non-compliance includes compliance assistance and capacity-building programmes [3]. These include skills training (e.g., for observer or compliance officers), systems development (e.g., providing financial and technical assistance to establish or improve operating systems and procedures), analytical assistance or technology purchase [3]. ICCAT includes capacity building and technical assistance options for all levels of non-compliance and issues (e.g., exceeding catch limits; failure to implement and/or enforce time/area closures; or failure to report statistical and other required data) [12]. The GFCM recommends capacity building and technical assistance as one action to resolve non-compliance to support members in addressing areas that need improvement (Rule XIX, para 1(b)) [7]. SPRFMO, CCAMLR, and WCPFC note the importance of identifying areas in which members require technical assistance or capacity-building support in their respective CMMs [2,21,23]. Section V of the WCPFC CMM 2023-04, provides for the submission of a Capacity Development Plan for developing States that cannot meet compliance obligations, [23]. CITES and IOTC not only recommend specific capacity-building actions, but also provide in-country assistance, technical assessment and, in the case of CITES, a verification mission [5].
- 4. More than one corrective action can be applied.** CCSBT notes that 'corrective actions recommended by the Compliance Committee may include' [3]. This indicates that the Compliance Committee can recommend a mix of different actions, such as quota paybacks and increased monitoring requirements. In ICCAT, besides the responses that are outlined in its severity action table, capacity building and technical assistance options are also available. IOTC provides that "other remedies" can be recommended by the Compliance Committee to the Commission, in addition to capacity building or technical assistance.
- 5. Application of corrective actions.** When it comes to the application of corrective actions, in most RFMO/As the Compliance Committee may recommend corrective actions to the Commission for adoption. The Compliance Committee recommends actions to be taken by the members and, in case of serious non-compliance and ongoing non-compliance, may recommend additional actions for consideration by the Commission, including quota reductions or trade measures (Table 1). In NAFO, a list of potential actions is provided, including actions such as an investigation by the flag State member or judicial and administrative actions and sanctions (e.g., fines, seizure of the vessel, increased or additional reporting requirements). However, it is up to the flag State member to decide which action to take and report back to the Commission.

## 4. Conclusion

In this paper, compliance frameworks from RFMO/As, as well as selected multilateral environmental agreements were reviewed and analysed. Some RFMO/As and other multilateral environmental agreements have compliance frameworks that include types of corrective actions to be applied by the member concerned and/or could be applied by the Commission.

ICCAT, CCSBT, SPRFMO, SIOFA, IOTC, CITES and the Montreal Protocol have compliance processes in place that include schemes of corrective actions that enumerate responses, to different degrees of specificity, to be taken by both members and potentially the Commission. IATTC, WCPFC, GFCM, and CCAMLR allow for the possibility of corrective actions to be applied by members and potentially their

Commissions, but have not yet elaborated in detail the specific types of actions. NAFO only identifies actions to be taken by flag State members. Some of the RFMOs reviewed (e.g., IOTC) adopted corrective actions quite recently, and so more time is needed to see how these will be applied in practice.

The kinds of corrective actions that have been elaborated by the reviewed RFMO/As and the Multilateral Environmental Agreements illustrate innovation in identifying a spectrum of responses to address varying degrees and types of non-compliance. This review reveals that the types of corrective actions, and how and when they may be applied, show similarities despite differences in the kind of RFMO/A, species managed, or organisational structure. For instance, the need for capacity assistance is embedded in all the corrective schemes reviewed, highlighting the importance of providing a support structure to improve compliance overall. Finally, this review indicates that corrective action schemes are a common feature of compliance assessment systems in multilateral fisheries and environmental arrangements, although certain normative aspects and degrees of specificity vary. The commonalities and existing practices identified in this review could assist in the development or refinement of schemes of corrective actions by other international organisations or arrangements. For instance, some States may only participate in one or two RFMOs, sometimes in the same ocean area, and thus are not exposed to the operation and practices of other compliance assessment processes. This review could help assist in the evolution of existing compliance mechanisms, as well as harmonisation, where appropriate. Further, increasing the awareness of the commonalities and existing practices could promote agreement among members in developing and implementing schemes of corrective actions.

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## Declaration of Competing Interest

HK is working for the International Seafood Sustainability Foundation (ISSF); however, her contributions to this paper are her own professional views and do not necessarily reflect those of ISSF.

## Data availability

No quantitative data was used for the research described in the article. All information used for the analysis in the article is publicly available.

## References

- [1] J.S. Barkin, E.R. DeSombre, Do we need a global fisheries management organization? *J. Environ. Stud. Sci.* 3 (2013) 232–242, <https://doi.org/10.1007/s13412-013-0112-5>.
- [2] CCAMLR. 2023. Conservation measure 10-10 (2023). Retrieved from (<https://cm.ccamlr.org/en/measure-10-10-2023>).
- [3] CCSBT. 2018. Corrective actions policy. Compliance policy Guideline 3. Retrieved from ([https://www.ccsbt.org/sites/default/files/userfiles/file/docs\\_english/operational\\_resolutions/CPG3\\_CorrectiveActions.pdf](https://www.ccsbt.org/sites/default/files/userfiles/file/docs_english/operational_resolutions/CPG3_CorrectiveActions.pdf)).
- [4] CITES. 2017. Seventeenth meeting of the Conference of the Parties. CoP17 Doc. 23. Retrieved from (<https://cites.org/sites/default/files/eng/cop/17/WorkingDocs/E-CoP17-23.pdf>).
- [5] CITES. 2018. Conf.14.3\* CITES compliance procedures. Retrieved from (<https://cites.org/sites/default/files/document/E-Res-14-03-R18.pdf>).
- [6] P. de Bruyn, H. Murua, M. Aranda, The Precautionary approach to fisheries management: how this is taken into account by Tuna regional fisheries management organisations (RFMOs), *Mar. Policy* 38 (2013) 397–406, <https://doi.org/10.1016/j.marpol.2012.06.019>.
- [7] GFCM. NA. Rules of procedure of the General Fisheries Commission for the Mediterranean. Retrieved from (<https://www.fao.org/3/ax822e/ax822e.pdf>).
- [8] J. Harrison, Compliance mechanisms under treaties relating to protection of the marine environment, in: R. Rayfuse, A. Jaekel, N. Klein (Eds.), *Research Handbook on International Marine Environmental Law*, Edward Elgar Publishing Limited, 2023.
- [9] IATTC. 2022. Resolution C-22-02. Resolution on the process for improved compliance of resolutions adopted by the commission. Retrieved from ([https://www.iatc.org/GetAttachment/82979774-0873-498a-8416-67ca268e023a/C-22-02\\_Compliance.pdf](https://www.iatc.org/GetAttachment/82979774-0873-498a-8416-67ca268e023a/C-22-02_Compliance.pdf)).
- [10] ICCAT. 2009. Report of the independent performance review of ICCAT. Retrieved from ([https://iccat.int/Documents/Other/PERFORM\\_%20REV\\_TRI\\_LINGUAL.pdf](https://iccat.int/Documents/Other/PERFORM_%20REV_TRI_LINGUAL.pdf)).
- [11] ICCAT. 2022a. Recommendation by ICCAT to replace recommendation 06-14 to promote compliance by nationals of contracting parties, cooperating non-contracting parties, entities, of fishing entities with ICCAT conservation and management measures. Retrieved from (<https://www.iccat.int/Documents/Recs/compendiopdf-e/2022-14-e.pdf>).
- [12] ICCAT. 2022b. Schedule of compliance issues and corresponding actions. Retrieved from (<https://www.iccat.int/Documents/Recs/compendiopdf-e/2022-18-e.pdf>).
- [13] IOTC. 2023. Indian ocean tuna commission: rules of procedure. Retrieved from ([https://iotc.org/sites/default/files/documents/2023/05/IOTC\\_Rules\\_of\\_Procedure\\_12May2023E.pdf](https://iotc.org/sites/default/files/documents/2023/05/IOTC_Rules_of_Procedure_12May2023E.pdf)).
- [14] ISSF. 2022. RFMO best practices snapshot – 2022: compliance processes. Retrieved from (<https://www.issf-foundation.org/issf-downloads/download-info/rfmo-best-practices-snapshot-2022-compliance-processes/>).
- [15] Koehler, H. 2023. Tuna RFMO compliance assessment processes: a comparative analysis to identify best practices. Retrieved from (<https://www.issf-foundation.org/about-issf/what-we-publish/issf-documents/issf-2023-05-tuna-rfmo-compliance-assessment-processes-a-comparative-analysis-to-identify-best-practices/>).
- [16] Lodge, M., Anderson, D., Løbach, T., Munro, G., Sainsbury, K., and Willock, A. 2007. Recommended best practices for regional fisheries management organizations. *OECD Report*. Retrieved from (<https://www.oecd.org/sd-roundtable/papersandpublications/39374297.pdf>).
- [17] NAFO. 2019. Northwest Atlantic fisheries organization - conservation and enforcement measures 2019. Retrieved from <https://www.nafo.int/Portals/0/PDFs/COM/2019/comdoc19-01.pdf>.
- [18] B. Pentz, N. Klenk, S. Ogle, J.A.D. Fisher, Can regional fisheries management organizations (RFMOs) manage resources effectively during climate change? *Mar. Policy* 92 (2018) 13–20, <https://doi.org/10.1016/j.marpol.2018.01.011>.
- [19] Pew, and ISSF. 2022. Approaches to evaluate and strengthen RFMO compliance processes and performance - a toolkit and recommendations. Retrieved from <https://meetings.wcpfc.int/node/17088>.
- [20] SIOFA. 2020. CMM 2020/11. Conservation and management measure for the establishment of a southern Indian Ocean fisheries agreement (SIOFA) compliance monitoring scheme (Compliance Monitoring Scheme). Retrieved from (<https://siofa.org/sites/default/files/documents/cmm/CMM-2020-11-Compliance-Monitoring-Scheme.pdf>).
- [21] SPRFMO. 2020. CMM 10-2020 - Conservation and management measure for the establishment of a compliance and monitoring scheme in the SPRFMO convention area. Retrieved from <https://www.sprfmo.int/assets/Fisheries/Conservation-and-Management-Measures/2020-CMMs/CMM-10-2020-CMS-31Mar20.pdf>.
- [22] UNEP. 2020. The Montreal protocol on substances that deplete the ozone layer. Retrieved from <https://ozone.unep.org/node/2080>.
- [23] WCPFC. 2023. Conservation and management measure on the compliance monitoring scheme. Retrieved from <https://cmm.wcpfc.int/measure/cmm-2023-04>.