



SPC
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SPC-EU EDF10 Deep Sea Minerals Project
Proceedings of the Vanuatu National Deep Sea Minerals
Stakeholder Consultation Workshop
Chantilly's on the Bay, Port Vila, Vanuatu
16 May 2012



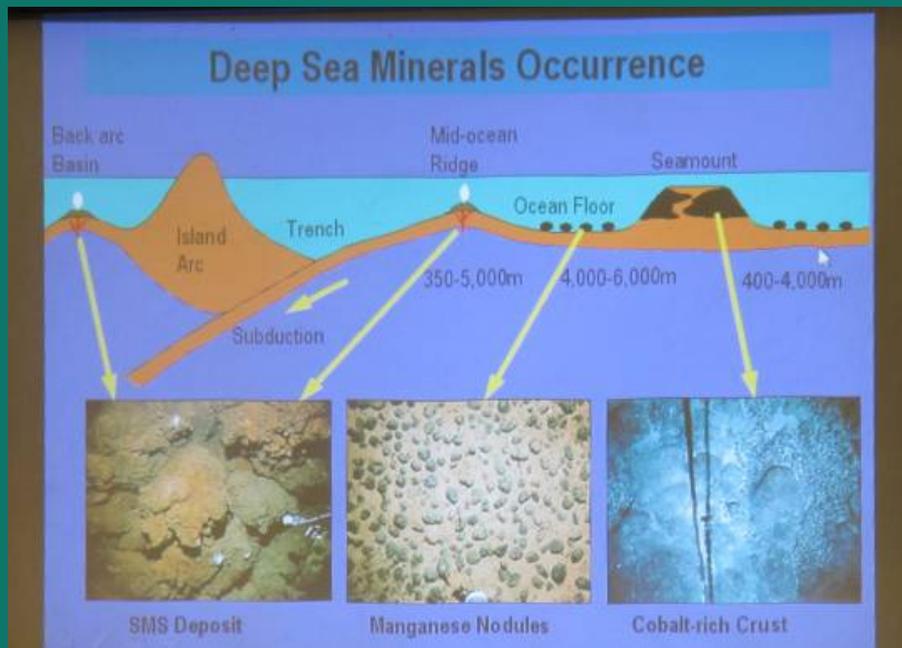
June 2012

SOPAC WORKSHOP REPORT (PR145)

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A slide from Mr Tawake's presentation about the Pacific's Deep Sea Minerals potential

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CONTENTS

EXECUTIVE SUMMARY	4
ACKNOWLEDGEMENTS	5
1. INTRODUCTION	6
1.1 Participants of the Workshop	6
1.2 Objectives of the Workshop.....	7
2. RECORD OF THE WORKSHOP PROCEEDINGS	7
2.1 Workshop Introduction	7
2.2 Workshop Opening	8
2.3 Response to Opening	9
2.4 Remarks from the EU	10
2.5 Presentations and Discussions	11
3. WORKING GROUPS.....	20
Workshop Outcomes	25
Closing of Workshop	25
ATTACHMENT	
ATTACHMENT 1: Workshop Programme	27
ATTACHMENT 2: Workshop Participants	29

EXECUTIVE SUMMARY

The Vanuatu National Stakeholder Consultation Workshop on Deep Sea Minerals ('**DSM**') was hosted by the SPC-EU EDF10 Deep Sea Minerals Project ('**DSM Project**') at Chantilly's on the Bay on the 16th of May 2012. In attendance were representatives from various government departments, the private sector, international agencies, the media, and national civil society.

The workshop was organized to present the Project to in-country stakeholders and collectively discuss national priorities in relation to DSM issues. It provided an opportunity to discuss next steps for Vanuatu to be fully prepared for any future engagement with DSM operations within its waters.

The workshop aligned with the DSM Project's aim to encourage a stakeholder participatory approach: to keep in-country stakeholders informed, to disseminate sound technical and policy advice, and to provide a forum at which all voices can be heard. The Project provided copies to workshop attendees of its six information brochures, developed to inform Pacific Island countries about minerals and mining issues, and DSM specifically. Attendees were advised that a Vanuatu-specific brochure, providing the data held by SOPAC about Vanuatu's DSM deposits, was being prepared. Information known about those deposits was also presented at the workshop. The workshop discussed the necessary development of a regional DSM legislative and regulatory framework. Capacity building requirements and how to operate effective environmental monitoring were also key issues covered.



The six information brochures produced by the SPC-EU DSM Project

The workshop was facilitated by the Commissioner of Mines and Director of the Department of Geology, Mines and Water Resources ('**DGMWR**'). Presentations were delivered by the DSM Project Team Leader, Vanuatu's Minerals Coordinator (DGMWR), a representative from Nautilus Minerals (an exploration company who hold prospecting licences for DSM in Vanuatu's Exclusive Economic Zone), the DSM Project Legal Advisor, and Vanuatu's State Law Office. Topics covered included an overview of the Project, and DSM in the Pacific, Vanuatu's DSM potential, the perspective and experiences of an exploration company working in the region, international legal requirements, Vanuatu's existing Minerals policy and legislation, as well as the gaps and requirements for future development of national policies and legislation.

In the afternoon, participants divided into two groups for the second half of the workshop: a technical working group, and a policy working group. A lively discussion session took place in each group, who then presented in plenary the outcomes of their discussions for consideration and further deliberations.

Four key action points were identified by the workshop

- (1) The development of a national DSM policy is necessary,
- (2) A review of existing legislation, to ensure that DSM activities are appropriately covered,
- (3) Participation in DSM capacity-building initiatives.
- (4) The establishment of a National Offshore Mining Committee (**'NOMC'**), to work with the DSM Project on these matters.

The DSM Project's assistance with each of these action points was requested, and the DSM Project's funding for the establishment and operation of the NOMC was acknowledged. It was agreed that the Vanuatu DSM Project focal point should remain within DGMWR and should be the role of the Mining Coordinator (Mr Brooks Rakau).

These agreed outcomes of the workshop will form the basis of the DSM Project's future intervention in Vanuatu.

ACKNOWLEDGEMENTS

The workshop was funded by the European Union (**'EU'**) through the SPC-EU EDF10 DSM Project. Much gratitude is extended to Mr Brooks Rakau, Minerals Coordinator, for his assistance prior to and during the workshop – and also to his colleagues within DGMWR, including Mrs. Camillia Garae and Mr Benjamin Titus for their kind assistance on the day of the workshop.

The Project also wishes to acknowledge all the attendees for their active involvement throughout the workshop. The participation and support of Mr Paul Eagleson of Nautilus Minerals, and Mr Chris Ioan (Director of DGMWR) is especially gratefully acknowledged.

1. INTRODUCTION

Vanuatu is situated in a tectonically active region of the south-west Pacific that creates a conducive environment for the formation of various types of metalliferous mineral deposits including Seafloor Massive Sulphides (SMS). Deep sea minerals study in Vanuatu was reported to have commenced in the late 1970s investigating the precious coral potential in the offshore areas of Malekula, Ambrym, and the Shepherd Islands. This was followed by metalliferous sediment surveys in the early 1980s in active volcanic arc and back-arc basins of Vanuatu. Later in the 1980s and 1990s, the then CCOP/SOPAC in collaboration with a number of international organisations conducted hydrothermal vent surveys in selected parts of the Vanuatu Exclusive Economic Zone (EEZ).

Following the confirmation of high grade Seafloor Massive Sulphide deposits in the Manus Basin in PNG in the early 1990s, the Commonwealth Scientific and Industrial Research Organisation (CSIRO) of Australia was keen to investigate similar back-arc basins of active convergent plate boundaries in the Pacific region. This has resulted in a number of surveys that were conducted by the CSIRO in the eastern part of Vanuatu in the early part of the last decade. The results of these early exploration efforts have indicated the presence of hydrothermal mineralisation that triggered recent mining companies' interests to explore for SMS deposits within the country's EEZ.

DSM Prospecting tenements within Vanuatu's EEZ have been issued by Vanuatu, under the existing Mining legislation (Mines and Minerals Act), which includes the seabed within its scope. The Act was not originally developed with a view to regulating DSM exploration and exploration hence it needs to be reviewed.

Due to the lack of specific policy, legislation and regulations for the governance of DSM resources in many Pacific states, the DSM Project, in consultation with the participating countries of the Project and a broad range of stakeholders, is developing a regional legislative and regulatory framework, from which national offshore minerals policy, legislation and regulations can be developed.

1.1 Participants of the Workshop

The DSM Project gives particular emphasis to in-country stakeholder participation in developing this new industry. The Vanuatu National DSM workshop was held to bring together key stakeholders in Vanuatu to discuss the challenges and the benefits of Vanuatu's potential engagement with the exploration or mining of DSM. This one-day workshop was held at Chantilly's on the Bay on Wednesday 16th May 2012. A range of stakeholders were invited to the workshop. A full list of participants is attached to this Report – please see Attachment 1.

1.2 Objectives of the Workshop

The objectives of the Vanuatu national stakeholder consultation workshop were to:

- Identify key in-country stakeholders and present the DSM project;
- Discuss various issues and concerns relating to DSM and mining;
- Determine the needs and priorities of Vanuatu in terms of policy and legislation development, capacity building and other DSM related issues;
- Provide the necessary guidance for the implementation of the DSM Project in Vanuatu;
- Discuss collaboration with key stakeholders (e.g. government agencies and NGOs), and form a steering committee or other mechanism, to involve all interested parties in project activities in Vanuatu;
- Identify in-country technical focal point for the DSM Project;
- Obtain from stakeholders answers to the DSM Project's questionnaire to assist the Project staff better understand the situation in Vanuatu; and
- Disseminate DSM Project information brochures to stakeholders.

2. RECORD OF THE WORKSHOP PROCEEDINGS

2.1 Workshop Introduction by Mr Chris Ioan, Director of DGMWR

Mr Chris Ioan, Director of DGMWR commenced the day by remembering Mr Stanley Temakon, former Director of DGMWR (and Ministry of Lands) and former Commissioner of Mines from late 1980s to 2000s – who sadly passed away on 20th April 2012. He was the first ever Geologist in Vanuatu, and was well-known for his vast knowledge and experience.

Mr Ioan then officially welcomed participants to the Vanuatu DSM Stakeholder Consultation Workshop. He acknowledged the presence of the representative from the EU, who fund the Project, and of the DSM Project Management Team: Akuila Tawake and Hannah Lily. Donor partner agencies, private sector, and civil society were also welcomed as important stakeholders to the workshop. Active participation was encouraged to achieve the objectives of the workshop. Mr Ioan introduced the Director General of the Ministry of Lands and Natural Resources, Mr Joe Ligo.



Mr Ioan introduces the workshop, and Mr Ligo.

2.2 Workshop Opening by Mr Joe Ligo, Director General of the Ministry of Lands and Natural Resources

Mr Ligo welcomed the technical team from the DSM Project and thanked them for their presence at the workshop and assistance to Vanuatu since the Project commenced. He acknowledged the EU's funding of the Project, and registered Vanuatu's sincere gratitude for the support and advice the DSM Project offers.

Mr Ligo highlighted that the theme of the workshop is in line with the State's plan to amend its current Mines and Minerals Act. The definition of 'land' in the legislation does include the seabed and subsoil within Vanuatu's EEZ and Continental Shelf; and it is currently used both to govern on-land and offshore exploration. However, it was primarily targeted at mineral resources onshore. It is hoped that one of the outcomes of the workshop will be to secure the Project's assistance to Vanuatu to review the regime to ensure that it properly addresses offshore mineral resources.

Currently there are 164 Prospecting Licences for DSM granted within Vanuatu's waters, 114 are held by Bismarck Corporation (Vanuatu) Ltd, and the rest by Nautilus Minerals.

Seabed minerals occur throughout the Pacific Ocean by natural processes. There are different types, but the most common found in Vanuatu's waters is SMS, which are composed of important metals. Mining DSM is a challenge, owing to the depths of waters, and the need for a commercially viable mining system capable of reaching these deep parts of the ocean - which is still to be developed. There are also some concerns and unknowns about how DSM mining will occur. Mr Ligo anticipated that, working together with development partners, Vanuatu can approach this new industry sensibly, and with an appropriate legal framework in place, in order for Vanuatu to reap substantial economic benefits.

Mr Ligo noted with particular thanks the DSM Project's capacity to assist Vanuatu to review its existing legal framework. He took the opportunity humbly to request the Project to help Vanuatu in its next steps to build on the current legislation, to include provisions to help cater for this new offshore industry

Mr Ligo concluded by stating that the Government of Vanuatu has in the last couple of years made great progress in developing national strategies in different sectors of the economy, and expressed his confidence that with the support of the DSM Project, DSM can be added to this. He looked forward to future work to develop guidelines and legislation to help point Vanuatu to follow the right path to make the most of its resources on the seabed.

2.3 Response by Akuila Tawake on behalf of the SPC-EU DSM Project:

In his responding remarks, Mr Tawake thanked the Director General of the Ministry of Lands and Natural Resources for his words of encouragement and sound advice in opening the Vanuatu National Deep Sea Minerals Stakeholder Consultation Workshop. He welcomed the Chargé d’Affaires from the EU delegation office, government officials, and representatives of the private sector and civil society. He thanked the Government of Vanuatu and in particular the DGMWR for collaborating with the Project in organising this workshop. He thanked the EU for the financial assistance that enables SPC to implement the DSM Project.

Mr Tawake highlighted the circumstances surrounding the conception of the SPC-EU DSM Project. Some 40 years ago, interest in seabed minerals in the Pacific Ocean began; and subsequent surveys identified potential DSM deposits in the region. At the time it was not considered feasible by industry to extract these seabed minerals. There has however been a recent rejuvenation of interest – triggered by rises in metal prices and global increase in demand for metals. New discoveries of high grade precious and base metals in PNG and Tonga, coupled with the grant of a mining licence to Nautilus Minerals by PNG last year – and Nautilus’ statement that they will commercially mine DSM by the end of 2013: a world first – has put Pacific in the forefront of this emerging industry.

Further, Mr Tawake gave a brief history of deep sea mineral studies in Vanuatu commencing with precious coral investigation in the late 1970s. This was followed by metalliferous sediment surveys in the early 1980s and SMS prospecting in late 1980s and 1990s that were carried by the then CCOP/SOPAC in collaboration with a number of international organizations. In addition, following the confirmation of high grade SMS deposits in the Manus Basin in PNG in the early 1990s, the Commonwealth Scientific and Industrial Research Organisation (CSIRO) of Australia conducted a number of surveys in the eastern part of Vanuatu in the early part of the last decade. Results of these early exploration efforts have indicated the presence of hydrothermal mineralisation that triggered recent mining companies’ interests to explore for SMS deposits within the country’s EEZ.

Mr Tawake referred also to the recent signing by the International Seabed Authority (**‘the ISA’**) of contracts to explore the seabed beyond national jurisdiction (**‘the Area’**) with a company sponsored by Tonga (Tonga Offshore Minerals Limited, or **‘TOML’**), and a company sponsored by Nauru (Nauru Ocean Resources Inc, or **‘NORI’**). He explained that other Pacific Island states, such as Kiribati, Samoa, Tuvalu and Fiji, have also expressed their interest to follow Tonga and Nauru in sponsoring exploration companies to explore the Area.

Mr Tawake next emphasised that DSM is a very new area, and there are many unknowns. As there is very limited scientific information currently about the potential impact of DSM activities, the precautionary approach must be adopted. In order to build our knowledge-base in the deep sea environment, the role of exploration and mining companies is key. Collecting relevant data is technologically challenging and the costs are high. So this work must be carried out in partnership with those who can afford and manage the financial risk.

Mr Tawake, however, cautioned that while deep sea mining may bring much-needed alternative economic development to countries in the region, we must be careful that we do not create unnecessary fear on one hand, and false hope and expectations on the other to the public. Efforts to date were to *explore* only, rather than to *mine*. Mining projects usually have long gestation periods, and any decision to mine or not to mine hinges on exploration results.

The DSM Project has been actively sharing information with Pacific Islands through media releases, workshops and brochures. The SPC sincerely hopes that the Project can be of service to Vanuatu. Mr Tawake looked forward to the outcome of deliberations during the workshop - and hoped that through interactive discussions we will be able collectively to identify an inclusive and precautionary approach in addressing deep sea minerals issues.

2.4 Remarks by Mr Robert de Raeve, on behalf of the EU

Mr Ioan introduced Mr de Raeve, the Chargé d’Affaires for the EU’s Delegation in Port Vila.

Mr de Raeve stated that, as it is an EU-funded Project, he was keen to add his few words of thanks. He explained that prior to his appointment in Vanuatu, he used to work in the EU delegation in Fiji, and so had been involved at the gestation of the Project. He expressed his pleasure to see now that the Project was approved and is now gathering speed. He also emphasised the importance of national workshops such as this stakeholder consultation event. He observed that he has sometimes found that regional projects are not well-known within the countries that should be benefiting, which leads to little ownership within individual countries in the region. But he is pleased to see that the DSM Project is engaging so thoroughly at national level.

Mr de Raeve highlighted that DSM is a sector that is emerging as a potentially important one for the region. Enacting proper laws, and being careful and prepared in advance is essential. Getting the perspective from all stakeholders, including the private sector is also important. He wished the DSM Project the best as it moves forward, and offered the Vanuatu Government the EU’s ongoing assistance from his office.

2.5 Presentations and Discussions

All presentations that were delivered during the workshop are available on CD from the DGMWR (contact: Mr Brooks Rakau).

2.5.1 Presentation 1: Overview of the Deep Sea Minerals (DSM) Project

Presenter: Akuila Tawake (DSM Project Team Leader)

Mr Tawake explained in his presentation that a regional approach to DSM had been called for by Pacific Island countries, following the recent upsurge in offshore minerals exploration in the region, and in view of the lack of specific national policy and legislation in place to regulate DSM activities. He explained that, following the submission of a concept note by the SOPAC Division of SPC to the EU, 4.7 m Euros funding had been granted to support the implementation of the Project in 15 Pacific ACP Countries over 4 years (2011-2014).

The Project's overall objective is: to expand the economic resource base of Pacific States by facilitating the development of a viable and sustainable marine minerals industry. The Project aims to do this by strengthening the system of governance and capacity of Pacific States in the management of DSM through the development and implementation of sound and regionally integrated legal frameworks, improved human and technical capacity and effective monitoring systems.



Mr Tawake presents

The project has four Key Result Areas:

- (1) Regional Legislative and Regulatory Framework ('RLRF') for offshore minerals exploration and mining;
- (2) National policy, legislation and regulations;
- (3) Building national capacities – supporting active participation of Pacific Island nationals in the offshore mining industry; and
- (4) Effective management and monitoring of offshore exploration and mining operations.

The Project's primary beneficiaries, as agreed with the EU, are (1) national governments, and (2) local communities. Other beneficiaries will include the private sector, non-state actors, regional and international agencies, and

implementing partners. Project activities to date for each of the Key Result Areas have included:

- (1) An inaugural workshop was held in June 2011 in Nadi; and a draft RLRf was disseminated in January 2012 to a wide range of stakeholders for comments.
- (2) Six national stakeholder workshops have been convened, and National Offshore Minerals Committees are being established.
- (3) Work on a publication to provide an assessment of DSM knowledge is underway in collaboration with UNEP/GRID-Arendal, with contributions from a group of leading experts world-wide. This will be published later this year. The Project is also currently gathering data to establish a regional marine minerals database, building on the SOPAC Division's current data derived from the 1985-2005 Japanese survey.

The Project is identifying national candidates for capacity-building opportunities. A candidate from Kiribati was supported by the DSM Project to attend a marine safety training course in Australia, and he will participate in a survey later this year with an exploration company; and a candidate each from Cook Islands, Papua New Guinea and Tonga were sponsored to attend a mining conference in Noumea in November 2011. In collaboration with partners, the production of a DSM documentary is in progress.

- (4) When the opportunities arise, the Project will collaborate with marine scientific research groups on monitoring the environmental impacts of deep sea mining over the next 2 years - identifying suitable candidates for on-the-job training in this area.

The Project has supported dissemination of information to key in-country stakeholders, including 6-monthly updates, information brochures, and media work. Web-pages dedicated to DSM are now being launched within the SOPAC Division's website. The Project will support National Offshore Minerals Committees to conduct DSM public awareness programmes.

2.5.2 Presentation 2: Deep Sea Minerals in the Pacific Island Countries and the outcomes of the June 2011 Project Inaugural Regional Workshop

Presenter: Akuila Tawake (SOPAC Division, SPC)

Mr Tawake introduced the different types of mining in the Pacific, highlighting the fact that DSM mining is a new frontier in mineral development. He explained how marine mineral exploration had occurred from the 1960s to the 1990s, and that these surveys had shown the potential of Manganese Nodules (MN), Sea-floor Massive Sulphides (SMS) and Cobalt-rich crusts (CRC) in the region. From 1985 to 2005, joint Japan-SOPAC surveys were conducted

within the waters of Papua New Guinea, Solomon Islands, Vanuatu, Fiji, Tonga, Samoa, Vanuatu, Cook Islands, Kiribati, Tuvalu, Federated States of Micronesia and Marshall Islands.

Commercial entities currently involved in offshore exploration in the region include Nautilus Minerals, Korea Ocean Research and Development Institute (KORDI), and Bluewater Metals / Bismarck. Nautilus Minerals is currently developing the necessary technology to mine SMS deposits in Papua New Guinea's EEZ.

Mr Tawake described how, where and at what depth deep sea minerals occur and the mineral contents inside MN, CRC and SMS. The potential benefits of offshore mining were explained.

Mr Tawake provided a useful comparison of terrestrial and offshore mining, highlighting the challenges of dealing with water depth, and the limited knowledge of the environment for DSM – but also showing that DSM does not have the same significant overburden, waste disposal, or complex landowner issues that on-land mining encounters.

Mr Tawake highlighted other Pacific Islands' engagement with DSM to date, covering also interest from various Pacific Island States in the Clarion-Clipperton Fracture Zone – i.e. the international seabed beyond national jurisdiction ('**the Area**') in addition to exploration work currently underway within national jurisdictions.

Finally Mr Tawake informed the Workshop of the regional workshop held in Fiji in June 2011 to launch the Project, which set a mandate for the Project for further work with regard to DSM in the following 18 areas: a regional approach, capacity building, technology development and transfer, maritime boundaries, benefit-sharing, data collation, marine scientific research, community concerns and stakeholder consultation, environmental protection guidelines, environmental conservation and monitoring, information sharing and outreach, fisheries, resource assessment, technical information, legal framework, fiscal regime, sustainable economics, and governance and transparency.

Discussions on Presentation 2:

Wendy Himford commented that she hadn't seen much about environmental impact assessment ('**EIA**') on the outcomes of the June 2011 DSM Project inaugural workshop outcomes. Mr Tawake advised that EIA is generally carried out only when there is a decision to proceed to the mining phase – such as the extensive EIA that Nautilus has carried out for the Solwara 1 Project. For exploration work there is less impact, and so EIAs are not likely to be required. But he confirmed that the importance of EIA processes had been discussed at the June workshop, and that DSM Project support is available to assist States, through a panel of experts, to conduct an independent review of EIA reports.

Sonia Rolland asked Mr Tawake to say more about the likely timeframe for DSM activities. He responded that it is difficult to say with precision. For some projects the exploration phase

could be 5 years, for some 10 years or even longer – particularly if the company needs to source more capital during exploration, as this can cause a hiatus in activities. It is also important to note that not all exploration projects will lead to a mining phase. It depends on the results of the exploration surveys, and the mineral resources potential.

Mr Ioan added that the timeframe of a mining project may also depend on the legislation. Prospecting Licences in Vanuatu (covering the exploration phase) are currently granted under the law for 3 years, and can be renewed twice, for two years each time.

Mr Eagleson added that, by the time Solwara 1 is mined, it will be at least 17 years since the first exploration licence was granted (in 1996-7). But that is the first DSM project, so it may not be entirely representative. Generally between 7-10 year mark would be fast in his experience for a mining operation (onland), and 15 years may be more realistic.

2.5.3 Presentation 3: Vanuatu Deep Sea Minerals Potential

Presenter: Brooks Rakau (Minerals Coordinator, DGMWR)

Mr Rakau presented the surveys that have been undertaken between 1979 and 2010 in Vanuatu's waters. These originally focused on precious coral and hydrocarbons, but in the 1980s offshore prospecting was shifted to the SMS potential of volcanic arcs and back-arc basins of Vanuatu which continued in the last decade.

Mr Rakau presented maps showing the various cruise routes in the region over the past 40 years (which showed reasonably high activity around Vanuatu's waters), and also the distribution of known SMS deposits world-wide.

Mr Rakau showed a picture of an active 'black smoker' and passed around a polished SMS specimen recovered by Bismarck in 2010, which was found to contain 43% zinc. He showed an offshore exploration tenement map where licences have been granted to Bismarck and Nautilus; and highlighted that these were granted under the Mines and Minerals Act 1986, as the definition of 'land' which sets the jurisdiction of the Act includes the seabed and subsoil within Vanuatu's EEZ and Continental Shelf.

The difference between 'prospecting' and 'exploration' in Vanuatu's legislation is that Exploration Licences do not give exclusivity and do not set specific boundaries, whereas Prospecting Licences give exclusivity, and have a set area (up to a boundary limit of 100km²).



Mr Rakau presents on Vanuatu's DSM potential

Prospecting Licences are granted for up to 3 years, renewable for two consecutive terms of 2 years each. The area must reduce upon each renewal – unless a fresh application is made for a new licence.

154 licences for DSM exploration have been issued by Vanuatu: 113 Prospecting Licences to Bismarck Corporation (Vanuatu) Ltd; and 41 Prospecting Licences to Nautilus Minerals. Mr Rakau showed on a map where those tenements are situated.

Mr Rakau listed some of the challenges and questions faced by Vanuatu as it moves forward with DSM:

- No DSM mining policy in place.
- Poor knowledge of DSM environment, and SMS potential.
- Does the current legislation properly cover DSM?
- Should Vanuatu have a separate fiscal regime for DSM to reflect great risks?
- Capability to monitor DSM.
- Fishing rights and navigational zones
- Maritime boundaries.

2.5.4 Presentation 4: Vanuatu's Policy and Approach to Deep Seabed Mining and Vanuatu's Relevant Legal Framework

Presenter: Avock Godden, State Counsel, State Law Office

Mr Godden reiterated that there is no specific legal framework to deal with DSM. The Mines and Minerals Act is the principal legislation, which allows for mineral extraction from the EEZ seafloor and the Continental Shelf. Mr Godden considered that it is hard to identify what the exact gaps are in the regulatory regime, as DSM has not commenced yet. He highlighted that there is no DSM policy currently in place in Vanuatu. This needs developing by the responsible Ministries – which requires the Government of the day to decide that it is a current priority.

Discussions on Presentations 3 and 4:

Mr Ioan added that Vanuatu has an extended Continental Shelf claim, and so finalising its maritime boundaries is important. He also explained that the current Mines and Minerals Act includes provision for a Mining Advisory Board, which is not yet established, but which may be relevant when it comes to considering the establishment of a national offshore minerals committee.

Wendy Himford raised the importance of the development of a DSM policy – particularly given the risks of DSM, and the importance of EIA or other anti-pollution measures. She emphasised the importance of a comprehensive legal framework for environmental protection.

Mr Ioan agreed that these are important points to discussion at the workshop in the afternoon session. As well as environmental issues, minimizing adverse impact upon fisheries is also important.

A question was asked about the process followed by Nauru to obtain a licence in the international seabed. Mr Tawake explained that it was an exploration company to whom the licence is awarded. But the exploration company has to be sponsored by a State in order to receive an exploration licence in the Area. The International Seabed Authority (ISA) is the body responsible for this in the international seabed. Deep Green Resources requested Nauru to support it, and then formed 'NORI' a Nauru-based company, who applied to the ISA for an exploration licence, which has been issued. Nauru and NORI have a sponsorship agreement.

Wendy Himford highlighted that it is important to distinguish between the Area and the EEZ. In the EEZ, Vanuatu is entirely responsible and liable for what takes place, and this is why it must have clear relationship and understanding with commercial partners operating within its jurisdiction.

2.5.5 Presentation 5: Nautilus Minerals Perspective: Regional Interest and Vanuatu DSM Activities

Presenter: Mr Paul Eagleson (Principal Geologis – Nautilus Minerals)

Mr Eagleson explained some of the drivers that have encouraged mineral exploration to go to the deep seabed, including the continuous rise of demand for metals, and the massive footprint



Mr Eagleson of Nautilus Minerals

on-land caused by terrestrial mining. By contrast, seafloor mining for SMS leaves a small footprint, no land owners are affected, infrastructure can be re-used, there is minimal overburden and increased worker safety .

He explained that Nautilus is involved in the most advanced DSM Project in the world: Solwara 1 in Papua New Guinea. The Solwara 1 Project involves only a small extraction area of 0.11 km². The minerals are at a depth of 1600 m and located 30 km from the coast away from coral reefs and fish. There will be no toxic chemicals or blasting involved, and no land clearance or onland construction is required. There is therefore anticipated to have very limited impact on local communities. The Seafloor Production System is anticipated to be quite simple: comprising a support vessel, a riser pipe and seafloor production tools.

Other forms of offshore mining are already happening around the world: phosphates and oil, as well as dredging (in shallow waters) for diamonds and aggregates. DSM is quite different, as the depth is challenging. Engineers are working on solving those problems and developing the appropriate equipments. It will combine technologies from mineral and oil and gas industries (but it's important to reiterate that there is a different risk profile between these and DSM: the actual deposit is rock, and not a liquid under extreme water pressure as it is with an oil well. An accident like the Deepwater Horizon spill wouldn't occur with DSM).

The Papua New Guinea Government is adopting an approach similar to that followed by Vanuatu to date, in opting to use / review their existing legislation and structures to issue licences for DSM exploration and mining, instead of developing new laws specifically for offshore activities.

In relation to its relationship with the regulator, Nautilus is looking for State authorisation to mine DSM (at a profit). This will comprise three components: disaggregating seafloor material, transporting the material to a ship, and transporting the material to market. Prior to the mining licence being granted by Papua New Guinea, Nautilus took 3-4 years preparing the EIA and Environmental Impact Statement ('EIS'), and having these peer reviewed by a number of stakeholders (including academics, and experts contracted by the PNG Government).

The processes followed in Papua New Guinea under existing law have been fairly rigorous, and have worked well from Nautilus' perspective. There were public hearings and Nautilus was pleased to be involved in transparent and inclusive stakeholder engagement and workshops to raise awareness. Nautilus have spoken to more than 10,000 individuals within communities in PNG, and have sought to reach an even a wider audience using the media. Local representatives are available for anyone who wants to come to speak with them. Issues and concerns raised by communities as well as the impacts and benefits of Nautilus presence have been discussed at these events. Nautilus are keen to raise awareness about exactly what the DSM mining will involve, to ensure that they have both a *legal and a social* licence to operate.

Mr Eagleson presented a flow-chart of the environmental regulatory framework, required for a robust decision-making process – which includes gathering baseline data, ongoing monitoring, and post-closure monitoring and reporting. He highlighted what in Nautilus' view makes good minerals policy: clarity, transparency, consistency, simplicity, efficiency, benefits justifying the risk (environmentally and socially responsible, while being economically viable), independent review, agreement from relevant governing bodies and affected stakeholders, and provision for adaptive management.

Mr Eagleson showed a graphic representation of how Nautilus proposes to operate the extraction of DSM. He explained what the potential impacts were considered to be and how those impacts were intended to be limited or mitigated by Nautilus. He explained the anticipated timescale for PNG, and introduced the training and up-skilling opportunities that Nautilus offers to the nationals of the countries in which it is working.

The focus to date for Nautilus has been on proving the model in Papua New Guinea. Once that's achieved, Nautilus will focus elsewhere, including Vanuatu. Nautilus has paid 17 million vatu to the Vanuatu Government already, and this is an ongoing commitment for regular payment. Nautilus' plan for Vanuatu is to commence a first phase of exploration, by bringing a research vessel to conduct some systematic work, and multi-beam mapping, in the area. A short video was played to conclude the presentation, which showed how the Nautilus seafloor production system will operate.

Discussions on Presentation 5:

Tess Newton Cain referred to Mr Eagleson's slide that stated that engagement with Nautilus would lead to job creation in-country, and asked for more detail about the likely numbers and nature of those jobs. Mr Eagleson advised that for work on Solwara 1, Nautilus is looking to employ 250-300 staff members, including some higher-level professional positives (such as 6 GIS scientists). Nautilus would ideally like them to be PNG nationals. – although it's not always possible to find available people with the right skills in-country. In Tonga, where work is just commencing, Nautilus has 5 local employees (2 of which are scientists).

Ms Newton Cain also asked where the processing of the minerals / ore will take place. She noted his statements that local communities would not be impacted by the DSM extraction at sea, but wondered whether customary land rights would become relevant if the ore would be transported and processed onland in PNG. Mr Eagleson confirmed that the mineral deposits, once extracted onto the vessel, will be shipped directly to China for processing, and would not be brought onshore to PNG at any stage. He clarified that local ports are used by Nautilus for bunkering (fuel and supplies), so a contribution is made to the country that way (and in port fees), but otherwise the operation doesn't come onshore at all.

Ms Newton Cain asked whether the Extractive Industries Transparency Initiative (EITI) was applicable to DSM. Ms Lily (DSM Project Legal Advisor) thanked her for raising this point, and explained to the workshop that the EITI was an initiative to which Governments and mining companies could voluntarily sign-up. It implements a 'publish what you pay' regime, whereby the mining companies publish the amounts they have paid to the Government, and the Government publishes the amounts they have received, and an independent expert body checks and reconciles the two. Through this fairly simple procedure, accountability and transparency is promoted, and members of the public are able to access key information about what financial benefits mining is bringing to the country, and are sufficiently informed to be able also to track how the funds are then used by the State. The DSM Project recommends Pacific Islands to sign-up to EITI.

In response to a question from Wendy Himford, Mr Eagleson explained that PNG has taken a 30% stake in Solwara 1 (as this is permitted under their legislation). So far the costs for Solwara 1 have been USD 400 million.

2.5.6 Presentation 6: International Law Obligations

Presenter: Hannah Lily (DSM Project Legal Advisor)

Ms Lily explained that international law requires States to take all appropriate steps to ensure that DSM exploration and exploitation activities under their jurisdiction or control are appropriately managed, in accordance with international standards. This requires the adoption of laws, regulations and administrative measures. This is necessary to protect Vanuatu from any potential damages claims that may arise as a result of accidents or pollution from DSM activities. Direct obligations under international law in respect of DSM include (i) the precautionary approach, (ii) best environmental practices and (iii) prior EIA. Legislation is not sufficient on its own. States engaging in DSM will need to identify or create an administering body to receive, assess and decide upon applications, to set the terms of licences for DSM activity, to monitor DSM operators working under such licences or agreements, and to enforce compliance where necessary. This will be a challenge to small countries, with little spare capacity, but options may be available to delegate some functions to a regional body, private contractor or other expert body.

Ms Lily introduced the EU-SPC Project's Regional Legislative and Regulatory Framework, which provided some detailed guidance for Pacific Island Governments on DSM law and policy requirements.

Discussions on Presentation 6:

Mr Toney Tevi clarified that the LOSC was ratified by Vanuatu in 1999 and national DSM policy and legislation must conform to relevant provision of the LOSC. He requested the DSM Project to provide assistance in the development of national DSM policy and legislation for Vanuatu. Ms Lily responded that the RLRF is consistent with the LOSC and the Vanuatu DSM policy and legislation must also be developed to cover relevant provisions of the LOSC.

In response to a question posed by Ms Wendy Himford on whether satellite technology has been used for deep sea mineral exploration and mining, Ms Lily said that to her knowledge no such technology is currently in used in marine mineral exploration and mining.

2.5.7 Presentation 7: DSM Project Implementation in Vanuatu: Formation of National Offshore Minerals Committee and Appointment of National Focal Point for DSM

Presenter: Hannah Lily (DSM Project Legal Advisor)

Ms Lily explained that the SPC-EU DSM Project's recommendation to have (i) a national technical focal point, and (ii) a National Offshore Minerals Committee ('**NOMC**') to implement the Project in Vanuatu. There is financial support from the DSM Project available for this and for in-country activities to be conducted by the focal point and the NOMC. It is open to Vanuatu

to inform the Project who takes these roles, and how it is to be arranged – and this was one matter to be discussed in the afternoon’s working groups.

3. WORKING GROUPS

Workshop participants were divided into two groups: (i) a technical and (ii) a law and policy working group, for the discussion session. The technical working group was tasked to discuss technical DSM issues in relation to the needs and priorities of Vanuatu, whilst the policy working group was mandated to discuss the state of national DSM legal instruments and the necessary requirements to put in place relevant to national policy, legislation and regulation.



Working Group 1

Each group then presented back in plenary on the outcomes of their discussions for consideration and further deliberations.

3.1 Outcomes of Working Group 1: Law and Policy

- **(1) Development of Offshore Minerals Policy and Legislation and Regulation**

A DSM policy is needed, and work should be undertaken to ensure that necessary legal provisions are in place. Working Group 1 decided that the existing framework of the Mines and Minerals Act (CAP 190) 1986 and the Environmental Conservation and Protection Act 2002 should be the starting point for a DSM regulatory framework. A gap analysis should be conducted. This should use the RLRf and other drafting work that is taking place in other countries (e.g. Tonga) as possible models for Vanuatu – so as not to re-invent the wheel, to ensure that important issues are not missed, and to bring consistency across the region, to minimize ‘forum shopping’ by DSM operators. The Project’s assistance is requested with this review. State law office can undertake any legislative drafting required.

Legislation should be simple to allow for implementation in a low resource environment. The starting point should be UNCLOS, and the legislation should be framed as particularly implementing UNCLOS and Vanuatu’s responsibilities under UNCLOS. Regulations should require work plan that includes a description of the technology and methodology of the mining, so that the EIA and monitoring provisions are fitted to the operations.

- **(2) Appropriate fiscal regime policies for deep sea mining**

Current practice for onland mining in Vanuatu is for the taxation rate to be fixed in the individual licence (usually at 5% of market value of the mined material, and the money is

allocated between central Government and local communities). Having the rate set in the licence leaves it open to negotiation for each individual project. This was seen by the Working Group as a bad approach, and it was preferred that the royalty scheme (or its principles) be fixed by legislation. There was some discussion following this point however about the need to address the realities of mining, and the fact that the taxation has to take into account the metals market and price fluctuations as well as the geological potential of each mineral deposit and the mining operation costs. A workable fiscal regime cannot be too rigid and needs to be flexible to care for all these elements. If the fiscal regime makes mining unviable, then the mining companies will cease mining, and the State will lose its income and other benefits. It was agreed that Treasury's input on this point will be sought.

How to allocate any revenue was also discussed, and it was agreed that indirect benefits should also be taken into account e.g. capacity building offers from the mining companies as well as infrastructure developments and community assistance initiatives. It was agreed to consider whether different fiscal regimes should apply depending on where the activity takes place – i.e. whether it needs to be different for different maritime zones. The EITI was supported.

- **(3) Environmental management and monitoring frameworks / guidelines for deep sea exploration and mining**

EIA requirements should follow best practices for DSM found elsewhere in the world and should incorporate the ISA's requirements. (It was highlighted that the ISA is developing a model EIA template for exploitation.) It was recommended to have observers on board the ship, and to place an obligation on DSM operators to report incidents. The PNG example, which required an extensive and comprehensive and independently peer reviewed EIA, at the company's cost, was advocated.

It was clarified by a representative from the Department of Environmental Protection and Conservation that in Vanuatu the process is for the State to appoint an independent expert to perform the EIA. This expert will be chosen on the basis that his or her qualifications match the task, so the Vanuatu Government would ensure that this person had requisite knowledge of DSM, and the relevant marine environment.

It was suggested to have a disaster compensation fund, paid into by private sector to be available to pay for rehabilitation following any (company-induced disasters). This should be proportionate to the likelihood and costs of any such DSM damages. A minimum capitalization requirement should be set for applicant companies, and an insurance requirement, to ensure that the company can cover potential damages.

- **(4) Offshore Mining Legal Instruments**

It was agreed that the relationship between UNCLOS and Vanuatu national legislation should be examined, to ensure that Vanuatu's international rights and duties are being appropriately

exercised and met. The IMO Conventions, trade agreements, and the Convention on Biological Diversity should also be taken into account.

- **(5) Development of Marine Scientific Research (MSR) Policy**

It was necessary to identify a possible institutional home for MSR within Vanuatu Government, and to set-up effective information-sharing processes, including EIA data.

- **(6) General Issues**

It was agreed that there should be a NOMC. There should also be a national contact person mandated to meet with stakeholders domestically, and to coordinate with different agencies, and represent Vanuatu in regional and international DSM activities. It was agreed that the proper person should be a public officer, within the DGMWR, and it was further suggested that they should be trained in relevant international law principles.

3.2 Outcomes of Working Group 2: Technical Issues

- **(1) Technical and technological challenges and recommendations for DSM**

Working Group 2 highlighted the need to proceed with awareness that there is no proven practice on DSM. Solwara 1 presents an opportunity for Vanuatu Government to learn from PNG's experience - as well as from Nauru and Tonga's work in the Area.

It was agreed that the current legislation has its limitations and so should be enhanced to take into account DSM. A DSM policy was needed.

It will also be necessary to expand human resources dedicated to DSM work within Vanuatu's Government. This may require a greater priority to be placed on DSM by the Government in its budgeting / strategy-making, so that more resources are allocated.

There are no resources or technology in-country to undertake independent studies of DSM or the deep sea environment, and so it will be important to collaborate with the companies who do have the resources and know-how to access these areas, so that Vanuatu can learn with them. It was hoped that in the future the technical workforce operating in the DSM industry could include Vanuatu nationals

- **(2) Current institutional capacity and priority areas for capacity building**

There is knowledge in place in-country, but staffing is limited, and training is required. It was recommended to carry out a training need analysis to identify strengths and gaps, and to plan for human resources development and training priorities. The DSM Project's assistance with this is requested. In particular, training opportunities with exploration companies, regional organisations and ISA should be sought (via secondments, training workshops, and scholarship

for studies). A scholarship scheme should be opened to identify opportunities and to match these to individuals within Government.

Mr Tawake highlighted, in this regard, a current call from the ISA for applicants for capacity-building opportunities for training programmes and bursaries. Vanuatu nationals are encouraged to apply.

Working Group 2 highlighted that there is also a lack of public understanding about DSM, which may lead to unnecessary expectation or unrealistic fears. So this should be addressed through a programme of public information-sharing.

- **(3) Environmental monitoring and management for DSM exploration and mining**

It should be part of the legislation / agreement that Government Environment Officers should be able to take part in the DSM exploratory work (not only Government Geologists). Mr Eagleson noted that in PNG, as well as self-reporting from Nautilus, Government officials are present on the vessels, and there is usually a separate cruise for environmental purposes, which the Environment Officers will participate in. Offshore sea survival training is a prerequisite for that.

A need was identified to review and to make relevant amendment to the Environment Protection and Conservation Act, to capture DSM environmental activities, and to have some additional guidelines for environmental monitoring and management plans for DSM. This may be reflected by particular arrangements within the licence.

- **(4) Stakeholder partnership**

It was agreed that consultation with a wide variety of stakeholders, and regional co-operation, are essential in Vanuatu's future approach to DSM.



Working Group 2

- **(5) General Issues**

- (i) *Benefits and adverse impacts of offshore exploration and mining*

The likely benefit to be derived from DSM is the potential to boost national economic growth (including employment, and income). Also Vanuatu may benefit from the technological and technical transfer of DSM knowledge.

Adverse impacts are likely to be, primarily, the environmental risks. It was added that there may also be adverse impacts if revenue streams are not properly managed. Mechanisms to ensure good governance were therefore recommended.

- (ii) *Formation of the National Offshore Minerals Committee (NOMC)*

There is no provision for a mining advisory board in the current legislation (Mines and Minerals Act [CAP 190]). There is however a provision in the amendments that is yet to be passed in Parliament and if it does, this can double as the NOMC, if DSM continues to be treated within the current wider mining regime (and if it is not decided to approach DSM as a standalone issue, with its own new legislation – a decision that Vanuatu has yet finally to make).

The following composition for the NOMC was proposed: DGMWR, Department of the Environment, Fisheries, Foreign Affairs, the State Law Office, NGO representative, Treasury, and Malvatumauri (Council of Chiefs).

It was suggested by Working Group 2 that the focal point should be DGMWR's Minerals Coordinator (Mr Brooks Rakau).

(iii) Additional

There are lots of activities taking place within Vanuatu's EEZ. There is a legal obligation for those operating within Vanuatu's waters to supply marine scientific data. This has not always been strictly adhered to by States, for example France has provided a published report, but not the raw data. Further, some of the previous data obtained was lost during the 2007 fire of Government buildings in Vanuatu. It was therefore recommended to set up a DSM database for Vanuatu. SOPAC can also offer a separate repository service for Vanuatu's data.

3.3 Conclusion of Working Group Session: Workshop Outcomes

The following action outcomes were therefore agreed by the workshop:

- (1) The development of a national DSM policy is necessary,
- (2) A review of existing legislation, to ensure that DSM activities are appropriately covered,
- (3) Participation in DSM capacity-building initiatives.
- (4) The establishment of a National Offshore Mining Committee, to work with the DSM Project on these matters.

The DSM Project's assistance with each of these action points was requested, and the DSM Project's funding for the establishment and operation of the NOMC was acknowledged.

4 CLOSING OF WORKSHOP

Mr Tawake thanked all of the workshop attendees for their active participation, on behalf of the Director-General of SPC and the Director of the SOPAC Division. He declared that the workshop objectives had been achieved.

He particularly thanked Mr Ioan and his team for working closely with the Project Team, and looked forward to continuing this collaboration as Vanuatu looks ahead to implementing DSM Project activities nationally.

Mr Ioan thanked all of the participants, acknowledging those from Government and civil society, and also those who are visiting Vanuatu and have attended, including a law professor from the US, and the Nautilus Minerals representative.

Mr Ioan thanked the DSM Project Team for the workshop. He reiterated the workshop outcomes, and emphasised the Vanuatu Government's commitment to pursue these, and particularly to put in place a DSM policy and comprehensive legal framework. He acknowledged that this is a big responsibility and looked forward to working with all relevant stakeholders as

the Project is implemented. He hoped this would lead to an environment in Vanuatu that is conducive to DSM activities from the private sector perspective, so as to boost the national economy – but that does so with due regard for the marine environment.

ATTACHMENT 1: Vanuatu Deep Sea Minerals National Stakeholder Workshop Programme

Vanuatu National Deep Sea Minerals Stakeholder Consultation Workshop

Wednesday 16th May 2012

Chantilly Hotel Port Vila

WORKSHOP PROGRAMME

Time	Activity	Presenter
9:00 – 10:00 am	Official Welcome and Introduction	Mr Chris Ioan, (Director (Department of Geology, Mines and Water Resources (DGMWR))
	Prayer	(Vanuatu Council of Churches)
	Official Opening	Director General (Ministry of Lands and Natural Resources)
	Responding Remarks	Mr Akuila Tawake (DSM Project Team Leader, SPC)
	Overview of the SPC-EU EDF10 Deep Sea Minerals (DSM) Project	Mr Akuila Tawake (SPC)
	[Group Photo for workshop Participants]	
10:00 – 10:15 am	Morning Tea	
10:15 – 12:30 pm	Deep Sea Minerals and Mining in Pacific Islands Region and Outcomes of the Inaugural DSM Project Regional Workshop	Mr Akuila Tawake (SPC)
	Vanuatu Deep Sea Minerals Potential	Mr Brooks Rakau (Minerals Coordinator, DGMWR)
	Nautilus Minerals Perspective: Regional Interest and Vanuatu DSM Activities	Mr Paul Eagleson (Principal Geologist – Nautilus Minerals)
	International law obligations and the draft Regional Legislative and Regulatory Framework.	Ms Hannah Lily (DSM Project Legal Advisor, SPC)
	Vanuatu Legal framework, policy and law – gaps, requirements, needs and priorities for deep sea minerals legal framework	A nominee of the State Law Office
12:30 – 1:30 pm	Lunch	
	DSM Project Implementation in Vanuatu: Formation of National Offshore Minerals Committee (NOMC) and Appointment of National Focal Point for DSM.	Ms Hannah Lily (SPC)
1:30 – 3:00 pm	Stakeholder Discussions	
	Participants will be split into two working groups	

	<p>(policy and technical) and will be required to discuss the issues listed below and provide recommendations:</p> <p>Working Group 1: Policy Issues</p> <ul style="list-style-type: none"> • Development of Offshore Minerals Policy and Legislation, and Regulation • Appropriate Fiscal Regime policies for deep sea mining • Environmental Management and Monitoring Frameworks/guidelines for deep sea exploration and mining • Offshore Mining Legal Instruments in relation to existing National policies, and Regional and International Conventions (e.g. Noumea convention and UNCLOS) • Development of Marine Scientific Research Policy <p>Working Group 2: Technical Issues</p> <ul style="list-style-type: none"> • Technical and technological challenges of seabed mining and recommendations • Determine current institutional capacity and priority areas for capacity building • Ideas for capacity building initiatives (e.g. attachment in offshore exploration and mining, training workshops) • How to implement environmental monitoring and management for seabed exploration and mining • Stakeholder partnership (e.g. Government-Private sector-SPC-NGO partnership) <p>General Issues</p> <ul style="list-style-type: none"> • Benefits and adverse impacts of seabed mining • Formation of a National Offshore Committee (NOMC) for delivery of the DSM Project activities in Vanuatu • Confirmation of the DSM Project technical focal points • Any additional seabed minerals and mining issues 	<p>All Participants [Facilitators: Chris and Akuila]</p>
3.00 – 3:15 pm	Afternoon Tea	
3:15 – 4:30 pm	Working Groups Report Back and Discussions	[Facilitators: Chris and Akuila]
4.40pm	Closure of Workshop	Mr Chris Ioan (DGMWR)

ATTACHMENT 2: Vanuatu Deep Sea Minerals National Stakeholder Workshop Participants

	Name	Job title	Organisation	Contact (email)
1.	Akuila Tawake	Project Team Leader, Deep Sea Minerals Project	SOPAC Division, SPC	akula@sopac.org
2.	Hannah Lily	Legal Advisor, Deep Sea Minerals Project	SOPAC Division, SPC	hannah@sopac.org
3.	Paul Eagleson	Principal Geologist – Commercial Leader	Nautilus Minerals	pge@nautilusminerals.com
4.	Blandine Boulekone	Présidente	Vanuatu National Council of Women	boulekone@vanuatu.com.vu
5.	Wendy Himford	Aposoc	Holy Jos Blong Ol Nasen	himford@vanuatu.com.vu
6.	Shem Tema	General Secretary	Vanuatu Christian Council	shemtema@yahoo.com
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22.	Joe Ligo	Director-General	Ministry of Lands	jligo@vanuatu.gov.vu
23.	Allan Simeon	Journalist	Vanuatu Broadcasting and Television Corporation	
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28.	Toby Ley	Research Associate	Pacific Institute of Public Policy	tley@pacificpolicy.org
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32.	Brooke Griffin	Volunteer Legal Officer	DEPC	brookemgriffin@gmail.com