

Global Agenda

Toward Transparency and Best Practices for Deep Seabed Mining

An initial multistakeholder dialogue

Bellagio, Italy 7-9 October

January 2016



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Acknowledgements

The Conference on Transparency and Best Practices for Deep Seabed Mining was hosted by the Rockefeller Foundation at its Bellagio Center in Bellagio, Italy, on the initiative of the World Economic Forum Global Agenda Councils on Oceans and the Future of Mining and Metals. The conference was organized by a steering committee comprised of the International Seabed Authority, RESOLVE, the Commonwealth Secretariat, the Institute for Advanced Sustainability Studies, and the University of California, San Diego.

Summary

The Conference on Transparency and Best Practices for Deep Seabed Mining convened representatives from industry, academic and civil society communities, national governments and international organizations to discuss a number of foundational issues in the design of a regulatory regime for deep seabed mining (DSM). The primary focus was to formulate initial consensus on transparency and best practices in DSM in general, as well as to inform the design of an exploitation code by the International Seabed Authority (ISA). A first draft of this code is intended to be issued in 2016. The conference was held under the Chatham House rule¹.

The conference spanned three days. The first day focused on information sharing and included presentations by participants on a number of framing issues in DSM, including legal and economic considerations, potential environmental impacts, and industry and developing country perspectives. The second day shifted to key issues, challenges, and responses, with a focus on five topics related to DSM: transparency in the function of DSM governance institutions; the design of an appropriate fiscal regime for deep seabed mining beyond national jurisdiction; the design of an appropriate set of regulations governing exploitation of deep seabed mineral resources; phases of mining; and the use of strategic environmental planning and creation of protected areas. The third and final day of the conference focused on discussion of a plan of work based on four challenges emerging from Day 2.

At the broadest level, the questions and issues addressed by the conference fell into three primary categories: procedural and operational matters, including the optimal design of institutions, processes and procedures to promote transparency, investment and good governance in DSM, as well as an adequate flow of financial and economic benefits from DSM; distributional issues, namely the role of DSM in fostering economic and social development, particularly for Small Island Developing States, and related economic and equity considerations; and finally, environmental issues, principally related to the potential negative consequences of DSM to the water column and for poorly-understood deep-sea species and benthic ecosystems. Several overarching challenges emerged from the deliberations, as did consensus on several best practices and priorities for further work and discussion. Participants also agreed on the need to create work groups to address the four key topics discussed on Day 3: Transparency, Fiscal Regime, Protected Areas and Data Management.

¹ When a meeting, or part thereof, is held under the Chatham House Rule, participants are free to use the information received, but neither the identity nor the affiliation of the speaker(s), nor that of any other participant, may be revealed. - See more at: <https://www.chathamhouse.org/about/chatham-house-rule#sthash.jnTbp7hE.dpuf>

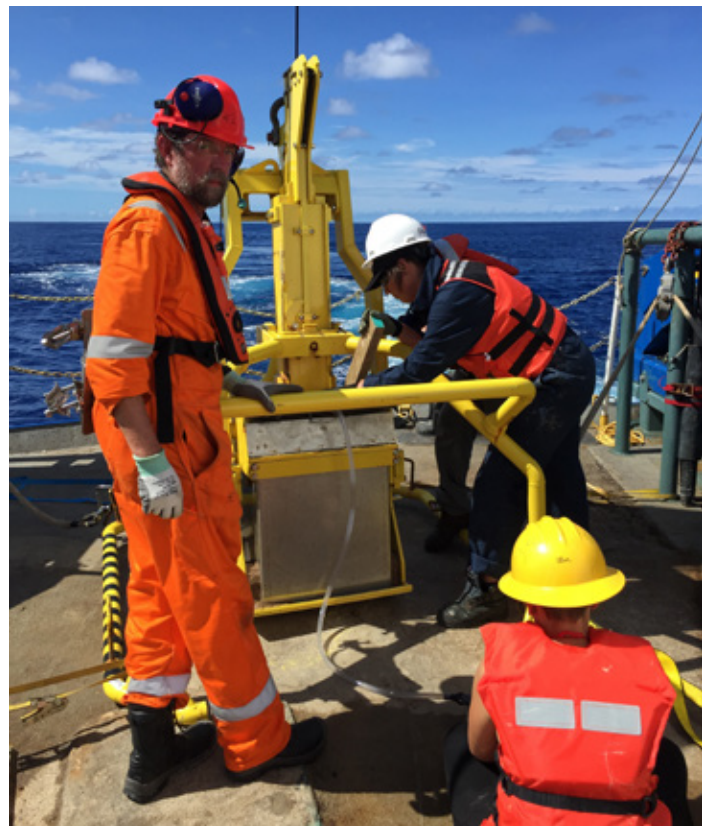
Findings

As a starting point, participants agreed that some form of DSM will likely take place in the near- to medium-term, despite cyclic, minerals market fluctuations, which can impact investment in minerals exploration generally, either within national jurisdictions or in *the Area* beyond national jurisdictions, which is subject to ISA regulation (there, the principle of the *common heritage of mankind* promulgated in the Law of the Sea Convention calls for the development of a robust, equitable and sustainable regime governing DSM.) Consensus also emerged on three basic principles regarding the design and refinement of the DSM governance framework: increase transparency throughout the DSM process, adopt measures to protect and mitigate potential impact on deep-sea species, habitats and their ecosystem services, and provide better information and knowledge-sharing to support decision-making.

Regarding the first of these principles, **increase transparency throughout the DSM process**, there was general agreement on the value of applying the three principles embodied in the Aarhus Convention² as a benchmark for promoting transparency – namely public participation in decision-making, access to information, and access to justice. Agreement was also generally reached on the need to increase transparency in some of the governance processes of the ISA, particularly in the work of the Legal and Technical Commission. The difficulties for some countries to adopt the EITI transparency process due to cost and convenience issues were raised. Participants also generally agreed that confidentiality will be required in some circumstances, but indicated it should not be the default position of contractors or regulators. Participants identified the need for further discussion on how to determine the balance between transparency and confidentiality as well as the identification of relevant stakeholders and the modalities of sharing and managing the large quantities of data entailed in DSM, including with regard to the scientific data gathered by exploration and development companies.

Another area of consensus concerned the need to **adopt measures to protect and mitigate potential impact on deep-sea species and ecosystems**. Participants generally agreed that such measures must be underpinned by better data than currently exist and that the opening of seabed areas to mineral exploitation should be accompanied by the creation of protected areas. As a general principle, the identification and designation of protected areas should precede rather than follow granting of exploitation concessions, in order to ensure that the network of protected areas captures and maintains important or

unusual ecological features as well as being representative of the species and ecosystems that will be disturbed by DSM activity. Participants identified the need for further discussion on how to address the pervasive lack of data on the deep-sea environment; what innovative financing mechanisms for environmental protection could be utilized; and finally, possible ways of protecting deep-sea marine biodiversity from other human activities outside of the mandate of the ISA. Several participants advocated incorporating the value of deep-sea ecosystem services into the governance structure, but there was general agreement that doing so would require significantly expanded scientific research and data collection. Additional suggestions raised in this respect concerned the application of marine spatial planning principles and the value of requiring a multi-sectoral Strategic Environmental Assessment (SEA) process on a national or regional basis. Questions were also raised about the relationship between SEA processes and site-specific Environmental Impact Assessment (EIA) processes. Furthermore, the need to develop guidance and rules concerning SEAs and EIAs, respectively, which would include a broad range of stakeholder input, was emphasized. Many participants emphasized that the designation of mining concessions necessitates identification and delineation of areas to ensure species and ecosystem protection.



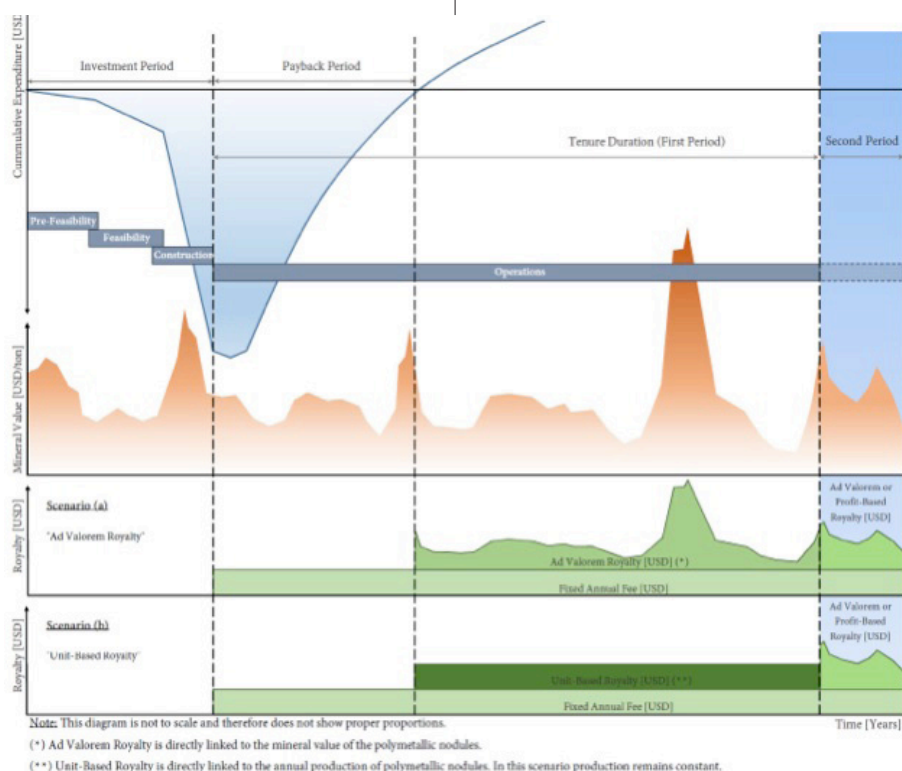
² Formally known as the United Nations Economic Commission for Europe (UNECE) Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters.

The third principle, **provide better information and knowledge-sharing to support decision making**, arose throughout discussions over all three days, underscoring the relevance of the topic. Transparency of data, decision-making processes and reporting were all identified as important components of an effective governance approach. There was consensus on the pressing need to establish good practices in promoting transparency before commercial exploitation commences, and the ISA's Legal and Technical Commission was often identified as a keystone body with considerable scope to influence these outcomes, both in the international arena as well as within national jurisdiction, through the setting of benchmark standards.

The group agreed these three principles should guide the development of a more robust governance structure for DSM, especially given rapid advances in deep-sea exploration technologies and the aspirations of industry to begin commercial exploitation of deep-sea minerals in the near- to medium-term despite cyclic, minerals market fluctuations, which can impact investment in minerals exploration generally. However, participants also identified the need for further dialogue on the prioritization of various elements of the deep-sea governance regime, including the design of environmental and fiscal regimes, especially the choice of revenue-raising instruments by both national jurisdictions and the ISA, and the design of investment vehicles for generating concentrated versus sustained income from DSM revenue. Participants also identified the need to further define the balance of interests between flexibility and adaptation with those of predictability and regulatory stability, particularly for industry. Industry and investment participants highlighted several distinct phases in DSM, ranging from initial exploration to sustained exploitation, each of which entails different levels of risk and operational and financial considerations, which these participants asked to be reflected in the design of the DSM governance regime.

Discussion on the fiscal regime for DSM in the Area focused principally on harvesting polymetallic nodules. The results built upon discussions that took place in relation to the fiscal regime during the Joint ISA-CIL Workshop on Mineral Exploitation in the Area held in Singapore in June 2015. In particular, it was recalled that there was consensus among participants in that workshop that any financial system should be simple and easy to implement and administer. Furthermore, a proposal had been made in Singapore for a transitional financial regime to encourage the growth of the seabed mining industry and ensure its sustainable development. Such a regime would comprise a simple fee structure of an annual flat fee and a royalty payment. To provide stability in the initial years, this regime should be in place for an appropriate length of time (10 years was suggested) after which there should be a review where any changes agreed upon would apply prospectively. The discussions also noted that with an exhaustible resource, the welfare of future generations should be contemporaneously considered with that of the current generation, creating equity between generations. Inter-generational equity impacts the institutional structure, timing, amount and method for benefits shared under the Common Heritage of Mankind.

Two different fiscal regimes were discussed (see the diagram below): 1) a hybrid fiscal regime comprised of a fixed fee during the long pay-back period for investors that is supplemented by an *ad valorem* royalty that incorporates changes in international market benchmark prices. The fixed fee can be set at a level to finance ISA operations that can include cost recovery by the ISA. Some participants felt it would be difficult to reach consensus on a fixed royalty alone during the payback period. However, the view was expressed during both the Singapore and Bellagio workshops that the royalty regime should start as simply as possible, given the embryonic state of the sector. Today the seabed mining industry is in its formative stages and it may take a few decades for the industry to mature and potentially prove economically viable at all. Copying fiscal regimes from mature industries may become a disincentive for investment in this new DSM sector.





Given the above, 2) it was suggested that a fiscal regime, comprised of a fixed fee for cost recovery by the ISA *that is supplemented by a unit-based royalty*, would be the easiest to administer while providing the most predictability for investors. As such, an appropriate time should be allowed for the sector to mature before *ad valorem* or profit-based royalties are foreseen. Specific issues of *ad valorem* royalties were also discussed, such as arm's length and transfer pricing, fixed rate over time or changing according to changes in an international baseline price, and vulnerability to changes in the fiscal regime (i.e., time inconsistency).

Consideration was also given to a profit-based payment following a long period of *ad valorem* or unit-based royalty, although it was noted that this requires reliable cost information from all firms to form representative and reliable costs and that the absence of an international and common tax and cost accounting code hampers application. A price ceiling and a price floor, creating a corridor of admissible prices for the *ad valorem* royalty, were recommended to minimize risks for both firms and States. To minimize potential currency risk, International Monetary Fund Special Drawing Rights, which is a basket of reserve currencies, were discussed as a unit of account to value the revenues upon which the *ad valorem* royalty is levied. The discussion also considered many of the remaining issues.

Due to the nature of the resource and potential extraction technology, environmental impacts from mining are unlikely to receive substantive remediation, if at all. Without remediation, mining firms would not bear corresponding remediation costs as they do with terrestrial mining. Seabed mining's environmental impacts could create liabilities that are both known and unknown. Known environmental impacts can be addressed by an environmental charge that differs from the *ad valorem* royalty and should be kept distinct. The environmental charge receipts can be placed into an environmental fund (or sustainability fund) that is distinct and ring fenced from the royalty receipts and may be used to fund, for example, activities that benefit the Area and its marine environment and which protect and preserve the marine environment, including vulnerable marine ecosystems and ecologically or biologically sensitive areas. Liability for environmental damage was also discussed, including unknown liabilities and strict liability rules and negligence rules. Both assurance bonds and insurance, whether private or administered through the ISA, were discussed as means of ensuring that funds are available to meet possible remediation measures needed due to unanticipated, unintended, or extreme environmental impacts. A liability fund, as suggested by the International Tribunal for the Law of the Sea in the Seabed Mining Advisory Opinion, was also discussed.

Finally, participants also voiced general agreement on the validity of incorporating a regional approach to regulation of DSM, including the creation of model legislation and policies, and encouraging dialogue and knowledge-sharing mechanisms among individual countries.

Issues and Challenges

Several over-arching issues emerged during the discussions, each of which poses challenges to the design of a robust and comprehensive DSM governance regime. The first of these concerned uncertainty owing to the lack of adequate data, caused by various reasons including the difficulty and cost of data collection, and the lack of sharing available data on nearly all aspects of the deep sea. As several participants pointed out, lack of understanding of deep-sea environments, and the logistical challenge of operating in such environments, each pose distinct barriers to the formulation of best practices for environmental protection, safety, and resource exploitation based on the precautionary principle. Significant uncertainty is likely to persist even if, as advocated by several participants, further resources are devoted to producing better data on the deep sea. A related issue, given the many unknowns, discussed but not resolved by participants, concerned the proper allocation of environmental, social, and financial risk among the ISA, national governments and industry. Industry and investor participants emphasized the need to ensure regulatory stability, particularly during the initial phases of resource exploitation when capital investment requirements, as well as risk, are highest. On the other hand, a certain degree of management flexibility, allowing for adaptation through experience, was also recognized. Environmental protection, the precautionary approach and the polluter pays principle were also raised. Critical to facing these challenges will be transparency and the ability of ISA to engage relevant expertise and all stakeholders in both providing advice and in decision making.

The second over-arching issue stemmed from the diversity and heterogeneity of deep-sea environments and resource types. A consistent theme, voiced by participants from various sectors, was the need to differentiate between mineral formations (i.e., seabed massive sulfides, manganese nodules, and cobalt-rich ferromanganese crusts) and attendant habitat types (i.e., hydrothermal vents, abyssal plains, and seamounts) respectively. Participants emphasized that each of these mineral types entails different approaches to mining with different environmental implications, and each habitat type raises particular environmental and ecological issues.

The third over-arching challenge related to how to address DSM governance under both national and international jurisdiction, as well as how to adequately address issues that are governed under different sectoral regimes (e.g., biodiversity protection in areas beyond national jurisdiction, which will be addressed in a future implementing agreement to be negotiated under UNCLOS).

The difficulties of bridging these divides led many participants to discuss how best to identify and convene relevant stakeholders in order to link the DSM governance regime to other sectoral regimes, including for biodiversity protection, fisheries, and marine pollution control. Participants from national governments also stressed the different interests and approaches of individual countries in initiating DSM in their respective jurisdictions, and highlighted the fact that while some countries have established regulations governing DSM, others have yet to do so, and still others lack the capacity to do so. Several participants identified this variation in the pace and stringency of regulation as a further reason that the ISA should refine its governance regime as quickly as possible so as to set an international benchmark against which varying national approaches can be measured and refined. Similarly, some participants indicated existing national legislation should be taken into consideration when developing ISA regulations, so as to not “re-invent the wheel” and to integrate emerging best practices. A number of participants averred that ISA standards could be critical in preventing a “race to the bottom” among countries seeking to attract DSM investment.



Action Items

Participants agreed on two sets of action items. The first of these were four next steps to advance the design of DSM governance. First, participants emphasized the need to communicate with peers and to broaden stakeholder participation in order to validate the conclusions of the conference. Many participants suggested a wider range of stakeholders should be involved in future gatherings related to DSM governance. A concern that the group may become too large or over-represent one sector if too many new entities were included in future meetings was also raised. Second, participants agreed to explore the possibility of leveraging the expertise of the World Economic Forum to conduct a DSM stakeholder analysis. Third, the group agreed to explore the possibility of holding a meeting in Africa to convey the lessons and conclusions of the workshop to African countries and stakeholders. Finally, the group agreed to explore the possibility of convening a stakeholder dialogue side-event on the margins of the next ISA annual meeting, to be held in July 2016, to discuss transparency.

The second set of action items pertained to the establishment of work groups to continue discussion of DSM governance issues, with the objective of contributing further to the ongoing ISA processes, as well as national efforts. Participants agreed on the value of maintaining, with some possible modification in composition, the conference Steering Committee to coordinate this further dialogue and communication. In addition, participants agreed on the value of creating an open-ended DSM Dialogue Group with four component work groups on the key issues in DSM governance identified by the conference: addressing transparency; designing a payment mechanism; implementing spatial environmental planning, including protected areas; and developing procedures for data collection, measures, and management.

Participants

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