



SPC
Secretariat
of the Pacific
Community



SPREP
Secretariat of the Pacific Regional
Environment Programme

“Environmental Perspectives of Deep Sea Mineral Activities”

4th Pacific-ACP States Regional Training Workshop

9th – 13th December 2013, Nadi, Fiji

SUMMARY OF WORKSHOP OUTCOMES

Preamble:

The Secretariat of the Pacific Community (SPC), through the SPC-EU Deep Sea Minerals (DSM) Project, in collaboration with the Secretariat of the Pacific Regional Environment Programme (SPREP), hosted and ran the DSM Project’s 4th Pacific-ACP States Regional Training Workshop in Nadi, Fiji on the 9th – 12th December 2013. This workshop provided a consultative forum for stakeholders to hear from experts and to raise and discuss their concerns on potential environmental impacts of deep sea mineral activities on deep-ocean and marine ecosystems and fishery resources. There are many unknowns associated with deep sea mining and it is necessary to adopt a precautionary approach.

The objectives of the Workshop were:

- To build on the outcomes of two previous DSM Project workshops focusing on the environment management of DSM activities¹.
- To assess site and national perspectives, particularly related to national responsibilities within the EIA process, such as evaluating the EIA, establishing the Environmental Management Plan (EMP), monitoring and enforcement of the EMP.
- To assess regional issues, particularly any policy needs.
- To raise awareness and provide a forum for discussion amongst environment professionals of the emerging Deep Sea Mineral industry, potential issues from an environment sector perspective.
- To assist countries to identify capacity gaps for implementing all steps of the EIA process at national and regional scales and proposing measures to fill these gaps.

The Workshop was the first time that SPREP had officially partnered with DSM Project’s work and jointly run a workshop, and both agencies welcomed the opportunity for collaboration on the environmental management strand of the DSM Project’s work programme.

Seventeen Pacific Island countries and territories were represented at the Workshop, by 37 Government officials. Representatives of 17 non-governmental organisations, and 10 private sector

¹ For more details, and copies of the papers from those workshops, please see here: <http://www.sopac.org/dsm/index.php/regional-meetings-and-trainings>, and particularly the November- December 2011 and August 2012 events.

companies also participated. SPREP and SPC were also well represented including the SPREP Director General and the Director – SOPAC Division of the SPC.

The Workshop benefitted from the attendance of a number of experts in relevant fields, and in particular by Dr. Cindy Van Dover of Duke University, and Dr. Malcolm Clark of NIWA – world-leading expert scientists in the marine biology of deep-ocean ecosystems. Copies of the workshop papers are available on the DSM Project website².

This Summary of Workshop Outcomes was drafted through a representative ad-hoc drafting committee and discussed and agreed in plenary by the Workshop Participants. It covers 11 key areas:

- A. Development Drivers
- B. Knowledge
- C. Environmental Impacts
- D. Strategic Environmental Assessment
- E. Environmental Impact Assessment
- F. Marine Spatial Planning
- G. Management
- H. Legal Issues
- I. Capacity Gaps
- J. Regional Approach
- K. Future Action

On the 4th day of the workshop participants were formed into 6 working groups to discuss and address the following topics:

- 1. Review of ISA EIS Template³ – Seafloor Massive Sulphides
- 2. Review of ISA EIS Template – Manganese Nodules
- 3. Review of ISA EIS Template – Cobalt-Rich Crusts
- 4. Strategic Environmental Assessment
- 5. Marine Spatial Planning
- 6. Regional Cooperation

The outputs from working groups 4, 5 and 6 are attached as Appendices. The outputs from working groups 1, 2 and 3 will be used to revise the EIS template.

² <http://www.sopac.org/dsm/index.php/regional-meetings-and-trainings/33-spc-sprep-organised-pacific-acp-states-regional-training-workshop-on-environment-perspectives-of-deep-sea-minerals-activities-9-13-december-2013>

³ Environmental Impact Statement template from the International Seabed Authority Technical Study: No. 10 <http://www.isa.org.jm/files/documents/EN/Pubs/TS10/TS10-Final.pdf>

Summary of Workshop Outcomes

A: Development Drivers

1. There are a number of drivers for Pacific Island countries to develop their deep sea mineral sector, including economic growth, social development and limited alternative economic development options. For industry the main drivers are geological potential, growing demand for minerals and rare metals coupled with low grade of terrestrial mineral deposits.
2. More information about the potential of the industry will assist to manage expectations about the scale and timing of development, and inform Government decisions.
3. The EIA process should inform the developer's feasibility study where a decision to mine or not is made or vice versa.

B: Knowledge

4. The deep ocean is large, diverse and complex, with a number of dominant physiographic features well known and many other features still to be discovered. A diverse fauna inhabits the deep sea, with many species undescribed or undiscovered; this fauna varies from one region to the other.
5. Access to the deep sea has improved in recent decades, but understanding the ecology of the deep sea is limited by the high cost of research and exploration (requiring expensive ships and technology). Most of the deep sea remains unexplored.
6. Multidisciplinary science is needed, and involves collaboration between mining industry, research institutions, government agencies and other stakeholders.
7. Some key scientific points that need to be addressed are:
 - *Structure*. Multiple habitats, "ecosystem" organisation.
 - *Dynamics*. How variable, over what spatial scale.
 - *Connectivity*. Linkages between habitats, depths, ocean basins
 - *Future ocean structure and function* - climate change
 - *Human impacts*. Fishing, mining, waste disposal, litter and other uses
8. Site-specific information on species composition, abundance, and biological characteristics is needed to determine vulnerability to impact.
9. Slow growth rates and reproduction, connectivity, and adaptation to food-poor conditions are key limiters in the resilience of manganese nodule and crust environments to human impacts.
10. Studies in other regions may be used to inform the first steps in developing deep sea mineral exploration activities in the region.

C: Environmental Impacts

11. Environmental assessment is a planning process that should be done at two levels: strategic environment assessment (SEA) and project-specific environmental impact assessment (EIA).
12. All stages of development need to be subject to some form of environmental assessment. The type of assessment required will vary in complexity and intensity depending on the stage of development and the level of risk involved.

13. A challenge for Government is to address cumulative impacts, which may arise from natural processes, multiple marine uses in the same area, or multiple deep sea minerals activities occurring in proximity (which may be at different times or in different jurisdictions).
14. It must be recognised that deep sea mining by its nature will be destructive in the local scale, and may lead to species loss. The impacts on the wider ecosystem level need to be evaluated and managed.
15. More information about oceanographic processes is required to understand the potential impacts on the water column, ecosystems and human communities.
16. Variable currents near the deep seabed mean that it is uncertain how far sediment plumes may or may not travel up the water column, and/or linger as a cloud. The extent will depend on individual sites and technology used.
17. Fisheries are an important source of income for Pacific Islands. It will be important to predict and prevent unwanted impacts on fish populations from deep sea minerals activities, which may particularly occur in relation to seamounts. Because of the depths currently fished (<600m) compared to the depths of deep sea minerals currently targeted (>1000m), direct impacts are unlikely; but indirect impacts on fish of deep sea minerals activities may include changes to the water column or primary productivity from increased marine traffic, surface discharges, or chemical 'leaks' when ore is lifted through the water column.
18. The three types of deep sea mineral deposits are significantly different in their physical and biological characteristics. Mining methods will be different so the management of their impacts will require different requirements.
19. Considerations for assessing the capacity for system recovery should include the biological characteristics of different species, habitat variability, oceanography, underwater acoustics etc.

D: Strategic Environmental Assessment (SEA)

20. An SEA:
 - is a tool for regional/provincial/sector wide planning,
 - addresses at a strategic and wide-scale level the environmental impacts of potential developments and resources uses,
 - is a systematic process to assist transparent and informed decision-making,
 - should lead to environmental considerations, sustainability principles, and international obligations being factored into policy and planning in other sectors,
 - enables consideration of cumulative and trans-boundary impacts.

E: Environmental Impact Assessment

21. An EIA should:
 - ideally be nested within a regional SEA,
 - encompass the full range and life cycle of the proposed activity,
 - take an 'ecosystem-based approach' with a comprehensive description of all communities, appropriate spatial coverage, and detailing the biological responses, connectivity, and resilience of the animals to the impact.

22. The ISA published an EIA template for the environmental management of deep sea mineral activities. Countries can modify the template to suit their national settings.
23. An EIA results in an environmental impact statement (EIS), which should comprise (i) Environment Risk Assessment (ERA), (ii) Environment Impact Assessment (EIA), (iii) Environment Management Plan (EMP). The EIS may present impacts by location (e.g. depth strata) or by receptor (e.g. biological groups).
24. The ERA should be conducted early in the process, and continually reviewed and updated.
25. It is important that an EIS presents information in a way that is easily understood by stakeholders. For example it could include key messages and a summary at the start of each chapter.

F: Marine Spatial Planning (MSP)

26. MSP is:
 - a planning process to identify a balance of economic, social and ecological sustainability and to support informed and coordinated decision making for marine resources.
 - a mechanism for integrated decision making, identifying potential non-compatible resource uses and minimising conflict.
 - a participatory process, inclusive of multiple sectors, government departments and resource users.
 - an iterative process, which involves refinement and revision over time.
27. Essential components of MSP include:
 - future scenario planning, and
 - the need for engagement and participation of all stakeholders, such as using maps to identify both resources and resource users (e.g. Locally Managed Marine Areas)
28. MSP requires Ecosystem Based Management (EBM). EBM takes a balanced approach to managing whole ecosystems, and integrates all sectors that impact or are impacted by the ecosystem, recognising the connections within and across ecosystems. 'Ridge to reef', can be expanded to 'ridge to deep sea'.
29. There are other management strategies, such as Species Management, Marine Protected Areas, Watershed Management, and Integrated Coastal Zone Management.

G: Management

30. Successful management of deep sea mineral activities is reliant on a cooperative and integrated approach between all stakeholders (industry, civil society and government).
31. Stakeholders are required to sort through complex information in weighing up different values and making decisions about difficult trade-offs
32. Information sharing is important for transparent assessment processes and giving the public confidence about the integrity of these processes.
33. The requirement for transparent and accurate sharing of information applies to all stakeholders: government, industry, civil society.

34. Before deep sea minerals licensing and individual project EIAs, it is important to have cross-agency dialogue, public consultation, wider planning schemes (such as marine spatial planning, based on strategic environmental management), and institutional arrangements in place. This could apply at sector, national, and regional levels.
35. Civil society has a role to play in promoting rights based approaches and shaping development policies, and can be involved in deep sea mineral decisions via the establishment of a 'citizens advisory committee'.
36. Civil society is very diverse encompassing a range of community groups and value systems.
37. Effective meaningful consultation depends on an open (not pre-determined) outcome.
38. Data collection, access, exchange and management arrangements need to be put in place to facilitate informed decision making, with an understanding of where to draw the line with respect to the level of information required to take decisions.
39. Baseline environmental studies are essential for ongoing environmental management and for progressing basic scientific understanding of the deep sea environment.
40. New scientific techniques and baseline sampling processes are being developed.
41. Baseline data collection should commence at the start of exploration and be staged throughout the exploration phases and not left until the mining EIA stage.
42. The EIS should be followed up by site monitoring and remediation as part of adaptive management.
43. Data from other activities and sources (e.g. identification of historical shipwreck sites) can be used to inform the collection of baseline data.
44. A consistent approach to the design of sampling and data collection programs, and data storage formats, will allow for comparisons across the Pacific region. However, it will also be necessary to allow for adaptability to specific project sites and advances in science and techniques.
45. In doing baseline assessments it is important to look at the dominant functional groups in an ecosystem, which can be identified through community structure and food web analyses.
46. Where relevant, a good reserve site / sites should be identified to provide source stock for re-colonisation of a mined site.
47. Proper environmental management planning and a commitment to best environmental practice are necessary for any deep sea mineral development.
48. Trans-boundary impacts should also be anticipated and managed.
49. Rehabilitation of deep sea mining sites is an expensive possibility, and Government can include this within the scope of the EIA and/or the permit conditions. Long term monitoring of these sites is recommended.
50. Transparent financial management (e.g. by application of the Extractive Industry Transparency Initiative) and equitable sharing of benefits from deep sea mining, will be essential to secure positive economic development.

H: Legal Issues

51. Maritime boundaries need to be measured and declared, in order for States to know where their jurisdiction lies.
52. The precautionary principle must be applied to all deep sea mineral activities.
53. Most countries in the Pacific are engaged, or about to engage, with deep sea minerals exploration either in national jurisdiction, or the Area; and these countries have also commenced the process of reviewing existing or developing new laws to regulate deep sea minerals.
54. States who permit deep sea minerals activities within their EEZ, or who sponsor deep sea minerals activities in the Area, bear ultimate responsibility to ensure that those activities comply with UNCLOS and other international law environmental obligations to which they are a party.
55. National law should be used to place requirements on the deep sea minerals operators, such as to share data, to meet environmental standards, and to include financial liability for non-compliance with the laws (e.g. environmental bond). This law must be informed by science (and scientific research should be targeted to inform the law), and it is important that the law is based upon national policy, developed with widespread stakeholder consultation.
56. There are existing international frameworks (e.g. UNCLOS, Multi-lateral Environmental Agreements (MEAs), IMO conventions on safety and environment) that can be drawn upon to develop a regional assessment framework. This should be informed by clear analysis of countries' existing multi-lateral agreements, and how deep sea mineral activities will affect these agreements.
57. Management tools such as EIA, SEA and MSP can be required by law as a firm commitment towards achieving objectives for environmental management.

I: Capacity Gaps

58. Work needs to be undertaken to link land management processes and coastal management processes more effectively.
59. National environment service representatives note the following 'gaps':
 - Lack of in-country expertise (and some laws require Government consultants to be locally registered).
 - Deep sea minerals not expressly covered in national environment laws.
 - Absence to date of cost/benefit analysis of deep sea minerals development: to determine what impact is acceptable.
 - Fragmentation of mandate and regulations – and lack of coordination across Government.
 - Lack of scientific data to inform national policy / laws.
 - Staff capacity to know when an EIA should be required, terms of reference for a deep sea minerals EIA, and how to review the EIA, and monitor against it.
 - Lack of capacity to implement and enforce legislation.
 - A lack of funding / budget allocation.

- Capacity to know how and when to conduct public education and consultation.

J: Regional Approach

60. All Pacific Island countries are members of the International Seabed Authority, and more co-ordinated engagement from the region in that forum could influence the regime to maximise benefits conferred on developing States.
61. There are opportunities for Pacific Island countries to operate collectively, via a regional body (underpinned by a regional treaty?) to set minimum standards and harmonised licensing and fiscal regimes, to promote data-sharing between countries, to pool human and technical resources, and to act as a regional bloc in relevant negotiations.
62. As a region we can learn from our neighbours, our history, and other development sectors (e.g. offshore oil and gas).

K: Future Action

63. SOPAC Division of SPC and the Forum Fisheries Agency to bring fisheries and deep sea minerals officials together – and examine how deep sea minerals policies and procedures can learn from and complement fishery policies. [Ensure all SPC members are invited]
64. Governments to engage more actively with the ISA (with SPC-SOPAC Division support), including arrangements to access environmental data.
65. There is a potential for capacity-building through ‘telepresence’ (real-time, on-line video, audio, and instant messaging) from the seafloor in collaboration with scientists from Duke University and other research institutions and scientists.
66. Interested stakeholders to engage with Global Ocean Commission, ISA, and other initiatives (e.g. DOSI and MIDAS) regarding the comprehensive environmental management of the High Seas and the Area, and draw on these initiatives for national jurisdiction.
67. Regional universities should be involved in future deep sea mineral activities.
68. SPC and NIWA to collaborate on the development of Regional Guidelines for Marine Minerals Scientific Research Guidelines (Prospecting and Exploration). The Guidelines will:
 - be drafted in consultation with stakeholders including regional universities, SPREP, Marine Sector Working Group, and NGOs;
 - link to existing regional processes (e.g. Oceanscape);
 - provide a framework for research that supports good environmental management of deep sea mining activities;
 - ensure research meets regional and not just national needs;
 - support the development of region-wide understanding of biological and ecological communities; and
 - identify what is important to measure, how it can be measured and the frequency of monitoring required once a deep sea mining operation commences.
69. SOPAC Division of SPC and SPREP (and other stakeholders) are requested to collaborate on provision of support to Pacific Island Governments (for individual countries, and/or regionally) including:
 - Finalising and sharing the EIA guidelines worked on during the meeting.

- Developing Environmental Management Plan (EMP) guidelines.
 - Developing regional SEA guidelines for deep sea mineral activities.
 - Continuing discussion on implementing management tools on a regional level, and integrating environmental planning and management tools into existing regional commitments such as Coral Triangle and Oceanscape.
 - Updating and expanding regional impact assessment guidelines.
 - Providing impact assessment training.
 - Providing relevant policy and legislative assistance.
70. The next SPC Deep Sea Minerals Project meeting deep sea mining workshop in the first quarter of 2014 will cover fiscal regimes and models of managing extractive industry wealth so as to provide long-term sustainable benefits for Pacific Island countries from the development of non-renewable deep sea mineral resources.
71. SOPAC Division of SPC will work with SPREP and other stakeholders to produce an options paper for strengthened regional cooperation.
72. Countries should work to bring management approaches onto one management system (e.g. a GIS map) to start to link to broader marine management processes.
73. Assistance is requested by P-ACP States in relation to the management of marine genetic resources.

This workshop was part of the ongoing DSM Project capacity building initiatives in addressing knowledge gaps on specific deep sea mineral issues and encouraging a stakeholder participatory approach for Pacific ACP States.

The full workshop papers and proceedings will be available on the DSM Project website <http://www.sopac.org/dsm/index.php/regional-meetings-and-trainings>

Addendum:

After the workshop Mr Rick Steiner (of Oasis Earth consultancy firm), via email to workshop participants, raised a point regarding the relative proportion of impact to hydrothermal vent ecosystems. While this issue was not raised during the workshop the comment and responses received are included in this summary, as an additional point of consideration:

Comment: It has been estimated that there are only 500 - 5,000 deep sea hydrothermal vent sites (where one type of DSM deposits, seafloor massive sulphides (SMS) are found) in the world ocean. If one estimates that these vent sites cover an average of 1 km² each, the global total area covered by deep sea hydrothermal vent ecosystems would be perhaps 500 km² - 5,000 km². This is relatively small compared with, for instance, the 6+ million km² of tropical forest habitat globally, or 100+ million km² of abyssal plain habitat (where another type of DSM deposits, polymetallic nodules are found) in the world ocean. Thus, disturbance or removal of deep sea hydrothermal vent habitat through DSM activities would remove a proportionately greater amount of the global total of this ecosystem/habitat type than would mining activities, for instance, on the abyssal plain or tropical forests. In addition, these deep sea vent ecosystems are some of the only known to science that rely on chemosynthesis⁴, representing unique life forms, relatively new to science.

Additional email exchanges with other participants further raised the following points in response:

- There remains significant disagreement among workshop participants regarding the risks and potential impacts of DSM.
- The natural disturbance regime at deep sea hydrothermal vents (e.g., volcanic activity, etc.) is significantly greater than on the abyssal plain, and vent ecosystems generally exhibit greater resilience to disturbance than abyssal plain ecosystems.
- The fauna at *active* vent sites differs significantly from that at *inactive* vent sites (the latter which may be more likely to be targeted for mining), and so the environmental impact of disturbance would differ between inactive and active sites.

⁴ The formation of organic material by certain bacteria using energy derived from chemical reactions (as opposed to energy derived from the sun i.e. photosynthesis).

Appendix 1: Working Group 4: Strategic Environmental Assessment

*notes adapted from powerpoint presentation

Process that we need to undertake at the regional and national level

Guidelines are what we would envisage coming out of the process

General Principles

- SEAs should be subject to review
- Countries should be firmly committed
- All countries should seriously consider conducting SEA on a national level before any DSM activities take place.
- SEA should include inputs from all relevant stakeholders
- SEA can help influence good decision making
- SEA will set standards and thresholds for DSM activity

National Level

- Country needs to first agree to undertake SEA
- Identify competent authority
 - (create new or use existing one)
 - SEAs should be recognised in national policies
 - Review existing legislation/policies
 - Ensure there is a Legal framework for DSM that incorporates SEA requirements at national level (and EIA)
- Need close collaboration between minerals departments and environment departments and relevant stakeholders
 - Create working group consisting of all relevant stakeholders
- Awareness of SEA needed
 - (May seek assistance from SPC/SPREP)
 - Workshops to inform stakeholders
- Formulation of SEA
 - Look at framework and capacity for carrying out SEA
 - Identify opportunities and options for how SEA can be incorporated/implemented
 - Transboundary issues consideration
 - Research including any baseline studies
 - Spatial planning
- Institutional Capacity building should be considered parallel to SEA guideline formulation

Regional Level

- Region to recognize the need to have a regional SEA
 - Commitment from leaders.
 - Information is needed to inform this.
- Initial Workshop
 - To determine if SEA for region should be pursued. (This could inform regional leaders.)
- Work on legal framework
- Can learn from EU experience in SEAs for assistance on creating DSM

- Will need to be coordinated by the CROP agencies

Proposal for an institutional arrangement which can help coordinate SEA in region

- Need a **unit** which is recognized by countries, Council of Regional Organizations in the Pacific (CROP), academic community.
- Will sit in a CROP agency and will facilitate the discussions/meetings on SEA.
- Roles of unit:
 - Research
 - Facilitate input
 - Look at outcomes of meetings and see how we can realistically implement outcomes

Limitations

- Sharing of information
- Transboundary issues
- Institutional Capacity

Working Group Members

Mr Lowell Alik (RMI) – Environmental Protection Agency

Mr Tom Dettweiler (USA) - Odyssey Marine Exploration

Ms Eleni Tokaduadua (Fiji) - Department of Environment

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Ms Gretel Orake(PNG) - Minerals Resources Authority

Ms Marii Marae(Kirabati) - Environment & Conservation Division

Ms Ferila Brown (Samoa) - Ministry of Natural Resources & Environment

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Appendix 2: Working Group 5: Marine Spatial Planning

Summary of Key Outcomes

Current efforts and potential of integrated marine planning:

1. With specific relevance to DSM, currently being developed at sub island scale (eg Fiji), island group scale (eg Tonga) and significant portion of EEZ (eg Cook Islands) (and recognise many other efforts in the region, particularly inshore).
2. Provides a clear identification of critical knowledge gaps and needs, so as targeted effort can be made to fill these data needs and further inform the
3. Marine Spatial Planning outputs can be used explicitly for assessment of cost benefit analyses of actions and resource uses, supporting decision making in regard to location and prioritization of DSM mining.
4. Essential for marine spatial planning to start with engagement from multiple sectors, multiple governance levels and civil society.

What can SPREP/SOPAC/DSM project provide?

5. Develop synthetic information to communicate Marine Spatial Planning explanation, context, aim and mechanism – how it can support multiple sector planning.
6. Look for opportunities for joint CROP support in terms of marine management, and responding to requests for multi CROP agency support to assist in the cross pectoral discussion for integrated marine planning (marine spatial planning) – access through Marine Sector Working Group.
7. Mechanisms and direction on linkages between multiple data types held by different CROP agencies, countries and contractors – framework and guidelines for sharing to build over time increased regional knowledge.

Sustainability and Implementation:

8. Sustainability for an integrated marine planning process needs linking community management processes with national legislative process and international commitments.
9. Sustainability for integrated marine management needs committed staff to carry out and continue marine spatial planning process, and provide training and capacity building to ensure continuation of effort and continuity over time.

Working Group Members

Mrs Anne Littaye (New Caledonia) – PACIOCEA

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Ms Laisa Vereti (Fiji) -Pacific Islands Association of NGOs

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Mr Manoa Malani (Fiji) - World Conservation Society

Ms Elizabeth W. Koteca (Cook Islands) – Office of the Prime Minister

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Dr John Luick (Australia) - SARDI

Ms Vira Atalifo (Fiji) – SPC

Dr Tim Carruthers (Samoa) - SPREP

Appendix 3: Working Group 6: Regional Cooperation

Summary of Key Outcomes

- Significant reasons in favour of strengthening regional coordination were identified.
- It is noted that SOPAC Division was tasked by its member countries at the last annual meeting to develop an 'options paper' to explore different models of regional cooperation for DSM management. It is recommended that this work proceed, but that SOPAC include a wider group of interested stakeholders in developing that paper.
- It is recommended to set-up an open-ended working group (including stakeholders already engaged with SOPAC Division's DSM Project, and others). This could be done under the Forum, or via existing initiatives e.g. the Marine Sector Working Group.

Notes in Full from Discussion:

Reasons in favour of stronger regional coordination

- Increased influence on the international stage (e.g. ISA)
- Minimum standards for environmental protection measures being upheld across the region.
- Set commercial / financial terms, to avoid 'powerful' companies playing countries off against each other, and driving down royalty rates (as has been observed with onland mining e.g. in Australia.)
- A harmonised regime across the region will provide a secure, familiar and certain regime for companies, which will make the Pacific EEZs a more attractive operating and investment environment.
- Individual Governments have limited resources, and could not be expected each to have in-country a DSM specialist geologist, biologist, lawyer, economist etc and there would be unlikely to be enough demand in one country to have these staff full-time. Pooling resources on a regional level will enable Governments to draw upon a team of relevant experts (e.g. to conduct / review EIAs), and if serving all countries in the region, full-time staff can be retained.
- Using a regional resource for DSM work will retain within the region the knowledge garnered from one DSM operation, and this learning can inform another country's work. This will not happen if - individual countries hire external consultants.
- Government can be assured that a regional team of technical experts working for an intergovernmental agency is independent and impartial and working in the countries' best interests.
- There is possibility of transboundary DSM operations, where deposits straddle national maritime borders, or are located in sites subject to shared extended continental shelf claims. Companies are unlikely to invest in such projects if they have to navigate two entirely different regulatory systems, and without assurance that the countries are managing the site cooperatively.
- Marine spatial planning and strategic environment assessment on a regional scale would be facilitated.
- Managing transboundary impacts, impacts on migratory species, or cumulative impacts where different DSM sites are located close to each other but in different national jurisdictions, would be easier.

- If exploration cruises can move easily across national maritime boundaries, without undue bureaucracy, then more than one country can be covered in one cruise.
- Pacific Islands share priorities and vulnerabilities (e.g. climate change). The inter-relation between DSM and other priority areas can be managed more holistically on a regional level, and with countries sharing their experiences.
- Implementation of the RLRf and agreed common standards can be monitored and reviewed on a regional basis.
- DSM is not a standalone issue. Having a centralised body for the region will assist DSM work across the region to feed into wider environmental management initiatives.
- A regional body can hold, analyse, and share (as appropriate) geological and environmental data for the region's benefit. Environmental data gathered from research in one country's marine space, can inform another country's environmental management and planning.
- Regional cooperation could assist in case of disputes with companies.

Suggestions of options for what the coordination would comprise

- We can learn from FFA and PNA experiences, which have seen parties that share common benefits from fisheries, cooperating to dictate process, minimum terms and conditions, conservation measures, and pricing on a regional level. This has led to increased national benefits, and enhanced regional voice at the international level.
- The ISA set-up could also be a useful model for a regional arrangement.
- There is potential for the regional cooperation to include four different areas: (i) policy, (ii) legal, (iii) technical support, and (iv) commercial relations.
- The regional approach should also encompass fiscal considerations: realistic financial modelling of the resource potential, how to calculate likely profits / costs, how to design a tax / royalty regime, and financial management standards, like the Extractive Industry Transparency Initiative.
- A regional agreement, setting high-level common understandings and standards would be a good first step, and may be easy to achieve, given wording already included in the Pacific Plan, Leaders' Communiques, and the RLRf on this subject.
- This could be done by way of a protocol to the Noumea Convention: an important first step would be to encourage more countries to sign up to the Convention that already contains Articles on preventing pollution from seabed exploration and exploitation, and EIA requirements.
- More detail, e.g. setting up institutions, or deciding on the content of regional template application forms, licences, EIA templates etc. can follow.
- Types of common conditions that could be included in the regionally agreed terms / conditions for DSM activities would include the regulatory terms described in the RLRf, e.g. minimum technical and financial qualifications for contractors, when an EIA is triggered and what it must include, requirement to pay an environmental bond, biodiversity off-setting, corporate social responsibility provisions (e.g. capacity-building or community investment), transparency mechanism etc.
- An agreement could also formalise stakeholder engagement provisions, and public participation mechanisms.
- A new secretariat body could be formed (like the PNA), existing agencies could be used (e.g. SOPAC) or existing structures could be modified (e.g. the Marine Sector Working Group,

which is responsible for Pacific Oceanscape framework implementation) could be formalised into a Marine Council).

- A regional body could provide regulatory services to individual Governments e.g. receiving licensing applications, reviewing EIA reports, reviewing annual performance reports, monitoring operations, carrying out inspections.
- A regional body could run an observer / inspector training programme, so there is a pool of independent observers countries can call upon.
- A regional body can work with the ISA and DSM companies to secure capacity-building and training opportunities for Pacific Island nationals.

How to move forward

- SOPAC Division DSM Project has been a very useful project, and has brought the countries into contact with each other. The DSM Project will end in 2 years' time. The countries should continue and strengthen the relationship, and will need funding to do so. Governments should highlight this as a priority, and should include the proposal of strengthened regional DSM collaboration in discussions about funding options (e.g. EU EDF 11).
- Any regional initiative must fit within the Pacific Plan. To date the Pacific Plan has included regional cooperation with regards the regulation of DSM activities. The Leaders in 2012 endorsed the RLRf and recommended its use by the region. The Leaders will meet in April to consider 36 recommendations to re-draft the Pacific Plan, to focus on collaboration, integration and coordination. This includes changing the name to 'Framework for Pacific Regionalism'. It is important to ensure that these outcomes are fed into the Leaders' discussions and the Pacific Plan; and also the CRGA meeting next year.
- The relevant processes, legal and financial implications need to be presented and discussed, by Leaders and by regional agencies.
- SOPAC Division was tasked by its member countries at the last annual meeting to develop an 'options paper' to explore different models of regional cooperation for DSM management. It is recommended that this work proceed, but that SOPAC include a wider group of interested stakeholders in developing that paper.
- It is suggested to set-up an open-ended working group (including stakeholders already engaged with SOPAC Division's DSM Project (e.g. like Pacific Island Forum Secretariat), and others e.g. University of the South Pacific, South Pacific Tourism Organisation). This could be done under the Forum, or via existing initiatives e.g. the Marine Sector Working Group.
- As well as the Pacific Plan there are a number of existing initiatives and treaties that have relevance to DSM (e.g. Pacific Island Regional Ocean Policy and Oceanscape; the Noumea Convention), which are summarised in the RLRf. These should be taken into account in developing the options paper.
- The PNA has developed a paper on the subject, which was presented to the Pacific Plan review team. This should be taken into account.
- It was acknowledged that not all Pacific Island countries and territories are signatories to the Noumea Convention, nor members of the SOPAC Division DSM Project, so it will be important to move forward via a network with the full membership (e.g. SPC)
- Pacific Island countries should attend the ISA annual meeting, and should participate in the pre-meeting preparatory workshop to be convened by the SOPAC Division DSM Project.

Working Group Members

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Mr Michael Perez (Tokelau) - Department of Economic Development, Natural Resources & Environment

Ms Hannah Lily (Fiji) - SPC

Mr Clark Peteru (Samoa) - SPREP

Mr Stuart Chape (Samoa) - SPREP

Ms Seni Nabou (Fiji) - Greenpeace – participating without prejudice to Greenpeace’s position on seabed mining

Ms Helen Rosenbaum (Australia) - DSM Campaign – joining the group as an observer