

Ninth Report of the CODE PROJECT

**Enforcement of Deep-Sea Mining Regulations at Sea:
Unpacking the Tangle of Overlapping Jurisdictions in
International Waters**

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MEMBERS OF THE CODE PROJECT

David Billett UK, Deep Sea Environmental Solutions

Neil Craik Canada, University of Waterloo

Duncan Currie New Zealand, Globelaw

Anindita Chakraborty US, The Pew Charitable Trusts

Tara Davenport Singapore, National University of Singapore

Laleta Davis Mattis Jamaica, University of West Indies

Andrey Gebruk Russia, Shirshov Institute of Oceanography

Kristina Gjerde US, IUCN Global Marine and Polar Programme

Renee Grogan Australia, Independent Consultant

Maila Paisano Guilhon e Sá Brazil, Research Institute for Sustainability (Germany)

Aline Jaeckel Australia, University of Wollongong (Australian National Centre for Ocean Resources & Security)

Daniel Jones UK, National Oceanographic Centre

Hannah Lily UK, Independent Legal Consultant

Kevin Murphy UK, KM Environmental Consulting

Alberto Pecoraro Italy, Maqsut Narikbayev University (Kazakhstan)

Chris Pickens US, The Pew Charitable Trusts

Steve Roady US, Duke University School of Law

Samantha Robb South Africa, Independent Legal Consultant

Pradeep Singh Malaysia, Research Institute for Sustainability (Germany)

Torsten Thiele Germany, Global Ocean Trust

Phil Weaver UK, Seascope Consultants

Daniel Wilde UK, Commonwealth Secretariat

Lily (Xiangxin) Xu China, Shanghai Jiao Tong University

The Code Project is a cooperative enterprise of 23 scientists and legal scholars from 14 nations. Its mission is to provide analyses of the regulatory framework for deep-sea mining under development at the ISA with a view to developing precautionary and environmentally sound regulations that would ensure the protection of the marine environment from the effects of mining.

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By: Hannah Lily and

Laleta Davis Mattis, Renee Grogan, Aline Jaeckel, Steve Roady, Samantha Robb, Phil Weaver

Review and editing by: Anindita Chakraborty, Julian Jackson, Chris Pickens.

ABSTRACT

The International Seabed Authority (ISA), as an intergovernmental agency, has specific and limited jurisdiction, and cannot exercise full regulatory control over miners. The ISA will need to rely upon various States' cooperation to assist with monitoring and enforcement actions. This paper examines the patchwork of jurisdictional rules that will apply to deep-sea mining beyond national jurisdiction, and discusses how these could be addressed in the mining regime under development at the ISA. This includes the roles, established under different international agreements, of the 'sponsoring State' for the mining activity, the 'port State' where the vessels (and ore) will disembark, and the 'flag State' with responsibility for maritime and navigational matters on the high seas – who may in practice each be different countries, and may not even be members of the ISA and hence not subject to its rules. The paper offers insights aimed to avoid the ISA regime creating jurisdictional loopholes.

Introduction:

Deep-sea mineral-related activities beyond national jurisdiction ('DSM') are managed by the intergovernmental agency, the International Seabed Authority (ISA). However, the ISA cannot act in isolation, and relies upon State actors assuming various regulatory roles in cooperation with the ISA. These actors include:

- (i) the State that sponsors the ISA contract ('the sponsoring State'),
- (ii) the State to which DSM vessels are registered ('the flag State'), and
- (iii) the State whose port is used for disembarkation and docking of vessels involved in DSM ('the port State').

Understanding how these various roles and responsibilities intersect with the ISA's regulatory framework presents a tricky but critical challenge to enable DSM to be properly regulated.

This paper discusses jurisdictional issues at play in the inspection, compliance and enforcement regime of the ISA, identifies potential gaps in the legal framework, and makes recommendations designed to address these.

What scenarios could arise due to jurisdictional conflicts or confusion? Here are some examples (taken from section B of this paper, below).

1. A flag State lawfully exercises its exclusive jurisdiction on the high seas to refuse to allow ISA inspectors to board.
2. An ISA inspector observes a vessel involved in DSM causing ship-related pollution, or mistreating crew members; and is powerless to take any action to prevent it.
3. A vessel involved in DSM unlawfully pollutes the marine environment from discharges that combine waste streams from general shipping operations and from DSM: rendering it unclear

whether this falls within the ISA regime enabling enforcement action, or within the flag State's jurisdiction.

4. A vessel used for DSM purposes is also used for criminal activities e.g. transporting illicit cargo on the barges used to transport the ore; or is under the beneficial ownership of a proscribed terrorist organisation or international war criminal, and the ISA has no powers to address this.

A: STATE OF PLAY

The role of the ISA: The ISA is the intergovernmental agency established by the UN Convention on the Law of the Sea (UNCLOS), through which its States Parties shall 'organise and control activities in the Area'.¹ The ISA is required by UNCLOS to develop 'rules, regulations, and procedures' ('RRPs') to deliver its mandate,² which includes ensuring the effective protection of the marine environment from harmful effects of DSM,³ ensuring protection of human life,⁴ safety aspects for installations used in DSM in the Area,⁵ inspecting Contractors' DSM operations, and ensuring Contractor compliance with the RRP.⁶ Under these RRP, the ISA issues contracts to States or State-sponsored entities ('Contractors'), allowing them to conduct DSM.⁷ The ISA is currently developing its RRP for exploitation in the Area.⁸

The role of sponsoring States: All ISA contracts (unless held solely by the Enterprise⁹) must be associated with at least one State party to UNCLOS, which is known as the sponsoring State.¹⁰ A sponsoring State has a responsibility to ensure that the DSM under its sponsorship is carried out in conformity with UNCLOS, the RRP and the terms of its ISA contract,¹¹ and also to assist the ISA in its function to control those DSM operations.¹² Sponsoring States are required to have legislation and appropriate national mechanisms in place to ensure compliance by their sponsored Contractor with UNCLOS and the RRP of the ISA.¹³ Sponsoring States also have direct obligations themselves to legislate and enforce rules for the protection of the marine environment, including the obligations set out in Part XII of UNCLOS: e.g. to protect and preserve the marine environment, and to prevent, reduce and control pollution from DSM undertaken under their sponsorship.¹⁴

While UNCLOS indicates that both the ISA and the sponsoring State are responsible to secure

¹ UNCLOS, Article 157

² UNCLOS, Part XI e.g. Articles 145, 146, 147, 153 etc.

³ UNCLOS, Article 145.

⁴ UNCLOS, Article 146.

⁵ UNCLOS, Article 147. Noting that this provision gives ISA legal competence to place safety restrictions on installations used for DSM in the Area (but does not give any legal competence over ships used for DSM in the Area, nor ships navigating around them).

⁶ UNCLOS, Article 153(4) and (5), and Article 162(2)(z)

⁷ UNCLOS Article 153(3).

⁸ <https://www.isa.org.jm/the-mining-code/draft-exploitation-regulations/>

⁹ The Enterprise is the in-house mining organ of the ISA, established by Article 170 and Annex IV of the United Nations Convention on the Law of the Sea

¹⁰ UNCLOS, Article 153(2)

¹¹ UNCLOS Article 139

¹² UNCLOS Article 153(4).

¹³ UNCLOS Article 139, and see also the International Tribunal for the Law of the Sea, Seabed Disputes Chamber Advisory Opinion no.17 of February 2011: https://www.itlos.org/fileadmin/itlos/documents/cases/case_no_17/17_adv_op_010211_en.pdf, paras 117-120.

¹⁴ UNCLOS, Articles 192 and 209.

Contractor compliance with UNCLOS and the ISA's RRP, ¹⁵ it does not provide clear guidance on how this will work in practice, save for an indication that the State would 'assist' the ISA in its compliance function. ¹⁶ This leaves ambiguity around the division of responsibilities between ISA and sponsoring States, both in legal and in practical terms. Arms-length compliance measures may also be difficult in situations where Contractors are State-owned. In the absence of a steer at the international level, it can be seen that sponsoring States are each taking different approaches to their regulatory role, ¹⁷ ranging vastly between 'minimal' or 'optimal' standards in their domestic regime. ¹⁸ This exposes the regime to inconsistency, and potentially even 'forum-shopping' for 'sponsoring States of convenience'. ¹⁹

The role of Flag States: DSM "will involve a range of vessels, from conventional ships such as offshore supply vessels and bulk carriers, to a range of installations, including floating platforms, floating and submerged structures, submersibles and craft operating on the seabed." ²⁰ Ships used to conduct DSM will fall under a shipping regulatory regime implemented by the flag State, i.e. the country to which the ship is registered. There can be only one flag State, and the ship shall be subject to that State's exclusive jurisdiction on the high seas. ²¹ The jurisdiction of the flag State extends to the ship and its master, officers and crew, in respect of 'administrative, technical and social matters concerning the ship'. ²²

As noted above, UNCLOS (Part XII) also prescribes a general obligation on its States Parties to adopt and enforce laws and regulations (nationally and globally) for protection of the marine environment, ²³ and this applies equally to flag States. Key international instruments dealing with pollution, collision, safety of life at sea, etc. have been adopted by international organisations like the International Maritime Organisation (IMO) and the International Labour Organisation (ILO). The flag State's jurisdiction must be exercised with reference to such instruments (see Table 1, below).

This means that RRP to be adopted by the ISA need to be informed by, and not undermine, those existing rules – whilst filling in any gaps in regulation that may exist in relation to DSM specifically. If the ISA adopts RRP that are inconsistent with any flag state rules, this will create legal uncertainty, as

¹⁵ UNCLOS Article 153(4) and Article 139(2).

¹⁶ UNCLOS Article 153(4).

¹⁷ See the ISA-commissioned study (undated and unattributed), available on the website here: https://www.isa.org.jm/wp-content/uploads/2022/04/Comparative_Study_NL.pdf.

¹⁸ Xu, X.; Li, M.; Xue, G. Revisiting the "Responsibility to Ensure": Two-Line Standards of the Sponsoring State's National Legislation on Deep Seabed Mining. *Sustainability* 2023, 15, 8095. <https://doi.org/10.3390/su15108095>.

¹⁹ See: Willaert, K (2020) 'Forum shopping within the context of deep sea mining: Towards sponsoring States of convenience?' 1 *Belgian International Law Review* 116–1; and Willaert and Singh (2021) 'Deep Sea Mining Partnerships with Developing States: Favourable Collaborations or Opportunistic Endeavours?' *International Journal of Marine and Coastal Law* 36 <https://www.researchgate.net/publication/349965633>.

²⁰ ISA, 'Technical Study 25: Competencies of the ISA and the IMO in the context of activities in the Area': <https://www.isa.org.jm/documents/20152/>

²¹ UNCLOS, Article 92.

²² UNCLOS, Article 94(2)(b).

²³ UNCLOS, Articles 192, 209, 210, 211.

flag states are already bound by existing international law on flag state responsibilities; and where the flag state is not an ISA member, any new rules will simply not apply.

Table 1: Non-exhaustive examples of relevant treaties that provide flag State responsibilities.

Who hosts	Convention	Subject	Application
International Maritime Organisation ('IMO')	Convention on the International Regulations for Preventing Collisions at Sea, 1972 (COLREGs) ²⁴	Prevention of collisions, including traffic separation schemes, lights and signalling rules.	All vessels on the high seas.
IMO	International Convention for the Safety of Life at Sea, 1974, as amended (SOLAS)	Minimum standards for the construction, equipment, and operation of ships, compatible with their safety.	Ships on international voyage (excluding war ships, cargo ships <500 tons, pleasure yachts, fishing vessels).
IMO	International Convention on Standards of Training, Certification and Watchkeeping, 1978	Training, certification and watchkeeping for seafarers.	All seafarers serving on board sea-going ships, except warships, fishing vessels, pleasure yachts.
IMO	International Convention for the Prevention of Pollution from Ships, 73/78 (MARPOL).	Prevention of pollution of the marine environment by ships (from oil, bulk noxious liquid substances, harmful packaged substances, sewage, garbage; air pollution)	All ships and fixed and floating platforms.
International Labour Organisation	Maritime Labour Convention 2006	Conditions of work for seafarers (minimum age, employment terms, onboard medical care, recruitment, accommodation and subsistence, health and safety protection, complaint handling)	All persons employed or engaged or working in any capacity on board all ships engaged in commercial activities. Exclusions for fishing vessels and warships.

The role of Port States: Port States are given rights by some Conventions to exercise control over vessels in their ports, and there is a growing body of customary international law, as well as several multilateral memoranda of understanding, supporting port State jurisdiction.²⁵ Seventy-six members, including the European Union on behalf of its member States, are also parties to the FAO's 2009 Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing.²⁶ The IMO describes port state control as a 'safety net' (underlying the flag state regime) by which non-compliant ships can be caught.²⁷ Though the port State jurisdiction has been focused to date largely on inspections relating to IMO Conventions on safety or pollution, or fisheries, and not ISA RRP, UNCLOS does also enable investigations and proceedings by a port State 'in respect

²⁴ Navigational safety may become particularly important if activities in the Area lead to substantial increase in maritime traffic in the high seas.

²⁵ E.g. the Caribbean: https://www.caribbeanmou.org/sites/default/files/Approved_MOU_Jan_20_2020_Rev.9.pdf; European Coastal states: <https://parismou.org/about-us/organisation>. Asia-Pacific region: <https://www.tokyo-mou.org/>; West and Central Africa: <https://abujamou.org/en/>; the Black Sea: <https://bsmou.org/>; Indian Ocean: <https://www.iomou.nic.in>.

²⁶ For example, <https://www.fao.org/port-state-measures/background/history/en/>

²⁷ <https://www.imo.org/en/ourwork/msas/pages/portstatecontrol.aspx>

of any discharge from that vessel outside the internal waters, territorial sea or exclusive economic zone of that State in violation of applicable international rules and standards'.²⁸ This could be relevant to a ship conducting activities in the Area.

B: JURISDICTIONAL INTERSECTIONS FOR ACTIVITIES IN THE AREA

ISA, sponsoring States and flag States: Where ships on the high seas are used for DSM and supportive activities, the flag State will have jurisdiction and responsibility for the safe operation of ships, the wellbeing of the ship's crew, and also for environmental impacts and pollutants from the regular operations of the vessel. The flag State would not, however, have jurisdiction over ensuring compliance with ISA RRP, nor the environmental impacts and pollutants arising from the mining (or exploration) operations, which would fall to the sponsoring State – even though the activities may be occurring from the same vessel. A technical report by the ISA and the IMO ('Technical Study 25') studying the interface between the varying obligations and competencies of the two organisations and their associated mandates, notes the possibility that there ends up being '*two different regimes in UNCLOS, deep seabed mining in part XI and navigation and shipping (which cuts across UNCLOS), juxtaposed and overlaid*'.²⁹ As we note below, the distinction between what activities or discharges fall within one regime or another, may not be clear-cut.

Some shipping Conventions and flag State laws may apply to certain classes or tonnages of vessel only (for example, the International Convention on the Control of Harmful Anti-fouling Systems on Ships), which may exclude the types of ships used for DSM.³⁰ Others may apply only within national jurisdiction, and not to vessels engaged in DSM in the Area (for example, the Protocol to the Convention for the Suppression of Unlawful Acts Against the Safety of Maritime Navigation).³¹ Whether sponsoring States and/or flag States can extend the application of such standards to ships engaged in DSM in the Area remains unclear.³² There are also potential environmental impacts which are expressly excluded from shipping regimes, but do not appear to be covered by the ISA's current rules (for example air emissions and energy efficiency standards for installations engaged in DSM).³³ Other standards may apply selectively only to some personnel or activities on a vessel conducting DSM in the Area, but not to other personnel or activities (e.g. IMO training regulations will apply to persons defined as seafarers, which will not be all workers engaged in DSM operations; some waste streams from the vessel will fall under maritime rules, and others under ISA rules).³⁴

There are further permutations depending on whether the mining vessel itself is legally classified not as a 'ship' but as an 'installation'³⁵ - which may be the case if it doesn't move from the mine site over

²⁸ UNCLOS, Article 218.

²⁹ ISA, 'Technical Study 25: Competencies of the ISA and the IMO in the context of activities in the Area': <https://www.isa.org/im/documents/20152/>

³⁰ Aldo Chircop, Alfonso Ascencio-Herrera & Fredrik Haag (submitted 2021), "Coordinating UNCLOS Regimes: An Analysis of the Interface of the Competencies of the ISA and IMO with respect to Activities in the Area" in [Marine Bioprospecting, Biodiversity and Novel Uses of Ocean Resources: New Approaches in International Law](#) eds. Niels Krabbe and David Langlet (Bloomsbury, 2024) DOI: 10.5040/9781509968305.ch-006, pages 97–124.

³¹ Ibid.

³² Ibid.

³³ Ibid.

³⁴ Ibid.

³⁵ Part XI of UNCLOS appears to envisage activities in the Area being conducted from '**installations**' rather than ships. 'Installation' however, is not defined in UNCLOS, though is differentiated from items such as lighthouses [Article 7], artificial islands [Article 11], systems of communication [Article 19], navigational aids [Article 21], pipelines [Article 145] and also [throughout UNCLOS] 'ships', 'facilities', and 'equipment'. Generally an installation is understood to be a human-made structure (usually for the purpose of exploration or exploitation of marine resources) – such as a platform or rig used for oil and gas production. It seems from UNCLOS, however, that an installation *can* be registered with a flag State (By inference from UNCLOS Articles 109 and 209, rather than being clearly stated.) But may not be, in which case (if the installation is being

lengthy periods. An installation on the high seas may be subject to the jurisdiction of a flag State or ISA sponsoring State, depending on registration status. The latter scenario is interesting, as it would bring the vessel and the DSM operations under the jurisdiction of one State. However, it also presupposes that the sponsoring State will have relevant laws in place responsible for surveys, inspections and enforcement in relation to installation-related matters: i.e. seaworthiness, navigation, operating standards, crew well-being, installation-related pollution. This is unlikely to be included in the State's DSM sponsorship laws, as these tend to presume that maritime law and flag state responsibility will apply to shipping matters. To compound confusion, the jurisdiction under which an installation falls may even change over time, for example being registered with a flag State at the outset and for transit to the mining site, but moving to sponsoring State jurisdiction at a later point when that registration ends.

There is little evidence to suggest that the sponsoring State for activities in the Area, and the flag State of the vessels used for those activities, will be the same State.³⁶ Indeed not all of the current 20 sponsoring States have a shipping registry (or maritime laws, or are signatory to relevant IMO conventions). Some other of the current sponsoring States are either grey-listed or black-listed as shipping registries, according to different listings conducted under various maritime agreements (and other ratings initiatives).³⁷

There is no stipulation in the ISA's current Exploration Regulations, or currently in the draft Exploitation Regulations (as of November 2023) that the flag State must be:

- the sponsoring State, or even
- a member of the ISA, or
- signatory to specific maritime conventions (e.g. around safety, pollution, or worker rights) or,
- 'white-listed' as a shipping registry, according to relevant rating initiatives.

The Cook Islands' Seabed Minerals Act states that vessels used by its Contractors must be registered with 'a reputable shipping registry' and comply with the laws of the flag State³⁸ but other sponsoring laws do not appear to cover this point.

As noted above, where the mining vessel is under the jurisdiction of a flag State which is different from the sponsoring State, an unusual scenario may present itself where the ship (and its crew, navigational equipment etc) is under the exclusive jurisdiction of the flag state, but any specialist DSM operations (and personnel, equipment etc) - as opposed to ship operations - would separately fall under the jurisdiction of the sponsoring State. This set-up could lead to significant gaps in the overall regime for DSM, whereby e.g.:

used to conduct activities in the Area) it seems likely it would by default fall under the jurisdiction of the sponsoring State. UNCLOS also contains specific requirements for installations used for activities in the Area, which it does not contain for ships (e.g. regarding warnings of their presence, not interfering with recognised sea lanes or intense fishing activity, having appropriate safety zones marked etc.) – UNCLOS Article 147. The rules applicable to a vessel used for activities in the Area may therefore vary depending on whether it is classified as an 'installation' or a 'ship'.

³⁶ Source: Meeting record from UNODC-ISA Expert Group Meeting on Enforcement-Related Issues of Deep-Sea Mining (Bali, Indonesia, 29-30 August 2022) [Author's own files]. As an example, due to incidents arising, there is public reporting of the Nauru-sponsored contractor NORI using vessels flagged to Denmark, and Malta, respectively (https://www.isa.org/jm/wp-content/uploads/2024/01/Second_report_of_the_SG_on_the_immediate_measures.pdf; https://www.isa.org/jm/wp-content/uploads/2023/02/ISA_inspection_report_NORI_mining_collector_system_test.pdf).

³⁷ E.g. the Tokyo MOU flag state rating, which looks at the proportion of each flag State's vessels that are detained upon inspection in port States in the Asia-Pacific regime. In the latest publication two ISA sponsoring States were grey-listed, and two were black-listed: <http://www.tokyo-mou.org/doc/Flag%20performance%20list%202020.pdf>. According to the International Transport Workers' Federation (a union body), as of 2022, five of the current sponsoring States are associated with 'flags of convenience' shipping registries: <https://www.itfseafarers.org/en/focs/current-registries-listed-as-focs>.

³⁸ Section 141(j) of the Cook Islands Seabed Minerals Act 2019 (as amended)

- i. A flag State lawfully exercises its exclusive jurisdiction on the high seas to refuse to allow ISA inspectors to board;
- ii. A vessel involved in DSM is applying sub-standard shipping practices causing e.g. pollution, high greenhouse gas emissions, mistreatment of crew members; and the ISA or sponsoring State are aware of these issues, but powerless to take any action to prevent them (save for reporting to the flag State);
- iii. A vessel involved in DSM causes harm to the marine environment and it is unclear whether this falls within the ISA regime, or the flag State regime, e.g.
 - i. Pollution occurs from discharge of a waste stream that combines shipping and DSM waste streams (e.g. greywater waste from the ship's plumbing system with dewatering discharge from the DSM collection).
 - ii. To transfer ore from the mining vessel to a barge, the ore is mixed with water and pumped across to the barge via a hose; this transport water is then removed from the ore and discharged back into the ocean from the barge, causing chemical changes and sediment dispersal at water surface.
 - iii. Light on the surface vessel used to illuminate the decks at night as a matter of maritime safety, adversely impacts birds, mammals or plankton due to the length of time and lack of movement of the vessel, which arises due to its use for DSM.
- iv. An ISA or sponsoring State inspector identifies evidence of criminality on the vessel (e.g. illicit cargo on the barges also being used to transport the ore), but does not have powers to seize that evidence, or intervene in those matters;
- v. A vessel used for DSM could be under the beneficial ownership of a proscribed terrorist organisation, international war criminal, or similar, who could benefit financially from the activities.

These issues are compounded by persistent concerns about inadequate flag State enforcement or control, and 'flags of convenience' (for foreign-owned vessels with little or no presence in the country of registration).³⁹ The only available recourse for a State concerned or affected by a flag State's apparent neglect to exercise appropriate jurisdiction and control over its vessels, is only to report that matter to the flag State for their investigation.⁴⁰

There may be further issues arising from a flag State having delegated its responsibilities to a private sector 'classification society', and/or re-flagging (i.e. a vessel changing its country of registration to avoid sanctions), and/or beneficial owners of vessels not being nationals or residents of the flag State or maintaining secrecy or complex corporate structures to obfuscate their identity.⁴¹

ISA, sponsoring States and port States: Minerals extracted from the Area will need to be transported from the site at-sea to a port for onward transport, refining and/or sale. This will most likely be done by a series of barges, allowing the mining vessel to stay in position at-sea. There are also likely to be supply vessels going to and from the mining vessel and ports to re-stock with food and other necessary

³⁹ See, for example: Zwinger, T, 'Duties of Flag States to Implement and Enforce International Standards and Regulations - And Measures to Counter Their Failure to Do So' (2011) *Journal of International Business and Law*: Vol. 10: Iss. 2, Article 5. Available at: <http://scholarlycommons.law.hofstra.edu/jibl/vol10/iss2/5>. Also Scanlon, Z, 'Addressing the Pitfalls of Exclusive Flag State Jurisdiction: Improving the Legal Regime for the Protection of Submarine Cables' (2017) 48(3) *Journal of Maritime Law and Commerce* 297, 333 Google Scholar.

⁴⁰ UNCLOS, Article 94(6). Also: ITF and WWF (2008) 'Real and Present Danger: Flag State Failure and Maritime Security and Safety' https://www.itfglobal.org/sites/default/files/resources-files/flag_state_performance.pdf.

⁴¹ See OECD (2004) 'Maritime Security – Options to Improve Transparency in the Ownership and Control of Ships' [https://one.oecd.org/document/DSTI/DOT/MTC\(2004\)3/REV1/En/pdf](https://one.oecd.org/document/DSTI/DOT/MTC(2004)3/REV1/En/pdf).

items, and to exchange personnel etc. Embarkation and off-loading at port, may be an important checkpoint for DSM-related inspections. However, the ISA has no jurisdiction outside of the Area, and there is little evidence to suggest that the sponsoring State⁴² and the port State will be the same State⁴² (or even that the port State will be an ISA member State).⁴³ As with flag States, this has the potential to lead to a loophole in the regime whereby the ISA and the sponsoring State may be prevented from accessing important sites and evidence pertaining to the mining project.

There may also be an equity issue if the State(s) in which contractors operate onshore are required by ISA to facilitate ISA inspection or enforcement functions (which may incur time and financial commitment) yet are not the State(s) benefiting financially from the contract sponsorship or the minerals produced.

The ISA's Technical Study 25 noted that an interesting loophole in international shipping regulation could also arise if a ship is engaged on an 'international voyage', i.e. it leaves from one port of departure and arrives at a different port of arrival, then most international maritime rules and standards will apply. However, a ship that leaves from and returns to the same port, even where it may traverse the high seas in between, is deemed to be 'on cabotage' which is treated as a domestic shipping matter excluded from many international shipping rules (for example, anti-pollution treaties regarding anti-fouling paint, or ballast water disposal).⁴⁴ This scenario may apply to support vessels conveying supplies and personnel to a mining vessel engaged in activities in the Area, barges bringing ore from the mining vessel to port, and also to the mining vessel itself.

C: ADDITIONAL REGULATORY GAPS

There is additional potential for regulatory responsibilities to fall through the cracks. For example, MARPOL Annex VI excludes from its scope air emissions directly arising from DSM. But the ISA's regime does not currently cover air emissions. This means greenhouse gas emissions from DSM (as opposed to those arising from shipping) may be unregulated. Furthermore, there may be emissions reporting requirements or targets for *some* contractors, due to lender agreements, or domestic law requirements of the country in which the contractor is headquartered. But this will be inconsistent across contractors, and hardly meets 'the principle of nondiscrimination among contractors'.⁴⁵

To add further complexity to jurisdictional issues that arise depending on the kind of vessel being used is the question of how marine technologies, not easily captured by the definition of 'ship' if at all, such as seabed excavators, collectors, and pipelines will be governed. These may be outside the scope of international shipping regulations and so may present new regulatory challenges for ISA.⁴⁶

Additionally, some instruments explicitly exclude DSM from their ambit, but the ISA is yet to cover those issues within its own RRP. For instance, the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972 and its 1996 Protocol, known as the London

⁴² Source: Meeting record from UNODC-ISA Expert Group Meeting on Enforcement-Related Issues of Deep-Sea Mining (Bali, Indonesia, 29-30 August 2022) [Author's own files]. See also: in the news on 13.11.2023, the Nauru-sponsored ISA Contractor announces plans to process their minerals in Japan, apparently using the port State of Hachinohe – some 8000km from the mine site (and 5000 km from Nauru, where the ore will never land): <https://investors.metals.co/news-releases/news-release-details/tmc-and-pamco-sign-binding-mou-complete-feasibility-study>.

⁴³ It is notable that in the first inspection visit conducted by the ISA (in 2022) a vessel used in the relevant activities in the Area was docked in San Diego, USA: https://www.isa.org.jm/wp-content/uploads/2023/02/ISA_inspection_report_NORI_mining_collector_system_test.pdf

⁴⁴ ISA, 'Technical Study 25: Competencies of the ISA and the IMO in the context of activities in the Area': <https://www.isa.org.jm/documents/20152/>

⁴⁵ See e.g. UNCLOS Article 152(1) and 1994 Agreement, Annex, section 1(15)(c).

⁴⁶ Technical Study 25 notes that submersibles are covered by some IMO regulations (e.g. MARPOL) but not others (e.g. COLREGs).

Convention/Protocol or LC/LP, lists material whose dumping is permitted and prohibits dumping of other materials. However, the LC/LP expressly does not apply to the disposal of waste directly arising from activities in the Area. This exclusion apparently occurred because it is presumed the ISA will cover such matters in its own regulations, and the London Convention drafters wished to avoid jurisdictional clashes.

A final issue worth interrogation is whether there is potential for ISA Contractors that are themselves States to claim a ship used for DSM as a 'Government ship for non-commercial purposes' which could allow it to evade regulation – and provide legal immunity.⁴⁷

D: RECOMMENDATIONS

The above analysis shows a complicated patchwork of legal provisions and jurisdictions, with unclear delineations for different regulators involved in DSM. This could hinder the ISA's or sponsoring State's ability to deliver on its mandate. The ISA has an opportunity now, as it develops the regulations for exploitation, to consider whether there are actions it could take to avoid potential hindrance to its inspections or enforcement actions, or which could result in jurisdictional disputes. Indeed we recommend that such jurisdictional issues should be resolved *before* any exploitation applications are entertained by the ISA, as proper assessment of any application will require information about the flag State and port State.

The following are preliminary suggestions for ways forward, in approximate order of priority. Whilst the list may seem daunting, it should be seen as imperative for the development of a cohesive and comprehensive regulatory regime at the ISA. To share the lift, the ISA Secretariat could seek collaboration with other relevant and competent organisations.⁴⁸ This can be a way to bring diverse expertise, learning from other sectors, and additional resources to facilitate the recommended actions.

- a. Convene more detailed discussions between relevant actors, and ISA member States in particular, to ensure mutual understanding of the issues and responsibilities. This may include exercises to map out relevant outstanding questions, or scenario planning.
- b. Convene expert technical groups between ISA and IMO bodies to clarify and report to relevant ISA organs on specific legal questions, e.g.
 - i. Which vessels used in DSM will be defined as 'ships' and which as 'installations' for the purposes of IMO treaties, and do any regulatory gaps arise as a result?
 - ii. Will machinery and equipment used for DSM fall outside of the definition of 'ship' and/or 'installation' and do regulatory gaps arise as a result?
 - iii. For vessels used in support of DSM, what aspects of the ship's operation, equipment and personnel fall under, or outside of, flag State jurisdiction?
 - a. Are there grey areas (e.g. impacts that arise from a combination of both mining and shipping activities) that may require specific definitions and clarification from the ISA about jurisdictional competencies?

⁴⁷ UNCLOS, Article 32.

⁴⁸ For example, the UN Office of Drugs and Crimes Maritime Crimes Programme; the Joint FAO/ILO/IMO Ad Hoc Working Group on Illegal, Unreported and Unregulated Fishing and Related Matters - and each of those institutions individually also.

- b. Can it be clarified whether aspects that fall outside of flag State jurisdiction, are covered by sponsoring State jurisdiction, and/or should be included within ISA regulation?
 - iv. Are there existing rules (under IMO and ILO auspices) that do not apply to activities in the Area, but which the ISA regulations could draw or rely upon to extend the same standards to activities in the Area?
 - v. Where the ISA or a sponsoring State envisages on-vessel in situ inspection (or monitoring equipment) on a ship conducting DSM, could the flag State object to their presence on the ship? Must the inspection team (or equipment) avoid capturing any matters within flag State jurisdiction? Is this practicable; how will it be managed?
 - vi. Where the ISA or a sponsoring State envisages an on-vessel inspection of a ship onloading or offloading materials or personnel at port, could the port State object to their presence on the ship? What proactive steps could be taken to facilitate such processes?
 - vii. What reporting and follow-up can or should be followed if concerns regarding areas of flag State responsibility, or port State responsibility, are identified during an ISA or sponsoring State inspection activities; and who is eligible to engage in that process?
 - viii. Should or can ships' owners, and/or financial or management institutions behind ship ownership and/or classification registries be included in the ISA's regulatory regime in any way?
- c. Consider options to address identified issues in the RRP for exploration or exploitation. This may include:
 - i. Requirement for an applicant in their plan of work for DSM to provide information to the ISA of the flag State(s) and port State(s) that it plans to use in its operations, and for that to be incorporated into the Plan of Work as a requirement (requiring pre-notification to the ISA and approval, before such details can be revised - see (iv) below).
 - ii. A requirement in ISA RRP that only UNCLOS States parties (or States who otherwise expressly agree to be bound by the ISA RRP) may be used as flag States and port States for vessels used in DSM.
 - iii. Further stipulation from the ISA about what flag States and port States may be used, perhaps with reference to multilateral agreement 'white-lists' (or the Council reserving the right to issue decisions about this in the future e.g. in the event there is systematic failure by a flag State to control vessels used in DSM).
 - iv. A requirement for the Contractor to apply for prior approval from the ISA before any 're-flagging' or identity change for any vessel used for or to support DSM.
 - v. Relevant powers reserved for ISA inspectors (and representatives of relevant States) to board and inspect any vessels used for DSM. (Seeking helpful lessons from other multilateral processes e.g. the UNCLOS Agreement for the Conservation and Management of Straddling and Highly Migratory Fish Stocks).
 - vi. Relevant powers reserved for ISA (and representatives of relevant States) to access evidence from vessels, personnel, equipment, or other items, as vessels used in DSM disembark or dock in ports (including via prior agreement with maritime authorities in named port States).
 - vii. Stipulation that a 'Government ship for non-commercial purposes' cannot be used for the purpose of DSM.

- viii. Prescription that the standard definition of ‘cabotage’ will not apply for vessels associated with DSM activities.
- d. Consider other measures.
 - i. The ISA could develop templates and enter into bilateral (or trilateral, with the sponsoring State) agreements with flag and port States identified in Contractors’ plans of work, to ensure appropriate coordination and facilitation of inspection and enforcement capabilities. This should be done prior to any contract award; or
 - ii. The ISA could require that such bilateral agreements are entered into by the sponsoring State, and require evidence of those arrangements, as a prerequisite to contract approval; or
 - iii. The ISA could stipulate minimum standards relating to port and flag states that it expects to see in sponsoring States’ domestic laws, and require evidence of this in an application for a Plan of Work.⁴⁹
 - iv. Sponsoring States could be supported (e.g. by relevant international organisations and multilateral technical and advisory agencies) to review national laws in light of the above issues, and to consider including in domestic laws and measures similar requirements (and compliance powers) as those proposed for the ISA in section (c), above.

⁴⁹ This seems within the scope of Article 4 of Annex III of UNCLOS: “*The criteria and procedures for implementation of the sponsorship requirements shall be set forth in the rules, regulations and procedures of the Authority*”.