Response to International Seabed Authority Stakeholder Survey

Submitted by Jeff Ardron, 23 May 2014.

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These comments are those of the author, and do not represent an official position of either PacMARA or IASS. Rather, these answers are to be taken as indicative of the organisations’ preferences, as put forward by the author in his capacity as Chairman of the Board (PacMARA) and Senior Fellow (IASS).

About PacMARA

The Pacific Marine Analysis and Research Association (PacMARA), is a registered not for profit charity, based in Victoria, BC, Canada. PacMARA undertakes training, facilitation, and analysis to support an ecosystem-based approach to coastal and marine planning. PacMARA has a global training program covering the concepts of marine planning and correct use of planning software tools. PacMARA acts as facilitators in the development of cooperative and collaborative research and analysis initiatives between First Nations, provincial and federal governments, non-government organizations, academics, and civil society. PacMARA provides analytical services to support marine planning, conservation, and sustainable resource use.

About IASS

The Institute for Advanced Sustainability Studies (IASS), based in Potsdam Germany, devotes itself to promoting at international level interdisciplinary science and research for global sustainability, particularly in the areas of climate change, the earth system and the development of new technologies. The Institute aims at exploring new paths, encouraging lateral thinking and scientific excellence. It analyses existing knowledge to generate new ideas and develop strategically relevant fields of research to further the understanding of climate change and the earth system. The IASS acts as a permanent platform for bringing together guest scientists providing a setting in which high-level-science can take place. It draws on the expertise and innovation potential of qualified ‘fellows’ ranging from outstanding young scientists at the beginning of their careers to Nobel Laureates and strive for scientific exchange at the highest international level. As a Senior Fellow, Jeff Ardron’s research is currently focussed on transparency in the governance of marine resource extraction.
Response to the ISA Survey

1. In delivering a best revenue opportunity for the ISA and an overall fair and equitable system, which payment mechanism would you consider preferable for the ISA and Contractors and why?
   - Our overarching observation is that the ISA is not a State, and hence will have difficulties in applying tax-based tools used in national jurisdictions. Even if the ISA were able to levy taxes based on income, we question whether the ISA would have the legal standing to be able to enter into tax treaties with nations. Hence, we argue that the use of income tax tools such as capital gains, or the use of windfall taxes would be difficult, if not impossible, to administer and enforce within the ISA.
   - Therefore, any income-based taxes would have to be administered and enforced by the Sponsoring States. Assuming the States would also expect some income, the question arises on how such taxes would be divided between the Authority and the State.
   - For the above reasons, we recommend that the ISA focus on gaining revenue primarily from non-tax tools (i.e. royalties) and secondarily through production agreements with the Contractors and Sponsoring States.

2. If a royalty mechanism is adopted for reasons of administrative convenience, how can a royalty mechanism capture, for example, economic rents over the life of an exploitation contract?
   - Royalties should not be expected to capture ‘rents’. However, they can, and should, be flexible enough to track general profit profile of the industry. Given that this is a new endeavour, it can be expected that profitability will be largely unknown at the beginning, and once known will be lower initially until systems are streamlined, when efficiency and profits can be expected to increase.
   - Therefore we recommend that royalties be reviewed and adjusted on a scheduled basis.

3. Are you aware of any alternative payment mechanisms that would merit consideration by the ISA?
   - Production agreements, as used in the oil and gas industry.

4. In your view, how frequently should any payment mechanism be reviewed from a regulatory viewpoint?
   - Yes. We suggest after Year 1, Year 3, and every 4 years after that.

5. The point(s) of valuation for any payment obligations under the regulatory framework needs to be identified. In land-based regimes and oil and gas regimes, theory determines that the
valuation point is as close as possible to the point of extraction of the resource. In land-based regimes an approximation for this is usually the first arm’s length sale in the downstream process. Often a free on board export price or a net back system is adopted for royalty calculation purposes.

- We urge the ISA to 'keep it simple'.
- We suggest a free on board royalty based on a combination of tonnage and value.
- Value should be calculated using a simple metals market index, such as the London Exchange.
- Tonnage would be a fixed amount, regardless of market prices, and regardless of what metals the Contractor reports.

6. **In connection with any late or overdue payments / returns by Contractors, in your opinion, what penalty or fine mechanisms should be adopted by the ISA?**

- First, for all overdue fees, the ISA should charge interest rates a couple points higher than commensurate business loan rates (otherwise they could simply be viewed as loans);
- Secondly, fines should be proportionate to the offence. A late fine (in addition to interest) could be charged after x months, and a second larger fine could applied after y months, etc.
- Penalties are discussed below.
- As a last resort, the licence could be suspended and the environmental bond could be used to pay the balance. However, please note that license suspension, including other ongoing or future projects, must accompany the bond payment. Caution must be exercised to avoid this becoming a perverse incentive for the Contractor to simply close down unprofitable operations and rely on the environmental bond to cover its debts (rather than the intended use of the bond --decommissioning of the site).

**Other considerations impacting financial terms and obligations**

7. The current Exploration Regulations state that an applicant must be “financially and technically capable” of carrying out a plan of work for exploration. This is considered of relevance to future exploitation regulations as well.

**In your view what key elements should be considered in respect of “technical” capability?**

- Because this is a new industry, we cannot expect Contractors to have direct experience in the field. Furthermore, we would not want to limit applications to existing mining companies, as this would discourage innovation as well as developing world applicants.
- Therefore, capability will have to be demonstrated indirectly, through three aspects:
  i. technical / engineering expertise
  ii. scientific / environmental expertise
  iii. administrative capability
each of the above can be broken down into various skills --beyond the scope of this survey. In all instances, the information should be publicly available, open to public review and comments.

Similarly, in your view what key elements should be considered in respect of “financial” capability?

- audited financial statements / proof of assets
- insurance
- ability to post environmental bond
- indication of how all aspects of the development / production / decommissioning plans will be financed

8. In your view, how can the regulatory framework be structured to encourage optimum extraction of low grade mineral resources?

- This question is potentially confusing, as that ‘low grade ores’ may not have an optimal extraction strategy; i.e. the best economic and environmental solution could be to leave them in the ground.
- High grading in the sea is potentially different from on land. With little overburden, there is much less risk that a high-grading operation would bury low-grade ore, rendering it inaccessible. Therefore, in such instances high-grading should not be seen as necessarily negative. If some deposits are not financially viable to mine, then they could be left behind, providing:
  - they are left in good environmental condition, and
  - do not foreclose future mining options when technology and prices may make them profitable.
- Note that high grade site will have less environmental footprint / harm per tonne of metal than low grade sites. Therefore there is an environmental perspective that could argue in favour of some degree of ‘high grading’, particularly in the development stage and early production when procedures are still being worked out.

9. Do you have any suggestions for incentive mechanisms that would encourage investment in the Area and / or support best environmental operating practices?

- Given that The Area is legally the common heritage of mankind, this provides a unique opportunity to manage it differently than private property. From the outset, there should be an emphasis, in policy and regulation, on cooperative (rather than competitive) corporate behaviour. This should include the sharing of information on technology and extraction techniques. (Smelting, as that it will likely occur in national jurisdictions, may remain outside this cooperative concept.)
- Pioneer States and Contractors will have to necessarily pay more for exploration and data gathering than those that follow. However, this is only true if they share their data. Therefore, data sharing should be required in the case of non-proprietary (e.g.
environmental) data, and be incentivised with ‘proprietary’ data (e.g. confidential technologies, etc) through lower fees and/or royalties for the first years of operation, should a more cooperative approach be taken.

- Cooperation could be institutionalised in the form of regular (e.g. annual or bi-annual) best practices workshops, MoUs, and codes of conduct.

10. For what term (in years) should an exploitation contract be granted? What do you consider best practice in terms of renewal periods for the same contract?

- Notwithstanding performance reviews throughout the duration of a contract, 15 years would be a reasonable initial period to recoup costs, followed by 10-year renewals, indefinitely, each after an evaluation of their overall practices. The potentially very long-term nature of the lease, should act as an incentive to Contractors to follow good practices, indefinitely, so as not to jeopardise renewal. However, for this to be successful, the renewal criteria will have to be clear on this point.

11. In your view, what criteria should Contractors / the ISA consider in connection with the optimum size of exploitation areas within a contract area?

- given the many ecological and engineering unknowns, this will be hard to determine before operations begin. Hence, a slow ‘ramp-up’ will in all cases be required.
- ecological patchiness and connectivity will need to be studied
- plume dispersion and effects will need to be studied
- different mining targets (nodules, crusts, SMS) and extraction techniques will have different spatial and temporal effects, which will need to be profiled.
- to summarise, start slow, study, adapt, slowly grow one step at a time.

12. It would seem appropriate, in line with existing extractive industry regimes, that financial penalties are considered as part of the regulatory framework. The Agreement provides, subject to judicial remedies, that in the case of violations of non-fundamental contract terms (or in place of any suspension or termination of a contract), monetary penalties may be imposed on Contractors. Contractors may also be subject to other penalty regimes beyond that of the ISA (for example, by sponsoring States under the terms of domestic licences or permits).

a. In your view, what penalty mechanisms should be adopted in the regulatory framework and imposed specifically by the ISA? For example this could be fixed penalties in connection with the breach of procedural obligations, including environmental procedural obligations;

- This is outside our scope of expertise, but we do encourage that modern jurisprudence be followed, learning from experiences in other extractive industries. Being the common heritage of mankind, The Area will require particular legal care, and hence fines will have to be significant and meaningful to the States and Contractors.
b. In addition, do you have any recommendations as to the classification (seriousness of the violation, duration etc) of violations and a range of penalty amounts?

- As that court procedures (ITLOS) will be slow, ISA should endeavour to set up rules and penalties that are clear and as non-contestable as possible. These should be agreed to Council and the Assembly, of course. However, it may be wise to also seek an advisory opinion from ITLOS on the extent and limits of ISA in levying such fines / sanctions, thus precluding some possible future court challenges.

c. Finally, your recommendations on the use of any penalty amounts collected by the ISA? For example, should these amounts be directed toward an inspection regime only?

- The inspection regime should have core funding. That said, fines could support enhanced monitoring, control, and surveillance in exceptional circumstances. But, this should be a discretionary budgetary item, separate from normal day-to-day activities.
- In general, in international legal regimes there is an emphasis on correcting poor behaviour through training, capacity building, etc. The fines could be well-placed in funding such activities.

13. The Exploration Regulations require Contractors to maintain appropriate insurance policies that are in accordance with generally accepted maritime practice. Do you have any recommendations as to any specific insurance products that should be reflected in the exploitation regulatory framework?

- Outside of our expertise.

Specific environmental considerations

14. It is common practice in land-based regimes to require an environmental guarantee or bond. In some regimes, a cash amount is paid under a trust arrangement or to a special bank account. What are your recommendations for including such a guarantee or cash contribution in the exploitation regulatory framework? Please advise on the nature of any guarantee, the quantum of the guarantee (its calculation methodology), its use and rationale (for example, for restorative obligations, agreed penalty amounts) and the suggested duration before release / return.

- Bonds should be designed to cover the full cost of decommissioning a site should the Contractor ‘disappear’.
- Bonds should have a significant up-front deposit, but this need not be 100%. Given that the costs of cleaning up a relatively new site would be less than one after 20 years of operation, there is an argument in favour of also paying into the bond over the course of operations, for the duration of the lease period. We do not have specific expertise in such calculations, but suggest that whatever payment formula is
adopted, that it be transparent in its rationale. It should be acknowledged that that as monitoring data arrive from current leases, as well as experiences in the decommissioning costs, the formula will likely need reviewing for subsequent lease agreements.

15. The Seabed Disputes Chamber\textsuperscript{1} recommended that consideration be given to establishing a trust fund in the event an environmental liability gap arises. Western Australia, for example, has implemented a Mining Rehabilitation Fund to cover situations where an operator fails to rehabilitate the environment. However, the concept of a trust fund may have wider appeal.

Your comments would be welcome therefore on the setting up of a general environmental trust fund under the exploitation regulatory regime on the basis of the “polluter pays” principle. Please also provide your comments on how any contribution to the fund should be calculated and suggested, specific uses of trust monies.

- This is an interesting legal question, planning for (unknown) liability gaps… We see such an approach as in line with the precautionary principle and would encourage the development of such a fund.
- At the same time, we would encourage the Authority to ensure that liability is clearly articulated, to the extent possible, before operations begin.

Part B: Environmental management terms and obligations

There exist a number of general obligations to protect the marine environment in the Convention. In addition the Exploration Regulations identify specific obligations including application of the precautionary approach and best environmental practices. These fundamental principles will be carried through to the exploitation regulations.

Similar to Part A, in responding to this Part B, please consider the questions below connected with environmental assessment and environmental management and in bullet point form highlight the main points for consideration in the development of the regulatory framework for exploitation. Again, please provide additional information in narrative form.

16. Please describe any general recommendations that the ISA should consider in developing rules, regulations and procedures on the prevention of damage to the marine environment from activities in the Area;

- The ISA should first establish its guiding principles, such as polluter pays, precautionary principle, public participation, transparency, inter-generational equity, etc.
- That The Area is the common heritage of mankind should always be foremost in mind, and guide a stringent set of principles, policies and regulations with regard to the environment and safeguarding it for future generations.

\textsuperscript{1} International Tribunal for the Law of the Sea: Case No. 17: Responsibilities and obligations of States sponsoring persons and entities with respect to activities in the Area (Request for Advisory Opinion submitted to the Seabed Disputes Chamber).
Ecosystem-based management is now the global expectation. Linking the work of the ISA to other competent environmental authorities could allow for synergies, cooperation, and avoid duplication. Thus, we suggest the ISA should reach out to the CBD, CMS, World Heritage Convention, inviting their input. Likewise we suggest the ISA invite a broad representation of the deep sea research community and NGOs with expertise in these matters. Both PacMARA and IASS would be pleased to participate in environmental consultations. PacMARA brings experience in marine planning and database development, and IASS has maritime/marine legal and policy expertise. Encourage the continual development of better practices through the development and adoption of voluntary codes of practice with industry. Currently the most applicable is the OSPAR code of conduct for scientific research (which built on the InerRidge Code, amongst others), but this should be modified for the purpose of deep sea exploration, development, and mining. Any voluntary codes of conduct should be buttressed with mandatory monitoring and reporting, as well as environmental regulations. Codes should not be seen to replace regulations, but rather to augment them, encouraging practices that go beyond the minimum standards set by the letter of the law.

17. The Exploration Regulations do not reflect any restorative or rehabilitative obligations in the marine environment. In your view, under an exploitation framework, what general restorative or rehabilitative obligations should be incorporated?

- Restoration of deep sea mining sites will be difficult, costly, and of unknown efficacy. Hence, efforts should be towards minimising harm in the first instance.
- General rules from land based mining would apply (e.g. removal of structures, equipment, clean-up of toxic substances, etc.)
- Any tailings should be dealt with such that they are not polluting, affecting pH, or otherwise altering the ecosystem characteristics.
- Restoration and recovery (i.e. leaving sites to come back on their own) must be accompanied by scientifically rigorous monitoring so that we can get a better idea of what can realistically be expected.

18. As part of the approval process for exploitation, Environmental Assessments and Environmental Management Plans will be required. What procedural steps should be incorporated into the regulatory framework to evaluate Environmental Assessments and Environmental Management Plans? What independent verification procedures should be adopted by the LTC in reviewing Environmental Assessments and Environmental Management Plans?

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Environmental assessments could be done by the ISA (a new inspectorate as per Tech report 11), the Contractor, or a third party. Key, however, is oversight of these assessments and the ability to fully review and replicate their findings.

Therefore the monitoring data should be publically available such that they can be independently verified by researchers, without prejudice. No environmental data should be treated as proprietary.

Environmental assessments and plans should be open to peer-review, and public comment.

Decisions by the LTC (or inspectorate) should be clear in their rationale, and address concerns raised by public comments and peer-reviews. LTC / inspectorate deliberations should be open to observers.

19. As to any damage to the marine environment following the removal of a substrate (e.g. polymetallic nodules) what do you consider the most appropriate advance response strategies to conservation, restoration and natural remediation of biological diversity and ecosystem functioning? Is remediation best achieved by the development of Areas of Particular Environmental Interest3 and Preservation Reference Zones4 envisaged by the Exploration Regulations?

• Given the generally slow recovery of many (but not all) deep sea ecosystem, advance response will indeed be important: “An ounce of prevention is worth a pound of cure.”
• In this context harm should be minimised throughout operations.
• If monitored harm exceeds expectations, this should trigger a review to consider options, including altering practices, reducing scale of production, or ceasing it altogether. Waiting until the end of operations may be far too late to allow for recovery of rare and fragile species and habitats.
• An ecologically coherent network of protected areas (whether APEIs, PRZs, or other designations) should be established before mining activities begin, and ideally before exploration licenses are handed out, though we recognise that this is not current practice. In any case, the longer one waits to establish protected areas, the more difficult it will be to create a network that can deliver on the objectives of good recovery and providing ecosystem resilience.
• We agree that protected areas in most instances are likely to be much more effective towards aiding recovery of impacted ecosystems than experimental man-made interventions. However, that should not detract from the value of such experiments in aiding better understanding of how these systems can recover.
• (See next question below for further thoughts on MPAs.)

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4 Under the exploration regulations, Preservation Reference Zones are areas in which no mining is to occur to ensure representative and stable biota of the seabed.
20. In connection with question 19 above, what ecosystem functions are critical to restore and/or what levels of biological diversity should be conserved at regional levels, local scales and over what time periods?

- With such limited knowledge, any answering of this question is fraught with uncertainties. It is preferable to simply admit that we do not know most of the critical elements yet, and hence that a precautionary approach will be required. Central to that approach will be the development of ecologically coherent protected areas and a statistically rigorous monitoring regime to better understand the impacts of deep sea mining activities and if the precautionary measures in place are working as intended.
- Protected areas should be designated using the extensive experiences gained through systematic conservation planning -on land and in marine waters in national jurisdictions. Although this activity is new for the ISA, it is not new, and there is much to be gained by linking up with experienced experts, such as those in the CBD, CMS, etc., as well as environmental NGOs and conservation ecologists.
- We would warn against the ISA attempting to do this exclusively ‘in-house’ through the LTC or otherwise. The ISA’s expertise appears to be better suited to establishing regulations, rather than conservation planning. There are many external groups such as GOBI, DOSI, and INDEEP, NGOs, as well as our own institutions (PacMARA and IASS) which could help.

21. The Exploration Regulations (and the Convention) envisage an emergency response (known as “emergency orders”) where an incident has caused, is causing or poses a threat of serious harm to the marine environment. Please describe any recommendations you have in the light of best practices on the measures and procedures that should be adopted in connection with an emergency response.

- It is not always clear if an event is an emergency. Therefore all potentially critical events should be reported in near-real-time to the ISA and Sponsoring State, as well as any follow-up actions. All such information should also get posted to a public web site, though this may not happen in near-real-time.
- Declaring an event an emergency should not be limited to a single entity. Rather, the Contractor, ISA, or Sponsoring Country should each have protocols in place for declaring an emergency.
- Once an emergency is declared, that triggers the emergency response plan (ERP), including chains of command, reporting, and the mobilisation of physical, human, and monetary resources. Releasing monetary resources should follow a streamlined procedure, as outlined in the ERP.
- Emergency response plans should be reviewed regularly, and updated to reflect experiences and new good practices.

22. A number of international and domestic legal instruments, including the Exploration Regulations, incorporate terms such as “serious harm” or “vulnerable marine ecosystems” in
connection with the protection of the marine environment. How do you think these terms should be better defined and interpreted in the exploitation regulatory framework?

- There is already considerable literature on these terms, and others (e.g. significant adverse impacts) which should be referenced.
- Wherever possible internationally agreed upon terminology and good practices should be used.
- That said, the ISA may need to customise the terms in the context of mining operations, and certainly how they are applied in the deep sea. As per above, we encourage the ISA to look beyond the borders of its internal committees. There is a wealth of experience that can be drawn upon.

23. How can the ISA most usefully promote and encourage the use of best practice (including technology advances and scientific research) to better protect the environment during exploitation operations?

- Because ‘best practices’ continually evolve, especially in a new field such as deep sea mining, we would encourage ISA to take an open approach, recognising a variety of ‘good practices’ rather than a single ‘best practice’.
- Given that this is the common heritage of mankind, corporate competition should give way to mutually beneficial cooperation.
- As noted above, regular (annual or bi-annual) workshops to share evolving good practices could be very helpful.
- Voluntary Codes of Conduct (discussed above) would also help establish good practices, provided there is mandatory reporting and review.
- ISA could develop honorary awards of recognition to highlight those contractors with particularly good practices.
- Practical economic incentives could include fewer site visits to better operators (thus reducing their costs if they are co-financing the inspectorate) and likewise more visits to operations with poorer track records.
- A common database for scientific data and data gathered by operators would facilitate analyses and reduce redundancies.
- As noted below in the transparency section, all such data should be presumed publicly available, unless the operator can demonstrate significant financial harm in their release.
- As noted above, many of our standards on land are premised on the notion of competition and protecting financial advantage, which in The Area will need to be balanced in light of considerations concerning the common heritage of mankind. Sharing good practices can be seen as a small step in this direction.

24. Are there any other fees or levies that the ISA should consider to promote environmental compliance?
• When non-compliance and/or poor practices are suspected, additional monitoring and inspection could be ordered, at the expense of the Contractor.
• On the other hand, when Contractors exhibit an exemplary record, they could get a partial waiver on certain payments or fees, e.g. a reduced environmental bond.

25. For the monitoring of activities in the Area, the Exploration Regulations provide for an inspection regime. Additionally, Sponsoring States may also undertake monitoring of Sponsored Contractor activities in the Area through inspection.

a. In your view what monitoring obligations should be placed on Contractors operating in the Area and included in the exploitation regulatory framework?

• Contractors should have to pay for in-situ monitoring and also a portion of the site visits.
• Contractors should be responsible for scientific monitoring of effects from mining (though this may be sub-contracted).
• Monitoring should take advantage of inexpensive remote technologies, building on existing practices when possible.
• Ships, for example, should be monitored using existing AIS systems. Ship positional data should be publicly available.
• At the site, in-situ continuous cam monitoring (on the sea bottom and on the ship) is recommended. This is normal on oil rigs and often on fishing vessels. It allows one to re-construct accidents as well as randomly to check operations from a distance without the Contractor altering behaviour as they do for site visits. It is also much cheaper.
• All monitoring of emergency events should be publicly available (just as the Deep Water Horizon deep water cam was available on the web)
• Other more sophisticated scientific monitoring / sample gathering will allow for better understanding of ecology and ecological impacts. Samples should be entered into a central repository and information from them (molecular, etc) publicly available.
• Site visits will also be necessary. However, these are expensive (shared between the Contractor, Sponsoring State, and the Authority), and have the further disadvantage of prior notification. Given the remoteness of the locations and the cost of running a ship / helicopter, there is really little possibility of unannounced visits. Therefore, they should be used sparingly --at start-up, in the development phase, and randomly throughout operations. Problematic operations will require more visits than good ones, and the cost of these should (in part) be borne by the Contractor. Site visits should be coordinated between the Sponsor State and the ISA to avoid duplication and to pool costs and information.

Please list the key measures and characteristics of what should be considered in establishing a supervision programme to verify compliance of Contractors with the rules, regulations and procedures, particularly compliance with their monitoring obligations above. In your view, how should such an ISA regime be structured and implemented, including the frequency of inspection, by whom and how should an inspection regime be funded?
• Some of this was addressed in the answers above.
• Whether an inspectorate is internal to the ISA or contracted out to a recognised body probably is not a significant issue. What is more important is the arm’s length independent relationship of an inspectorate, and the public availability of information so that civil society can check it over. Transparency will build trust and accountability.

26. What specific procedural obligations should be adopted under the precautionary approach best environmental practices and adaptive management? Are there any best practice risk management approaches (for example in an oil and gas or fisheries context) that could usefully be adapted to deep seabed mineral exploitation activities?

• First, it is valuable to differentiate between risk management (decision-making that uses available information to weigh probabilities) and precautionary measures (decisions which reflect a lack of full information, with unknown probabilities). Both are required and complement one another. Contractors are more often comfortable with the former, however.
• In an activity such as deep sea mining with so many unknowns, an active adaptive approach is warranted. In this case, all operations are seen as ‘experimental’ and data are gathered on their efficacy, etc, just as one would for an experiment. Additionally, if more than one procedure is seen as equally promising, then more than one can be taken, again with the results carefully monitored. Taking such an active adaptive approach can quickly build valuable empirical information on what works and what does not. All such information should be shared so that Contractors can learn from one another. (In this instance, the greater good afforded the environment should be seen to outweigh any claimed proprietary interests of individual operators.)
• Before full scale production, there should be a development phase that allows for trying out different procedures, per above.
• Operators should be incentivised to collect data, as that precautionary restrictions and buffers could be reduced once more is known. Perverse incentives should be avoided; for example, further restricting operations based on data collected. Therefore, precautionary restrictions should be most stringent at the beginning, and relaxed as data flow in and the effects are better understood. (This, unfortunately, does not occur with fishing, and as a result there is a great disincentive to collect fisheries data.)

27. In considering environmental procedures above, what internationally-accepted environmental management standards should be reflected in the exploitation regulatory framework?

• The offshore petroleum industry must comply with a wide variety of national standards. Norway has a good reputation in this regard and should be used as a starting point.
• Other commonly quoted standards such as the Equator Principles (financing) and EITI (fiscal transparency) are not environmental standards and should not be seen as such.
Part C: Health, safety and maritime security

The Exploration Regulations require Contractors to comply with generally accepted international rules and standards relating to safety at sea and any related rules, regulations and procedures adopted by the ISA. Equally, the Exploration Regulations similarly require Contractors to comply with any rules, regulations and procedures relating to employment practices including health and safety matters.

28. In considering health, safety, labour and maritime security, can you suggest the general and / or specific duties and obligations that should be placed on Contractors under the exploitation regulations? Please also consider any further specific obligations toward other users of the marine environment.

- Shipping standards are well-covered by the International Maritime Organisation (IMO). However, these are general in nature and not specific to resource extraction or protection of the environment.
- We discourage ISA from producing duplicate standards and encourage the Authority to cooperate and coordinate with the IMO for shipping, international labour bodies for worker health and safety, and international environmental bodies and experts for environmental protection (as noted above).
- Contractors should be encouraged to flag their vessels using recognised responsible flag states. Flags of convenience / non-compliance should be discouraged. Likewise ‘flag hopping’ (often changing flag) should be discouraged. Again, cooperation with existing international bodies as well as civil society (NGOs that track flag state performance), could inform the development of a list of preferred flag states.

Part D: General considerations – stakeholder communication and transparency

The ISA seeks your suggestions and comments on the following:

29. How can the ISA best develop a communications and consultation strategy which both secures transparency, efficiency and provides for the needs of a broad stakeholder base? It would be helpful to include specific examples of successful communication and consultation approaches.

- ISA currently has a mix of transparent and non-transparent practices. It should strive for greater transparency, particularly concerning the publication of scientific data, working documents, and observation of LTC decision-making.
- Transparency (according to the three categories outlined below) is currently a research topic at IASS. We would be happy to assist the ISA in developing policy in this regard.
- Transparency can be broken down into three categories:
  i. information / data going into decision-making. This would include survey data, for example.
ii. public participation in the decision-making process. This would include observers, publication of meeting documents, etc.

iii. reporting on how well objectives are being met. This would include reporting on compliance and enforcement.

- IASS and Duke University has recently completed a global assessment of regional fisheries management organisations (RFMOs) and would be pleased to provide lessons learnt. (The academic paper is in submission.)

30. What forms of engagement best enable you to make contributions and receive appropriate feedback? Please provide comments on any specific initiatives, including digital initiatives, that would be productive together with any observations on the structure and content of the current ISA website (www.isa.org.jm).

- The ISA website is currently pretty good in our view.
- Lack of access to ISA scientific data (submitted by Contractors) is a serious shortcoming.
- We encourage the development of a central database that is publicly accessible, using open source standards (e.g. Open Geospatial Consortium) that allow for ‘communication’ and integration with other global scientific databases.
- Once monitoring begins, these data should likewise be publicly available in a recognised open access format.
- It is beyond the scope of this survey to go into details, but PacMARA has extensive experience in building databases that use recognised global standards, and would be pleased to assist.

31. What information on activities in the Area do you consider most important to make available publicly? How should this information be shared?

- The wording of this question is rather backwards in our view. We would prefer to ask the question, “What information should not be shared?” This wording emphasises that information should be publicly available unless otherwise noted; hence, shifting the burden of proof.
- We argue that The Area being the common heritage of mankind will likely place additional burdens on transparency and reporting, over and above those found on private property or within national jurisdictions.
- Transparency is not just about what information is made available, but also about the quality of that information. (GIS files, for example, are more transparent and useful than scanned pdf files of maps.)
- Information and data should be available in electronic, machine readable format, at the same resolution at which they were collected.
- Scientific data (such as survey and monitoring data) should be available in the same format used in the environmental assessments, thus readily allowing for third party peer-review.
- It would be least burdensome to the ISA Secretariat if these data are housed in a central database, thus avoiding the duties of having to fill out data requests individually.
• Data requests should not be ‘screened’. (Such a case-by-case procedure would also be much slower and burdensome to the ISA.)

32. What aspects of the EITI do you think should be reflected in the exploitation regulatory framework?
• Both the principles and the procedures of the EITI are relevant; however, as outlined below, EITI has certain limitations.
• EITI places the complete burden of reporting on the State. Typically it can take up to ten years for a small state to arrange funding and go through the EITI process. This can be onerous for small states such as the Pacific States that have a desire to do deep sea mining in The Area.
• EITI is only about fiscal reporting --one leg of the ‘three-legged stool’ of sustainable development. The other two ‘legs’ -environment and public participation- are not covered.
• We would encourage a streamlined deep sea mining transparency initiative that looks at fiscal, environmental, and social responsibility. We would encourage a distribution of reporting burdens amongst the Sponsoring States, Contractors, and the Authority.
• IASS and PacMARA would be pleased to participate in developing a ‘DSMTI’.

Other considerations

33. Are there any further comments you wish to make on the issues raised in this survey that you have not commented on elsewhere?

We thank the ISA for the opportunity to participate in this survey. We expect that each of the topics covered in this survey will require further elaboration through workshops, follow-up consultations, etc. PacMARA and IASS would be pleased to participate in such follow-up actions. Our particular interests lie in transparency, environmental protection, database development, and marine spatial planning.