



Strengthening monitoring, control and surveillance of human activities in marine areas beyond national jurisdiction: Challenges and opportunities for an international legally binding instrument

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ABSTRACT

Monitoring, control and surveillance (MCS) is critical for the success of marine conservation and management. This raises specific challenges in the deep and distant waters of marine areas beyond national jurisdiction (ABNJ), which is characterised by a fragmented governance framework and reliance on flag States to ensure control over vessels. States at the United Nations are currently negotiating an international legally binding instrument for the conservation and sustainable use of the biological diversity of marine areas beyond national jurisdiction and there is a growing interest in how MCS tools and policies can contribute to the management of this vast global commons. The paper provides some suggested pathways for strengthening MCS in ABNJ, as well as three concrete proposals for provisions that could be included in the future international instrument.

1. Introduction

Effective monitoring, control and surveillance (MCS) of human activities is critical for the success of marine conservation and management in areas beyond national jurisdiction (ABNJ). Whereas coastal States have the exclusive right to manage marine resources within their national jurisdiction according to the United Nations Convention on the Law of the Sea (UNCLOS),¹ ABNJ are subject to a complex patchwork of international rules and regulations [1]. Effectiveness of MCS in ABNJ is hampered by higher costs, limited data and understanding of the impacts of human activities, and insufficient political will. However, the emergence of innovative and cost-effective technologies has the potential to play a transformative role in strengthening MCS.

States at the United Nations 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 (BBNJ). A range of existing international instruments and institutions are relevant to MCS in ABNJ and the negotiations provide an opportune moment to take stock of these provisions and consider how they can be strengthened. While the future ILBI will not substantially

reform existing rules and regulations,² there is nonetheless an important two-way relationship between MCS and the future instrument: MCS is crucial for implementation and enforcement (e.g. of future management measures or protected areas) and in turn the instrument could reinforce and complement existing MCS obligations, thereby providing renewed impetus for strengthening compliance with international rules.

This paper explores how an ILBI can strengthen MCS in ABNJ and in which ways MCS could contribute to the implementation of the rules of the future ILBI. The following section provides an overview of the current state of play, introducing key international legal provisions and technological tools. Section 3 considers some of the main challenges, in particular: reliance on flag State responsibility for compliance and enforcement; limitations in the governance framework; and a lack of capacity. Section 4 considers how a new ILBI could advance MCS, not only through its substantive provisions, but also through general obligations and principles, appropriate institutional arrangements and a proposed clearing-house mechanism. In concluding, Section 5 provides three concrete proposals to strengthen MCS through an ILBI, namely by reinforcing MCS obligations and principles, developing a strong role for the clearing-house mechanism, and requiring a MCS strategy to be

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¹ United Nations Convention on the Law of the Sea (adopted 10 December 1982, entered into force 16 November 1994) 1833 UNTS 3, Articles 2 & 56.

² The negotiations and future instrument must “not undermine” existing instruments and organisations, though there has been considerable debate about what this means in practice [18,37–40]. In relation to fisheries, some States have argued that existing fisheries management bodies would be undermined by inclusion of fisheries in the ILBI, whereas others argue that the “lack of global management and oversight of this sector” and the broader objectives of the ILBI (i.e. that it is for the conservation and sustainable use of marine biodiversity as a whole) necessitates the inclusion of fisheries. See, e.g. the discussions at the third session of the intergovernmental conference: Earth Negotiations Bulletin (25(218) September 2019), <http://enb.iisd.org/vol25/enb25218e.html>.

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submitted along with proposals for new management measures or protected areas.

2. State of play

Although most existing MCS rules were developed in the context of fisheries management,³ MCS can be broadly conceived as encompassing a wide range of tools, technologies and policies that can be used in a variety of contexts to promote compliance, increase transparency and contribute to the effective conservation and sustainable use of marine resources. MCS can include a range of applications, such as [2]:

- Monitoring of human activities (e.g. in the form of data collection and reporting);
- Control of human activities and their impacts on marine biodiversity (e.g. through regulation, licensing, and controls on how, where and when activities in the ocean take place);
- Surveillance of vessels (e.g. through observer programmes and electronic surveillance systems);
- Encouraging compliance with regulations through transparency, sanctions, and other measures (e.g. sustainability certification schemes); and
- Enforcement actions, e.g. to tackle illegal, unreported and unregulated (IUU) fishing and transnational illegal activities, such as human trafficking, forced labour, and trafficking in arms, drugs and wildlife.

Traditional approaches to MCS – observers, logbooks and surveillance planes/vessels – are now being supplemented by a range of technological tools. These include: vessel tracking systems, e.g. using Automatic Identification Systems (AIS) and Vessel Monitoring Systems (VMS); electronic monitoring systems (EMS), which can include a combination of cameras, GPS and sensor data; advanced computing techniques, such as machine learning, that can infer information about vessel activity from a range of data; and drones that can be used for surveillance in remote or inaccessible areas.

In terms of the international legal and policy framework, States have agreed to be bound by MCS obligations in a range of international legal agreements (Table 1), supplemented by voluntary guidelines and standards.⁴

Many RFMOs have developed various measures to enhance MCS efforts of their members and to encourage compliance with their rules [3].⁵ A wide range of initiatives are being undertaken by the private sector and by civil society [4], such as: fisheries improvement projects – multi-stakeholder initiatives that aim to improve the sustainability of a fishery⁶; the development of new technological tools for monitoring vessel activities; and capacity building and technology transfer initiatives. A number of MCS platforms and networks have also been

Table 1

Overview of selected provisions relevant to MCS in ABNJ.

Instrument	Summary of provisions
United Nations Convention on the Law of the Sea 1982 (UNCLOS)	• 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.^a • States Parties are free to fish on the high seas (Article 116) but must take conservation measures and cooperate with other States (Article 117–20). • States Parties 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 1992 (CBD)	• States Parties must ensure that “activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction” (Article 3).^b • Parties must cooperate, directly or through competent international organisations, to ensure the conservation and sustainable use of marine biodiversity (Article 5). • Obligation to monitor the status of biodiversity and any processes and activities which could have significant adverse impacts (Article 7) and to regulate or manage processes and activities with significant adverse effects (Article 8).
Food and Agriculture Organisation (FAO) Compliance Agreement 1993	• States Parties must ensure that their flagged vessels do not undermine the effectiveness of international conservation and management measures (Article 3 (1)). • High seas fishing requires prior authorisation and States Parties must ensure that vessels comply with the terms and conditions of the authorisation (Article 3 (2)). • Flag States are responsible for monitoring authorised vessels and must take enforcement measures in the case of violations (Article 3 (8)).
United Nations Fish Stock Agreement 1995 (UNFSA)	• Requires coastal and fishing States to implement and enforce conservation and management measures through effective MCS (Article 5) and to 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).
Port State Measures Agreement 2009 (PSMA)	• The PSMA aims to “to prevent, deter and eliminate IUU fishing through the implementation of effective port State measures, and thereby to ensure the long-term conservation and sustainable use of living marine resources and marine ecosystems” (Article 2). • Where State parties have “sufficient proof” that a vessel has engaged in IUU activities, it must deny entry to ports (Article 9).^c • Acknowledges potential challenges for developing countries in implementing effective port State measures and calls for

(continued on next page)

³ This is reflected in early definitions of MCS. E.g. The FAO’s 1981 definition focuses on monitoring of fishing effort and resource yields, controlling fishing activity with regulations, and conducting surveillance to ensure compliance with such regulations. FAO, 1981, Report on an expert consultation on MCS for fisheries management, Rome, FAO.

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 E.g. The implementation of mandatory VMS, observer programmes, electronic reporting and monitoring systems; the adoption of regional MCS schemes for port State measures; the development of vessel lists and requiring members to meet minimum standards. See FAO Fisheries and Aquaculture Circular 1702 (2012), <http://www.fao.org/3/i2637e/i2637e00.htm>.

⁶ See <https://www.msc.org/docs/default-source/default-document-library/for-business/fishery-improvement-tools/msc-definition-of-a-credible-fip.pdf>.

Table 1 (continued)

Instrument	Summary of provisions
International Maritime Organisation (IMO) instruments	development of appropriate funding mechanisms and assistance (Article 21).^d IMO has adopted a range of measures to prevent, control and mitigate pollution,^e 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).
International Seabed Authority (ISA)	- The ISA is the UN body responsible for monitoring, inspecting and taking measures to ensure compliance of operators engaged in seabed mining and related activities. - Through the ISA, parties have agreed various regulations that set out the responsibilities of contractors, prospectors, sponsoring States and the ISA itself with the aim to regulate seabed mineral resources.^f

^a 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).

^b The CBD applies, in relation to each Contracting Party, “in the case of processes and activities, regardless of where their effects occur, carried out under its jurisdiction or control, within the area of its national jurisdiction or beyond the limits of national jurisdiction” (Article 4 (b)). The CBD therefore expressly applies to processes and activities that may affect biodiversity in ABNJ, though not to the components of biodiversity themselves. While the extent of the CBD’s mandate in ABNJ has been debated [39], Parties have, in practical terms, limited the role of the CBD in relation to ABNJ to the provision of scientific and technical information and advice.

^c The Port State must communicate its decision to the relevant flag State and, if appropriate, to relevant coastal States, RFMOs and other international organisations.

^d 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/>.

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

^f Decision of the Council of the International Seabed Authority relating to amendments to the Regulations on Prospecting and Exploration for Polymetallic Nodules in the Area and related matters, ISBA/19/C/17, Regulation 32, available at: https://ran-s3.s3.amazonaws.com/isa.org.jm/s3fs-public/files/documents/isba-19c-17_0.pdf. Contractors are, for example, required to gather environmental baseline data and to establish environmental baselines to assess the effects of its activities on the marine environment and have to monitor and report on such effects.

established that provide a space for exchange between experts and practitioners.⁷

3. Challenges to effective MCS in ABNJ

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 [5,6]. Key challenges include: reliance on flag State responsibility for compliance and enforcement; limitations in the

governance framework; and lack of capacity.

3.1. Reliance on flag state responsibility

In ABNJ, flag States are exclusively responsible for the control of vessels flying their flag and UNCLOS has only limited provisions for enforcement measures against States that fail to meet their obligations. Commitment to the effective exercise of flag State responsibility varies considerably based on a range of factors. Ineffective exercise of flag State responsibility can allow ‘free riders’ to exercise their right to fish on the high seas without investing in the due diligence required to ensure compliance with international rules [7]. In some cases, vessels with no genuine link to the flag State are registered in exchange for a fee and the flag State subsequently exercises limited control or oversight [8,9] - so-called ‘flags of convenience’ [10]. In the fisheries context, vessels may be flagged by States that are not members of a RFMO, making it difficult to ensure compliance [11].

In recent years, international tribunals have more actively developed the concept of flag State responsibility, for example, in relation to their due diligence obligation in conserving and managing living resources within national jurisdiction [12].⁸ While these judgments concern areas within national jurisdiction, they may nonetheless also provide some indicative guidance as to the content of flag State obligations in ABNJ.

3.2. Limitations of the existing governance framework

The high seas is characterised by a fragmented governance framework composed of various sector- or region-specific organisations and conventions, often with overlapping mandates and members [1,13,14]. This makes effective cooperation challenging: States and other actors may have conflicting priorities, resulting in enforcement measures that are insufficient to ensure compliance. The level of transparency within management bodies varies considerably [15–17], as does coverage and commitment to key governance principles. For example, fisheries management has largely focussed on a small number of target species [18], with limited implementation of bycatch measures [19,20] and ecosystem-based management [21]. MCS rules and standards vary widely and procedures are often not implemented in a uniform manner, which can undermine efforts to sustainably manage high seas resources [5,6].

There are also gaps in coverage of the high seas: “not all human activities in ABNJ are adequately regulated; not all regions are covered; and some organisations exercise their mandate with limited reference to modern governance principles, such as the ecosystem approach, the precautionary principle, or the need for transparent and open decision-making processes” [1].

3.3. Capacity limitations

The lack of uniform and equal implementation of MCS rules can partly be explained by differences in States’ capacity, availability of capital for investment, and willingness of governments to eliminate non-compliance [22]. MCS and enforcement can be costly to implement, especially on the high seas, which may present challenges for developing States in particular to strengthen their MCS systems. Most developing countries, for example, “lack not only financial resources, but also the technical know-how, human resources, and infrastructure necessary to conduct proper stock assessments, develop and implement management measures, monitor fisheries for compliance, and impose penalties on violators” [34].

⁷ Examples include the International Monitoring, Control and Surveillance (IMCS) Network, the Tuna Compliance Network, the Global Fisheries Enforcement programme of the International Criminal Police Organisation (INTERPOL) and the Niue Treaty on Cooperation in Fisheries Surveillance and Law Enforcement.

⁸ See Request for an Advisory Opinion Submitted by the Sub-Regional Fisheries Commission (SRFC Advisory Opinion), Advisory Opinion of Apr. 2, 2015; PCA Case N° 2013–19, The South China Sea arbitration (The Republic of the Philippines v. The People’s Republic of China), para 983.

Even where data is abundant, limited capacity for storage, processing and analysis is likely to be a significant challenge. Further capacity development may therefore be needed and spatial and/or temporal targeting of observations may be helpful.⁹ The information collected must be sufficient for effective governance, but not exceed interpretation capabilities. There are also challenges in relation to the lack of coherence of data. Moreover, there should be sufficient human resources with an expertise to interpret MCS data. In the end, data only has an impact if it is effectively gathered, delivered and used by decision-makers to support strong compliance provisions [2].

4. Potential role of an ILBI

MCS will be crucial to ensuring compliance with any management measures developed under a future international agreement on BBNJ. This section explores how a new ILBI could advance MCS in relation to the general obligations of the agreement, the package deal components, institutional arrangements and the clearing-house mechanism.

4.1. General obligations and principles

Three key general obligations could be included in the ILBI to strengthen MCS systems at a regional, sectoral or global level: 1) cooperation and coordination; 2) transparency; and 3) reporting.

4.1.1. Cooperation and coordination

Cooperation and coordination on MCS may take place at all levels:

- Global (e.g. through the International MCS Network);
- Regional (e.g. through RFMO/As);
- Sectoral (e.g. through the IMO);
- National (e.g. between relevant government ministries and authorities).

Cooperation between these levels and between sectors is limited, with barriers including: 1) different geographical mandates and membership compositions of intergovernmental institutions; 2) limited capacity of institutions to engage in cross-sectoral collaborative activity; 3) limited understanding of ecological connectivity between areas within and beyond national jurisdiction; and 4) lack of appropriate domestic coordination leading to inconsistent national positions in global or regional governance forums [23].

Even though enhanced cooperation and coordination among different organisations with a mandate to regulate activities in ABNJ will likely not be sufficient to overcome existing governance gaps [5], cooperation and coordination could nonetheless strengthen MCS in ABNJ by sharing knowledge, intelligence, data, capacity and best practices. Cooperation between flag States and port States can lead to better “regional compliance and enforcement of measures to control nationals” [24].

Initiatives to improve communication and cooperation are often valued by participating compliance officers and MCS experts because they provide an opportunity to share information and build trust – this has been noted, for example, by participants in the Tuna Compliance Network and Fish-i Africa Task Force.¹⁰ Inclusion of a general coordination and cooperation obligation in the ILBI will provide an impetus for strengthening MCS, though States may also wish to consider including

more specific obligations.

4.1.2. Transparency

Transparency is widely recognised as a prerequisite to good governance and is increasingly incorporated into codes of conduct, guidelines and international law [25,26].¹¹ For example, transparency is an obligation under the UNFSA, which requires States to “provide for transparency in the decision-making process and other activities of subregional and regional fisheries management organisations and arrangements”.¹²

The term ‘transparency’ often refers to the following three components of the decision-making process in the context of multilateral environmental agreements:

1. Timely availability to members and the public of information used as inputs to decision-making;
2. Ability of the public to observe or participate in meetings and to review materials produced during the progression of decision-making processes;
3. Access to outputs of decision-making, including findings on compliance via compliance reviews and performance assessments [17].

Transparency has long been associated with improved accountability, enforceability, compliance, sustainability and more equitable outcomes [25].¹³ For example, transparency obligations in RFMOs can increase trust among States and assurances that others are fulfilling their commitments, thereby incentivising them to do so as well [27].¹⁴ It also means “good behaviour is rewarded, monitoring is cheaper and more effective, and bad actors stand out more clearly and can be penalised appropriately”.¹⁵ Ultimately, only when activities are visible will they be amenable to management and regulation. Transparency can also be applied to data-sharing: under the current governance framework, a significant amount of existing data is either private or isolated in institutional silos, meaning that other bodies or external actors cannot make use of it.

The ILBI could both include provisions that contribute to transparency (see Table 2) and specific obligations requiring transparency, e.g. in decision-making and data-sharing.

4.1.3. Reporting

Reporting, which is closely linked to transparency, “constitutes a precondition for informed and advanced decision-making and serves the purpose of understanding whether and if so, to what extent, States are fulfilling their obligations” [28]. There is currently a lack of specific monitoring and reporting requirements concerning ABNJ. Such reporting will be 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

⁹ <https://www.prog-ocean.org/wp-content/uploads/2018/08/MCS-Workshop-I-summary-final.pdf>.

¹⁰ UNFAO, Report of the Fifth Global Fisheries Enforcement Training Workshop in Auckland, New Zealand, from 7 to 11 March 2016. For example, the Chair of the FISH-i Africa Task Force has stated that: “the cheapest tool in fighting IUU fishing is the sharing of information and intelligence through cooperation among all MCS practitioners”.

¹¹ For example, Article 1 of the Aarhus Convention requires Parties to “establish and maintain a clear, transparent and consistent framework” to implement its provisions (Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters, 1988).

¹² Article 12.

¹³ A distinction can be made in this context between internal transparency, i.e. between ministries within a government or parties within an international organisation, and external transparency, i.e. between such organisations and non-members/the public. It is especially important to take this distinction into account when considering access to information, as data-sharing arrangements between States (internal transparency) do not necessarily increase transparency from the perspective of the public (external transparency).

¹⁴ <https://globalfishingwatch.org/data/data-sharing-key-to-building-the-transparency-needed-to-assess-and-respond-to-ocean-risk/>.

¹⁵ Ibid.

used for enforcement purposes. A State may have an interest in conservation and sustainable use, but not itself be a member of relevant management bodies or have access to relevant information regarding activities in ABNJ and their possible impacts. Effective reporting is therefore crucial for ensuring that all Parties are informed.

Reporting and information exchange provisions in the new ILBI in relation to Environmental Impact Assessments (EIA), for instance, are a welcome incremental step towards more effective compliance and enforcement of the new agreement. It is important, however, to ensure that reporting obligations are not onerous or overly burdensome for States and therefore it would be useful to streamline and consolidate reporting obligations to avoid multiple reporting of the same information.

4.2. Package deal components

Negotiations for an ILBI 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. This section examines the different roles that MCS can play in relation to the package deal components and provides a brief evaluation on the extent to which MCS has been covered in the draft text.

4.2.1. Marine genetic resources

MCS could play a role in monitoring the utilisation of MGRs in accordance with any future rules established by the ILBI. The monitoring of MGR activities, such as ‘bioprospecting’, could be useful to measure any impact of MGR activities on the marine environment in ABNJ and for reporting on who is conducting what kind of MGR activities, where and for what purpose. The draft text includes provisions obliging States Parties to monitor and report on when MGRs are accessed in ABNJ (Article 13). This could in turn increase the accessibility to MGRs and help with establishing any future benefit sharing arrangements.

4.2.2. Area based management tools

The effectiveness of MCS can be the deciding factor for whether MPAs will realise their conservation and management objectives [29]. MCS could play a role in the development of ABMT proposals, their implementation and the monitoring of whether ABMTs perform in accordance with the objectives identified in their designation process [5]. This is especially relevant in relation to large MPAs, because their vastness and remoteness can make surveillance tools impractical or expensive to implement [29,30]. However, due to the decreasing costs of new MCS tools (e.g. satellite technology) as well as the development of international partnerships, effective MCS of such areas is becoming increasingly viable [31,32]. Vessel monitoring and enforcement capacities will therefore need to be reinforced and the ILBI could help catalyse the provision of “adequate resources for follow-up, through patrols, and correspondence with flag States and fisheries management organisations” [29].

The draft text on ABMTs includes provisions on international cooperation and coordination (Article 15), implementation (Article 20) as well as monitoring and review (Article 21).

4.2.3. Environmental impact assessments

The new instrument could strengthen MCS by establishing minimum standards or reporting mechanisms for Environmental Impact

Table 2

Reflection of MCS general obligations in the draft treaty (Version of November 27, 2019).

General obligation	Relevant provisions in the draft treaty
Cooperation & Coordination	One of the objectives of the treaty is to “ further international cooperation and coordination ” (Article 2). “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” (Article 6). Establishment of coordination and collaboration mechanisms and/or consultation processes to enhance cooperation and coordination among different instruments and among conservation and management measures (Articles 12, 14, 15, 20, 23, 43, 48, 51, 52 Annex II). The clearing-house mechanism shall “ facilitate international cooperation and collaboration , including scientific and technical cooperation and collaboration” (Article 51).
Reporting	States Parties shall report on research findings , including data collected and all associated documentation; their utilisation of MGRs and on the implementation of ABMTs (Articles 13 and 21). Establishment of an environmental impact assessment report framework (Articles 21bis and 34–41). Each State Party shall monitor and report to the Conference of the Parties on measures that it has taken to implement this Agreement and the Secretariat shall prepare reports on the execution of its functions (Articles 50 and 53). States Parties shall ensure that reporting requirements are streamlined and not onerous (Articles 45 and 47). The clearing-house mechanism shall serve as a centralised platform to enable States Parties to have access to and disseminate information (Article 51). Capacity-building activities include “technical support for the implementation of the provisions of this Agreement, including for data monitoring and reporting ” (Annex II).
Transparency	Data related to MGRs shall be published and used taking into account current international practice in the field (Article 11). 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 (Article 18). Decisions of the Conference of the Parties shall be made publicly available and shall be transmitted to all States Parties in a timely manner as well as to relevant legal instruments/bodies (Article 48). Reports of States Parties on the implementation of ABMTs/MPAs shall be made publicly available by the secretariat (Article 21). 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 (Article 34) and shall publish the results as well as decision-making-related documents of the assessments (Articles 36 and 38). Capacity-building and the transfer of marine technology shall be transparent and country-driven (Article 44). The clearing-house mechanism shall “ facilitate enhanced transparency , including by providing baseline data and information” (Article 51). Funding in support of the implementation of this Agreement shall be adequate, accessible and transparent (Article 52).

Assessments (EIAs) and Strategic Environmental Assessments (SEAs).¹⁶ The new ILBI could serve as a “best practice model for EIA and SEA processes for ABNJ” and provide for a default mechanism where activities are not covered by existing frameworks [33]. It is also important that the ILBI provides for monitoring and follow-up in cases where an activity has greater environmental impacts than initially envisioned.

The draft text includes obligations for States Parties to conduct public notification and consultation, publish and communicate the results of assessments, and 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.

4.2.4. Capacity building and transfer of technology

Capacity differences between States is one of the biggest MCS challenges and many States have prioritised capacity building and the transfer of technology during the negotiations, in particular developing countries who argue that the new instrument should include: “establishment or strengthening [of] the capacity of relevant organisations/institutions in developing countries to deal with conservation of marine biological diversity in ABNJ; access and acquisition of necessary knowledge and materials, information, data in order to inform decision making of the developing countries” [5]. The draft text includes a non-exhaustive overview of types of capacity-building and technology transfer activities, many of which could provide a basis for enhancing MCS capacity (e.g. “Technical support ... including for data monitoring and reporting” and “Increasing cooperative links between regional institutions” – draft Annex II).

4.3. Institutional arrangements and the clearing-house mechanism

The effective implementation of the provisions of a new instrument will necessitate the establishment of an institutional structure through which parties can take decisions, coordinate, and review implementation [1,34]. There has been significant support for a structure in which “regional and sectoral mandates are reinforced, with global governance and guidance, possibly including mechanisms for global oversight and review” [1], though it is not yet clear what this will mean in practice or what role the COP will play in ensuring effective MCS.

There is significant support from States to include a centralised information repository through a clearing-house mechanism. The draft treaty text (Article 51) 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. 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. The clearing-house mechanism can also “develop capacity for the preparation and review by existing sectoral and regional bodies of EIAs of activities in ABNJ that may pose a risk to biodiversity” [35].

4.4. A brief evaluation

The current draft treaty provides a basis for strengthening MCS in ABNJ, placing a range of obligations on States to further cooperate, improve reporting and ensure transparency (see Table 2). The draft text,

¹⁶ EIAs are tools which can be used to determine whether planned activities of States under their jurisdiction or control cause significant harmful changes to the marine environment. SEAs are related to plans, programmes and policies relevant to a particular region or sector of activity in ABNJ rather than activities.

for example, introduces novel global MCS requirements for the utilisation of MGRs, addresses the implementation of ABMTs, including MPAs, and provides options for collaboration in data monitoring and reporting.

The draft treaty may nonetheless lack ambition in relation to MCS, because it does not: 1) explicitly and holistically address MCS, compliance and enforcement; 2) meaningfully expand on the duties of flag States; and 3) set out modalities for ensuring that MCS is a central part of proposals for management measures. In the pursuit of a consensus agreement that will “not undermine” existing bodies, the negotiations may have missed an opportunity to make more fundamental changes that can address the systemic issues that hamper effective MCS.

More broadly, there has been limited discussion during the negotiations of the potentially transformative nature of upcoming technological developments. Whereas it was once impossible to monitor activities in ABNJ, the international community can increasingly rely on comprehensive satellite radar capabilities and more vessels are equipped with AIS and tracking devices. At the same time, advanced computing techniques can offer new insights and monitoring capabilities. The increasing availability and declining cost of these technologies is likely to significantly change the MCS landscape in the coming years by allowing a wider range of actors to access relevant information [2]. This could allow for greater oversight of flag State behaviour and activities, increase transparency, and, ultimately, “re-structure political and socio-spatial relations governing the world’s oceans by defining new roles and responsibilities, as well as draw new boundaries around who is included and excluded in ocean governance” [36].

Given the prescribed scope of the negotiations, the potential magnitude of these changes is not reflected in the draft treaty, save for the potential role of the clearing-house mechanism in sharing information and new technologies.

5. Three proposals to strengthen MCS through a new instrument

The future ILBI 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 [2].

5.1. Reinforcing MCS obligations and principles

The ILBI could reinforce existing general obligations relevant to MCS, such as those regarding cooperation and reporting.¹⁷ Transparency could be explicitly included in Article 5 on general principles and approaches, which would help ensure that it is applied consistently throughout the agreement.¹⁸ The treaty could also apply the ABMT implementation provisions in Article 20 of the draft text 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. Finally, the treaty could urge flag, port 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).

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

The ILBI 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 and methods for assessment

¹⁷ See for example Articles 117, 118 and 205 of UNCLOS.

¹⁸ See for example Article 5 of the UNFSA.

(Article 51). The treaty could include specific references to building MCS capacity in order to reduce the burden of reporting requirements on developing States and assist them in meeting their obligations. The treaty could specify the types of MCS information States Parties are obliged to share through the clearing-house mechanism. For example, flag States can be obliged to report on accessed MGR from ABNJ to the clearing-house mechanism after the material has been deposited.

5.3. Incorporating a MCS strategy into proposals for management measures

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 (4)). The treaty could further require submission of a MCS strategy that considers the possible technological tools and institutional frameworks available to ensure compliance. Incorporating a MCS strategy for ABMT proposals could provide an initial indication of the resources required to ensure effective MCS of the proposed measure¹⁹ and encourage States Parties to consider the kinds of MCS tools they have at their disposal for different kinds of ABMTs.²⁰

For example, this could include consideration of innovative technological tools, such as satellite monitoring, for large MPAs; and consideration of potential partnerships and capacity-building activities²¹ in relation to MPAs adjacent to coastal States or seeking to manage a particular marine feature or human activity. To this end, the treaty could also invite relevant bodies, such as RFMOs, to provide information regarding their MCS activities and possible role in enforcing ABMTs.

6. Conclusion

Monitoring, control and surveillance is the implementing tool for States to meet international obligations regarding human activities in areas beyond national jurisdiction. A wide variety of MCS tools are available to monitor and enforce rules in ABNJ. However, the reliance on flag State responsibility, governance gaps in ABNJ and the lack of capacity of many States to take MCS measures make it challenging to efficiently and effectively regulate and monitor human activities and enforce the law in ABNJ. In order to strengthen MCS in ABNJ, a new international instrument could reinforce existing MCS obligations and principles, develop a strong role for the clearing-house mechanism and require proponents of management measures, such as protected areas, to include a MCS strategy in their proposals.

Author statement

No author statement necessary.

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¹⁹ Regulatory bodies often fail to map the full costs of MCS programmes, even though some costs (e.g. for satellite data) are relatively easy to plan for [29].

²⁰ Such MCS strategy could also be of use for MCS of MGRs and EIAs.

²¹ See e.g. the cooperation between the government of Palau and the Project Eyes on the Seas on MCS of national marine sanctuaries: <https://www.pewtrusts.org/en/research-and-analysis/articles/2016/05/13/palau-releases-plan-to-monitor-and-enforce-national-marine-sanctuary> and Conservation International’s collaboration with government institutions on MCS in MPAs in the Southeast Pacific: <https://www.conservation.org/blog/illegal-fishing-persists-in-protected-waters-heres-how-were-fighting-it>.

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