Presentation Outline

• Deep sea minerals exploration history in the Pacific Islands region;

• Summary of Deep Sea Mineral Occurrence and Potential in the region;

• DSM Project Rationale and Objective;

• Capacity Building and Environment Management Components

• DSM Project Inaugural Regional Workshop

• DSM Project-UNEP/GRID-Arendal Partnership

• Beneficiaries and Implementing Partners

• Project Outputs and Outcomes
Marine Minerals Exploration in the Region

- 1960s – Mid 1970s: Manganese Nodules exploration;
- Early 1980s – commencement of Cobalt-rich Crusts (CRC) survey;
- 1985: First black smoker was found in the Manus Basin, PNG
- Mid 1980s – mid 2000: Manganese nodules, CRC, Seafloor Massive Sulphides (SMS);
- 1991 – confirmation of high grade SMS deposits in the Manus Basin PNG by the CSIRO.

- **Stage 1:** 1985-1999 (15 years); **Stage 2:** 2000-2005 (6 years)

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<td><strong>Manganese Nodules</strong></td>
<td>Phase 1 (85 – 89)</td>
<td>Phase 1 (00 – 02)</td>
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<td>Cooks</td>
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<td>Kiribati</td>
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<td><strong>Cobalt-rich Crust</strong></td>
<td>Phase 2 (90 – 94)</td>
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<td><strong>SMS</strong></td>
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<td>Fiji (01)</td>
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<td>Solomon</td>
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<td><strong>Objectives</strong></td>
<td>Mineral Resource Potential</td>
<td>Upgrade Mineral Resources; Baseline Environment Survey</td>
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Nodule Abundance

Found high abundant area at the central area of Cook Waters

Surveyed at EEZs of 5 coastal states

Manganese Nodules Potential...
Cobalt-rich Crust: Occurrence and Thickness

Survey area:
Samoa: 1990
Seafloor Massive Sulphides

Manus Basin

North Fiji Basin

Lau Basin

Map showing locations of Seafloor Massive Sulphides in different ocean basins.
Baseline Environmental Study

2000 – 2005 JAPAN-SOPAC Baseline Environmental Surveys were carried out in conjunction with mineral resources assessment in 5 countries (i.e. Cook Islands, Marshall Islands, Fiji and Kiribati and FSM).

- Deep sea sediments were sampled and analyzed for:
  - Water content, specific gravity, Organic Carbon and Total Nitrogen, Grain size distribution.
  - Composition of benthos communities, Density of individual fauna, Vertical distribution of fauna within the sediments.
## Mineral Occurrence in the Region

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<tr>
<th>Country</th>
<th>MN</th>
<th>CRC</th>
<th>SMS</th>
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<td>Marshall Islands</td>
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<td>Federated States of Micronesia</td>
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<td>Niue</td>
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- No economic potential for Metalliferous Sediment, Precious Coral and Phosphate
DSM Project Rationale

- **Main Issues:**
  - Recent upsurge in offshore minerals exploration within the EEZ of PICs;
  - Lack of specific policy, legislation and regulations for the governance of deep sea mineral resources;
  - Need for harmonised legal and fiscal regimes for the management of offshore mineral resources;
  - Lack of capacity to deal with issues relating to deep sea minerals.

- **Approach:**
  - A regional approach to address these issues was proposed;
  - Develop a regional framework as a guide for the formulation of national offshore minerals policy, legislation and regulations.
  - EU has agreed to provide financial support for the implementation of the Project in 15 Pacific ACP States;
  - The DSM Project is implemented through participatory and collaborative approaches.
**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 the following 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 PICs nationals in the offshore mining industry; and

- (4) Effective management and monitoring of offshore minerals exploration and exploitation.
Result Area 3 – Capacity Building

- Establish a process for assessing Marine Scientific Research, offshore mineral exploration and mining;

- Set up a regional marine minerals database;

- In consultation with key in-country stakeholders determine priority areas for capacity building;

- Collaborate with countries, private sector and implementing partners on capacity building initiatives;
Capacity Building Initiatives

- Facilitate and support formal and informal training of relevant technical professionals in PICs;

- The DSM Project in collaboration with the Human Development Programme (HDP) of the SPC, sponsored a participant each from Cook Islands, Tonga, PNG, Solomon Islands and Fiji to attend the International Conference on Mining in the Pacific.
Result Area 4 – Environmental Management Framework

• Develop a regional environmental management framework for DSM (under the SPC-UNEP/GRID-Arendal Agreement):

(1) Environmental Considerations Related to Deep Sea Minerals;

• Formulate regional DSM environmental monitoring guidelines.
Institutional Strengthening on Environmental Monitoring

- Collaborate with key stakeholders on monitoring the environmental impacts of offshore mining operations;

- Suitable candidates identified to participate in environmental monitoring as part of the on-the-job training;

- Contribute to the strengthening of the government environment management system to deal with DSM.
Stakeholder Empowerment and Participation

• Support the dissemination of information to key in-country stakeholders (i.e. 6 monthly update, information brochures, press releases, websites, etc);

• If necessary support the translation of information to local languages;

• Encourage and support the participation of potentially impacted local communities in the environmental monitoring.
Benefit Cost Analysis of Deep Sea Mining

• Carry out a Benefit-Cost Analysis (BCA) of deep sea mining:

High costs of deep sea mining and the potential impacts on the marine living resources

Against

Profit derive from mining operations due to high commodity prices and the decrease in land metal reserves
Objectives:

- To present the SPC-EU Deep Sea Minerals (DSM) Project and provide an opportunity for country representatives to be briefed by presenters on various aspects of deep sea minerals.
- To stimulate discussions among participants and collectively identify a number of key guiding principles for the implementation of the DSM Project and the overall management of deep sea minerals in the region.
Workshop Outcomes

- A total of 18 workshop outcomes have been agreed to as the guiding principles for the DSM Project including:
  - **Regional Approach:** A regional approach to regulate the DSM sector and address seabed mining and related issues.
  - **Environment Protection Guidelines:** Suggested guidelines that support environment protection have been identified and regional and national environment frameworks must conform to existing international and regional mechanisms.
  - **Environment Conservation and Monitoring:** There is a need to balance exploitation and conservation, and protect and conserve marine biodiversity in accordance with the precautionary approach concept and LOSC.
SPC-UNEP/GRID-Arendal Collaboration

- Assess the state of knowledge of Pacific Marine Minerals.

- A number of world renowned experts are members of the technical steering committee;

- 1st Steering Committee meeting was held in June 2011;

- 2nd Technical Steering Committee meeting in December 2011;

- Final products to be delivered in June 2012.
Assessment Report Chapter Outline

- **Chapter 1:** General Introduction
- **Chapter 2:** What are the Main Drivers Behind Possible Development? (Why Mining, Why Now?)
- **Chapter 3:** What and where are these Occurrences?
- **Chapter 4:** What are the Habitats and Ecosystems associated with the Occurrences?
- **Chapter 5:** Processes related to the Technical Development of Marine Minerals in the Pacific Islands Region
- **Chapter 6:** Environmental Considerations Related to the Development of Marine Minerals in the Pacific Island Region
- **Chapter 7:** The Sustainable Economics of Deep Sea Mining
- **Chapter 8:** Societal Impacts and Community Perspectives of Marine Mineral Development in the Pacific Island Region;
- **Chapter 9:** Regional Environmental Management Policy Framework for Deep Sea Minerals Development: Guiding Principles and Planning Tools
- **Chapter 10:** The Sustainable Fiscal Management of Deep Sea Mining
- **Conclusion:** Policy Perspectives, Challenges and Opportunities.
DSM Project Beneficiaries

- Two main beneficiaries:
  - (1) National governments: relevant government agencies particularly those that deal with mining, fisheries, environment, law, and fiscal matters;
  - (2) Local Communities: particularly those that are most likely to be impacted by activities relating to offshore exploration and mining;
- Other beneficiaries: Private sector, NSA, and regional and international agencies.
Implementing Partners

- Relevant government agencies of the 15 Participating Countries:
  - Mining;
  - Fisheries;
  - Environment;
  - Finance,
  - Office of the Attorney General

- Regional Organizations:
  - Other Divisions of the SPC,
  - Pacific Islands Forum Secretariat (PIFS),
  - Forum Fisheries Agency (FFA),
  - Secretariat of the Pacific Regional Environment Programme (SPREP);

- Other Organisations:
  - UNEP/GRID-Arendal,
  - Commonwealth Secretariat,
  - Geoscience Australia,
  - International Seabed Authority,
  - World Bank, etc;

- Local Communities;

- Non-State Actors:
  - IUCN;
  - WWF;
  - Minerals Policy Institute (MPI).
Expected Project Outputs

- RLRF completed and used by P-ACP Countries;
- National offshore minerals policy, legislation and regulations established in 70% of P-ACP Countries;
- Regional marine minerals database operational;
- Improved capacity to deal with deep sea mining issues, e.g. legal, fiscal, policy, environmental, social, and technical;
- Regional environmental management framework and guidelines completed and distributed to stakeholders;
- Benefit Cost Analysis completed and distributed to stakeholders;
- Relevant information and data disseminated to stakeholders.
Expected Project Outcomes

• Seabed minerals exploration and exploitation policy and legislation implemented;

• Increasing number of P-ACP nationals participating in all aspects of the offshore mining industry;

• Increase investment in seabed minerals exploration and mining in the region.

• Deep sea minerals exploration and exploitation properly regulated;

• Deep sea mining operations (e.g. sound policy) and benefits (e.g. revenue, saving scheme) better managed;

• Better informed interest groups and impacted communities.