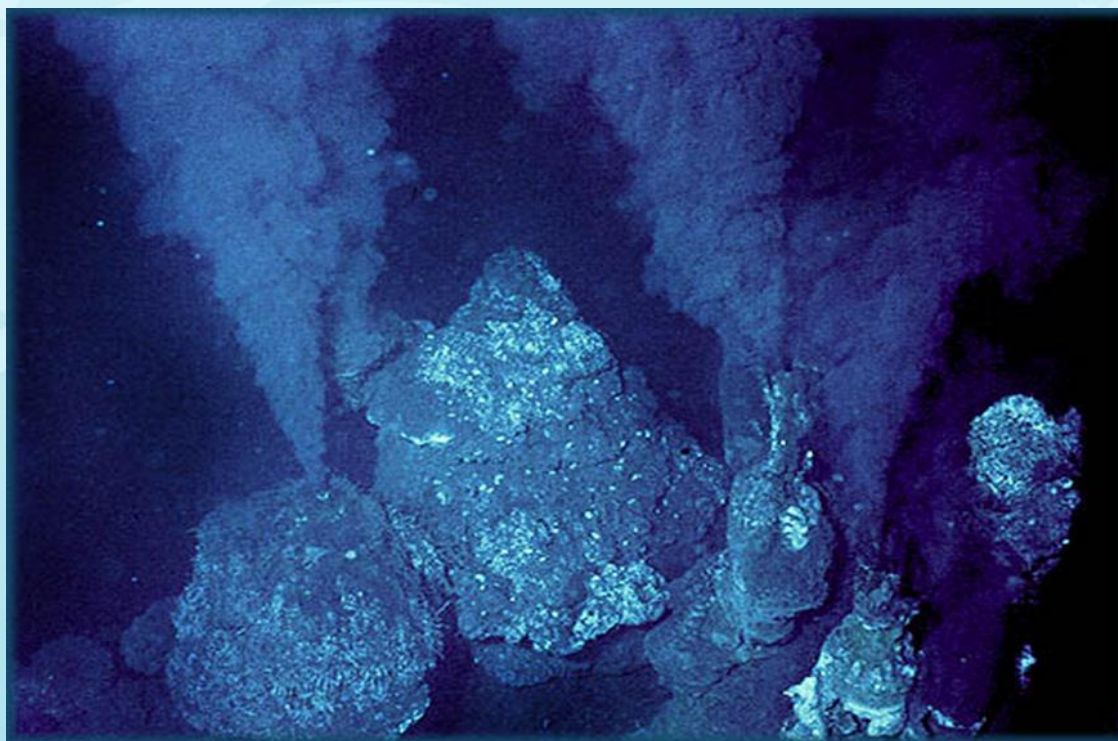




Deep Sea Environments and Seafloor Mining: An ABS Issue?



Alison Swaddling

SPC-EU DSM Project Environment Advisor



SPC-EU DSM Project

The **SPC-EU DSM Project** is helping Pacific Island countries to improve the **governance and management** of their deep-sea minerals resources in accordance with **international law**, with particular attention to the **protection of the marine environment** and securing **equitable financial arrangements** for Pacific Island countries and their people.

Activities include:

- Development of a Regional Legal and Regulatory Framework
- Assistance with domestic policy and legislation
- Training workshops
- Publications

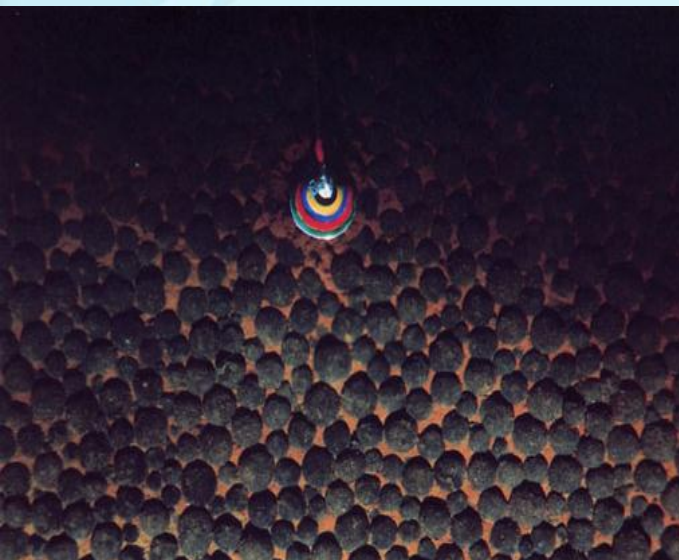




Deep Sea Minerals



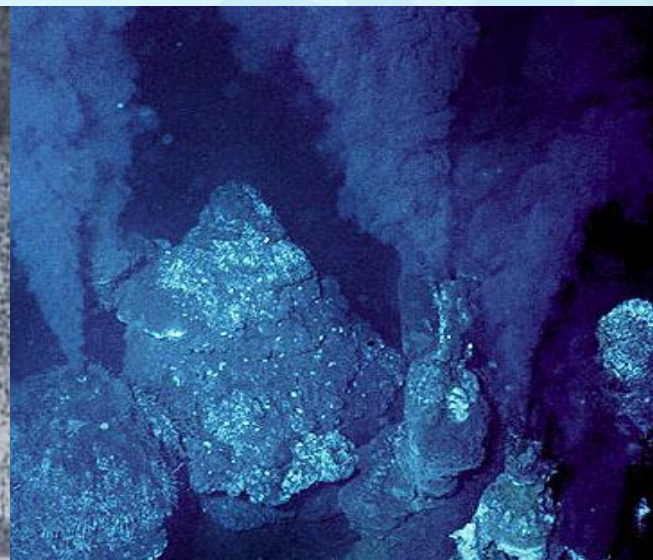
Manganese
Nodules (MN)

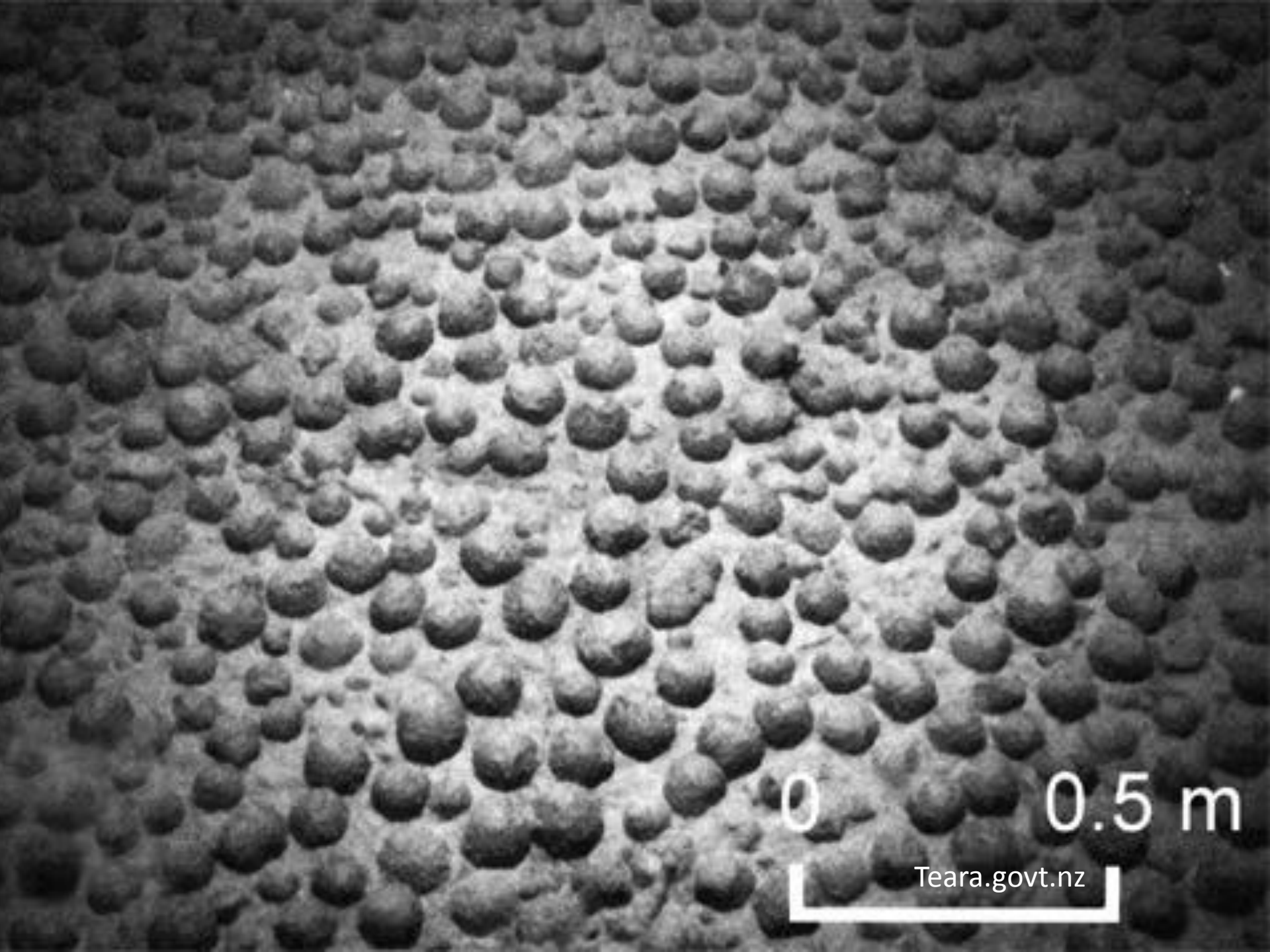


Cobalt Rich Crusts
(CRC)



Seafloor Massive
Sulphides (SMS)





0

0.5 m

Teara.govt.nz



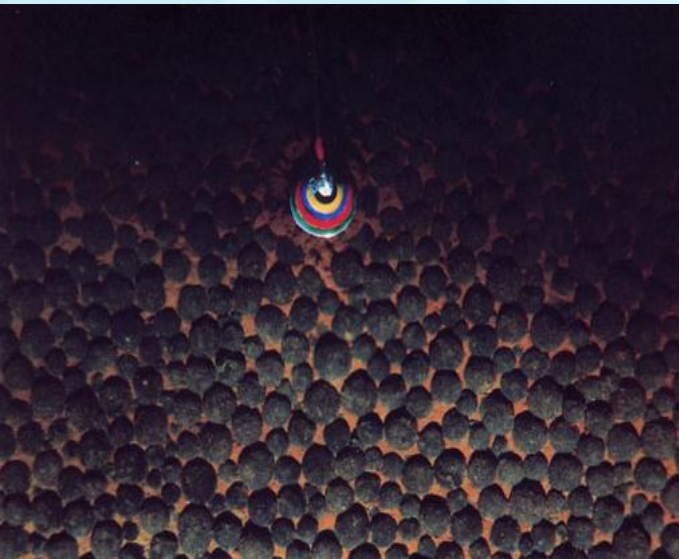




Deep Sea Minerals



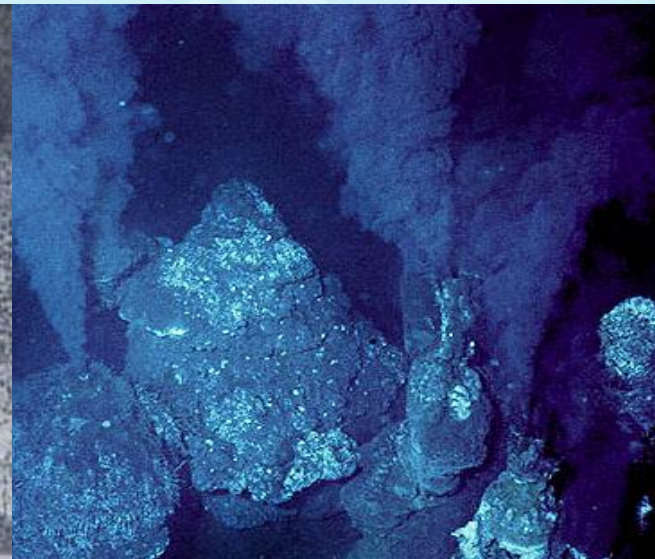
Manganese
Nodules (MN)



Cobalt Rich Crusts
(CRC)



Seafloor Massive
Sulphides (SMS)



What lives down there?



Manganese Nodules - Biology



Macrofauna
/ Meiofauna

© Glover, Dahlgren & Wiklund



Nodule
fauna

© Glover, Dahlgren & Wiklund

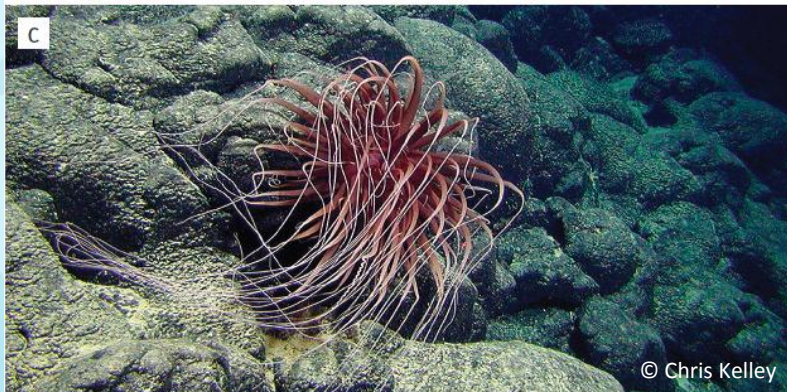


Megafauna

© Ifremer/Nautil, Nodinaut



Cobalt Rich Crusts - Biology





Seafloor Massive Sulphides – Biology



Active Sites

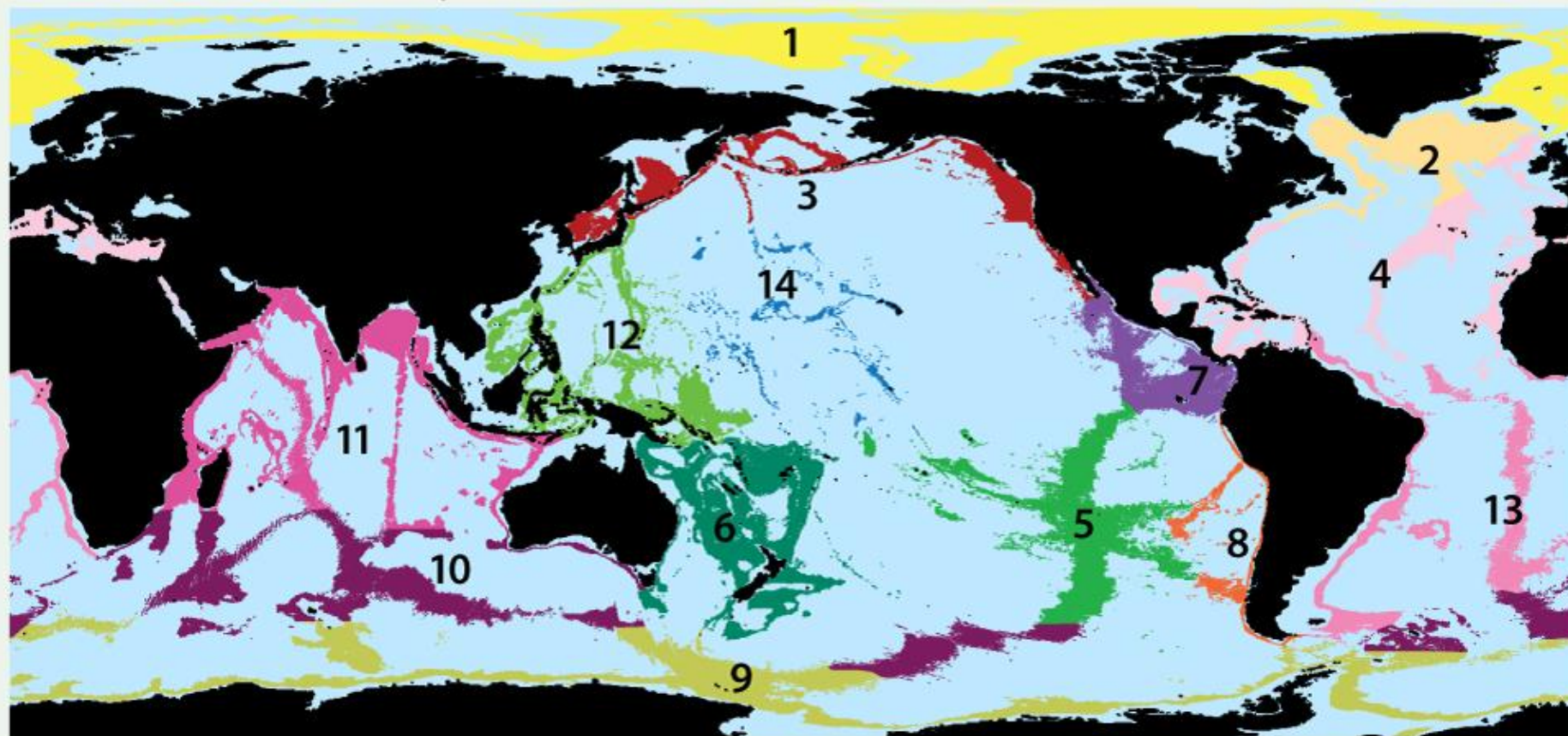


Dormant Sites





Bio-Regions



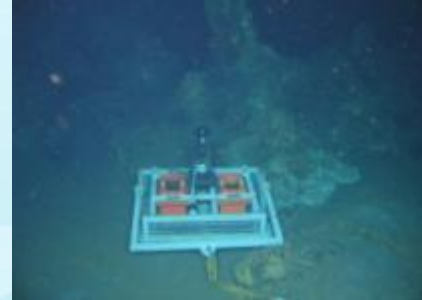
Depth: 800 to 3,000 meters

(UNESCO, 2009)

- | | | | | |
|----------------------------|-------------------------|----------------|------------------|--------------------|
| 1. Arctic | 4. North Atlantic | 7. Cocos Plate | 10. Subantarctic | 13. South Atlantic |
| 2. Northern North Atlantic | 5. SE Pacific Ridges | 8. Nazca Plate | 11. Indian | 14. North Pacific |
| 3. Northern North Pacific | 6. New Zealand Kermadec | 9. Antarctic | 12. West Pacific | |



Sampling Techniques



© Nautilus Minerals



Regional Legal and Regulatory Framework



A road-map to policy and law issues, for States considering engagement with DSM

Aims to:

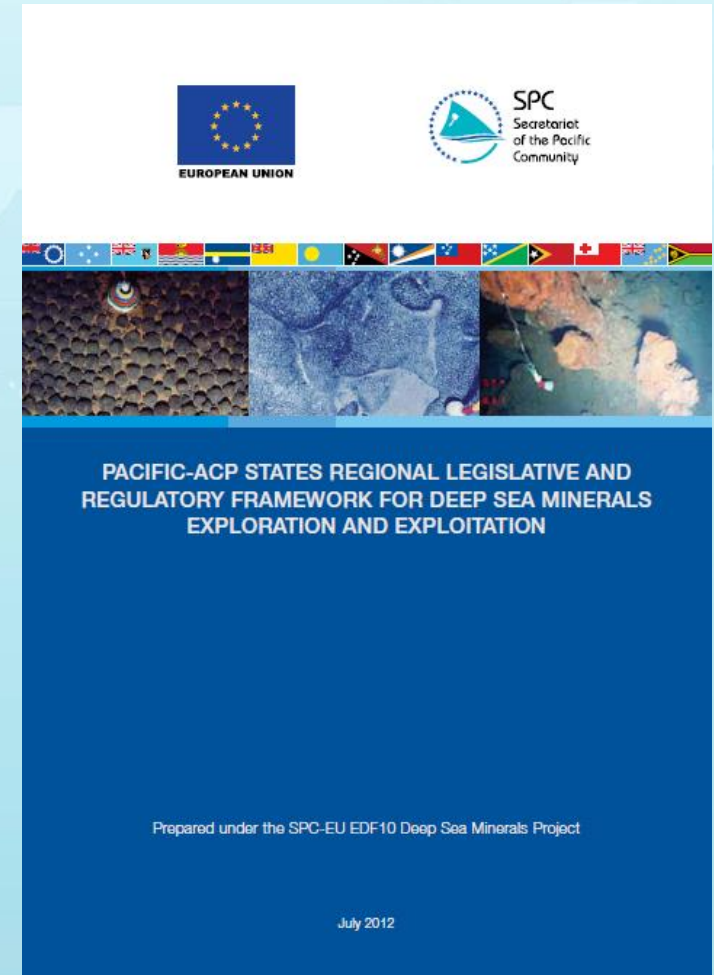
- facilitate national policy discussion
- guide national laws to meet international standards
- encourage regional consistency between States
- protect the State's best interests

Contributions from:

- 15 Member countries
- 56 International Experts/ Industry

Time line:

Jun 2011	Inaugural Workshop
Aug 2011	Terms of Reference
Nov 2011	Workshop
Jan-Jun 2012	Consultation
Aug 2012	Launch





Regional Legal and Regulatory Framework



Content:

Legal rights (ownership)

Balancing competing interests

International obligations

Maritime boundaries

Fiscal regime

Revenue management

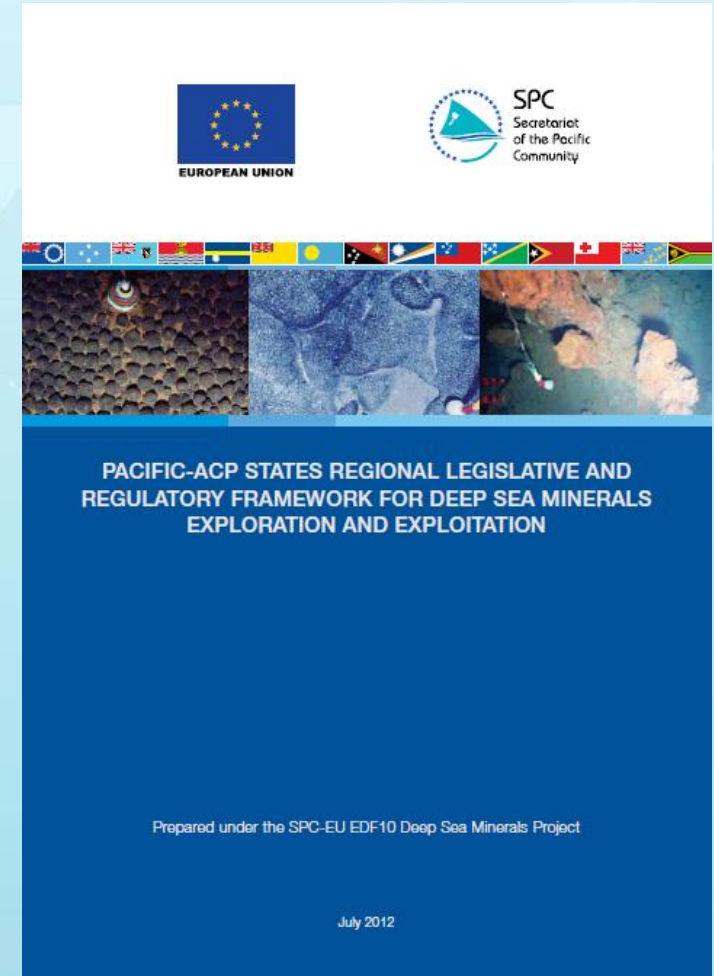
Decision-making
















Public participation

Environmental management

Other sea users

Regional co-operation



Country	DSM Policy	DSM Legislation	Mineral Potential	Licenses Granted
 CI	✓	✓	Nodules	
 FSM		presented to Congress	Crusts , SMS?	
 Fiji	under review	✓	SMS	Exploration
 Kiribati	under consultation	<i>(started)</i>	Nodules, Crusts	
 RMI	with Cabinet	with Cabinet	Crusts	
 Nauru		<i>(draft)</i>		
 Niue	<i>(draft)</i>	<i>(draft)</i>	Nodules, Crusts	
 Palau				
 PNG			SMS	Exploration, Mining
 Samoa			Crusts	
 SI	<i>(started)</i>		SMS	Exploration
 TL				
 Tonga		✓	SMS	Exploration
 Tuvalu	under consultation	presented to Parliament	Nodules, Crusts	
 Vanuatu	under consultation		SMS	Exploration



Considerations for Bio-prospecting



DSM Exploration License:

- Exclusive right to explore for **seabed minerals**
- Government reserves right to approve **other activities** in or around the licensed area
- All sampling data must be provided to the government. Annual Reports.
- Geological and biological samples remain property of the government



Collaboration with the DSM mining industry?



Accessing the deep sea:

- Time consuming
- Technologically challenging
- Expensive
- DSM exploration already underway, samples are being collected.





Collaboration with the DSM mining industry?



Licensing and regulation

- Currently separate licensing would be required
- Future incorporation into a joint framework?
- DSM Legislation being developed throughout the Pacific. Ie Tonga
- DSM Licensing / Environmental Regulations

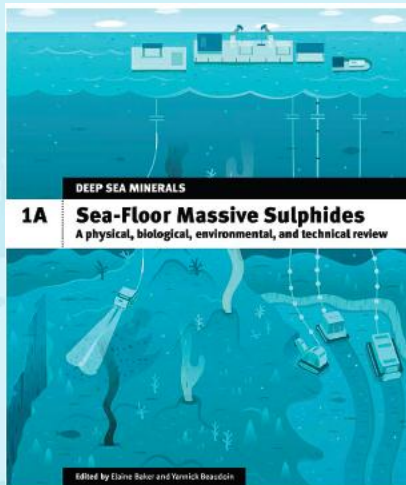




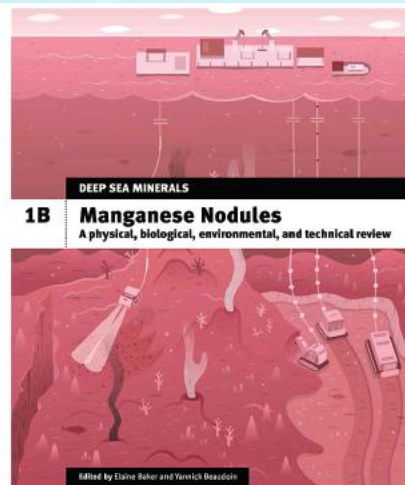
Deep Sea Minerals Report



A synthesis and review of existing knowledge on deep sea minerals



Volume 1A: SPC (2013). *Deep Sea Minerals: Sea-Floor Massive Sulphides, a physical, biological, environmental, and technical review*. Baker, E., and Beaudoin, Y. (Eds.) Vol. 1A, Secretariat of the Pacific Community.



Volume 1B: SPC (2013). *Deep Sea Minerals: Manganese Nodules, a physical, biological, environmental, and technical review*. Baker, E., and Beaudoin, Y. (Eds.) Vol. 1B, Secretariat of the Pacific Community.



Volume 1C: SPC (2013). *Deep Sea Minerals: Cobalt-rich Ferromanganese Crusts, a physical, biological, environmental, and technical review*. Baker, E. and Beaudoin, Y. (Eds.) Vol. 1C, Secretariat of the Pacific Community.



Volume 2: SPC (2013). *Deep Sea Minerals and the Green Economy*. Baker, E. and Beaudoin, Y. (Eds.), Vol. 2, Secretariat of the Pacific Community.





SPC-EU Pacific Deep Sea Minerals Project



Alison Swaddling
Environment Advisor

alisons@spc.int
www.sopac.org/dsm