

# An Update on Deep Seabed Mineral Activities in the Pacific Islands Region: Status, Challenges and Opportunities

MANGANESE NODULES

CLIPPING FRACTURE ZONE

CLIPPING FRACTURE ZONE

MANGANESE NODULES

HYDROTHERMAL DEPOSITS



PECC Meeting  
4<sup>th</sup> -5<sup>th</sup> December 2012  
Auckland New Zealand

Akuila Tawake  
SOPAC Division, SPC



# Presentation Outline

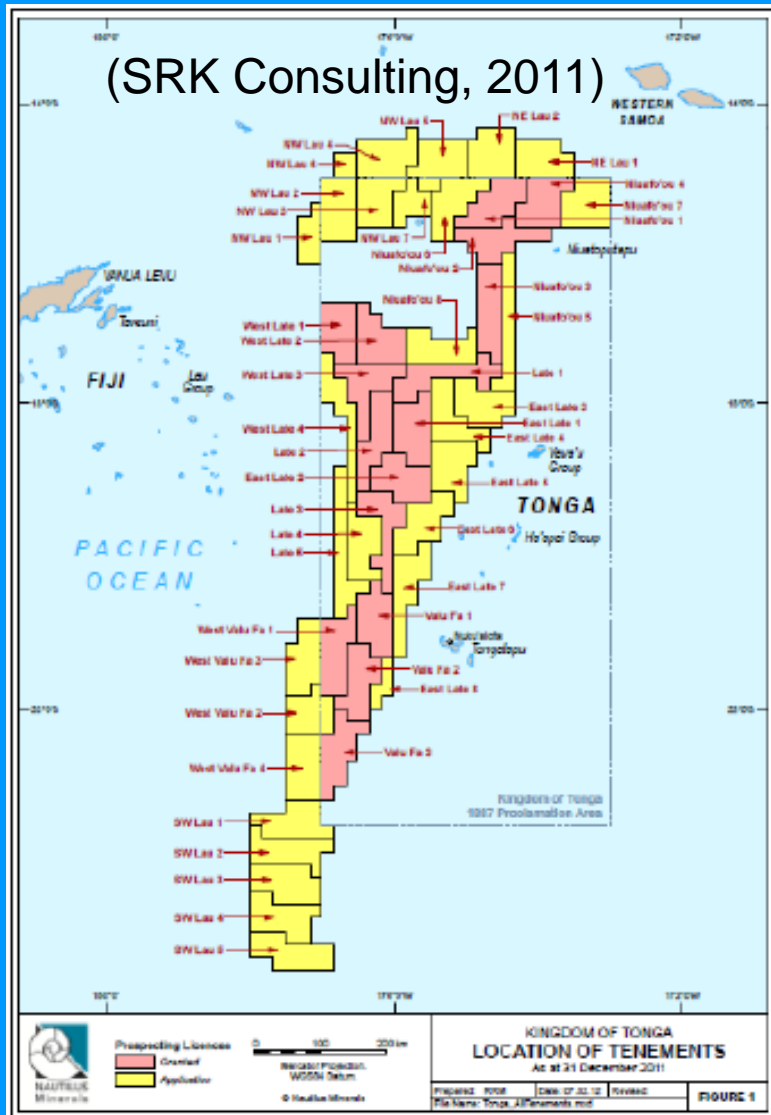
- Deep Sea Minerals Potential in the Pacific Islands region.
- Interests in deep sea minerals within national jurisdiction and in 'the Area'.
- The SPC-EU EDF10 Deep Sea Minerals Project.
- Deliverables by Key Result Areas (i.e. KRA 1 – KRA 4).
- DSM Project Challenges.
- In-Country Stakeholder Concerns.
- Information Sharing.

# Mineral Occurrence/Potential in the Region

Country	MN	CRC	SMS
Kiribati	√	√	
Cook Islands	√		
Tuvalu	√	√	
Samoa		√	
Tonga			√
PNG			√
Solomon Islands			√
Vanuatu			√
Fiji			√
Marshall Islands		√	
Federated States of Micronesia		√	
Palau		√	
Niue	√	√	

- No economic potential for Metalliferous Sediment, Precious Coral and Phosphate

# Recent Exploration for SMS in the Region

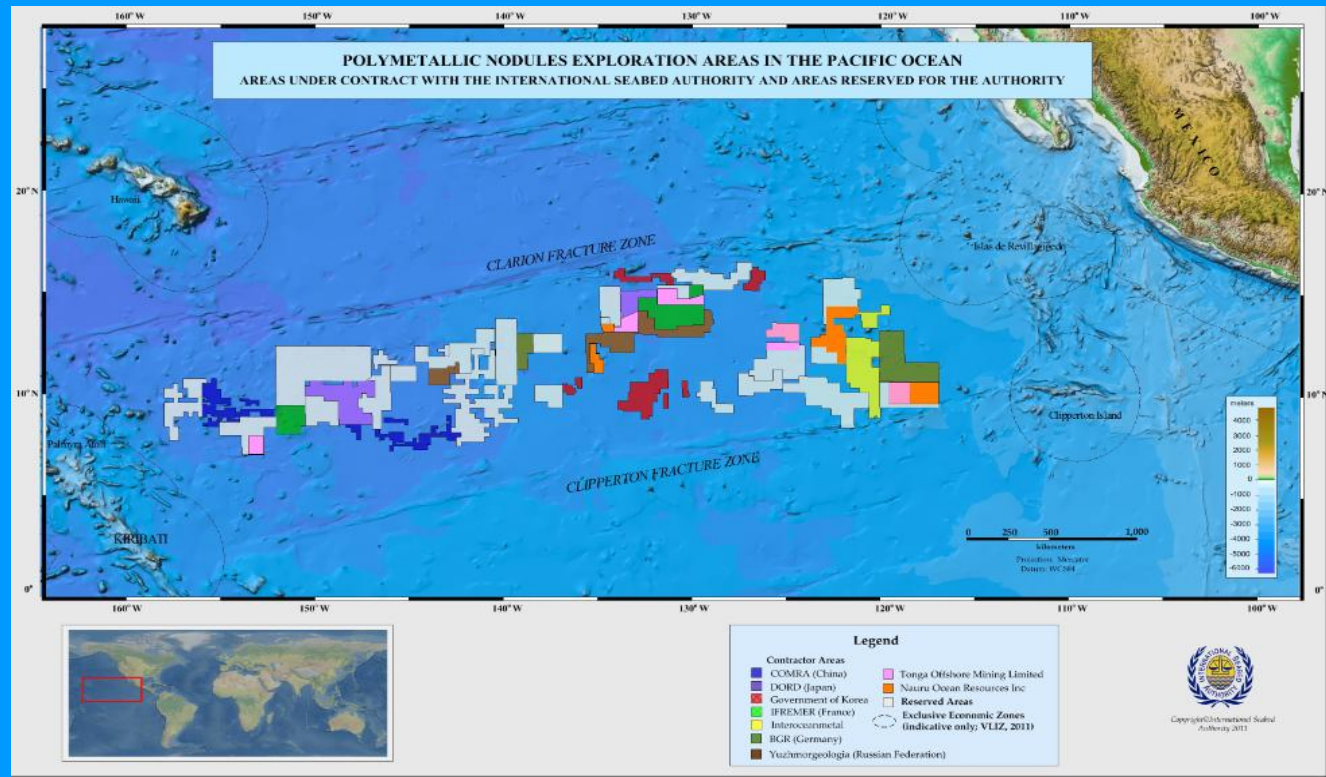


- **Nautilus Minerals:**
  - Exploring in PNG, Solomon Islands, and Tonga.
  - Exploration licenses granted in Vanuatu and Fiji
- **Bluewater Metals:**
  - a subsidiary of Neptune Minerals (US) and based in Australia.
  - Exploring in PNG, Solomon Islands, Vanuatu, and Tonga.
  - Application in Fiji.
- **Korea Ocean Research and Development Institute (KORDI):**
  - a state sponsored ocean science research institute.
  - Exploring in Tonga and Fiji.

# Exploration Interest in 'the Area'

- Nauru (NORI), and Tonga (TOML) registered companies have been granted exploration licenses in the “Clarion-Clipperton Fracture Zone (CCFZ) in 2011.
- Marawa Research and Exploration Limited (MREL) of Kiribati has been granted exploration licenses in the CCFZ in 2012.

• PICs such as Samoa, Tuvalu and Fiji have shown interest to participate in exploring “the Area”.



# Project Objective and Key Result Areas

- **Overall Objective:** to expand the economic resource base of Pacific ACP States by facilitating the development of a viable and sustainable marine minerals industry.
- The Project has four Key Result Areas:
  - **Key Result Area 1:** Regional Legislative and Regulatory Framework (RLRF) for deep seabed minerals exploration and exploitation;
  - **Key Result Area 2:** National DSM policy, legislation and regulations;
  - **Key Result Area 3:** Building national capacities – supporting active participation of Pacific ACP States nationals in deep sea mineral activities; and
  - **Key Result Area 4:** Supporting effective management and monitoring of offshore exploration and mining operations.

# Project Implementation Calendar

*The project implementation was delayed for a year*

Activities	Year 1				Year 2				Year 3				Year 4				Year 5 & 6	
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
Project Team Recruitment																		
Workshop and develop work plans																		
Develop TOR and formulate RLRF																		
Review and finalise RLRF																		
Consultations and establish NOMC																		
Formulate and review policies and legislation																		
Finalise policies and legislation																		
Institutional Assessment																		
Ongoing training and review of training programs																		
Establish Marine Minerals Database																		
Formulate and finalise Monitoring Framework and Guidelines																		
Stakeholder awareness and support potential environment monitoring																		
Complete project reports and increase visibility and showcasing																		
Closure phase																		

Key:

	Result Area 1	Result Area 2	Result Area 3	Result Area 4	Closure phase
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# Result Area 1 - Development of the Regional DSM Framework

- The “*Pacific ACP States Regional Legislative and Regulatory Framework (RLRF) for Deep Sea Minerals Exploration and Exploitation*” has been developed, reviewed and finalised.
- The RLRF was officially launched during the Pacific Forum Leaders Meeting in Cook Islands in August 2012;  
[http://www.sopac.org/dsm/public/files/reports/SOPAC\\_RLRF\\_for\\_DSM\\_Final\\_12.07.12\\_.pdf](http://www.sopac.org/dsm/public/files/reports/SOPAC_RLRF_for_DSM_Final_12.07.12_.pdf)
- Pacific-ACP States to use the RLRF to develop their DSM policy, legislation and regulations.



# Result Area 2 – Stakeholder Consultations

- 14 national stakeholder consultation workshops held in 2011- 2012 (Kiribati, Nauru, Tonga, Samoa, Fiji, Niue, Cook Islands, Tuvalu, Vanuatu, Solomon Islands, RMI, FSM, Palau, Timor Leste):
- The objectives of the national stakeholder consultation workshop were to:
  - (1) Present the DSM Project to in-country stakeholders;
  - (2) Discuss various issues and concerns relating to DSM and mining;
  - (3) Determine in-country needs and priorities in terms of DSM policy and legislation development, capacity building and other related issues;
  - (4) Provide the necessary guidance for the implementation of the DSM Project in-country;
  - (5) Discuss collaboration with key stakeholders (e.g. government agencies, and NGOs), and facilitate the establishment of a national multi-stakeholder committee (i.e. NOMC);
  - (6) Identify in-country technical focal point for the DSM Project.

# Result Area 2 – Establishment of NOMC

- Establish National Offshore Minerals Committee (NOMC) with representation of all stakeholders;
- NOMC to spearhead in-country DSM Project activities including the formulation of national offshore minerals policy and legislation based on the RLRf;
- Project will provide financial support for NOMC activities;
- Collaborate with implementing partners (e.g. USGS, NIWA, World Bank) in implementing project activities in-country.



# Result Area 2 – National Legislative Instruments

- Drafting instructions were prepared for Tonga and Nauru and sent to these two countries;
- Tonga Seabed Minerals Policy, Legislation and Regulations have been drafted and the first to be developed under the Project;
- Literature review of existing laws in Tuvalu and Kiribati in preparation of DSM policy and legislation development;
- Other countries will be assisted with formulation of their DSM policy, legislation and regulations.



# Result Area 2 – Assistance provided to Other Countries

## COOK ISLANDS MODEL SEABED MINERALS AGREEMENT



I  
Seabed Minerals Exploration Agreement

An Agreement between:

The Government of the Federated States of Micronesia

and

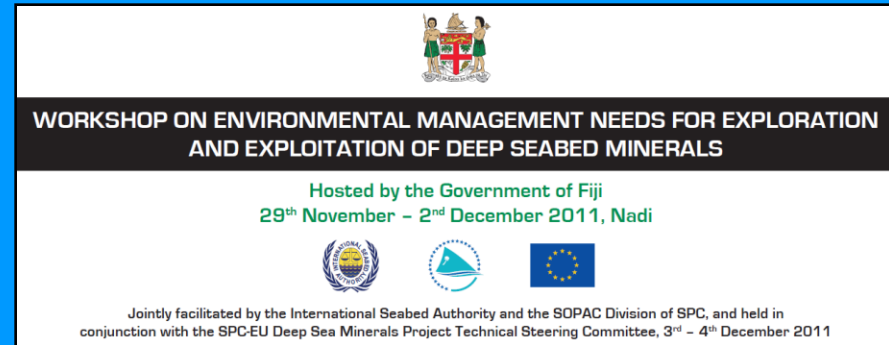
Bluewater Metals (Micronesia) Limited

September 2012

- **Cook Islands:** – an expert to conduct Manganese Nodule resource assessment through a SPC-CI cost-sharing arrangement.
- **Fiji :** – review of the MEEB and TOR for the establishment of a DSM Official Working Group.
- **Federated States of Micronesia:**
  - Development of an exploration contract agreement in the absence of legal instruments.
- **Vanuatu and Marshall Islands:**
  - Prepare cabinet paper for the establishment of National Offshore Minerals Committee.

# Result Area 3 - Capacity Building Initiatives

- An international workshop on ***“Environmental management needs for deep seabed minerals exploration and exploitation”*** was jointly organised by the ISA, Fiji and SPC through the DSM Project;
- The capacity building working group have identified that technical, human and financial capacity of PICs to deal with seabed mineral activities are inadequate/lacking.
- Activities to address capacity building requirements (i.e. partnership / collaboration, data management) were identified.



# Result Area 3 - Capacity Building Initiatives

- Support Pacific ACP State representatives to participate in regional consultation and training workshops;
- In collaboration with the Human Development Programme of SPC four candidates were financially supported to attend the Pacific Mining Conference in Noumea in November 2011;
- Support marine safety training, shipboard training and post-survey data analysis in collaboration with States and exploration companies.



# Result Area 3 - Capacity Building Initiatives

- Legal Internship – commenced in January 2012, to assist the Legal Advisor and be trained on legal issues relating to DSM;
- This capacity building initiative will be ongoing for the duration of the Project;
- Ongoing collation of DSM data and information for the establishment of a Regional Marine Minerals Database by 2013;
- Discussions with countries, ISA, University of the Sea, and exploration companies on capacity building opportunities.



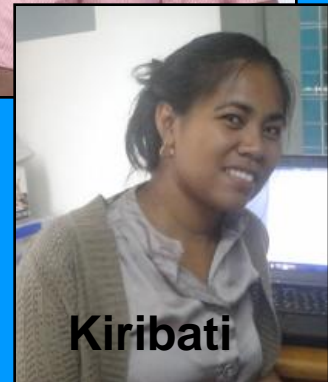
**Tonga**



**Fiji**



**Vanuatu**



**Kiribati**



# Result Area 3 – 1<sup>st</sup> Regional Training Workshop

- ***“Pacific ACP States Regional Training Workshop on Geological, Technological, Biological and Environmental Aspects of Deep Sea Minerals”*** was held in August 2012 in Nadi Fiji;
- DSM experts were contracted as resource scientists: Dr Jim Hein (USGS), Prof Chuck Fisher (PSU), Dr Malcolm Clark (NIWA), Kris Van Kijen (OceanfORE);
- A total of 53 people participated in the workshop;
- A Certificate of Completion was issued to each participant.



# Result Area 3 – Proposed Training Workshops

- Three regional training workshops will be held between 2013 and 2014:
- March 2013 – Legal Aspects of DSM and Country-Private Sector Contract Negotiations;
- August 2013 – Public participation and Socio-economic aspects of DSM exploration and exploitation;
- March 2014 – Fiscal Regime and Revenue Management of deep sea mining.





# Result Area 4 – State of Knowledge of Pacific Marine Minerals

- UNEP/GRID-Arendal is contracted to compile a report on the state of knowledge of marine minerals in the Pacific;
- World renowned DSM experts are contributing to this publication.
  - **Chapter 6:** Environmental considerations related to the development of marine minerals in the Pacific Island Region;
  - **Chapter 9:** Regional environment management policy;
- The draft report will be completed in October and final products will be delivered by January 2012.




# Result Area 4 – Precautionary Approach

- DSM Project emphasizes the application of the Precautionary Approach to DSM Activities;
- An information brochure on the Precautionary Approach has been prepared based on the 1992 Rio Declaration on Environment and Development, Principle 15;
- The information brochure provides summary guidance to PICs in applying the Precautionary Approach to the management of DSM resources;
- Website:  
<http://www.sopac.org/dsm/resources.html>



Applied Geoscience and Technology Division (SOPAC)

## SPC-EU EDF10 Deep Sea Minerals (DSM) Project



Information Brochure 13  
Application of the Precautionary Principle for Deep Sea Minerals

Prepared under the SPC-EU EDF10 Deep Sea Minerals Project<sup>1</sup> by the Applied Geoscience and Technology Division (SOPAC) of the Secretariat of the Pacific Community (SPC)

### Introduction

Rising global demand for metals and developments in technology have recently renewed industry interest in exploring, and exploiting, deposits of deep sea minerals ("DSM"). The 1992 UN Convention on the Law of the Sea gives coastal states exclusive sovereign rights over the DSM contained within national marine boundaries. For many Pacific Islands, this means that over 99% of their national jurisdiction is ocean. Surveys indicating abundant and promising mineral deposits in the Pacific Island region therefore suggest a potential economic opportunity for Pacific Islands.

However, this must be balanced with other resource uses. As well as bestowing legal rights over DSM, international law also imposes duties. States must: protect the ocean environment; prevent, reduce and control pollution; and preserve rare or fragile ecosystems and ocean habitats. Since there is still much to learn about the vast ocean environments and how they may be affected by DSM exploration and exploitation activities, the 'precautionary approach' must be applied as States consider whether or not to pursue DSM activities. This brochure seeks to provide summary guidance to Pacific Island states in applying the precautionary approach to the management of DSM resources.

### What is the Precautionary Approach?

The precautionary approach (or 'precautionary principle') has been defined in slightly differing terms in a number of international law instruments<sup>2</sup>. A common definition, used in the International Seabed Authority Mining Code – and so particularly pertinent to DSM, is the 1992 Rio Declaration on Environment and Development, Principle 15: "In order to protect the environment, the precautionary principle shall be widely applied by States according to their capabilities; where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation."

While the Rio Declaration requires States to apply the precautionary approach 'according to their capabilities', a State's due diligence responsibilities in properly controlling DSM activities (and their impacts) within its jurisdiction are applied uniformly across developed and developing States.

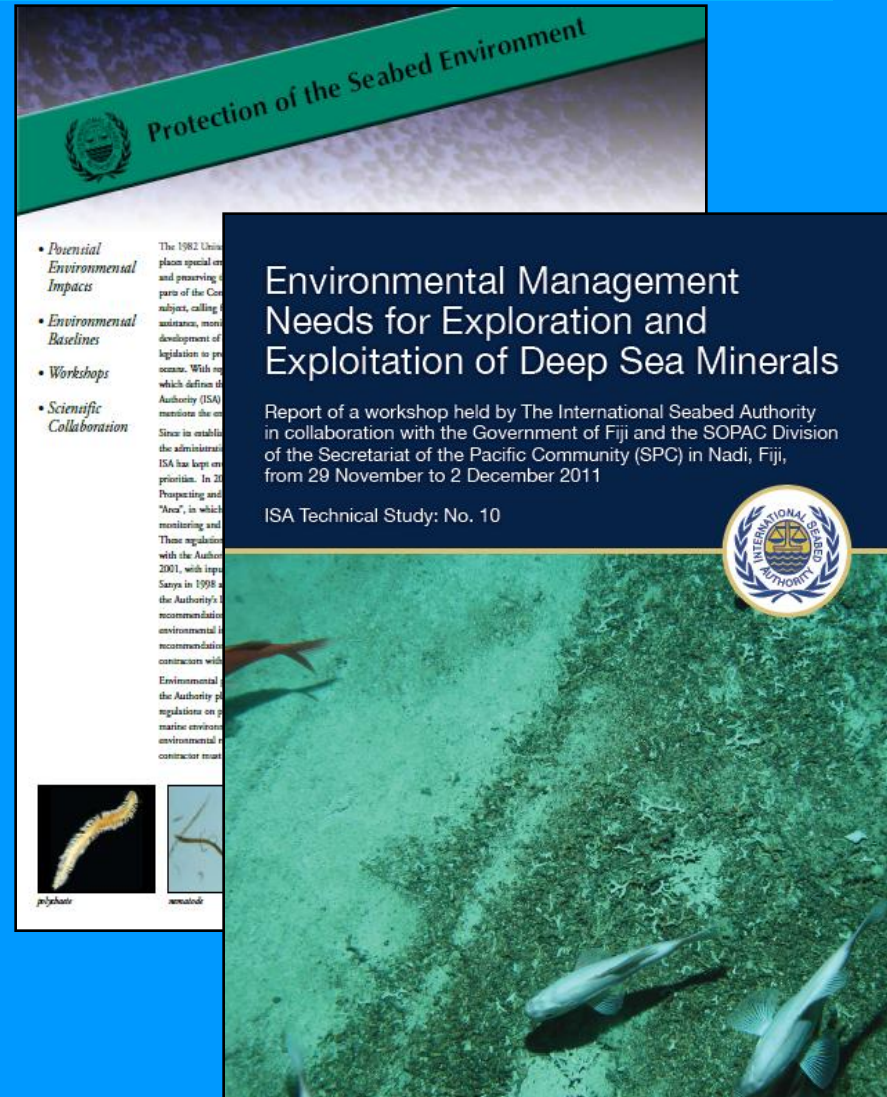
The precautionary approach provides States with guidance on the process for avoiding serious or irreversible harm when the risks of a proposed activity are uncertain. The precautionary approach indicates that positive action to protect the

<sup>1</sup> The EU-funded EDF-10 Deep Sea Minerals project implemented by the SOPAC Division of the SPC is mandated to assist interested Pacific Island states in developing and strengthening a system of governance and capacity in the management of their DSM resources through the development and implementation of sound and regionally integrated legal, fiscal and environmental frameworks. The Project provides technical assistance and funding for Pacific ACP states for their work developing national DSM regulation regimes and capacity.

<sup>2</sup> Some of these, and the relative 'strength' of their wording, is considered in more detail in the 2012 SPC/IEP paper: 'Understanding and Applying the Precautionary Principle: A Socio-Cultural and Legal Approach'.

# Result Area 4 – Environment related DSM Activities

- An EIA template was produced as an output of the ISA-SPC-Fiji November 2011 Workshop;
- Development of the Regional DSM Environmental Guidelines in 2013;
- A DSM Environmental Expert to assist the DSM Project Team through a Technical Cooperation Project with JICA;
- Potential collaboration with partners in the environmental monitoring of offshore DSM activities; E.g. the proposed University of Queensland-SPC (DSM Project)-Nautilus Minerals collaboration.



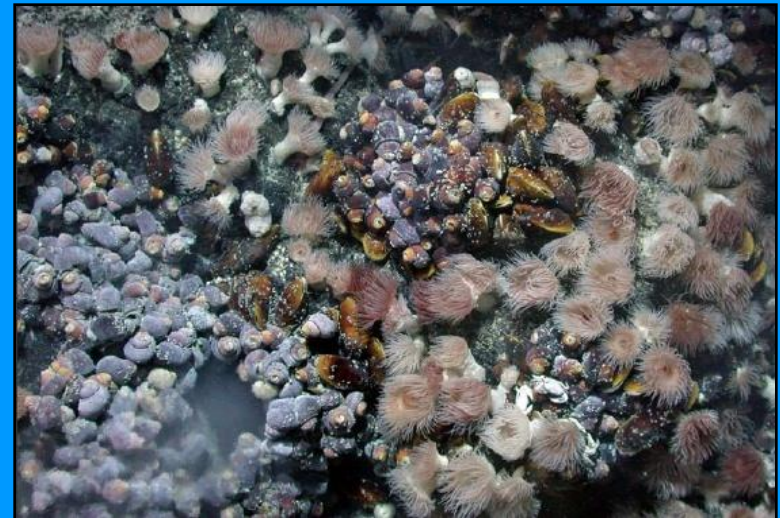
# SPC-EU DSM Project Challenges

- Lack of or delayed responses from some countries hence the need to re-schedule planned activities;
- Delayed deep sea mineral activities by exploration companies have affected the project capacity building schedule;
- The campaign by civil society groups against the DSM Project was not anticipated;
- Prolong in-country review process for national DSM legal instruments is anticipated.



# In-country Stakeholder Concerns

- Competing interests for the ocean – fisheries, conservation, research, deep sea minerals;
- Marine pollution, and potential impacts on fisheries and marine environment;
- Unknowns associated with DSM exploitation;
- Distribution and equitable sharing of DSM benefit streams;
- Capacity to enforce national DSM legislation and regulations;
- Independent monitoring of offshore mining activities and data sharing.



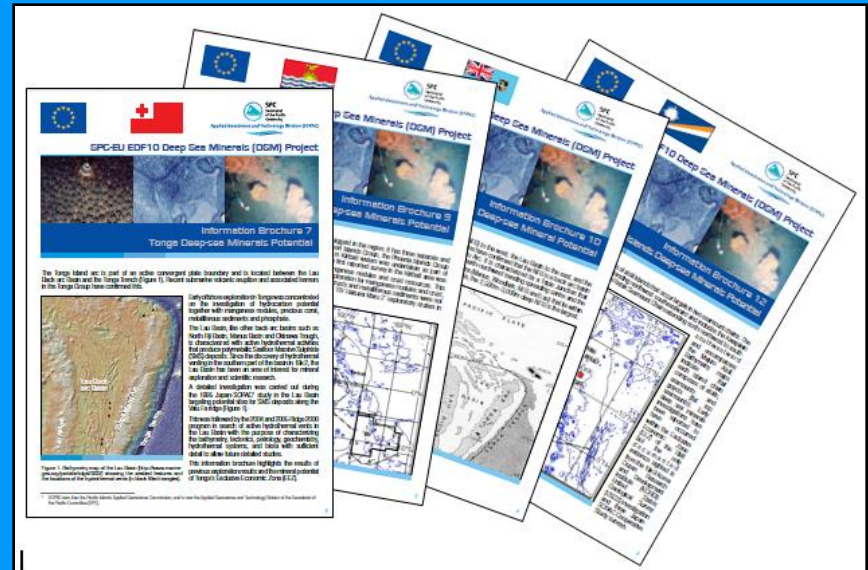
# In-country Stakeholder Concerns (cont')

- Lack of community and stakeholder awareness and information sharing;
- Conflicting messages from NGOs, researchers, developers and government;
- Potential resource ownership conflict;
- Preservation of cultural and aesthetic values to the sea (e.g. traditional shark calling);
- Lack of capacity (i.e. lack of knowledge on technical issues related to mineral exploration and mining) at all levels.



# DSM Project Information Sharing

- Host regional and national stakeholder consultation workshops / meetings;
- Project and workshop reports are prepared and disseminated;
- SPC-UNEP/GRID-Arendal report on the state of knowledge of marine minerals in the Pacific;
- Twelve information brochures have been prepared and disseminated to stakeholders;
- Share DSM information at regional and international conferences / meetings.



# DSM Project Information Sharing (cont')

- In consultation with IUCN Oceania, a DSM presentation was made at the Melanesian Spearhead Group (MSG) Environment Ministers meeting in January 2012;
- Production of a DSM Documentary in progress in collaboration with partners.
- Excellent media coverage through news release, TV and radio interviews;
- A mini-website for the DSM Project has been established:  
<http://www.sopac.org/dsm/>

## Deep Sea Minerals in the Pacific Islands region: Status, Challenges and Opportunities



"MSG Environment Ministers Meeting"

Nadi, Fiji  
27<sup>th</sup> January 2012



PAC – FORUM: PACNEWS |

PACNEWS 1: Fri 31 Aug 2012

### SPC defends criticisms against regional framework on deep sea mining

By Makereta Komai, PACNEWS Editor in Rarotonga

31 AUGUST 2012 RAROTONGA (PACNEWS) — The Director General of the Secretariat of the Pacific Community (SPC), Dr Jimmie Rogers has defended criticisms leveled at the regional legislative and regulatory framework for Deep Sea Mining (DSM) launched in Rarotonga at the margins of the Pacific Forum Leaders meeting Tuesday.

### Fiji Explores Deep Sea Minerals and Mining at Workshop |

The Director of Fiji's Mineral Resources Department, Mr. Malakai Finau told participants in a one day Fiji National

### Cooks seen as seabed minerals leader

As the Pacific Island countries continue to explore the possibility of deep sea mining, the Pacific Community (SPC) has organized a workshop to discuss the challenges and opportunities of deep sea mining. The workshop, held in Nadi, Fiji, was attended by representatives from 12 Pacific Island countries and the SPC. The workshop was organized by the SPC's Deep Sea Mining Programme and was the first of its kind in the Pacific region. The workshop was held over a three-day period and was attended by representatives from 12 Pacific Island countries and the SPC. The workshop was organized by the SPC's Deep Sea Mining Programme and was the first of its kind in the Pacific region. The workshop was held over a three-day period and was attended by representatives from 12 Pacific Island countries and the SPC.

### Pacific countries told to adopt 'precautionary approach' to seabed mineral mining

Tuesday, 26 June 2012 16:05 administrator



RIO+20

mal, PACNEWS Editor in Rio de Janeiro

and Countries and territories wishing to make use of or economic returns need to adopt a "precautionary

in any development where there are threats of serious the lack of full scientific data shall not be used as a ment", said Dr Russell Howarth, director of SOPAC Pacific Community (SPC).