

SPC-EU EDF10 Deep Sea Minerals Project Inaugural Meeting, 6-8th June 2011, Nadi Fiji

“High Level Briefing on the Status of Deep Sea Minerals in the Pacific Islands Region and Planning for a Regionally Integrated Way Forward”

CHAIR'S SUMMARY

The inaugural regional workshop for the Secretariat of the Pacific Community (SPC)-European Union (EU) EDF10 Deep Sea Minerals (DSM) Project was held at the Tanoa International Hotel in Nadi, Fiji Islands, during 6-8 June 2011. The workshop was titled: *High-Level Briefing on the Status of Deep Sea Minerals in the Pacific Islands Region and Planning for a Regionally Integrated Way Forward*. The meeting noted that this summary was determined on the 8th of June 2011, the United Nations World Oceans Day.

The following member countries of the Secretariat of the Pacific Community (SPC) were represented: Cook Islands, Federated States of Micronesia, Fiji Islands, France, Kiribati, Marshall Islands, Nauru, Niue, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu, United States and Vanuatu. The following governments also sent representatives: South Korea, People's Republic of China and Timor Leste (also a beneficiary of the DSM Project at the European Union's request).

International, regional and national agencies represented were: Commonwealth Secretariat, Duke University, European Union, IFM-GEOMAR, International Seabed Authority, International Union for Conservation of Nature (IUCN), Korea Ocean Research & Development Institute (KORDI), National Institute of Water & Atmospheric Research (NIWA), Pacific Islands Forum Secretariat (PIFS), Pennsylvania State University, Secretariat of the Pacific Regional Environment Programme (SPREP), UNEP/GRID-Arendal, United States Geological Survey (USGS), and World Bank.

The following private sector and civil society entities were represented: Anindilyakwa Land Council, BECA International Limited, Centre for Environmental Law and Community Rights Inc, Eco-Strategic Consultants, Envi-Green Pacific Consultancy Limited, Fiji Environmental Law Association, GeoPacific Limited, Greenpeace Australia Pacific, Kontiki Capital, Minerals Policy Institute, MUSKITS Law, Nauru Ocean Resources Inc (NORI), Nautilus Minerals Inc, North-South Environmental Law, and World Wildlife Fund (WWF).

Overview

With the vast ocean spaces, the livelihoods of most of the Pacific Island Countries (PICs) and territories revolve significantly around the opportunity for sustainable use of the ocean and its resources. This will significantly contribute to reducing their economic vulnerability and expand their narrow resource base by optimizing the benefit from the size and extent of their EEZs and the mineral resource potential that occur on the seabed.

In recent years the interest in some of these mineral deposits has moved from just scientific resource assessment to commercial interests. This is due largely to the high grade of base and precious metals contained in Seafloor Massive Sulphide deposits together with sustained high prices of key metallic minerals. The meeting recognized that the establishment of SOPAC in 1972 was in large part due to the need for assessment of deep sea mineral resources in the region. Subsequently and largely coordinated by SOPAC, marine scientific research and seabed mineral resource assessments within the region have located and identified a varied group of mineral occurrences on the seabed within the EEZs of many PICs.

The meeting acknowledged the current support of the European Union through the 10th EDF Pacific Regional Programme for the funding to support this 4-year project (2011-2014) entitled “*Deep Sea Minerals in the Pacific Islands Region: a Legal and Fiscal Framework for Sustainable Resource Management*”. The overall objective of the project is to expand the economic resource base of Pacific ACP States. The specific purpose is to strengthen the system of governance and capacity of Pacific ACP States in the sustainable management of their potential deep sea mineral resources through the development and implementation of sound and regionally integrated legal, fiscal and environmental frameworks, improved human and technical capacity and effective monitoring systems.

The meeting acknowledged the risks associated with deep sea minerals and the opportunity to sustainably manage them. The meeting further acknowledged that there is no such circumstance as “No Risk”. Having accepted that as a reality, the task at hand is to “Know Risk”. In other words it is a joint responsibility to work together to assemble all the necessary data and information leading to knowledge and a better understanding of risk, and ultimately the determination of an acceptable level of risk.

This meeting recognised that determining the level of acceptable risk in regard to the topic of deep sea minerals and potential for mining can be difficult and attracts differing opinions around the region. This is something that PICs need to address and perhaps discuss through a regional consultative process.

This High Level Meeting provided the opportunity to have an interactive dialogue so all can become better informed about deep sea mineral issues, challenges and opportunities and, through this Project and other initiatives, move forward together to better understand and determine the level of acceptable risk and ultimately contribute in some manner to improving the livelihoods of Pacific communities.

The deliberations concluded with agreement that the correct way forward is a strategic one which is built on the following: (i) inclusiveness, and (ii) interactive dialogue, which lead to (iii) incremental actions by which means sustainable management of deep sea minerals may proceed for all Pacific States concerned.

Conclusions and A Way Forward

The participants were divided up into 12 groups and were asked to provide comment, using bullet points, on three main areas / issues:

- **Issue 1:** offshore exploration and mining, mineral potential, maritime boundaries, technology development and transfer, private sector perspective, implications of UNCLOS and other laws, stakeholder collaboration and partnership
- **Issue 2:** conservation of deep sea ecosystems, fishery and other marine resources, potentially impacted communities, community concerns, outreach, implications of UNCLOS and other laws, stakeholder collaboration and partnership
- **Issue 3:** fiscal regime and policy, development of the regional framework and national policy/legislation/regulations, legal drafting, implications of UNCLOS and other international/regional conventions, existing national policy and laws, stakeholder collaboration and partnership

Any other key points that were identified by participants during group discussions have been included under appropriate headings. The following list is a synthesis of issues raised by each of the twelve groups during group discussions and presentations. A more detailed list of group discussion outcomes is appended (Appendix 1).

- **Regional Approach:** A regional approach to regulate the DSM sector and address seabed mining issues relating to economic activities and benefit sharing, governance and administration, capacity building, maritime boundary disputes and negotiation, research and exploration review, data sharing, integrated planning and coordination, opportunities and challenges.
- **Capacity Building:** Great need for capacity building in all aspects of DSM and the priority areas are: technical, legislative, fiscal, environmental, economics, governance, management, enforcement, monitoring, scientific research, and partnerships in capacity building initiatives.
- **Technology Development and Transfer:** Encourage and support long-term technology development and transfer through partnership and participation in: exploration, mining and environmental management, and development of environmentally friendly mining technology.
- **Maritime Boundary and Trans-boundary Challenges:** Maritime boundary issues that need to be addressed in accordance with UNCLOS are: declarations of maritime baselines, zones and limits, and defend extended Continental Shelf (eCS) claims, resolve maritime boundary disputes through regional dialogue and cooperation, and manage “trans-boundary” effects.
- **Benefit Sharing:** The sharing of benefits derived from mining projects is a concern hence the following are proposed: set up state equity interest in offshore mining projects, establish mineral processing facilities in the region, set up trust funds and other mechanisms for equitable sharing of financial and other benefits.
- **Data & Information:** Collation of existing DSM data and information are crucial hence review and use existing data to assess state of knowledge, establish ecosystem baselines before exploration, improve user access, develop and activate a regional database.
- **Marine Scientific Research:** MSR need to be encouraged and promoted in the region through the following: a proactive approach to MSR, encourage data and information sharing, assess the values of DSM ecosystems, medicinal potential and bio-prospecting, encourage and support systematic research and strategic approaches to conservation, develop and implement MSR regime in accordance with LOSC.
- **Community Concerns and Stakeholder Consultation:** Inclusive and ongoing consultations must be encouraged and the major issues are: need for greater “country-specific” community consultation and participation, benefit sharing must cater for impacted communities, consider independent mechanisms for decision making, manage the expectations of communities, determine social and cultural interests of communities apart from other interests, focus on both the benefits and the risks associated with deep sea mining, industry driven community projects need to be repackaged to ensure long term sustainability.
- **Environment Protection Guidelines:** Here are the suggested guidelines for environment protection: regional environment framework and national policy and legislation to conform to regional / international mechanisms, resource developers to collect environmental baselines, ensure effective pre- and post-mining impact assessments, consider ESHIA [Environmental, Social (including cultural) and Health Impact Assessments] in addition to EIA, independent body to regulate environmental issues, need for strategic environmental planning and risk assessment on seabed ecosystems, ensure independent and peer reviewed EIA processes.
- **Environment Conservation and Monitoring:** The main issues in regard to environment conservation and monitoring are: ongoing monitoring during and after mining, integrated

regional approaches to deep sea ecosystem conservation and management of impacts, the Solwara 1 Project offers a great learning opportunity, MPAs should be part of any mining plan, collaboration model for environmental management and monitoring, balance exploitation and conservation, protect and conserve marine biodiversity in accordance with LOSC, identify “Protected and Buffer Areas” for seabed protected areas (e.g. “ISA Reserved Area” type approach), apply the precautionary approach concept to protect unique and rare species associated with mineral deposits.

- **Information Sharing and Outreach:** Information sharing is an integral part of a regional approach and transparency and the key issues are: a regional web-based information sharing system, community awareness and dissemination of relevant information, use simple English during community awareness and may have to translate to local languages, use marine user map for planning, ensure community outreach is conducted from the outset, provide relevant information to potential impacted communities, establish a directory of experts in various DSM related areas.
- **Fisheries:** Perceived impacts on fishery resources are a concern hence the following issues have been highlighted: apply precautionary integrated approach to ocean resources management, protect fishery resources from any mining impacts, ensure law enforcement and monitoring, assess the links and potential conflict of using deep oceanic areas for seabed mining and fishery activities.
- **Resource Assessment:** Discussion outcomes on mineral resources assessment are: encourage the assessment of seabed mineral deposits to provide baseline data, more effort on the evaluation of manganese nodules and crust in the region, explain how mineral resources and reserves are estimated, and need for systematic and reasonably detailed seabed mineral assessment in each country.
- **Mining Technical Information:** These technical issues have been put forward: consider environment impacts of onshore processing facilities, explain the different stages of the mining process, explore ongoing collaboration opportunities with partners and interest groups, encourage trial mining before granting a mining license, facilitate PICs’ participation in offshore mining ventures in “the Area”, deep sea mining is high risk and capital intensive, evaluate a ‘regional processing facility’ for offshore mining.
- **Legal Frameworks:** Discussion outcomes for the development of regional and national frameworks are: apply an adaptive approach to the development of legal frameworks, harmonise national policy, legislation and regulations with international and regional treaties and conventions, include fiscal regime provisions in national legal instruments, national legal instruments in place prior to exploration and mining, need balanced regulatory frameworks to avoid disincentive to investment due to absence of regulatory regime or over-regulation, incorporate integrated approach to resource management, embody the concept of Ecosystem Based Management (EBM), policy to include regulation of country-sponsored activities in “the Area”.
- **Fiscal Regime:** Pressing issues relating to the mining industry fiscal regimes are: avoid reinventing the wheel and learn from other nations, formulate sound fiscal regime guidelines for the development of country-specific fiscal regime, consider internationally practiced fiscal regimes in extractive industries, need to balance investment with long-term sustainable benefits, tax instruments to be flexible / progressive to capture cyclical fluctuation in commodity prices, regionally harmonized tax base is essential, share tax information to avoid tax losses on transfer of assets between countries, a level playing field is required to avoid a “race to the bottom” scenario.
- **Sustainable Economics:** DSM deposits are finite hence the suggested long term sustainable benefits outcomes are: balance economic imperative for intensive/efficient extraction with the precautionary approach to scale up production, optimise revenue

streams and benefits to cater for national development priorities and a mechanism for future development needs, enhance long term economic stability through savings of mining revenue, avoid the potential impacts of the “Dutch Disease”.

- **Governance and Transparency:** Issues relating to governance and transparency are: adopt the “Norwegian Model” in managing mining revenues, encourage and promote the Extractive Industry Transparency Initiative (EITI) in the offshore mining industry, revenue transparency principles be included in regional and national frameworks and contract agreements, expand the EITI to verify all payments, put in place strategies to attract investment in offshore mining, establish mining operations accountability and transparency mechanisms.

APPENDIX 1

Issue 1 – How offshore exploration and mining will operate

Regional Approach

- Challenge of integrating regional and national planning on various issues relating to deep sea mining and managing economic activities and benefits emanating from offshore mining.
- Challenge of governance and administration, resources ownership and access rights, capacity to ensure informed decision making, and competent and trustworthy regional institutional support.
- Evaluate the establishment of a regional body to regulate the DSM sector similar to the FFA role for fisheries in the Pacific Islands region as well as to coordinate activities relating to deep sea exploration and mining to ensure environmentally friendly and transparent operations as well as optimising revenue for PICs. This can also offer a forum for supporting trans-boundary issues (environmental, mining, maritime boundary, etc).
- A regional approach is desired to address issues relating to deep sea mining and a mechanism for cooperation should be set up to address common issues such as maritime boundary disputes.
- Regional approach for independent review of seabed mineral studies, and to coordinate the sharing of information between nations so that PICs do not have to “reinvent the wheel” and learn from each others’ mistake and successes.
- Define regional approach and sovereign rights on the management of mineral resources to ensure overlapping responsibilities are avoided and regional organisations have clear guidelines in which to assist individual countries.
- Consider the implications of regional treaties and conventions such as the Noumea Convention on issues relating to deep sea minerals.
- Full and informed discussion of the opportunities and challenges of a regional approach to the overall interaction/management of the offshore mining industry.
- Regional cooperation is crucial and countries should share their expertise in managing these seabed mineral resources hence regional capacity building initiatives for nationals of PICs should be developed and enhanced (e.g. scholarships, short-term training, attachments, etc).
- Consider a permanent representative position for the PICs on the ISA.
- Consider establishing DSM Working Groups (technical, environment, legal, fiscal) within the SPC.

Capacity Building

- There is a great need for capacity building and institutional strengthening programs on technical, legislative and fiscal and environmental issues, and twinning of personnel between participating countries is required;
- Support the enabling environment for capacity building within the region to ensure best governance and management practices of the DSM industry (e.g. universities, certificate programs, workshops, attachments, scholarships, fellowships, University of the Sea, etc.).
- Provide capacity building support for nationals of PICs in specific areas relating to deep sea mining such as economics, governance, enforcement and monitoring to effectively regulate this new industry.
- Encourage sharing of experience and expertise under the regional approach on issues relating to deep sea minerals.
- Regional capacity requirement assessment for long term sustainable management of DSM.
- Develop collaborative partnerships with regional and international research and academic agencies.
- Encourage the fullest range of capacity building tools; e.g. Universities, fellowships, attachments, industry jobs and training, workshops, etc.

- Should PNG succeed in bringing the Solwara 1 Project to production, the PNG government is requested to consider assisting other PICs in capacity building;
- Encourage collaboration with regional academic institutions such as USP and UPNG and add DSM courses to the curriculum to supplement capacity building and boost scientific research opportunities on this new industry in the region.
- Evaluate the establishment of a regional school for training and up skilling in all DSM related areas.

Technology Development and Transfer

- Need to encourage Technology Development and transfer and participation of PICs in exploration, mining and environmental management.
- Significant challenge to develop green technology and develop technology for nodules and crust exploration and mining.
- Encourage and support long-term technology development and transfer as a value adding component of offshore mining. This can be done through a joint industry-PICs partnership to ensure the region progressively becomes self sustaining in the future.
- Challenges of developing appropriate technology for seabed exploration and mining as well as green technology for ore processing.
- Promote mining technology development that will have least adverse environmental impacts.

Maritime Boundary and Trans-boundary Challenges

- PICs need to declare their maritime baselines, zones and limits as well as to defend their extended Continental Shelf (eCS) claims, and also settle shared boundary negotiations.
- Timor Leste is a special case – its maritime boundary with neighbouring countries is yet to be established and may take many years to do this.
- Resolve maritime boundary disputes between neighbouring countries to facilitate the issuance of seabed minerals exploration license to interested parties.
- Consider setting up a committee at regional level to deal with maritime boundaries negotiations in consultation with LOSC experts, for example from the IMO and ISA.
- Encourage regional dialogue and cooperation to resolve maritime boundary issues and manage “trans-boundary” effects, impacts and opportunities relating to DSM mining.
- Maritime boundaries must be defined and finalised as soon as possible in accordance with the LOSC to avoid future conflict over access rights and ownership.

Benefit Sharing

- Facilitate the setting up of state equity interest in offshore mining projects and this can be considered as local participation in the entity.
- Opportunities for mineral processing facilities in the region need to be investigated and the benefits and costs to the region from local processing versus shipping out of the region need to be examined.
- Consider the establishment of trust funds and other mechanisms for equitable sharing of financial benefits.

Issue 2 – Environment Conservation, Social Issues and Awareness

Data & Information

- Expert review and collation of existing data to support understanding of deep sea systems and establish ecosystem baselines before the commencement of exploration activities.
- Improved user access to support decision making and gap analysis.
- Develop and activate a central / regional information / data system.

- Consider broad scale impacts assessment using existing data.
- Collate existing data and information on deep-sea ecosystems from different sources (e.g. fisheries and seamount database from the FFA, SOPAC for geology and seabed mapping, contact relevant experts on hydrothermal vents, seamounts and ocean basin ecosystems).

Marine Scientific Research

- Need to encourage Marine Scientific Research (MSR) within national jurisdictions and PICs to become more proactive in MSR.
- Need to increase resourcing research and mapping of national waters and seabed and share relevant data and information through a regional database.
- Improved understanding of DSM ecosystems, biology, opportunities beyond extraction. Without sufficient information DSM is seen as a mineral resource – there is significant potential for medicinal uses / bio-prospecting
- Improved research to support strategic approaches to conservation and protection – strategic approaches to MPAs, etc.
- Develop sustained approaches to research, technical assistance, etc (not just the life of this DSM Project).
- Different resource types (nodules, SMS, crusts, etc) if exploited are expected to have distinct impacts hence research must be developed to understand these differences and the implications.
- Encourage systematic scientific research to characterize and better understand marine ecosystems.
- Full and transparent implementation of MSR regime in accordance with LOSC and ensure all data are delivered electronically to the host country in accessible and readable format as oppose to previous experiences in the region.
- Develop a strategy to ensure ongoing funding for research and development through industry, donor partners and PICs as this is an essential component for the future development of the deep sea mining industry in the region.

Community Concerns and Stakeholder Consultation

- Consultations and awareness must be timely, ongoing and brought to community level in a comprehensive manner that local people can understand.
- Encourage inclusive consultations (government, non-state actors, private sector, etc) and active participation of interest groups such as local communities and civil society.
- Two-way interaction between PIC's and "experts" is very important to ensure solutions and approaches are tailored to PICs' needs.
- Develop an engagement strategy that caters for greater "country-specific" community participation on issues relating the deep sea minerals rather than just consulting them.
- Communities must be catered for in the benefit sharing of deep sea mining.
- Support for community led consultation and participation be made available to ensure local issues relating to seabed mining are catered for.
- Consider independent mechanisms for decision making in the management of DSM issues including environmental concerns.
- Disseminate factual information to manage the expectations of communities on deep sea mining – it may take many years before some mineral deposits are considered for mining.
- Ongoing government-community-company consultations are required to communicate simplified industry messages that people can understand.
- Examine New Caledonia as a possible case study for community participation in mining development projects (e.g. Nickel mining).
- Need to carry out a survey of local communities to determine social and cultural interests and issues apart from environmental, scientific and economic interests.
- Need to focus not only on the benefits of deep sea mining but also on the assessment of potential risks associated with it. SPC through the SOPAC Division should assist on this.
- Rights of local communities need to be identified and acknowledged.

- Industry driven community projects need to be repackaged in way that will ensure long term sustainability.

Environment Protection Guidelines

- Develop broad legal frameworks for monitoring, enforcement etc.
- Consider broader impacts of the industry (not only the mine site), e.g. increase in ship movements, and land based impacts.
- National policy and legislation to conform to UNCLOS / PIROP and other regional / international mechanisms to support biodiversity and environmental protection.
- Resource developers (i.e. with commercial interests) should be required to collect environmental baselines as a condition for the issuance of exploration license. This should have a broader scope than their immediate interests, i.e. improve ecosystems understanding not just management of impacts.
- Ensure effective pre-mining impact assessments (environmental, social, and health), coupled with monitoring and evaluation of post-mining impacts.
- EIA is perhaps inadequate given the implications of this industry; use of ESHIA [Environmental, Social (including cultural) and Health Impact Assessments] may serve regional needs and concerns better.
- Need for independent decision making body (regional and/or national) to regulate environmental issues and ensure greater transparency.
- Consider cumulative impacts of mining on the environment and develop mitigating strategy.
- Need for strategic environmental planning and risk assessment to evaluate the risks and threats to various parts of the ecosystem due to mining hence selected series of EIAs can be conducted.
- Ensure EIA processes are independent and peer reviewed.
- Need to conduct knowledge gap analysis to help interest groups (government, companies and marine scientific research groups) know what to collect.
- Encourage countries to ratify and implement IMO conventions hence marine pollution (including offshore mining pollution) can be legislated and enforced.
- Develop regional and national environmental management frameworks that are consistent with international law.
- Compensation of negative impacts and loss of use, to be properly addressed in an appropriate framework.

Environment Conservation and Monitoring

- Continue to monitor mining impacts during and after mining.
- Consider regional approach to biological exploration, conservation and protection within EEZs of PICs and areas of interest beyond EEZs.
- Consider regional / sub regional approaches to deep sea ecosystem conservation and management of impacts relating to DSM exploration and mining – e.g. ocean currents can carry both biological recruits and pollutants for great distances from one jurisdiction to another.
- Establish a regional DSM expert group / environmental working group to be coordinated by the SOPAC Division.
- Consider a regional “ISA Reserved Area” type approach for conservation purposes.
- Through regional cooperation, the Solwara 1 Project can be used as an opportunity to learn and understand the actual environment impacts of offshore mining;
- Planning, designing and implementing of Marine Protected Areas (MPAs) should be part of any offshore mining plan (should be part of exploration and mining licensing conditions).
- Need to assess the full range of in-country stakeholders to manage the environmental aspects of SBM (e.g. agencies that deal with Environment, Fisheries, Marine Transport, etc).
- Consider regional intervention (i.e. involve SPC) for assistance and expertise in the area of conservation (deep sea ecosystem, fishing, other marine resources).

- Need for a multi-stakeholder collaboration model for environmental management & monitoring similar to EITI to increase effectiveness and transparency in the environmental management of deep sea mining.
- Need to balance between exploitation and conservation (“acceptable use”) based on credible scientific information that SPC needs to provide to decision-makers and stakeholders.
- Support conservation initiatives of unique seabed ecosystem and determine the level of intervention (i.e. spatial and temporal).
- Meet LOSC obligation to protect and conserve marine biodiversity within national jurisdiction (coastal States) and beyond national jurisdiction (all States, the ISA and other relevant organizations).
- Consider reinvesting a portion of economic benefits into environment conservation.
- It may be necessary to develop separate set of regulations for each of the major three types of deep sea minerals (i.e. SMS, Nodules and CRC) due to their different nature of occurrence and deposit-specific mining methods with unique associated impacts.
- Identify “Protected and “Buffer Areas on the seabed and if possible categorise environmentally fragile / valuable areas that need to be protected from mining (save the walking fish!)
- Consider assessing seabed habitat distribution to facilitate planning and the establishment of seabed protected areas which in turn boost conservation initiatives.
- Apply the precautionary approach concept during seabed mineral assessment and mining for the protection of unique and rare species associated with such mineral deposits.

Information Sharing and Outreach

- SPC / SOPAC Division to host a regional web-based information sharing system for DSM.
- Use regional case studies to inform all countries.
- Need for community awareness so that local people can understand the benefits of deep sea mining against the environmental costs.
- Disseminate information about the industry using relevant communication tools and media outlets for stakeholder information.
- Encourage and support information gathering and sharing.
- Share DSM information in appropriate / accessible formats for communities.
- Consider the use of simple English in raising awareness and may have to translate to local languages in order to get the message across to local communities.
- Map marine users to show the spatial distribution of tourism (from SPTO), fisheries, land-coastal based activities, infrastructure development, etc, and use this map for planning deep sea mining related activities.
- Ensure information brochures, advisory/summary reports, etc are translated to local languages and made available in appropriate media.
- Ensure community outreach happens from the outset from which feedback on the impacts of outreach activities can be relayed back for improvement.
- Communications must be in accessible formats to ensure messages are well communicated to target audience hence internet communication is not good enough as accessibility is a major problem in the region.
- SPC through the SOPAC Division should assist in awareness and outreach and to provide relevant information to potential impacted communities including the fisheries and tourism sectors.
- Regular and ongoing awareness aids informed decision making.
- Establish a directory of experts in various DSM related areas within the proposed regional DSM webpage.

Fisheries

- Assess the existing use and possible biogeochemical links between DSM environments and fisheries of commercial and subsistence use.
- A precautionary integrated approach to ocean resources management must be adopted and driven by government.
- Fishery resources must be protected from any impacts of offshore mining through sound policy and legislation as well as enforcement and environment monitoring.
- SPC to collaborate with the FFA in identifying potential conflict of using deep oceanic areas for seabed mining and fisheries (using VMS data).

Resource Assessment

- Consider mapping as a tool to assess seabed resource potential and provide baseline data as well as filling in knowledge gaps that will contribute to better decision making.
- More efforts should be devoted to assessing the potential of manganese nodules and cobalt-rich crust within the Pacific Islands region as they appear to be under explored in some regions.
- Define mineral resources and reserves and explain how they are estimated as well as the values of those minerals based on current commodity prices.
- Need to conduct systematic and reasonably detailed evaluation of seabed mineral resources within national jurisdiction to ascertain the real potential of each country.

Mining Technical Information

- Due to the environmental impacts associated with onland processing facilities, such impacts should be considered as a component of the environmental costs of deep sea mining.
- For the benefit of various stakeholders, explain the different stages of the mining process (i.e. from exploration to mining).
- SPC through the SOPAC Division should explore collaboration opportunities with the governments and exploration companies through active participation and independent review of exploration results that need to be shared with other PICs to learn from. A classic example is the Solwara 1 Project in PNG as well as the emerging interests of PICs to submit applications for Manganese Nodules exploration in the international seabed area (e.g. the Clarion-Clipperton Zone).
- Due to the unknowns and uncertainties associated with deep sea mining, this will be an ongoing learning process (as technology improved, and environmental impacts better understood) and as countries build capacity, knowledge and expertise, there will be ongoing adjustments for better resources management.
- In view of the application of the precautionary principle, it would be necessary for any country to allow trial mining first to test certain operational criteria before granting a license for full blown mining to proceed.
- The SOPAC Division to facilitate the involvement of other PICs in the extraction of manganese nodules in “the area”.
- Note that deep sea mining is a high risk investment, expensive and raising capital can be challenging given the degree of uncertainty in regard to return on investment.
- Evaluate the concept of a ‘regional processing facility’ for offshore mining including the benefits and costs of ore processing in the region versus shipping out ore to other regions for processing.

Issue 3 – Legal and Fiscal Regimes, and Governance

Legal Frameworks

- Apply an adaptive approach so as to allow flexibility in developing and fine-tuning as a country's knowledge base and capacity for managing the development of sea bed mineral resources evolves.
- Need to prioritise participating countries on the development of national policy and regulatory frameworks based on needs and priorities of each country thus encouraging seabed mineral exploration and exploitation.
- With increasing interest in deep sea minerals exploration and potential mining in the region, it is imperative that regional and national framework developments are carried out quickly and in a consultative manner to ensure sound policy, legislation and regulations.
- Significant interest in the development of appropriate policy and legal frameworks to allow the exploration and development of Seabed Mining (SBM) at national and regional levels.
- Wide recognition of the knowledge gaps and the absence of adequate policy and legal frameworks to guide DSM management in a manner which protects the interests of all parties and the environment.
- Harmonise national policy, legislation and regulations with international and regional treaties and conventions (e.g. UNCLOS, IMO Convention, Noumea Convention).
- Policy and legislation pertaining to deep sea mining should also encompass onshore processing and pollution associated with it (e.g. water ways and coastal zone).
- Regulatory framework must incorporate inclusive and effective stakeholder engagement in licensing process and operational phases (i.e. exploration and mining).
- Develop a regional framework and assist PICs in the development of national policy, legislation and regulations with the inclusion of relevant provisions addressing the fiscal regime.
- Review the Madang Guidelines in light of changing circumstances since 1999 and develop templates for national policy and legislation.
- Ensure sound mining and environmental laws and regulations are in place before the granting of exploration and mining licenses.
- Develop regulations to address potential conflicts between mining activity and other sea users (e.g. fisheries, shipping, and tourism).
- Ensure balanced regulatory frameworks to avoid disincentive to investment due to the absence of regulatory regime or an over-regulated industry.
- Develop and promote an integrated approach to resource management taking into account other sectors such as fisheries, maritime transport, tourism, etc.
- Ensure regional and national policy frameworks embody the concept of Ecosystem Based Management (EBM) that include, but not limited to, reference to relevant tools such as spatial planning, strategic environmental assessment and marine protected areas.
- Policy development must also include a focus on the regulation of activities in "the Area" (i.e. the International Seabed Area) that are being sponsored by PICs.
- Consider the potential future impacts of climate change on PICs and the implications on access to seabed non-living resources and how can this be captured in the policy.

Fiscal Regime

- Avoid reinventing the wheel and learn from other nations by using the regional cooperation approach.
- Issues relating to appropriate fiscal regimes for offshore mining may need to be referred to a separate working group where specific PICs representative and technical and policy experts can come together to share relevant information and digest what are the best options for the region and country-specific fiscal regimes.
- Encourage and support discussions among PICs to formulate a set of sound fiscal regime guidelines that can be adopted to develop country-specific fiscal regime.

- Undertake a review of mining fiscal regimes that are being practiced internationally and also consider the fiscal regimes of other resource extraction sectors such as fisheries and forestry and determine what is most appropriate for offshore mining in PICs.
- Need for gap analysis of fiscal policy and regulations as it relates to resource use and balance the need to attract investment with the desire to maximise long-term sustainable benefits.
- Need a regional body to advise on issues relating to fiscal arrangements for the exploitation of non-living natural resources (equivalent to FFA) and coordinate a regional training programme on fiscal policy options.
- Tax instruments need to have flexibility / progressive elements to capture cyclical fluctuation in commodity prices.
- Regionally harmonized tax base is essential particularly in depreciation arrangements and avoid a possible scenario whereby a country can be taken for a ride.
- Need to share tax information between countries to avoid tax losses on transfer of assets from one country to another.
- A level playing field is required to avoid a “race to the bottom” scenario that ultimately leads to loss of revenue for the countries concerned.
- Provide information on the benefits of harmonised fiscal regime for deep sea mining across PICs and may need to convene a meeting of Finance Ministers to discuss this and agree on a way forward.

Sustainable Economics

- Challenge of having the wisdom and prudence to sustainably manage mineral resources and mining revenue streams and benefits including the establishment of long term investment funds;
- Balance economic imperative for intensive/efficient extraction with the precautionary approach to scale up production so as to better understand and minimise the environmental impacts of seabed mining.
- Optimisation of revenue streams derived from deep sea mining to ensure national development priorities are taken care of versus a saving mechanism for future development needs.
- Assess the linkages between the use of revenue derived from deep sea mining and the desired economic development outcomes of other sectors, e.g. tourism, fisheries, infrastructure, etc.
- Recognise the interplay between socio-economic circumstance of PIC’s and their capacity to prioritise conservation issues. Overlay SE data (SPC PRISM) with resource potential.
- Enhance long term economic stability through savings of revenue generated from deep sea mining – e.g. Timor Leste and Norway.
- Recognize that deep sea mineral resources are finite hence appropriate revenue management mechanisms (preferably with zero political interference) should be put in place to ensure future generations will also benefit from these resources.
- Recognize that many PIC have small economies hence it is essential that negative “Dutch disease” impacts emanating from the sudden significant inflow of DSM revenues are avoided.

Governance and Transparency

- Encourage and support the adoption of the Norwegian model approach in managing mining revenue in particular the setting aside of funds for future use (politicians should stay out of it).
- Encourage and promote the use of EITI in the offshore mining industry.
- Encourage the triple bottom line considerations (environment, social and economic) for sustainable resources management in order to balance the needs of PICs with that of the industry.

- EITI and Revenue Transparency principles should be included in regional and national frameworks as well as contract agreements.
- Adoption of EITI+ will ensure transparency and openness of industry arrangements with governments.
- Encourage decision making to be inclusive and independent possibly through the establishment of an independent mining tribunal.
- Consider expanding the EITI to verify all payments (including government to resource owners, distribution of money among resource owners, use of the mining revenue by government) not just between government and company.
- Establish advisory working groups at regional level in relevant fields such as science, law, and economics to guide regional approach.
- Countries must put in place mechanisms that attract investment for the offshore mining industry particularly the private sector.
- Ensure accountability and transparency mechanisms are established in all components of any mining operation including the involvement of watchdog such as civil society and independent auditors.
- Develop appropriate mechanism to address undue political interference.