

Keeping an Eye on the High Seas

**Strengthening Monitoring,
Control and Surveillance
through a New Marine
Biodiversity Treaty**

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¹ Short summaries are available at <https://www.prog-ocean.org/blog/2018/08/21/workshop-results-technological-tools-for-mcs-in-abnj/> and <https://www.prog-ocean.org/blog/2019/05/15/second-expert-workshop-on-monitoring-control-and-surveillance-in-areas-beyond-national-jurisdiction/>.

Key messages

- Effective monitoring, control and surveillance (MCS) is a prerequisite for the success of area-based management tools (ABMTs), including marine protected areas (MPAs), and can play a key role in many aspects of a future high seas treaty.
- The ongoing treaty negotiations present an opportunity to strengthen and bring greater coherence to MCS rules.
- MCS provisions in the current draft treaty text could be strengthened by: reinforcing key MCS obligations and principles; specifying a clear role for the clearing-house mechanism in coordinating MCS activities and building capacity; and requiring proposals for ABMTs, including MPAs, to incorporate a MCS strategy.

1. Introduction

Effective monitoring, control and surveillance (MCS) is critical for the success of marine conservation and management measures. Whereas States have the exclusive right to manage the marine resources within their national jurisdiction,² areas beyond national jurisdiction (ABNJ) are subject to a complex patchwork of international rules and regulations (Wright *et al.*, 2018).³ Effective MCS of these deep and distant waters is a significant technical challenge and there is growing interest in how MCS tools and policies can be applied to this vast global commons.

States at the United Nations (UN) are currently negotiating an international legally binding instrument (ILBI) for the conservation and sustainable use of the biological diversity of marine areas beyond national jurisdiction (referred to here as the “high seas treaty”). This brief explores how the negotiations could strengthen MCS in ABNJ and the contribution MCS could make to the implementation of a future treaty.

2 United Nations Convention on the Law of the Sea (adopted 10 December 1982, entered into force 16 November 1994), Article 56.

3 ABNJ are comprised of two different marine areas: (i) the high seas, i.e. the water column beyond the exclusive economic zone (200 nautical miles), (ii) the seabed beyond the continental shelves of coastal States, formally known as “the Area”.

2. State of Play

Many States have already agreed to be bound by MCS obligations in a range of existing legally binding international agreements (Table 1), supplemented by voluntary guidelines and standards.⁴ Traditional approaches to MCS (such as on-board observers, logbooks and surveillance planes) are increasingly being supplemented by new technologies and techniques, e.g. satellite monitoring and the use of “big data” (Probst, 2019).⁵ This is especially true for ABNJ, as “surveillance tends to rely progressively more on advanced technologies at larger and longer scales” (Miller *et al.*, 2013).

While the MCS toolkit is growing rapidly, there is no ‘one size fits all’ approach. Rather, there are a range of factors that need to be considered when evaluating the suitability of a particular MCS action, including: objectives, costs, reliability, coverage, security and privacy.

Figure 1. Schematic representation of tools for MCS of fishing activities

Source: Miller *et al.*, 2013.

MANAGEMENT ACTION

| | | | | |
|--------------|--|----------------------------|--------------------------|-------------------------------|
| Location | Local | Fishing Ground | Ocean Basin | Regional/Global |
| Monitoring | Catch/Transshipment | Port | Import/Export | Global Market |
| Control | At-Sea/In-Port Interdiction | Administrative Proceedings | Judicial Proceedings | Deterrence/Education/Outreach |
| Surveillance | Direct Observation | Aerial Observation | Over Horizon Observation | Satellite Observation |
| SPACE | 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⁴ E.g. The FAO Flag State Performance Guidelines, which set out ten principles for effective flag State responsibility and a range of actions that States can take to ensure that vessels do not conduct IUU fishing; and the Code of Conduct for Responsible Fisheries, which details principles and minimum standards and encourages States to collect and exchange fisheries data with other States and RFMOs (including on bycatch, discards and waste).

⁵ See: <https://www.iddri.org/en/publications-and-events/blog-post/keeping-eye-high-seas>.

Table 1. Overview of existing MCS provisions

| Instrument | Summary of provisions |
|---|---|
| United Nations Convention on the Law of the Sea (UNCLOS) | <ul style="list-style-type: none"> ↗ Vessels are subject to the exclusive jurisdiction of the flag State (Article 94); effective MCS is therefore largely dependent on the ability and willingness of flag States to exercise effective control over vessels flying their flag.⁶ ↗ States are free to fish on the high seas (Article 116) but must take conservation measures and cooperate with other States (Article 117-20). ↗ States must monitor pollution, publish reports, and conduct impact assessments where planned activities may cause substantial pollution or significant and harmful changes to the marine environment (Articles 204-206). ↗ Port States can investigate violations of international discharge or seaworthiness standards and take enforcement actions (articles 218-219). |
| Convention on Biological Diversity (CBD) | <ul style="list-style-type: none"> ↗ General provisions on conservation and management. ↗ States Parties required to monitor the status of biodiversity and any processes and activities which could have significant adverse impacts (Article 7). ↗ Obligation to regulate or manage processes and activities with significant adverse effects (Article 8). |
| United Nations Fish Stock Agreement (UNFSA) | <ul style="list-style-type: none"> ↗ Requires coastal and fishing States to implement conservation and management measures through effective MCS (Article 5) and establish cooperative mechanisms through regional fisheries management organisations and agreements (RFMO/As) (Article 10). ↗ Flag States are obliged to take MCS measures, such as inspection schemes and observer programmes (Article 18). ↗ Allows States to board and inspect fishing vessels on the high seas under certain circumstances (Articles 21 and 22). |
| FAO Compliance Agreement | <ul style="list-style-type: none"> ↗ States Parties must ensure that their flagged vessels do not undermine the effectiveness of international conservation and management measures. ↗ High seas fishing requires prior authorisation and States Parties must ensure that vessels comply with the terms and conditions of the authorisation. ↗ Flag States are responsible for monitoring authorised vessels and must take enforcement measures in the case of violations. |
| Port State Measures Agreement | <ul style="list-style-type: none"> ↗ Where an inspection provides a port State with “sufficient proof” that a vessel has engaged in IUU activities, it must deny entry (Article 9).⁷ ↗ Acknowledges potential challenges for developing countries in implementing effective port State measures and calls for development of appropriate funding mechanisms and assistance (Article 21).⁸ |
| International Maritime Organisation (IMO) instruments | <ul style="list-style-type: none"> ↗ IMO has adopted a range of measures to prevent, control and mitigate pollution,⁹ such as the International Convention for the Prevention of Pollution from Ships (MARPOL, 1973) and the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (London Convention, 1973). |

6 A concept often referred to as “flag State responsibility”. Specifically, flag States are obliged to ensure compliance with “applicable international rules and standards” and, in case vessels are non-compliant, must take appropriate enforcement measures, including investigations, institution of proceedings, exchanging of information on enforcement actions taken and issuing penalties (Article 271).

7 The port State must communicate its decision to the relevant flag State and, if appropriate, to relevant coastal States, RFMOs and other international organisations (Articles 11 and 18).

8 The FAO provides technical assistance and capacity development efforts to assist developing countries in their implementation of the PSMA: <http://www.fao.org/port-state-measures/capacity-development/ongoing-capacity-building-efforts/en/>.

9 See <http://www.imo.org/en/OurWork/Environment/Pages/Default.aspx>.

3. Challenges to Effective MCS

Adherence to relevant international agreements and standards varies widely and MCS procedures are often not implemented in a uniform manner, which can undermine efforts to conserve and sustainably use marine biodiversity (Dunn *et al.*, 2018; Pitcher *et al.*, 2009). Some key challenges include:

➤ **Flag State responsibility:** Flag States are ultimately responsible for the control of their flagged vessels. Commitment to the elimination of non-compliance varies, while some States continue to provide 'flags of convenience' that allow vessels to avoid international rules (Ford and Wilcox, 2019).¹⁰

➤ **Governance:** Cooperation has proven difficult within a fragmented governance framework that comprises a wide range of organisations with differing mandates and members (Wright *et al.*, 2018). There are also gaps in coverage of the high seas. For example, fisheries management has largely focussed on a small number of target species, with limited implementation of ecosystem-based management (Dunn *et al.*, 2018; Juan-Jordá *et al.*, 2018).

➤ **Data-based policy:** Data only has an impact if it is effectively gathered, analysed, used and reported on by decision-makers to support strong compliance and enforcement action. Yet data collection and management protocols vary and, even where data is abundant, there is often a lack of the capacity needed for effective processing and analysis.

➤ **Cost:** MCS can be costly to implement and there are considerable differences in the available capacity and capital for MCS activities.

While the negotiations may not fully address all of these challenges, there is nonetheless an important two-way relationship between MCS and the new high seas agreement: MCS is not only necessary for effective implementation and enforcement, but the negotiations also present an opportunity to bring greater coherence to MCS rules.

¹⁰ I.e. A flag State may register vessels in exchange for a fee, without exercising effective control over the vessel. This is desirable to the vessel operator as it reduces the costs associated with, e.g. MCS equipment, safety, insurance and training.

4. Key Principles for Strengthening MCS

Three guiding principles could inform the inclusion of MCS in a future high seas treaty: transparency; cooperation and coordination; and reporting.

Transparency has long been “linked to improved accountability, as well as enforceability, compliance, sustainability, and ultimately more equitable outcomes” (Ardron *et al.*, 2018). Transparency principles are widely recognised as an important prerequisite to good governance and are increasingly incorporated into codes of conduct and best practice guidelines (Ardron *et al.*, 2018), as well as into international law and negotiations (Peters, 2015). A number of initiatives are underway to increase the transparency of human activities on the high seas. For example, Global Fishing Watch uses automatic identification system (AIS) data and advanced computing technologies to trace the movements of about 60,000 commercial fishing boats in near real time.¹¹

Cooperation and coordination on MCS may take place at all levels: global (e.g. through the International MCS Network),¹² regional (e.g. through RFMO/As), sectoral (e.g. through the IMO), and national (e.g. between relevant government ministries and authorities). Cooperation increases the sharing of knowledge, intelligence, data, capacity and best practices, which can ultimately lead to better compliance and enforcement outcomes (Erceg, 2006). As such, cooperative initiatives are often highly valued by MCS actors. For example, the Chair of the FISH-i Africa Task Force has stated that “the cheapest tool in fighting illegal, unregulated and unreported (IUU) fishing is the sharing of information and intelligence through cooperation among all MCS practitioners”.¹³

Reporting, which is closely linked to transparency, “constitutes a pre-condition for informed and advanced decision-making and serves the purpose of understanding whether and if so, to what extent, States are fulfilling their obligations” (Englander *et al.*, 2014). However, there is currently a lack of specific monitoring and reporting requirements applicable to all human activities in, or having an impact on, ABNJ. Such reporting is crucial because it can: (1) enhance transparency and increase understanding of the nature of activities relating to ABNJ; (2) help measure the impact of these activities on marine biodiversity; and (3) be used for enforcement purposes. This is likely of particular interest to States not conducting activities in ABNJ, as they may be affected by the impacts of other States’ activities on biodiversity and ecosystem services.

¹¹ See <https://globalfishingwatch.org/map-and-data/technology/>.

¹² The IMCS network is an informal voluntary network of States, RFMOs and regional economic integration organisations committed to improving the efficiency and effectiveness of fisheries-related MCS activities.

¹³ Eight Southeast African coastal States cooperate through the FISH-i Africa Task Force to address illegal fishing and associated crimes at the regional level. See <https://fish-i-africa.org>.

5. MCS in the Draft High Seas Treaty

MCS can play a role in all four elements of the ‘Package Deal’ under discussion,¹⁴ and may in turn be strengthened through provisions that place obligations on States to facilitate cooperation and coordination, reporting and transparency.

5.1. Marine genetic resources

The draft text includes provisions obliging States Parties to monitor and report on when marine genetic resources (MGRs) are accessed in ABNJ (Article 13). Monitoring of MGR activities could help to track activities and their impacts, while reporting could provide insight into who is conducting what kind of MGR activities, where, and for what purpose. This could increase transparency and facilitate the establishment and implementation of any future benefit-sharing arrangements.

5.2. Area-based management tools, including MPAs

The draft text on ABMTs includes provisions on international cooperation and coordination (Article 15), implementation (Article 20) and monitoring and review (Article 21). MCS could play a role in the development of ABMT proposals, implementation of any management measures ultimately adopted, and monitoring their outcomes. Effective MCS is a crucial factor in the success of MPAs. Improvements may be needed to vessel monitoring and enforcement capability and the incorporation of “adequate resources for follow-up, through patrols and correspondence with flag States and fisheries management organisations” (Rowlands et al., 2019).

5.3. Environmental impact assessments

In addition to establishing global minimum standards for environmental impact assess-

ments (EIAs), the draft text includes obligations for States Parties to conduct public notification and consultation, to publish and communicate the results of assessments, and to ensure that the environmental impacts of the authorised activities are reviewed (Articles 34-41). Reporting and information exchange provisions in relation to EIAs could be an important incremental step towards more effective compliance and enforcement overall.

5.4. Capacity building and transfer in technology

The draft text includes a non-exhaustive overview of types of capacity-building and technology transfer activities. A number of these could provide the basis for enhancing MCS capacity, including: “Technical support... including for data monitoring and reporting”; “Increasing cooperative links between regional institutions”; “The development and strengthening of human resources and technical expertise through exchanges, research collaboration, technical support, education and training and the transfer of technology”; and “Collaboration and cooperation in marine science”.

5.5. Clearing-house mechanism

The draft treaty text suggests that an open-access platform could enable States Parties to access and publicise information on capacity-building and technology transfer opportunities, as well as facilitate enhanced transparency and international cooperation and collaboration (Article 51). In relation to MCS, this mechanism could, for example: encourage States Parties to share best practices; increase capacity for the design and implementation of MCS technologies and policies; and highlight opportunities to collaboratively monitor activities at sea.

¹⁴ Negotiations will cover the ‘Package Deal’ of issues agreed in 2011, namely: marine genetic resources (MGRs), including questions on the sharing of benefits; area-based management tools (ABMTs), including marine protected areas (MPAs); environmental impact assessments (EIAs); and capacity-building and the transfer of marine technology.

Table 2. Reflection of MCS principles in the draft treaty

| Principle | Relevant provisions in the draft treaty | |
|------------------------------|---|---|
| Cooperation and coordination | <ul style="list-style-type: none"> ➤ One of the objectives of the treaty is to “further international cooperation and coordination”. ➤ “States Parties shall cooperate for the conservation and sustainable use of marine biological diversity”, “promote international cooperation in marine scientific research” and “cooperate to establish new global, regional and sectoral bodies, where necessary”. ➤ One of the objectives of benefit-sharing is to build capacity “through common funding or pool funding for research cruises and collaboration in sample collection and data access”. ➤ Establishment of coordination and collaboration mechanisms and/or consultation processes to enhance cooperation and coordination among different instruments and among conservation and management measures. ➤ The clearing-house mechanism shall “facilitate international cooperation and collaboration, including scientific and technical cooperation and collaboration”. | Articles 2, 6, 11, 14, 15, 23, 43, 46, 48, 51, Annex. |
| Reporting | <ul style="list-style-type: none"> ➤ States Parties shall report on research findings, including data collected and all associated documentation; their utilisation of MGRs and on the implementation of ABMTs. ➤ Environmental impact assessment reports shall be submitted to the Scientific and Technical Body for review. ➤ Each State Party shall monitor and report to the Conference on measures that it has taken to implement this Agreement. ➤ Capacity-building activities include “technical support for the implementation of the provisions of this Agreement, including for data monitoring and reporting”. | Articles 11, 21, 34-40, 45, 47, 50, 51, 53, Annex. |
| Transparency | <ul style="list-style-type: none"> ➤ Data related to MGRs shall be published and used taking into account current international practice in the field. ➤ ABMT/MPA consultations “shall be inclusive, transparent and open to all relevant stakeholders”. The secretariat shall make that proposal publicly available, shall facilitate consultations and shall make any contributions received publicly available. ➤ Decisions of the Conference of the Parties shall be made publicly available and be transmitted to adjacent coastal States and relevant bodies instruments/bodies. ➤ Reports of States Parties on the implementation of ABMTs/MPAs shall be made publicly available by the secretariat. ➤ States Parties shall make public the comments received and the descriptions of how they were addressed during consultation processes regarding planned activities under their jurisdiction or control. ➤ States Parties shall establish procedures allowing for access to information related to the EIA process. ➤ Capacity-building and the transfer of marine technology shall be transparent and country-driven. ➤ The clearing-house mechanism shall “facilitate enhanced transparency, including by providing baseline data and information”. | Articles 11, 18, 19, 21, 34, 36, 41, 44, 47, 51 and 52. |

6. Strengthening MCS Provisions in the Draft Treaty

The future high seas treaty could reinforce existing obligations and build on existing procedures to help ensure transparency, cooperation and coordination, and reporting. Many of the key provisions in the draft text remain in brackets, so negotiators may wish to keep in mind the need to include strong MCS provisions when further debating and refining the text. In addition, three potential pathways for strengthening MCS provisions are outlined below.

6.1. Reinforcing MCS obligations and principles

The high seas treaty could consolidate and reinforce existing principles by explicitly including key MCS principles, such as transparency and cooperation, in Article 5 on general principles and approaches. This could ensure that these principles are applied consistently throughout the agreement. The treaty could also apply the ABMT implementation provisions in Article 20 to the entire agreement, so that States Parties are required to “ensure compliance by vessels flying their flags and enforcement” in all aspects of the treaty. The treaty could support the implementation of obligations, and strengthen data collection and consistency, by requiring vessel tracking for all vessels operating on the high seas. Finally, the treaty could urge flag States, port States and coastal States to ensure compliance (as in the preamble of UNFSA) and call for sub-regional and regional cooperation in enforcement (as in UNFSA Article 21).

6.2. Developing a strong role for the clearing-house mechanism

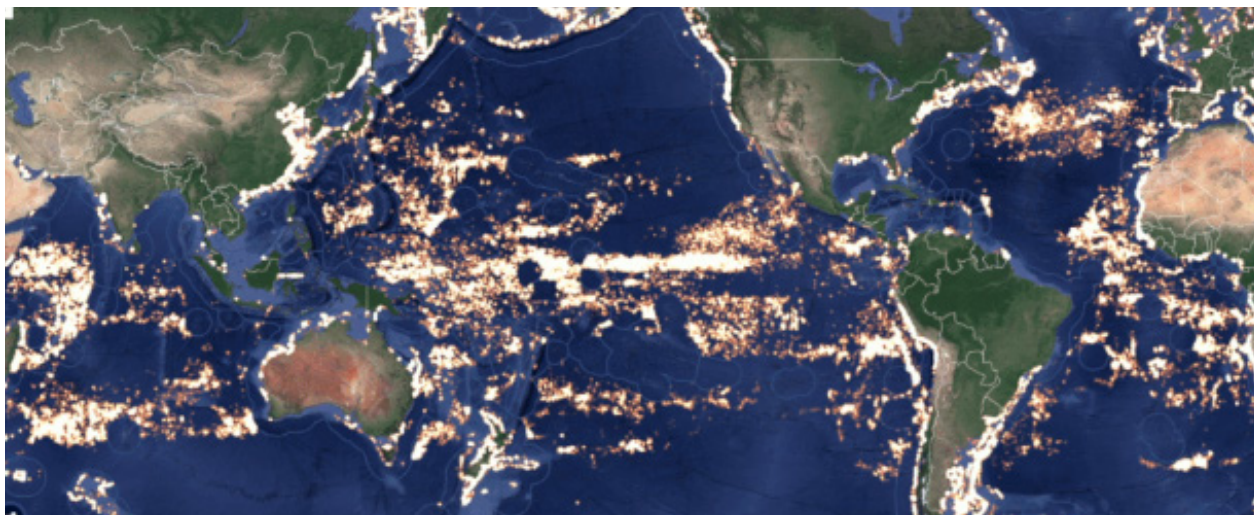
The high seas treaty could define a strong MCS role for the clearing-house mechanism by specifying that it shall serve as a platform to share best MCS practices, exchange data on MCS activities, and match capacity-building needs in relation to MCS tools (Article 51). The treaty could include specific references to building MCS capacity in order to assist developing States in meeting reporting require-

ments and other treaty obligations. Finally, the treaty could specify the types of MCS information States Parties are obliged to share through the clearing-house mechanism.

6.3. Incorporating a MCS strategy for ABMT proposals

The draft treaty text suggests that States Parties could be required to submit a “monitoring, research and review plan” as part of proposals for ABMTs and MPAs (Article 17). The treaty could further require submission of a MCS strategy that considers the possible technological tools and institutional frameworks available to ensure compliance. This could encourage States Parties to consider the kinds of MCS tools they have at their disposal for different kinds of ABMTs: for large and remote MPAs, this could include consideration of innovative technological tools, such as satellite monitoring; for MPAs adjacent to coastal States, this could include consideration of potential partnerships and capacity-building activities. The treaty could also invite relevant bodies, such as RFMOs, to provide information regarding their MCS activities and possible role in enforcing ABMTs.

Figure 2. Examples of technological tools and cooperative initiatives that could be explored through a MCS strategy



Global Fishing Watch uses satellite data and advanced computing techniques to shine a light on the high seas fishing fleet. Source: Global Fishing Watch



Through cooperation and coordination, the members of the **FISH-i Africa Taskforce** were able to track the FV Premier, a vessel engaging in IUU fishing, and hold it accountable, resulting in a \$2m settlement. Source: FISH-i Africa

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Sébastien Treyer, Executive Director

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About the STRONG High Seas Project

The STRONG High Seas project is a five-year project that aims to strengthen regional ocean governance for the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction. Working with the Secretariat of the Comisión Permanente del Pacífico Sur (CPPS; Permanent Commission for the South Pacific) and the Secretariat of the West and Central Africa Regional Seas Programme (Abidjan Convention), the project will develop and propose targeted measures to support the coordinated development of integrated and ecosystem-based management approaches for ocean governance in areas beyond national jurisdiction (ABNJ). In this project, we carry out transdisciplinary scientific assessments to provide decision-makers, both in the target regions and globally, with improved knowledge and understand-

ing on high seas biodiversity. We engage with stakeholders from governments, private sector, scientists and civil society to support the design of integrated, cross-sectoral approaches for the conservation and sustainable use of biodiversity in the Southeast Atlantic and Southeast Pacific. We then facilitate the timely delivery of these proposed approaches for potential adoption into the relevant regional policy processes. To enable an interregional exchange, we further ensure dialogue with relevant stakeholders in other marine regions. To this end, we set up a regional stakeholder platform to facilitate joint learning and develop a community of practice. Finally, we explore links and opportunities for regional governance in a new international and legally-binding instrument on marine biodiversity in the high seas.

Project duration: June 2017 – May 2022

Coordinator: Institute for Advanced Sustainability Studies (IASS)

Implementing partners: BirdLife International, Institute for Sustainable Development and International Relations (IDDRI), International Ocean Institute (IOI), Universidad Católica del Norte, WWF Colombia, WWF Germany

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