



Developing a Regulatory Framework for Mineral Exploitation in the Area

Submission of the Deep Sea Conservation Coalition

Report to Stakeholders (ISBA/Cons/2015/1)
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Executive Summary

The Deep Sea Conservation Coalition (DSCC) welcomes this opportunity to make submissions on these very important regulations. This submission takes the form of an executive summary, summarizing the submission, detailed explanation of our submissions, and a detailed commentary on the Report, referenced to the Report.

Substantive Content of Regulations

1. *Establishment of a baseline:* Crucial elements include establishment of a robust environmental baseline that also identifies vulnerable marine ecosystems and ecologically and biologically significant areas. An environmental baseline is an essential and fundamental part of an environmental impact assessment that must be carried out before any extractive activity commences. A baseline establishes the existing environment, and will enable the ISA to both properly assess environmental impacts and put into place management strategies to protect the marine environment. A vital part of establishing the environmental baseline is the identification of ecologically or biologically sensitive areas (EBSAs) and vulnerable marine ecosystems (VMEs), and these areas should be taken into account when establishing Strategic Environmental Management Plans at relevant regional or bioregional scales as well as in site specific environmental impact assessments and management plans. This process will enable the ISA to develop appropriate management responses, including establishing protected areas, strategies to avoid significant adverse impacts (SAIs) to EBSAs and VMEs and in so doing to avoid serious harm to the marine environment.
2. *Accounting for all impacts:* Once an environmental baseline is established and VMEs and EBSAs identified, and all species and ecosystems identified in the mining footprint and also those which may be affected by mining, such as by a plume, applications must take into account all effects of the proposed mining. This must include direct, indirect and cumulative effects.
3. *Strategic Environment Management Plans:* Strategic Environment Management Plans (SEMPs) must be implemented on a regional basis prior to allowing commercial mining in individual claims within a region.
4. *Protected Areas:* A programme for identifying and establishing networks of protected and representative areas including marine reserves must be implemented, including to protect vulnerable marine areas, ecologically or biologically important areas, both under SEMPs and under site specific EMPs.
5. *An effective management response:* Management responses must then be implemented based on the EIA and identified effects, including the following:
 - Environmental bottom lines for species, populations and effects on the environment should be set.
 - VMEs and EBSAs should be protected.
 - A programme for identifying and protecting networks of protected areas must be implemented.

- A monitoring programme should be established and an early warning system implemented in case of accidents, incidents or unforeseen effects.
 - An environment bond should be required from the contractor to ensure that contractors comply with regulations and best environmental practice.
 - A Sustainability Fund should be established, for instance, to carry out environmental research where it is not otherwise being carried out.
 - Sharing of research data and facilities and cooperative research efforts should be facilitated and encouraged by the Authority.
 - Best known environmental practices must be adopted by applicants. These should be updated as necessary. Co-operation between contractors should be encouraged.
6. Additionally, a Liability Fund should be established to address the gaps identified by ITLOS in the Seabed Mining Advisory Opinion, such as when a contractor is insolvent or otherwise unable to meet its obligations.

Procedural Aspects of Regulations

7. The procedures adopted by the Authority are critical for the development and implementation of the regulations. The procedures must:
- establish a clear and transparent framework with timelines and chains of responsibility from the start of the process until its completion and continuation;
 - provide for transparent, comprehensive and fair evaluation of applications;
 - provide for independent scientific review of environmental impact assessments;
 - provide for ongoing review and adaption of processes at regular intervals;
 - provide for development, implementation and adaptation of environment management plans, environmental best practices and industry best practices;
 - provide a fair and equitable contractor pays cost structure consistent with the common heritage of mankind;
 - establish clear timelines for applications; and
 - implement access to information, public participation and access to review opportunities accessible to stakeholders.

Central Data Repository and Environmental Information

8. The ISA Secretariat needs the continued mandate and adequate resources to establish and maintain the Central Data Repository.
9. Environmental information must be disclosed and not be kept confidential, and sharing of environmental information should be encouraged. Reports from contractors and sponsoring States should also be disclosed and not be confidential. The ISA should draft and agree comprehensive procedures and criteria for the release and withholding of information.

Information and Transparency Principles

10. Information and transparency principles applicable to the application and environmental management process need to be articulated. These should include transparency and public participation, use of the best available science, capacity building, the precautionary approach to address scientific uncertainty and that the ISA should favour caution and environmental protection.

Forms of Applications

11. Applications should include an environmental impact assessment (EIA), proposed environmental management plan, a financial plan, including bond and other securities, a plan of work, a closure plan, a training plan, an emergency response and procedures plan, a health, safety and maritime security plan and a social impact assessment plan.

Mitigation, Adaptive Management and Remediation

12. An EMP will need to focus on preventing significant adverse impacts and thus serious harm. Adaptive management will have a role, but only where it sufficiently diminishes risk and uncertainty to be consistent with a precautionary approach. Any adaptive management approach, such as staging, must be consistent with this approach, and will need good baseline information, effective monitoring, robust thresholds and the ability to remedy adverse effects before they become significant or irreversible.
13. It may be too early to say whether restoration and remediation will be feasible or effective for different types of mining. Where implemented, it should be science based, consistent with the precautionary approach and ecosystem approach.

Liability

14. An international framework is needed to ensure prevention and response measures and to recover the costs, or to claim compensation or other relief on behalf of the international community. The focus should be on prevention of loss, and secondarily, where necessary to redress environmental loss, there should be a way to achieve restoration of the loss or compensation. Costs should be allocated in accordance with polluter pays principles. The Seabed Disputes Chamber of ITLOS in its Advisory Opinion acknowledged a gap in the liability regime, where a contractor does not meet its liability in full and where a sponsoring State may also not be liable, and suggested a trust fund, which is already provided for in UNCLOS article 235.3. DSCC suggest that the ISA should therefore hold a workshop to discuss liability and make recommendations. A workshop could also address the issues of bonds, insurance and other financial guarantees. This is a crucial part of environmental management: without it, compliance will not be assured, and economic damage and associated costs will be borne by the international community.

Conclusions and Suggestions

15. The ISA Report has raised a lot of issues, which will need to be addressed in workshops and other consultations. Transparency and improving working methods so that the ISA is able to obtain the best advice and support from civil society and the public is crucial. Consideration needs to be given to financial support for stakeholder consultations and scientific advice consultations. In addition, DSCC welcomed the open meeting day held by LTC during the 20th Session, and welcomes suggestions made at Council and Assembly in support of

the LTC opening its meetings to observers as a rule rather than the exception. This would ensure not only transparency but that the LTC obtains the best advice and support in what will be a challenging and complex process.

16. It seems clear that the working methods of the Authority will need to adapt to include the demands of moving to the next phase and development of regulations and procedures. Consideration should be given to the establishment of a Scientific Committee, as well as appropriate working groups and subsidiary committees.

Introduction

17. The Deep Sea Conservation Coalition (DSCC) has as its objective to protect and preserve the marine environment of the seabed and sub-soil and the deep sea. The DSCC has operated since 2004 as a coalition of over 70 non-governmental organizations worldwide, working together under the umbrella of the DSCC to protect cold-water corals and vulnerable deep-sea ecosystems. The DSCC is a stichting (i.e. foundation) formally incorporated in the Netherlands. DSCC has made representations in the United Nations General Assembly, numerous regional fisheries management organizations, the United Nations Food and Agriculture Organization (FAO) and other international fora as well as numerous national and regional fora governments, conferences and other organizations since 2004. As such, it has extensive experience and expertise in the area of the deep sea and deep sea biodiversity, its primary focus.
18. The DSCC considers that no seabed mining should take place unless and until the institutional framework is in place to ensure that the global commons are effectively protected, which means that the full range of marine habitats, biodiversity and ecosystem functions are adequately protected. This includes setting aside sensitive and representative areas from mining as part of the establishment of comprehensive network of marine reserves and putting in place rules to ensure that both the environmental and cumulative impacts of seabed mining, as well as potential impacts on alternative uses and livelihoods, have been thoroughly assessed and properly addressed in advance.
19. These regulations must be consistent with the international regime for the law of the sea, set out principally in the 1982 United Nations Convention on the Law of the Sea (UNCLOS) and 1994 Implementing Agreement, including the common heritage of mankind, and customary international law and principles including transparency, the precautionary approach and ecosystem approach and the polluter pays principle.
20. Measures taken must deal with all sources of pollution of the marine environment (UNCLOS art 194.3) including minimize to the fullest possible extent:
 - a. the release of toxic, harmful or noxious substances, especially those which are persistent, from land-based sources, from or through the atmosphere or by dumping;
 - b. pollution from vessels and
 - c. pollution from installations and devices used in exploration or exploitation of the natural resources of the sea-bed and subsoil, in particular measures for preventing accidents and dealing with emergencies, ensuring the safety of operations at sea, and regulating the design, construction, equipment, operation and manning of such installations or devices

Measures taken must include measures to protect and preserve rare or fragile ecosystems as well as the habitat of depleted, threatened or endangered species and other forms of marine life. (UNCLOS art. 194.5)

Measures must be taken to prevent, reduce and control pollution and introduction of species, alien or new, to a particular part of the marine environment, which may cause significant and harmful changes (UNCLOS art. 196).

Other conventions which these regulations should be consistent with include:

- a. The 1992 Convention on Biological Diversity (CBD)
 - b. The Convention for the Protection of Natural Resources and Environment of the South Pacific Region 1986 (Noumea Convention), and
 - c. The London Convention and London Protocol.
21. The regulations should also build on relevant aspects of the UN General Assembly resolutions adopted since 2004 related to the management of bottom fisheries in areas beyond national jurisdiction¹ and the 2009 International Guidelines for the Management of Deep-Sea Fisheries in the High Seas (Deep Sea Guidelines)²
22. These regulations should also build on and develop on the experience of the Authority and contractors through the *Regulations on Prospecting and Exploration for polymetallic Nodules in the Area* (adopted 13 July 2000) which was later updated and adopted on 25 July 2013; the *Regulations on Prospecting and Exploration for Polymetallic Sulphides in the Area* (adopted 7 May 2010) and the *Regulations on Prospecting and Exploration for Cobalt-Rich Crusts* (adopted 27 July 2012), as well as the *Clarion Clipperton Zone Environmental Management Plan* (EMP), adopted on 26 July 2012 in ISBA/18/C/22.
23. The experience from state regulatory bodies with regard to sea-bed mining applications on their continental shelf should be drawn upon as highlighting the challenges that legislation and regulation in related areas that States have faced and lessons learned.

The Precautionary Approach

24. There is an obligation on the Authority to take a precautionary approach, which is most concisely stated in principle 15 of the Rio Declaration on Environment and Development (1992): *Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.*
25. The Seabed Disputes Chamber of the International Tribunal for the Law of the Sea (ITLOS) stated in the Seabed Mining Advisory Opinion³ that “the precautionary approach is ... an integral part of the general obligation of due diligence of sponsoring States, which is applicable even outside the scope of the [International Seabed Authority] Regulations.” The precautionary approach is a matter of customary international law, shown in its recognition by international courts and tribunals including the ICJ in *Pulp Mills on the River Uruguay*.⁴ In the context of deep seabed mining, this means that scientific uncertainty in matters such as the plume, the sediment and the baseline must be resolved to avoid serious harm being caused by mining.

The Ecosystem Approach

26. The ecosystem approach can be expressed as a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way.⁵
27. It requires a holistic approach to environmental management. As the Environmental Management Plan for the Clarion Clipperton Zone (EMP-CCZ) stated (para 21), “best-practice management of damaging human activities in the marine environment generally involves the use of spatial management tools, including the protection of areas thought to be representative of the full range of habitats, biodiversity and ecosystem structure and function within the management area.” The expressed vision is preserving and conserving marine biodiversity and ecosystem structure and function in the Clarion-Clipperton Zone (para 33). EMP-CCZ goals include to establish ecosystem approaches to management (para 35(b)), as well as maintain regional biodiversity, ecosystem structure and ecosystem function across the Clarion-Clipperton Zone ((para 35(b)), and manage the Clarion-Clipperton Zone consistent with the principles of integrated ecosystem-based management (para 35(d) and enable the preservation of representative and unique marine ecosystems. (para 35(e)).

The Polluter Pays Principle

28. The “polluter pays principle” (PPP) is concerned with identifying the appropriate party to cover the cost of environmental harm. It requires the polluter to bear the cost of preventing, mitigation, controlling and cleaning up pollution. The Organisation for Economic Co-operation and Development (OECD) first articulated the principle in 1972. It has since become an important principle of national and international environmental law and policy. It features in key international agreements including the 1992 Rio Declaration.⁶

Common Heritage of Mankind

29. The Area and its resources are the common heritage of mankind.⁷ Activities in the Area are to be carried out with a view to ensuring the development of the common heritage for the benefit of mankind as a whole (UNCLOS art. 150(i)). This basic principle cannot be amended or derogated from (UNCLOS art 311(6)).
30. There shall be no serious harm caused to the marine environment (UNCLOS arts 162.2(w),(x), 165.2(k), (l)). Together with the obligation to protect and preserve the marine environment (article 192), the Authority and Parties should protect the ecosystem and its resources as well as ecosystem services for future generations.
31. This includes protecting inter-generational equity, and in particular the preservation of environment and resources for future generations. As was noted by Judge Wolfrum, “the introduction of the term ‘mankind’ combined with the word ‘heritage’ indicates that the interests of future generations have to be respected in making use of the international commons. More specifically, it requires that deep seabed or outer space activities should avoid undue waste of resources and provides for the protection of the environment. An important part of the intertemporal dimension of the heritage principle is the principle of sustainable development.”⁸

The Environmental Management Plan for the Clarion Clipperton Zone

32. The ISA has already adopted a suite of guiding principles in the Environmental Management Plan (EMP) that should serve as a model and guidance for the Exploitation Regulations. The guiding principles for the EMP are the common heritage of mankind, the precautionary approach, the protection and preservation of marine environment, prior environmental impact assessment, conservation and sustainable use of biodiversity and transparency. These should also be the guiding principles of the Exploitation Regulations.
33. Transparency is built into the EMP:⁹ the principles of the Aarhus Convention and its three pillars of access to information, public participation access to justice (review) are clearly established, and must be implemented in the regulations and procedures.
34. Protected areas are also provided for: the EMP established the Areas of Particular Environmental Interest (APEIs), but also noted that areas of special significance for their uniqueness, biological diversity or productivity, as well as areas of special importance to the life histories of non-fish species referred to in the criteria of the Convention on Biological Diversity have not been incorporated in the scientific design. As was noted in the EMP, as more information becomes available, the spatial management of mining activities will have to reflect such factors.
35. The goals of the EMPs include to maintain regional biodiversity, ecosystem structure and ecosystem function across the Clarion-Clipperton Zone; manage the Clarion-Clipperton Zone consistent with the principles of integrated ecosystem-based management; enable the preservation of representative and unique marine ecosystems; and monitor the environment during and after testing of collecting systems and equipment, in accordance with the rules, regulations and procedures of the Authority. These goals need to be achieved in the regulations and procedures.

The London Convention and London Protocol

36. The London Convention (1972) and the London Protocol (1996) provide legal frameworks for the prevention of marine pollution by the dumping of wastes and other matter at sea, under the broader framework of the United Nations Convention on Law of the Sea (UNCLOS).
37. According to Article 2 (Objectives) of the London Protocol: “Contracting Parties shall individually and collectively protect and preserve the marine environment from all sources of pollution and take effective measures, according to their scientific, technical and economic capabilities, to prevent, reduce and where practicable eliminate pollution caused by dumping or incineration at sea of wastes or other matter”.
38. In the specific case of dumping of wastes or other matter, the application of a precautionary approach is interpreted as the need to take appropriate preventative measures when there is reason to believe that wastes or other matter introduced

into the marine environment are likely to cause harm even when there is no conclusive evidence to prove a causal relation between inputs and their effects.

39. According to Article 1 of the London Protocol, “The disposal or storage of wastes or other matter directly arising from, or related to the exploration, exploitation and associated offshore processing of seabed mineral resources is not covered by the provisions of this protocol”. Notwithstanding this exclusion, the obligations imposed on Parties by the overall objective of the London Protocol set out in Article 2, namely the protection of the marine environment from all sources of pollution, nonetheless remain to be implemented in the seabed mining context. Similar obligations exist under Articles 192 and 194 of UNCLOS, under which States must take all measures consistent with that Convention to prevent, reduce and control pollution of the marine environment from any source. Furthermore, the more specific regulatory focus of the London Convention and London Protocol to address the prevention of pollution from dumping of wastes or other matter has not prevented the Parties from investigating, considering and, in some cases, adopting guidelines relating to issues which extend beyond that specific focus to address the broader aspects of pollution prevention consistent with the general obligations to address all sources of pollution. One example is the publication in 2009 of Guidelines for the Placement of Artificial Reefs¹⁰, which the Parties to the London Convention and London Protocol developed jointly with the United Nations Environment Programme (UNEP).

Recommendations

Substantive Content of Regulations on Environmental Protection

A Strategic Environmental Assessment

40. The regulations should include provisions for region-wide strategic environmental impact assessments (SEAs), as a key tool to address cumulative effects of several exploration activities in a region, as well as of other sectoral activities, location (and other) alternatives, impact distribution, ecosystem and inter-generational equity issues, as well as impacts on other sectors. Environmental Impact Assessments are conducted on the lower level of a single project.
41. SEAs should be linked to the Environmental Impact Assessments (EIAs) and Environmental Management Plans.

An Environmental Baseline, Vulnerable Marine Ecosystems and Ecologically and Biologically Significant Areas

42. The obligations to protect the marine environment, in particular deep-sea ecosystems, and to ensure there is no serious harm to the marine environment have been given further form by the UN General Assembly through a series of resolutions¹¹ addressing the management of bottom fisheries in areas beyond national jurisdiction and the negotiation of a complementary instrument, the International Guidelines for the Management of Deep-Sea Fisheries in the High Seas.¹² The core conservation objective adopted by the UN General Assembly and further refined in the International Guidelines is that bottom fisheries must be

managed to prevent significant adverse impacts on vulnerable marine ecosystems (VMEs). The key provisions of the General Assembly resolutions and the International Guidelines, adopted on the basis of extensive negotiations and significant input and advice have increasingly been implemented by regional fisheries management organisations (RFMOs) with competence over deep-sea fisheries in the high seas. As a benchmark for avoiding serious harm, preventing significant adverse impacts (SAIs) to VMEs has become the global standard for the management of deep-sea fisheries. The importance of protecting VMEs is recognized in article 194.5 of UNCLOS.

43. Additional considerations are the processes developed under the CBD to identify ecologically and biologically significant areas (EBSAs)¹³ and the recommendation made by the Ad Hoc Open-ended Informal Working Group to study issues relating to the conservation and sustainable use of marine biological diversity beyond areas of national jurisdiction (BBNJ) to develop an international legally-binding instrument under the Convention on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction.
44. An environmental baseline is an essential and fundamental part of an environmental impact assessment. A baseline establishes sufficient information to describe the existing environment, and will enable the ISA to both properly assess environmental impacts and put into place management strategies to protect the marine environment.
45. Strategic Environmental Management Plans and assessments must be implemented for identifying and establishing networks of protected areas on a regional basis prior to allowing commercial mining in individual claims within a region. The SEMP must take into consideration, *inter alia*, the potential impacts of mining on biodiversity, habitats and ecosystems on a regional scale and be designed to protect representative habitats and source populations, ensure species connectivity remains intact, prevent extinctions, and ensure the effective functioning of a range of additional ecosystem processes relevant to the particular biogeographic region concerned.
46. The ISA should ensure that EBSAs and VMEs are taken account of and identified as part of the environmental impact assessment process at site specific scales as well, and that an adequate environmental baseline is established. Both the Strategic Environmental Management Plans and the EIA process for specific mining areas will enable the ISA to develop appropriate management responses, including establishing protected areas, strategies to avoid significant adverse impacts (SAIs) to EBSAs and VMEs and in so doing to avoid serious harm to the marine environment.

The Content of an Environmental Impact Assessment

47. Once an environmental baseline is established and VMEs and EBSAs identified, and species and ecosystems identified in the mining footprint and also those which may be affected by mining, such as by a plume applications must take into account all effects of the proposed mining. This must include direct, indirect and cumulative effects. Applications should be assessed for their impacts on the immediate and nearby environment, as well as the overall impact of the activity in

light of other activities already taking place or which are likely to take place in the affected area (cumulative impacts).

Management Responses

48. Management responses must then be implemented based on the EIA and identified effects. Best known environmental practices must be adopted by applicants. These are necessary but not sufficient: in an emerging industry, current practices may not adequately protect the environment. Where new environmental practices emerge during the period of a contract, contractors should be required to update their practices and processes and the EMP amended as necessary.
49. Contractors should be encouraged to share and promote best environmental practices, including through reviews and through incentives.
50. Environmental bottom lines for species, populations and effects on the environment should be set. Where a bottom line is breached, an application should fail. Bottom lines must be scientifically based, based on the best available scientific information, taking into account the precautionary approach, and should be established over time as information and understanding of the marine environment develops.
51. Where necessary, areas such as areas containing VMEs or EBSAs should be protected. A programme for identifying and protecting networks of protected areas is essential.
52. A monitoring programme should be established and an early warning system implemented in case of accidents, incidents or unforeseen effects.
53. In order to ensure that contractors comply with regulations and best environmental practice, an environment bond should be required from the contractor.
54. A Sustainability Fund should be established. Such a fund could, for instance, carry out environmental research where it is not otherwise being carried out. Separate funds could be established for different distinct mining areas within the Area (the CCZ, North Atlantic, etc).
55. Sharing of research data and facilities and cooperative research efforts should be facilitated and encouraged by the Authority. Additionally, a Liability Fund should be established to address the gaps identified by ITLOS in the Seabed Mining Advisory Opinion, such as when a contractor is insolvent or otherwise unable to meet its obligations.

Central Data Repository and information

56. The ISA Secretariat needs the continued mandate and adequate resources to carry out detailed resource assessments of the areas reserved for the Authority, establish and maintain a specialised and public database of data and information on the resources of the international seabed Area and to monitor the current status of the scientific knowledge of the deep sea marine environment as part of its ongoing development and formulation of the Central Data Repository. Environmental information must not be kept confidential, and sharing of environmental information should be encouraged. Reports from contractors and sponsoring

States should also not be confidential, and only commercially sensitive information relating to non-environmental matters should be kept confidential. The Secretariat should have the mandate and resources to review reports and make decisions on whether information is confidential or not.

Procedural Content of Regulations on Environmental Protection

57. The procedures adopted by the Authority are critical for the development and implementation of the regulations. The procedures must:
- a. Establish a clear and transparent framework with timelines and chains of responsibility from the start of the process until its completion and continuation;
 - b. Provide for transparent, comprehensive and fair evaluation of applications;
 - c. Provide for ongoing review and adaption of processes at regular intervals;
 - d. Provide for development, implementation and adaptation of environment management plans, environmental best practices and industry best practices;
 - e. Provide a fair and equitable contractor pays cost structure consistent with the common heritage of mankind;
 - f. Establish clear timelines for applications;
 - g. Implement access to information, public participation and access to review opportunities accessible to stakeholders.
58. Information and transparency principles applicable to the application and environmental management process need to be articulated. These should include:
- a. Transparency and public participation. Aarhus Convention principles of access to information, public participation and access to review processes should be adopted;¹⁴
 - b. Use of the best available science. This includes the inclusion of independent and peer review of science, publication of data, with appropriate protection of commercially confidential non-environmental information, and sharing of scientific information and appropriate co-ordination of scientific research, investigation and data collection;
 - c. Capacity building on scientific and technical capacity;
 - d. The precautionary approach to address scientific uncertainty; and
 - e. The ISA should favour caution and environmental protection.

Document/Form of applications

59. Applications should include:
- a. an environmental impact assessment (EIA), including an assessment of alternatives approaches;
 - b. a proposed environmental management plan (EMP);
 - c. a financial plan, including bonds, insurance and other financial security;

- d. a plan of work;
- e. a closure plan;
- f. a training plan / programme;
- g. an emergency response and procedures plan;
- h. a health, safety and maritime security plan; and
- i. a social impact assessment / statement and action plan.

Environmental Impact Assessments

60. An application must include a thorough environmental impact assessment. An impact assessment must:
- a. describe the activity for which consent is sought;
 - b. describe the current state of the area where it is proposed that the activity will be undertaken and the environment surrounding the area;
 - c. identify the effects of the activity on the environment and existing interests (including cumulative effects and effects);
 - d. identify adverse effects on others interests;
 - e. identify any effects on global phenomena such as climate change;
 - f. specify any possible alternative locations for, or methods for undertaking, the activity that may avoid, remedy, or mitigate any adverse effects; and
 - g. specify the measures that the applicant intends to take to avoid, remedy, or mitigate the adverse effects identified.
61. An impact assessment should contain the information required in:
- a. such detail as corresponds to the scale and significance of the effects that the activity may have on the environment and existing interests; and
 - b. sufficient detail to enable the ISA and States and stakeholders whose existing activities or interests are or may be affected to understand the nature of the activity and its effects on the environment and existing interests.

Environmental Management Plan

62. The EMP is the main tool for managing the impact of the activity on the environment. A EMP should be drafted in accordance with the following guiding principles:
- a. Common heritage of mankind;
 - b. Precautionary approach and ecosystem approach;
 - c. Protection and preservation of the marine environment;
 - d. Prior environmental impact assessment;
 - e. Conservation and sustainable use of biodiversity; and
 - f. Transparency.
63. With regard to transparency, the Authority shall enable public participation in environmental decision-making procedures in accordance with the Convention on

Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters, 1998, and its own rules and procedures.

Plan of Work

64. A plan of work for exploitation should be produced for each separate area.

Closure Plan

65. Any closure plan should ensure that all residual foreign materials and installation are removed from the Area, and take into account any ongoing monitoring and other measures in the EMP.

Sustainability Fund

66. An underlying and unavoidable problem is the lack of knowledge of the marine environment: how to define the appropriate environmental mechanisms and standards to protect it. One suggested way to approach this is a Sustainability Fund. Rather than one fund, there could be multiple funds specific to different areas. This would allow funds to be pulled to enhance a baseline of data for the group to then work from in their individual applications.

67. To establish a Seabed Sustainability Fund:

- The Authority should be in a position, based on expert recommendations, to direct further research e.g. in relation to marine ecosystems in the Area and to develop institutional capacities;
- There should be a budget for large-scale research activities;
- The fund could be financed by way of initial levies before mining and after mining by levy e.g. per ore recovered on board the mining vessel;
- Contributions to the fund could also be considered an element of social contribution; and
- The fund could target the development of technology.

Further aspects can be continued in workshops.

Mitigation, Remediation and Adaptive Management

68. The EMP will need to focus on mitigation – avoiding significant adverse impacts and thus serious harm. Adaptive management is useful, but must be rigorously defined. In its commentary, the IUCN said that an adaptive management approach¹⁵ involves taking management measures in the face of uncertainty, as part of a rigorously planned and controlled trial, with careful monitoring and periodic review to provide feedback, allowing amendment of decisions in the light of such feedback and new information. The New Zealand Supreme Court has said that “[t]he secondary question of whether the precautionary approach requires an activity to be prohibited until further information is available, rather than an adaptive management or other approach, will depend on an assessment of a combination of factors:

- (a) The extent of the environmental risk (including the gravity of the consequences if the risk is realised);
 - (b) the importance of the activity (which could in some circumstances be an activity it is hoped will protect the environment);
 - (c) the degree of uncertainty; and
 - (d) the extent to which an adaptive management approach will sufficiently diminish the risk and the uncertainty.¹⁶
69. The Court held that “The overall question is whether any adaptive management regime can be considered consistent with a precautionary approach.” The Court approved a test dealing with risk and uncertainty as follows:
- (a) there will be good baseline information about the receiving environment;
 - (b) the conditions provide for effective monitoring of adverse effects using appropriate indicators;
 - (c) thresholds are set to trigger remedial action before the effects become overly damaging; and
 - (d) effects that might arise can be remedied before they become irreversible.
70. This approach, focusing as it does on baseline information, monitoring, threshold and effects, is useful in the seabed mining context.
71. It may be too early to say whether restoration and remediation will be feasible or effective for different types of mining. Where implemented, it should be science based, consistent with the precautionary approach and ecosystem approach.

Liability

72. It is not appropriate to let loss for damage lie where it falls where the common heritage of mankind and the marine environment is affected. It is essential to impose an obligation on the polluter (mining contractor) to take response and prevention measures. An international framework is needed to ensure prevention and response measures and to recover the costs, or to claim compensation or other relief on behalf of the international community. The primary focus should be on prevention of loss, and where necessary to redress environmental loss, there should be a way to restore of the loss or compensation. This necessitates the implementation of response measures to:
- prevent, minimize and contain environmental loss, in the event of a threat of or actual environmental damage;
 - restore the environment to the condition to the condition that existed before the damage occurred; and/or
 - provide for redress or compensation where prevention or restoration is not possible.
73. The ISA Mining Code¹⁷ requires the implementation of response measures to prevent serious harm to the marine environment in an emergency. It is also helpful to study other existing systems. Parties to the Madrid Protocol continue to ratify

provisions on liability.¹⁸ Other sources include¹⁹ the various nuclear liability treaties,²⁰ the oil pollution liability instruments, including the Oil Pollution Convention,²¹ the Oil Fund Convention,²² and the 1977 Convention on Civil Liability for Oil Pollution Damage resulting from Exploration for and Exploitation of Seabed Mineral Resources, the conventions on the transport of dangerous goods and substances²³ and the Nagoya-Kuala Lumpur Protocol²⁴ on damage caused by living modified organisms (LMOs or GMOs). Also helpful are the 1972 Convention on Liability for Damage Caused by Space Objects and the 1993 Lugano Convention.²⁵

The Need for a Liability Fund

74. The International Tribunal for the Law of the Sea (ITLOS) in its Advisory Opinion²⁶ stated that the obligation to carry out responsibilities under Part XI is an obligation of conduct and a due diligence obligation.²⁷ This means that if a sponsoring State has exercised required due diligence in respect of the contractors it sponsors, it will not be held liable for any damage caused. However, ITLOS also observed that “[t]he situation becomes more complex if the contractor has not covered the damage fully. It was pointed out in the proceedings that a gap in liability may occur if, notwithstanding the fact that the sponsoring State has taken all necessary and appropriate measures, the sponsored contractor has caused damage and is unable to meet its liability in full. It was further pointed out that a gap in liability may also occur if the sponsoring State failed to meet its obligations but that failure is not causally linked to the damage.”²⁸
75. ITLOS suggested a remedy: “[t]aking into account that, as shown above in paragraph 203, situations may arise where a contractor does not meet its liability in full while the sponsoring State is not liable under article 139, paragraph 2, of the Convention, the Authority may wish to consider the establishment of a trust fund to compensate for the damage not covered. The Chamber draws attention to article 235, paragraph 3,²⁹ of the Convention which refers to such possibility.”
76. It is therefore crucial that a fund be established to cover this gap. This could be achieved by a levy on ore taken from the area.

Conclusion

77. The regulations and the many issues raised by them have raised a lot of issues, many of which will need to be addressed in workshops and other consultations. Transparency and improving working methods so that the ISA is able to obtain the best advice and support is crucial. Consideration needs to be given to financial support for stakeholder consultations and scientific advice consultations. In addition, DSCC welcomed the open meeting day held by LTC during the 20th Session, and welcomes suggestions made at Council and Assembly in support of the suggestions the LTC open its meetings to observers as a rule rather than the exception. This would ensure not only transparency but that the LTC obtains the best advice and support in what will be a challenging and complex process.
78. In addition, it seems clear that the working methods of the Authority will need to adapt to include the demands of moving to the next phase and development of regulations and procedures. Consideration should be given to the establishment of

a Scientific Committee, as well as appropriate working groups and subsidiary committees.

Detailed Comments on the Report

79. The following constitute specific comments on the Report, referenced to the Report.

Part I Introduction Use of Terms and Scope

80. Terms used in the regulations should have the same meaning as the Convention, where they appear there, and be updated and expanded as necessary. We agree they should reflect internationally agreed and accepted definitions where possible.

Part II Applications for plans of work for exploitation in the form of contracts

Form of Application

81. We note that other documents that will be needed include a financial plan, including bonds, insurance and other financial security; a plan of work; a closure plan; a training plan / programme; an emergency response and procedures plan a health, safety and maritime security plan; and a social impact assessment / statement and action plan.

Financial and technical capabilities

82. Evaluation criteria should include: Past experience in the Area; comparison with industry best practice; environmental record; consideration of financial capabilities including with regard to liability, insurance etc; and liabilities of sub-contractors.

83. A list of relevant considerations that must be taken into account when considering the financial and technical capabilities. Where an operator has been involved in serious environmental wrongdoing, then the contractor must demonstrate how practices have changed to prevent a recurrence.

Previous contracts with the Authority

84. Every contract should be treated equally, except that where a contractor has previously failed to comply with ISA regulations, this should be taken into account.

Approval of the Plan of Work for Exploitation

85. Add to column 4: Develop EIA guidelines (see discussion below.)

86. Column 3: A separate plan of work will need to be prepared for each area. This list further demonstrates the need for separate plans of work for separate areas as each of these documents could change depending on differing circumstances of each area.

87. Column 3: A financial bond, insurance or other financial security document will be needed.

Feasibility Study

88. Column 3: Needs to include an assessment of economic benefits from the project compared to the risks involved to the environment and alternative sources of the minerals.

89. Column 4: Need guidelines for economic assessment

Add Row: Environmental Impact Assessment

90. New for Column 2: Content to be adequate to assess commercial viability of proposed exploitation activities by exploitation area.

91. New Column 3: Impact assessment must include: description of the activity, including the quantities and characteristics of all waste materials and how they will be managed; description of the current state of the area where it is proposed that the activity will be undertaken ; description of the greater ecosystem surrounding the area; Identify the effects, direct, indirect and cumulative ; Identify any parties that may be affected by the activity; Specify alternative locations and approaches to the activity; Identify best environmental practices that will limit adverse effects; include consideration of climate change and ocean acidification.
92. New Column 4: Guidelines for EIA assessment to be drafted.

Environmental Impact Statement

93. Add to column 3 after iv:
 - v. Must include reference to trophic modeling and biodiversity impact studies that form part of the EIA. (vi) baseline should: (a) include a compilation and summary of all previous scientific work at a site; (b) be publicly available; (c) be independently reviewed, with new studies conducted if necessary; (d) include temporal studies to understand natural variability; (e) ensure the collection and analysis of sufficient information on the ecosystems, habitats and communities in the area, against which future changes are to be compared and that potential adverse impacts of mining activities can be identified and preventative or avoidance measures can be planned for accordingly and incorporated into the EMP.

Environmental Management Plan

94. Add to Column 3: Should include how adaptive management measures may be implemented where applicable. EMP Should be publicly available for comment. Should include adequate assessment of various tools involved and alternatives to environmental management, so that the current and most progressive model is used.

Social impact assessment and action plan (SIA)

95. Add to Column 3: The ocean has a social value to all of humanity under the common heritage of mankind. SIA should include future uses of the area and principles of sustainability, using resources sustainable for the future of mankind and intergenerational equity. SIA should also include consideration of wider global phenomena such as climate change and ocean acidification.
96. Column 4: Need a Workshop on what this requires, including common heritage of mankind, sustainability principles etc.

Closure Plans

97. Must include and adopt principles of the London Convention and Protocol; must include liability measures for any breaches.

Size and location of exploitation area(s) covered by the plan of work

98. Add to Column 3: Authority can determine the size and location of mining blocks in line with the EIS, EIA, feasibility study and EMP. Must adopt adequate adaptive management principles. See text below Principles taken into account when assessing size and location of blocks: Precautionary principle; Common heritage of mankind; Connectivity of areas; Trophic flow with the wider area ; Protection and reserve of some areas.; Cumulative impact of other uses of the area.

99. Add to Column 4: Develop bottom-lines for the environment; consider when there is overlap of areas. Must take into account feasibility study.

Fee for Applications

100. Add to Column 3: Appropriate assessment of expected costs. Where costs are seen to be too expensive, collective scientific research is proposed.

Public review of the Environment Impact Assessment, Environmental impact statement, Feasibility Study and Environmental management plan [and Social impact assessment and Closure plan] (Added Environmental Impact Statement and Feasibility Study

101. Add to column 3: Review by observers/groups which can show a supported interest in the area. Financial support for review of documents and hiring of experts from the ISA.

102. Add to Column 4: Analysis of public review process that has been adopted in other countries.

Consideration and approval of plans of work for exploitation by the Council

103. Comment: a public review process is needed for each application.

104. Add: Full transparency and public participation implemented. If an application is provided and it is incomplete then the Council can return it.

Independent technical expert working group / sub-committees

105. DSCC strongly supports expert working groups and sub-committees.

106. Add to Column 4 “Should this be formalised under the regulatory framework? Yes. The workload will clearly require expert working groups and sub-committees. This will enhance public participation. Working methods such as webinars and online systems should be implemented to enhance transparency.

Duration of Contracts/Renewals

107. Add to Column 3: A review should also be triggered where a substantial breach of any the contract or regulations.

Use of Sub-Contractors

108. Add to column 3: This is an important issue. A sub-contract cannot be for the main mining activity. Contractors who will undertake the main mining activities must be a part of the original application in order that they can be held liable for breach and their environmental management program can be assessed. Excess use of subcontractors leads to uncertainty in processes and techniques that will be used and uncertainty in accountability and liability.

Termination of Sponsorship

109. This shows the need for liability provisions. Where an application is approved subject to mitigation, monitoring and any remediation, the contractor must be held accountable on an ongoing basis.

Responsibility and liability

110. DSCC strongly supports a workshop on responsibility and liability, as well as a Liability Fund.

Adaptive management approach

111. Add to column 3: Adaptive management an adaptive management approach can allow the activity to go ahead without too much risk to the environment. The

overall question is whether any adaptive management regime can be considered consistent with a precautionary approach. (a) there will be good baseline information about the receiving environment; (b) the conditions provide for effective monitoring of adverse effects using appropriate indicators; (c)

thresholds are set to trigger remedial action before the effects become overly damaging; and (d) effects that might arise can be remedied before they become irreversible.

112. Add to Column 4: Working group on adaptive management.

Strategic environmental management plan (SEMP)

113. Add: to column 3: The regulations should include provisions for SEIAs, as a key tool to address cumulative effects of several exploration activities in a region, as well as of other sectoral activities, location (and other) alternatives, impact distribution, ecosystem and inter-generational equity issues, as well as impacts on other sectors. SEAs should be linked to the Environmental Impact Assessments (EIAs) and Environmental Management Plans.

Seabed Sustainability Fund

114. There could be different funds for different areas. Contractors and States could then pool funds so that substantial research could be undertaken in an area where multiple parties wish to invest before any applications are made. On completion of the research, a majority group would be better placed to apply at a smaller cost given that a large portion of the environmental work would already have been completed. The information would be publicly available.

Conclusion

115. We expressly consent to make our personal details and submission publicly available. We are interested in future contact by the Authority and being part of a stakeholder group.

116. Contact:

Sian Owen

Coordinator, Deep Sea Conservation Coalition

sian@sustainabilityoptions.net

¹ UN General Assembly resolutions 59/25; 61/105; 64/72; and 66/68.

² 2009 FAO International Guidelines for the Management of Deep-Sea Fisheries in the High Seas. At <http://www.fao.org/docrep/011/i0816t/i0816t00.HTM>

³ *Responsibilities and obligations of States sponsoring persons and entities with respect to activities in the Area (Advisory Opinion)* ITLOS Seabed Dispute Chamber Case No.17, 1 February 2011. Paragraph 131.

⁴ *Pulp Mills on the River Uruguay (Argentina v Uruguay) Judgment*, I.C.J. Reports 2010, p. 14 (20 April 2010). Paragraph 164.

⁵ The Ecosystem Approach, Convention on Biological Diversity, found at: <https://www.cbd.int/ecosystem>.

⁶ United Nations Conference on Environment and Development, Rio Declaration on Environment and Development, UNCED Doc. A/CONF.151/5/Rev. 1, 31 ILM 874 (1992) (Rio Declaration).

⁷ UNCLOS art. 136

⁸ Rüdiger Wolfrum, 'Common Heritage of Mankind' in *Max Planck Encyclopedia of Public International Law* (2009), paragraph 22.

⁹ The Authority shall enable public participation in environmental decision-making procedures in accordance with the Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters, 1998, and its own rules and procedures.

¹⁰ LC-LP/UNEP (2009) London Convention & Protocol/UNEP Guidelines for the Placement of Artificial Reefs. UNEP Regional Seas Reports and Studies No. 187. Published by the International Maritime Organisation (IMO), ISBN: 978-92-807-3022-7: 103 pp.

¹¹ UN General Assembly resolutions 59/25; 61/105; 64/72; 66/68

¹² FAO. International Guidelines for the Management of Deep-sea Fisheries in the High Seas. Directives internationales sur la gestion de la pêche profonde en haute mer. Directrices Internacionales para la Ordenación de las Pesquerías de Aguas Profundas en Alta Mar. Rome/Roma, FAO. 2009. 73p.

¹³ See CBD Decisions IX/20, X/29, 11/18 and 12/22. All at <https://www.cbd.int/decisions/>

¹⁴ The three pillars of the Aarhus Convention are:

- a. access to information
- b. public participation and
- c. access to justice

Access to environmental information

2. In order to make access by the public more consistent and reliable, each Party should encourage international forums to develop and make public a clear and transparent set of policies and procedures on access to the environmental information that they hold.

Public participation in decision-making on environmental matters

3. Efforts should be made to proactively seek the participation of relevant actors, in a transparent, consultative manner, appropriate to the nature of the forum.
4. Participation of the public concerned in the meetings of international forums, including their subsidiary bodies should be allowed at all relevant stages of the decision-making process, unless there is a reasonable basis to exclude such participation according to transparent and clearly stated standards.

Access to review procedures

5. Each Party should encourage international forums to consider measures to facilitate public access to review procedures relating to the application of the forums' rules and standards regarding access to information and public participation within the scope of the Guidelines. "The Authority shall enable public participation in environmental decision-making procedures in accordance with the Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters, 1998, and its own rules and procedures." ('Aarhus Convention').

¹⁵ International Union for Conservation of Nature "Guidelines for applying the precautionary principle to biodiversity conservation and natural resource management" (as approved by the 67th meeting of the IUCN Council 14–16 May 2007) "IUCN Report". 10.

¹⁶ New Zealand Supreme Court, *Sustain Our Sounds v King Salmon*, SC 84-2013, [2014] NZSC 40 paras. 129, 130.

¹⁷ Regulations on Prospecting and Exploration for Polymetallic Nodules in the Area, Regulation 33; Regulations on Prospecting and Exploration for Polymetallic Sulphides in the Area, Regulation 35, and Regulations on Prospecting and Exploration for Cobalt-rich Ferromanganese Crusts in the Area, Regulation 35.

¹⁸ See Decision 4 (2010) - ATCM XXXIII - CEP XIII, Punta del Este, at http://www.ats.aq/devAS/info_measures_listitem.aspx?lang=e&id=469. Protocol on Environmental Protection to the Antarctic Treaty, Annex VI, Liability Arising From Environmental Emergencies, adopted by the 28th ATCM in Stockholm in 2005.

¹⁹ See generally CBD, "Liability and Redress for Damage Resulting from the Transboundary Movements of Living Modified Organisms", 31 July 2001, at UNEP/CBD/ICCP/2/3, at

<http://www.cbd.int/kb/record/meetingDocument/1660?RecordType=meetingDocument&Event=ICCP-02>.

²⁰ See list and description at CBD, *op. cit.*, pars. 14-16.

²¹ 1969 International Convention on Civil Liability for Oil Pollution Damage.

²² 1971 International Convention on the Establishment of an International Fund for Compensation for Oil Pollution.

²³ The 1989 Convention on Civil Liability for Damage caused during Carriage of Dangerous Goods by Road, Rail and Inland Navigation Vessels (CRTD), the 1996 International Convention on Liability and Compensation for Damage in connection with the Carriage of Hazardous and Noxious Substances by Sea (HNS Convention); and the 1999 Basel Protocol on Liability and Compensation for Damage resulting from Transboundary Movements of Hazardous Wastes and Their Disposal (Basel Protocol).

²⁴ 2010 Nagoya – Kuala Lumpur Supplementary Protocol on Liability and Redress to the Cartagena Protocol on Biosafety. At <https://bch.cbd.int/protocol/supplementary/>

²⁵ The Convention on Civil Liability for Damage Resulting From Activities Dangerous to the Environment, 1993.

²⁶ Case No. 17, Advisory Opinion on Responsibilities and Obligations of States Sponsoring Persons and Entities with respect to Activities in the Area of 1 February 2011. At <https://www.itlos.org/cases/list-of-cases/case-no-17>.

²⁷ Advisory Opinion, para. 11.

²⁸ Advisory Opinion, para. 203.

²⁹ UNCLOS art 235.3. “With the objective of assuring prompt and adequate compensation in respect of all damage caused by pollution of the marine environment, States shall co-operate in the implementation of existing international law and the further development of international law relating to responsibility and liability for the assessment of and compensation for damage and the settlement of related disputes, as well as, where appropriate, development of criteria and procedures for payment of adequate compensation, such as compulsory insurance or compensation funds.”