

Seafloor mineral resources: Scientific, environmental and societal issues

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The regulatory regime for deep seabed mining

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The regulatory regime for deep seabed mining

Outline

Fundamental principles and sources of law

Status of the Mining Code

Prospecting and exploration

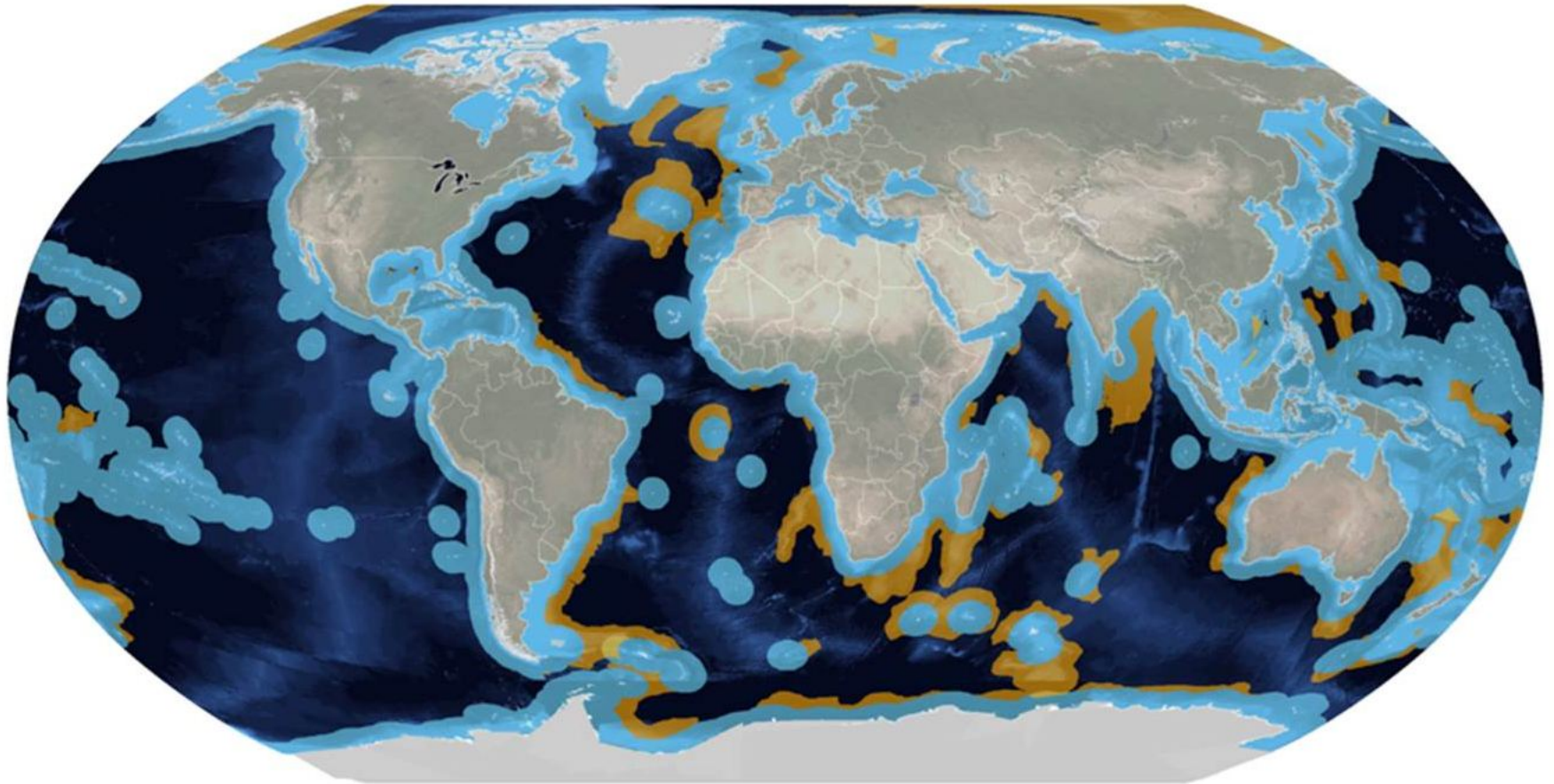
Environmental protection

Exploitation

The “Reserved Areas”

Fundamental principles and sources of law

The “Area”



Exclusive Economic Zones (VLIZ, 2011)

Submissions to the Commission on the Limits of the Continental Shelf as of 15 June 2012*

Fundamental principles and sources of law

Fundamental principles

Article 136

The Area and its resources are the common heritage of mankind.

Article 137

No State shall claim or exercise sovereignty or sovereign rights over any part of the Area or its resources.

All rights in the resources of the Area are vested in mankind as a whole (represented by the ISA) and no State or natural or juridical person shall exercise mineral rights except in accordance with Part XI.

Article 140

Activities in the Area shall be carried out for the benefit of mankind as a whole.

Article 141

The Area shall be open to use exclusively for peaceful purposes by all States.

Fundamental principles and sources of law

Sources of law

1982 UN Convention on the Law of the Sea (Part XI and Annex III)

1994 Agreement for the Implementation of Part XI of the 1982 Convention

Other rules of International law not incompatible with the Convention

Rules, regulations and procedures of the International Seabed Authority

Aim to create a regulatory framework for prospecting, exploration and exploitation similar to terrestrial mining:

- Security of tenure
- Due Diligence
- Environmental protection
- Exploitation on fair and reasonable financial terms



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The Mining Code

Definition and content

The comprehensive set of rules, regulations and procedures issued by the International Seabed Authority to regulate prospecting, exploration and exploitation of marine minerals in the Area.

- Regulations on:
 - Prospecting
 - Exploration
 - Exploitation
- Rules and procedures
 - Environmental recommendations
 - Data standards
 - Financial reporting
- Covering:
 - Polymetallic nodules
 - Polymetallic sulphides
 - Cobalt-rich crusts
 - Other resources

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Prospecting and exploration

Overview

❑ Prospecting

- Searching for mineral deposits with no exclusive rights.
- Requires written notification to the Secretary-General.
- Most prospecting may be undertaken as MSR.

❑ Exploration

- Searching for and evaluating potential of mineral deposits with exclusive rights under a contract.
- Priority over other applicants for exploitation rights.

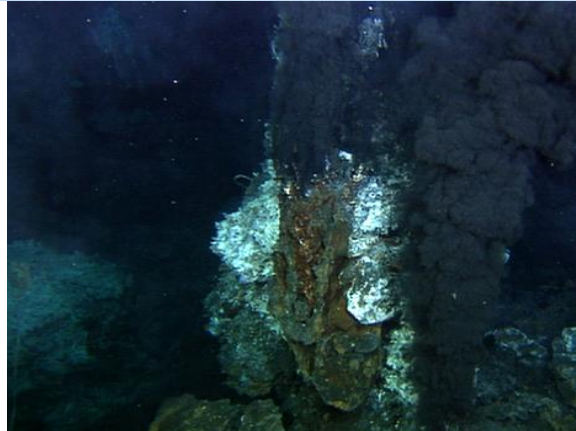
Prospecting and exploration

Overview

Current regulations cover prospecting and exploration phases for polymetallic nodules, polymetallic sulphides and cobalt-rich crusts.



*Polymetallic nodules
(2000)*



*Polymetallic sulphides
(2010)*



*Cobalt-rich crusts
(2012)*

Regulatory framework largely identical, differences reflect different nature of resources

Prospecting and exploration

Application criteria

Qualified Applicants

State Party to the 1982 Convention *or*
State enterprise sponsored by a State
Party *or*
Natural or juridical person possessing the
nationality of a State Party and sponsored
by a State Party.

State Sponsorship

Fundamental requirement.

Sponsorship by State of which applicant is
a national or State having effective control
(may be more than one sponsoring State).

Evidenced by certificate of sponsorship.

Declaration of responsibility.



Prospecting and exploration

Content of application for exploration licence

- ☐ Information on financial capability.
- ☐ Information on technical capability.
- ☐ Proposed 15-year exploration programme.
- ☐ Detailed five-year plan showing anticipated annual actual and direct expenditure on exploration.
- ☐ Proposal for oceanographic and environmental baseline studies and preliminary environmental impact assessment.
- ☐ Proposed measures to prevent pollution (contingency plan).
- ☐ Undertaking of good faith.
- ☐ Processing fee (US\$ 500,000).
- ☐ List of coordinates and chart of proposed area.

Prospecting and exploration

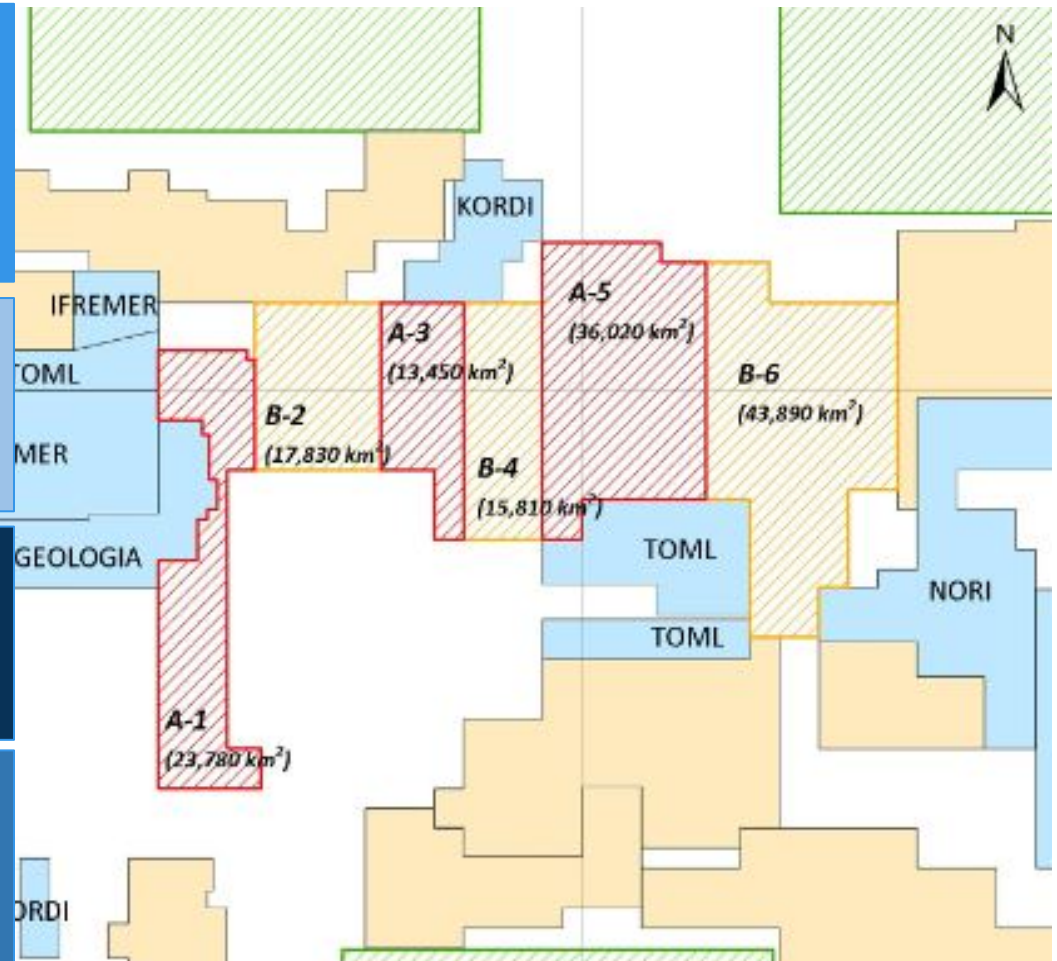
Polymetallic nodules – size of area for exploration

Applicant must offer two sites of equal estimated commercial value (one for the contractor, one to be reserved)

Each site to be not more than 150,000 Km² in size, relinquish to 75,000 Km²

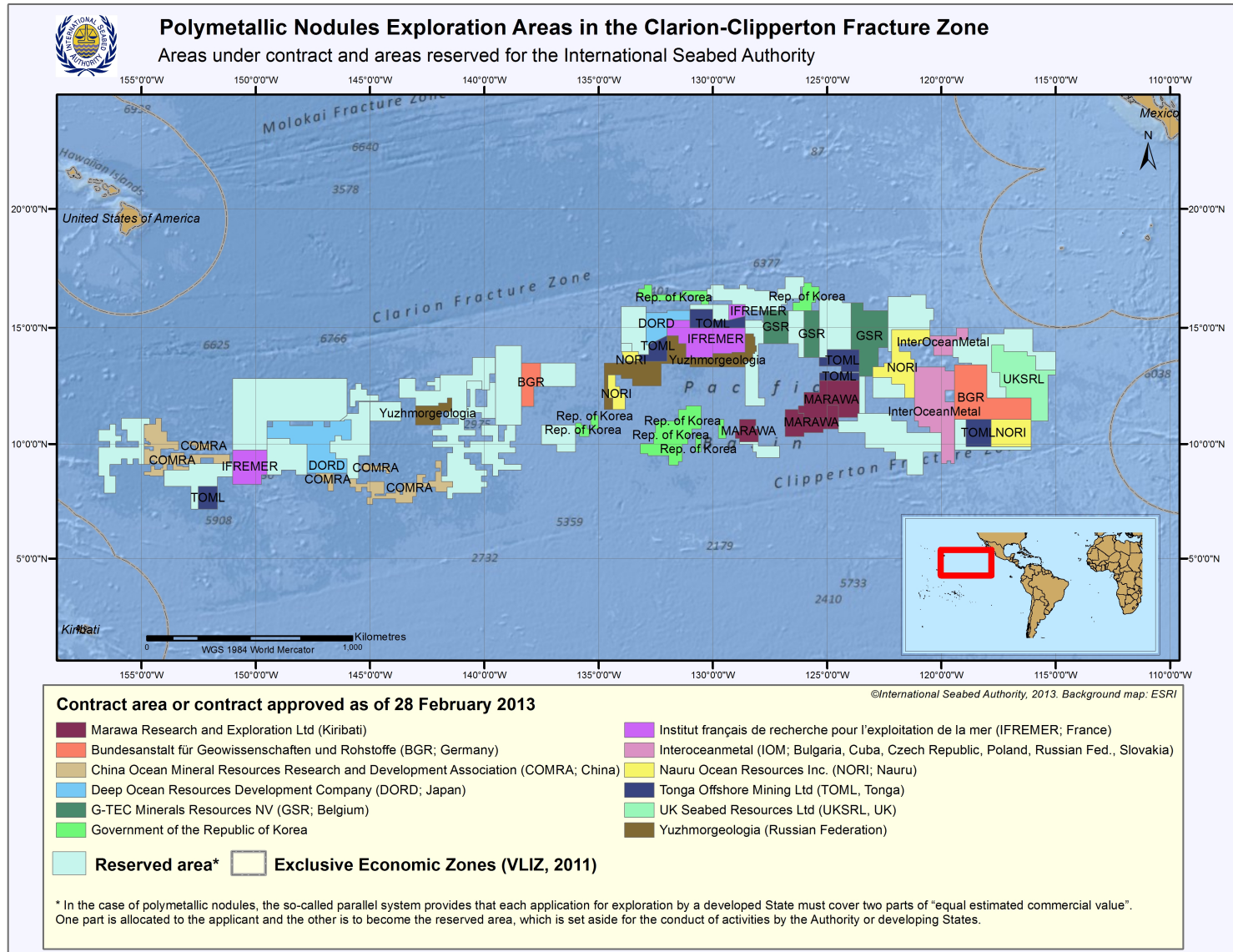
May be in any geographical configuration and need not be a single area

Twelve contracts issued to date (Eleven in CCZ and one in Indian Ocean)



Prospecting and exploration

Polymetallic nodules – CCZ licences

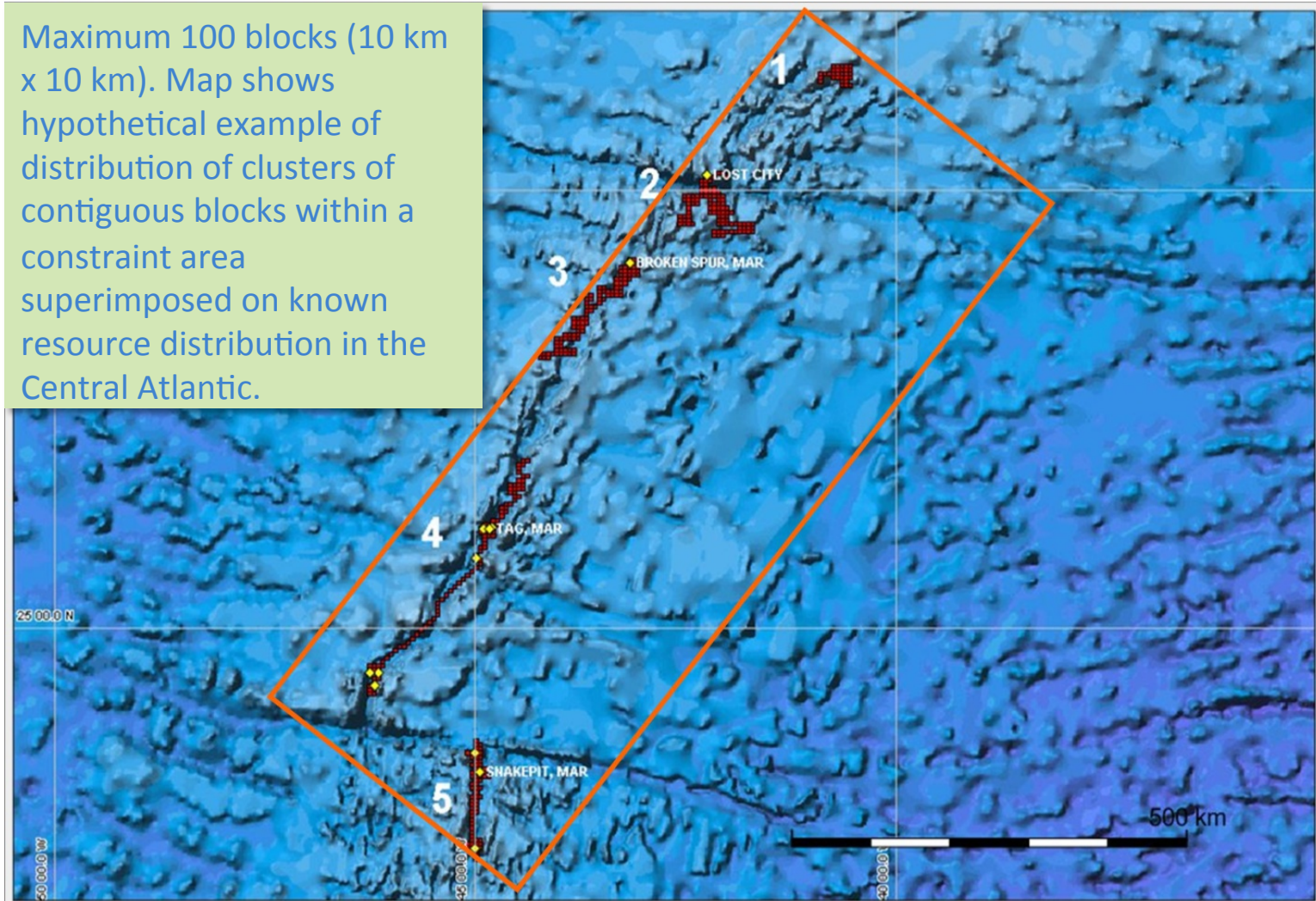


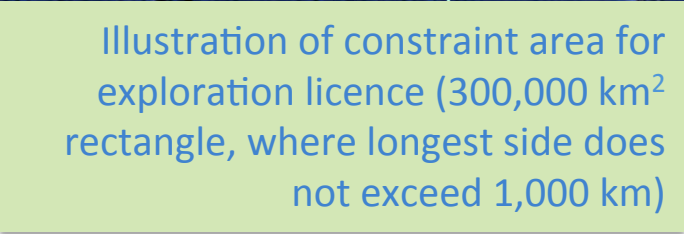
Prospecting and exploration

Polymetallic sulphides – block allocation system

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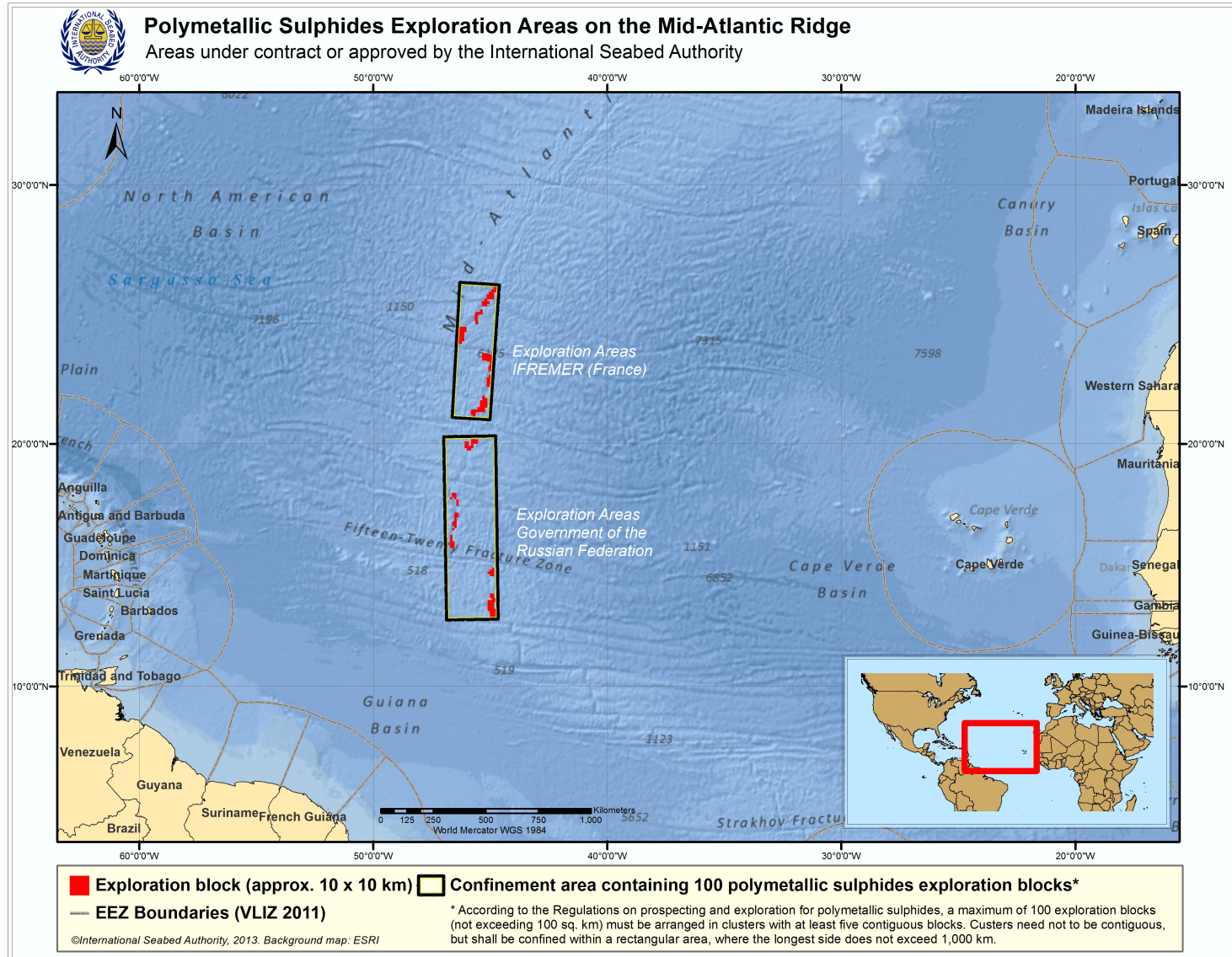
Maximum 100 blocks (10 km x 10 km). Map shows hypothetical example of distribution of clusters of contiguous blocks within a constraint area superimposed on known resource distribution in the Central Atlantic.





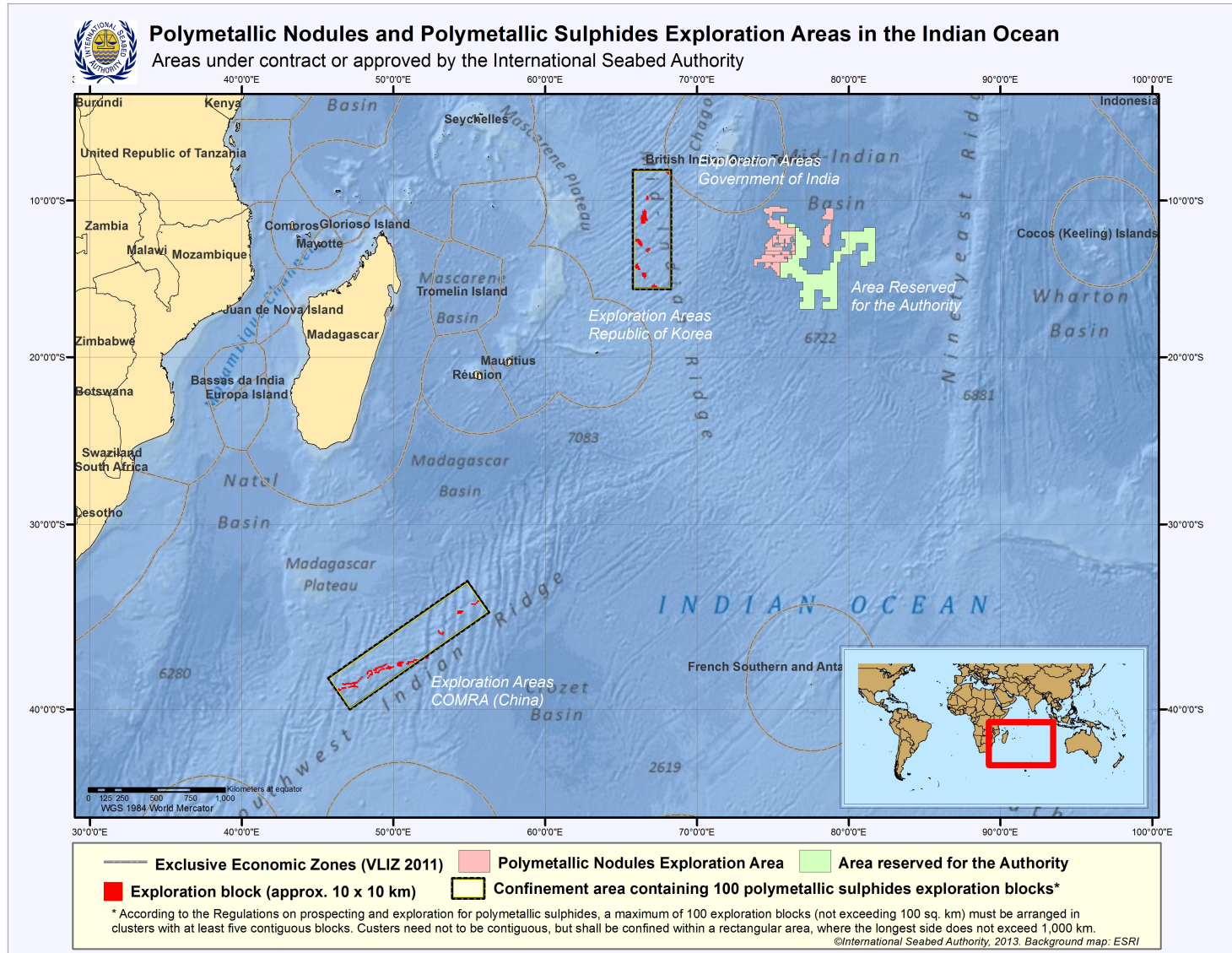
Prospecting and exploration

Polymetallic sulphides – Atlantic Ocean



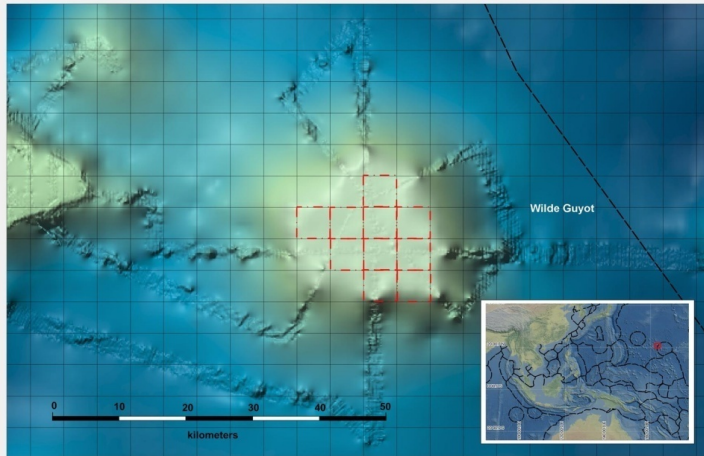
Prospecting and exploration

Polymetallic sulphides – Indian Ocean

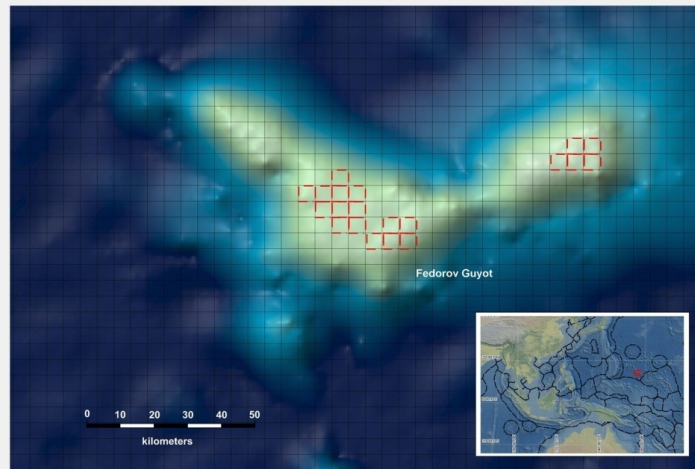


Prospecting and exploration

Cobalt-rich crusts – block allocation system



Example: Wilde Guyot with cluster of 10 blocks (5 x 5 km)



Example: Fedorov Guyot with 20 blocks (5 x 5 km) in 2 clusters



Exploration Block (5 x 5 km)

---- Limits of Exclusive Economic Zones (indicative only)

- ❑ Each exploration block no more than 20 Km², but may be square or rectangle.
- ❑ Maximum of 150 blocks, which shall be arranged in clusters of maximum 5 contiguous blocks.
- ❑ Clusters need not be contiguous but may be proximate and in a constraint area measuring 550 x 550 Km.
- ❑ Total exploration area 3,000 Km², to be relinquished down to 500 km²
- ❑ Option to offer joint venture in lieu of reserved area.
- ❑ Two applications filed in 2012 (under consideration)

Prospecting and exploration

Consideration of applications for exploration licences

Legal and Technical Commission reviews and makes recommendation to the ...

Council, which shall approve the application unless disapproved by two-thirds majority including a majority in each chamber

Then a Contract issued by Secretary-General in standard format

Prospecting and exploration

Content of standard exploration contract

- ☐ Standard contract terms in Annex 4 of Regulations.
- ☐ 15 year duration, extension for 5 years in 'exceptional circumstances'.
- ☐ Schedule of progressive relinquishment of exploration area
- ☐ Mandatory training programme for personnel of developing countries.
- ☐ Annual reporting requirement to the Authority.
- ☐ Minimum exploration expenditure requirement.
- ☐ Preference over other applicants for exploitation of same area.
- ☐ Strict limitations on use of and access to confidential data, e.g. commercially sensitive data on ore grade, abundance and metal content. Note that environmental data not considered confidential, but proprietary data (e.g. equipment design) always considered confidential.

Prospecting and exploration

Suspension and termination of contract

- ❑ Contract may be suspended or terminated in case of:
 - Termination of sponsorship;
 - Serious persistent and wilful violations;
 - Failure to comply with final binding decision of Court or Tribunal; or
 - Insolvency.
- ❑ Monetary penalties may be imposed by Council for breach of contract.
- ❑ Disputes to be settled in accordance with Part XI, Section 5, of the Convention, including recourse to Seabed Disputes Chamber.

Prospecting and exploration

Responsibility and liability

- ❑ Contractor liable for damage arising from wrongful acts or omissions.
- ❑ Authority liable for damage arising from wrongful acts or omissions, including vicarious liability under article 168.
- ❑ Sponsoring States liable unless taken “all necessary and effective measures to ensure compliance” (includes adequate national regulatory system).
- ❑ Personal liability on members of Legal and Technical Commission and Secretariat staff for abuse under article 168(8) of the Convention.

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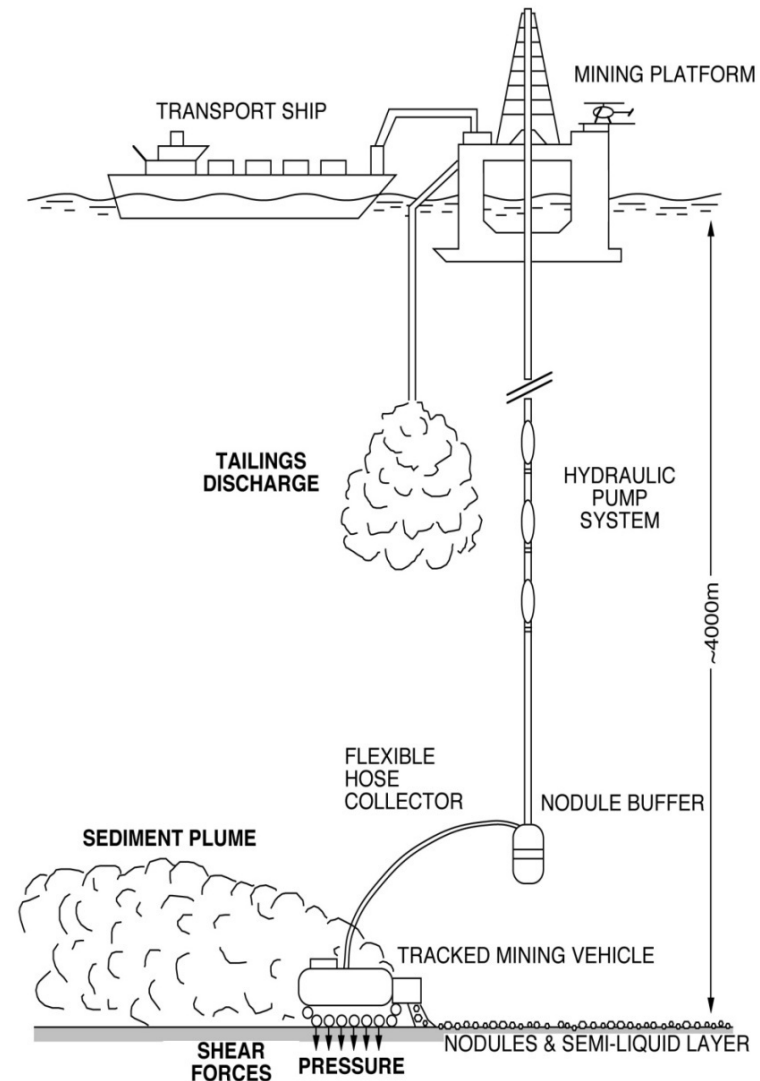
The “Reserved Areas”

Environmental protection

Fundamental responsibility

Reg 33(1): The Authority shall, in accordance with the Convention and the Agreement, establish and keep under periodic review environmental rules, regulations and procedures to ensure effective protection for the marine environment from harmful effects which may arise from activities in the Area.

Reg 33(2): In order to ensure effective protection for the marine environment from harmful effects which may arise from activities in the Area, the Authority and sponsoring States shall apply a precautionary approach, as reflected in principle 15 of the Rio Declaration, and best environmental practices.



Environmental protection

Obligations and responsibilities on all parties

The Authority

- Establish and keep under review environmental rules, regulations and procedures.
- Apply a precautionary approach.
- Develop and implement programmes for monitoring and evaluating impacts of mining on marine environment.

The Contractor

- Include environmental information with application (Reg. 20).
- Take necessary measures to prevent, reduce and control pollution and other hazards to the marine environment, applying a precautionary approach and best environmental practices.
- Cooperate with Authority in establishment and implementation of monitoring and evaluation programmes.
- Gather environmental baseline data and establish baselines, taking account of any recommendations issued by the Legal and Technical Commission.
- Report annually to the Authority.

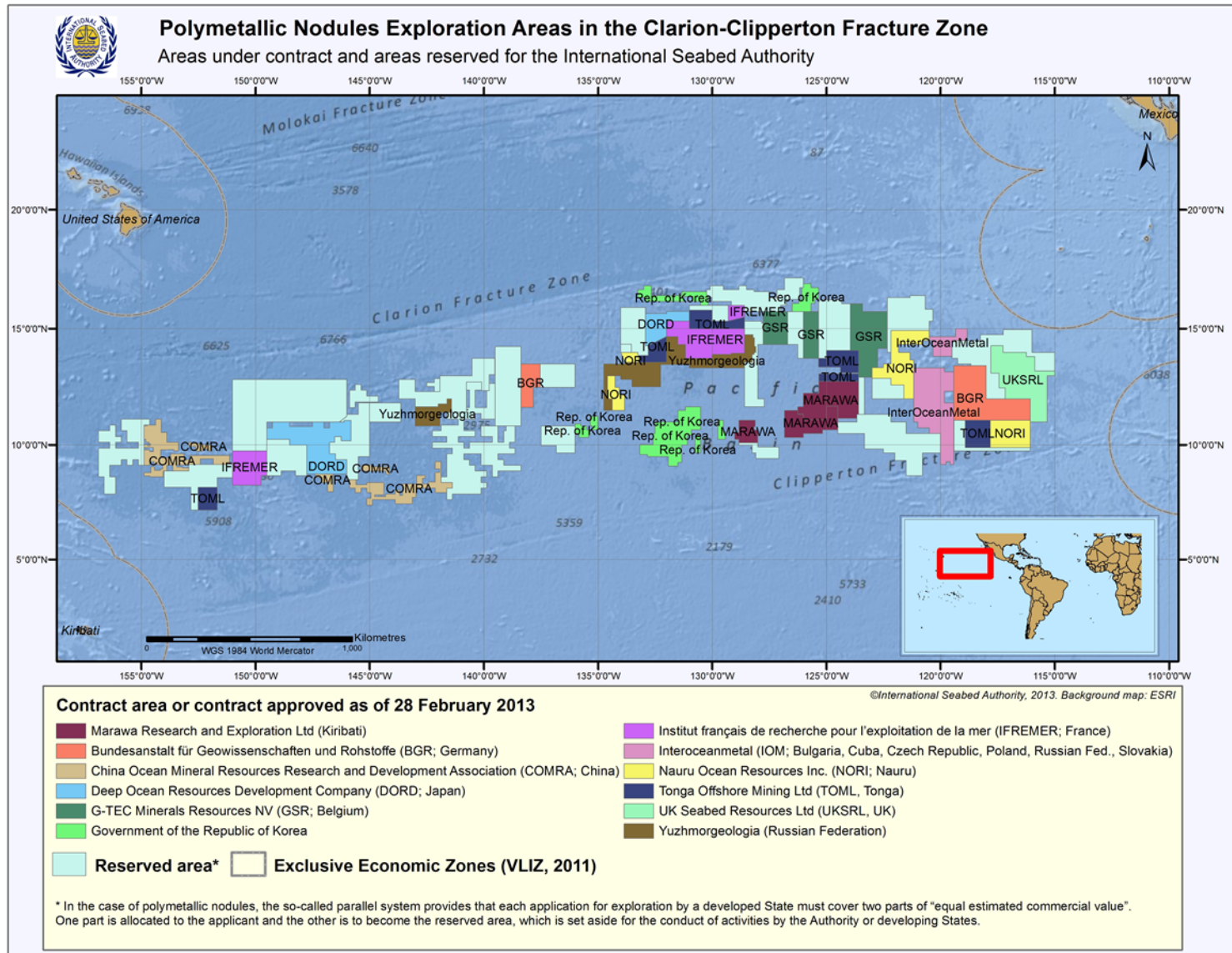
The Legal and Technical Commission

- Make recommendations to Council on implementation of Regulation 33(1) and (2).
- Consider annual reports of contractors.
- Issue Recommendations for Guidance of Contractors.
- Other powers under article 165.



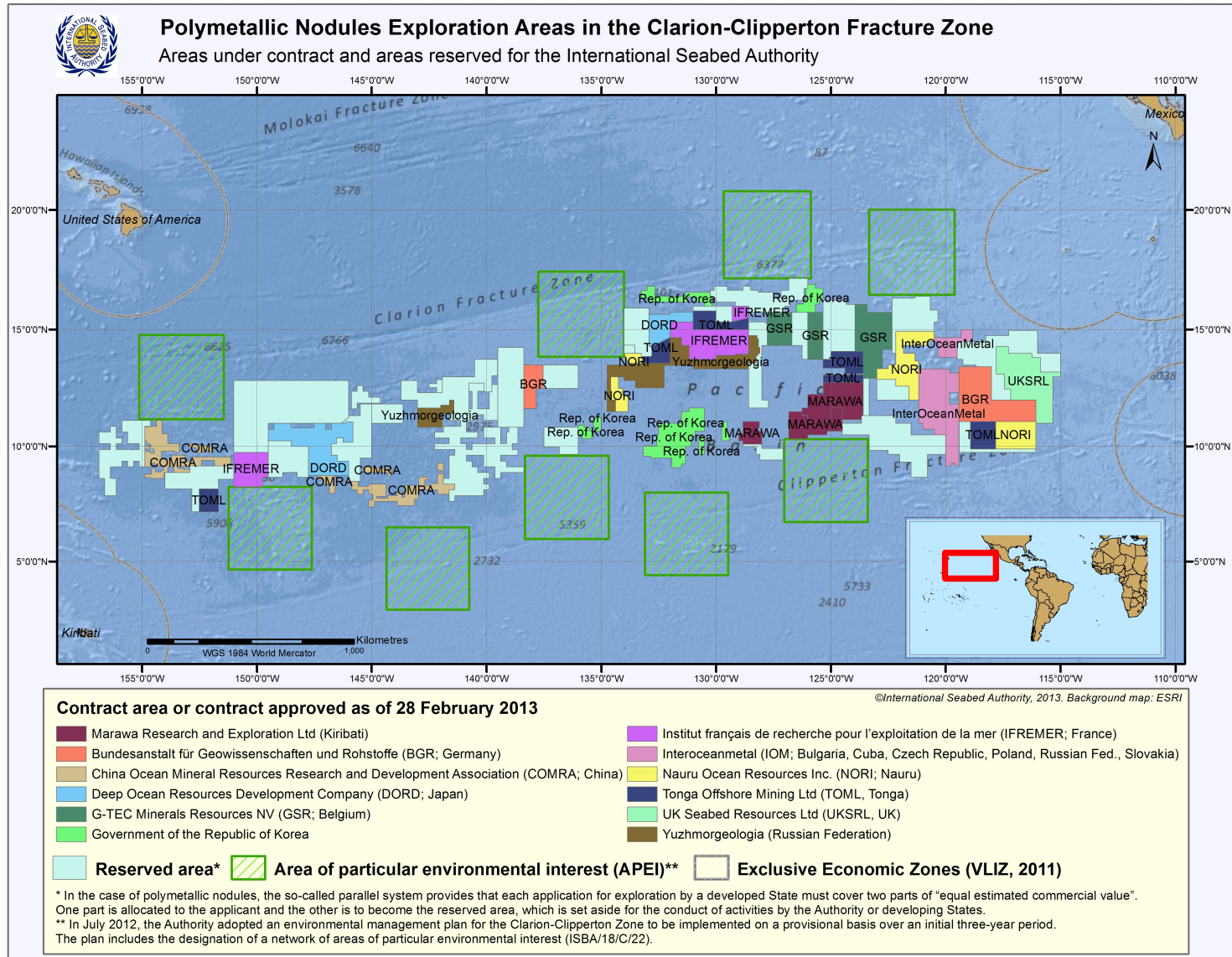
Environmental protection

Areas of Particular Environmental Interest (APEIs) - 2012



Environmental protection

Areas of Particular Environmental Interest (APEIs) - 2012



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Exploitation

Future work for the Authority

Regulatory framework for exploitation does not exist.

☐ **Exploitation**

- Recovery for commercial purposes and extraction of minerals.
- Construction of mining, processing and transportation systems.
- To be conducted under licence from Authority.

☐ **Financial terms (1994 Agreement, Annex, Section 8)**

- System should be fair to both Authority and contractor and comparable to land-based mining.
- System should not be complicated.
- Should be an annual fixed fee.
- Consideration should be given to royalty system.

☐ **Preliminary study prepared for Legal and Technical Commission in 2013**

Exploitation

Importance of fiscal regime to future mining

Most
sensitive

Least
sensitive

Metal Price

Metal Content

Fiscal Regime

Processing Cost

Mining Cost

Energy/fuel Cost

Transportation Cost

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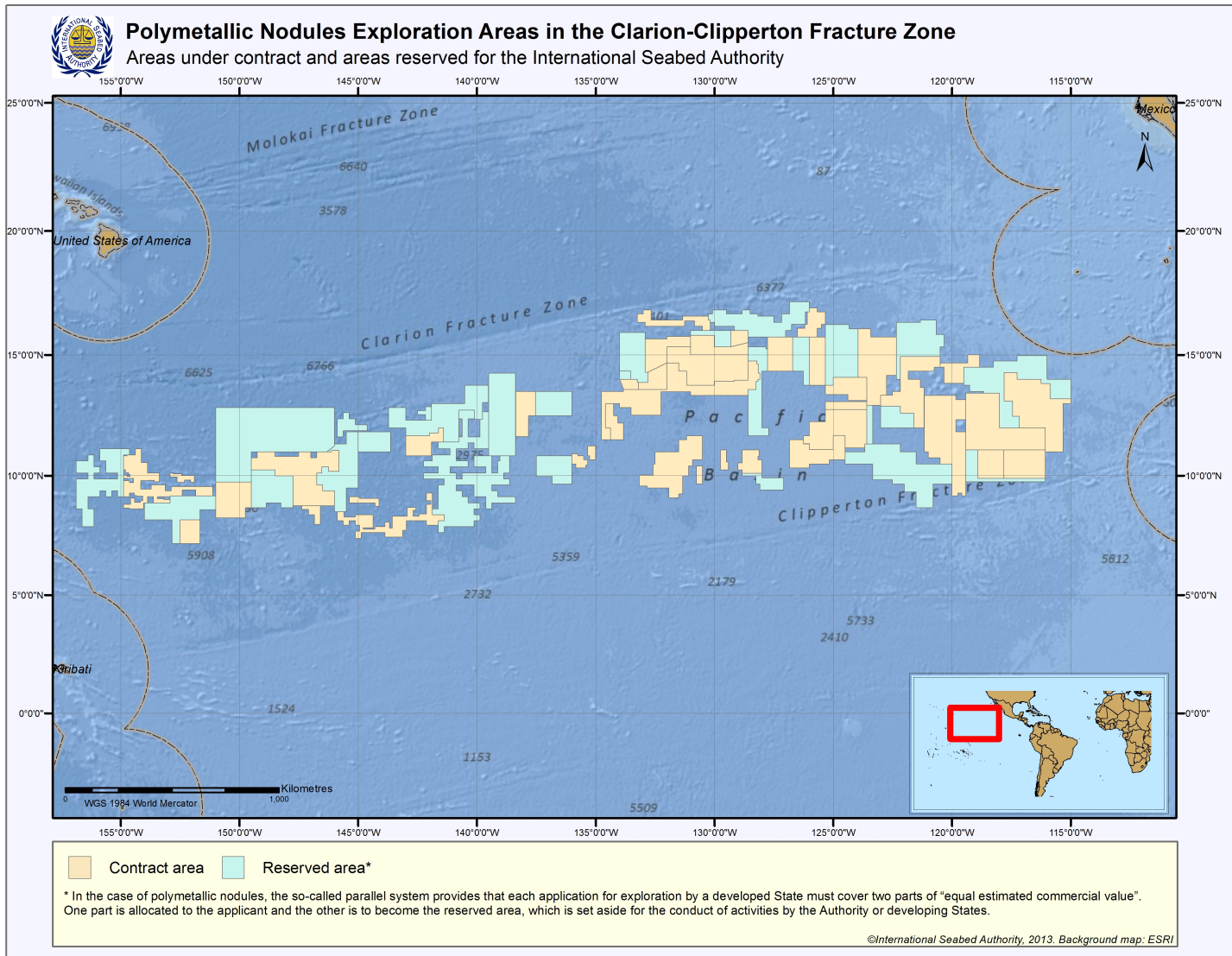
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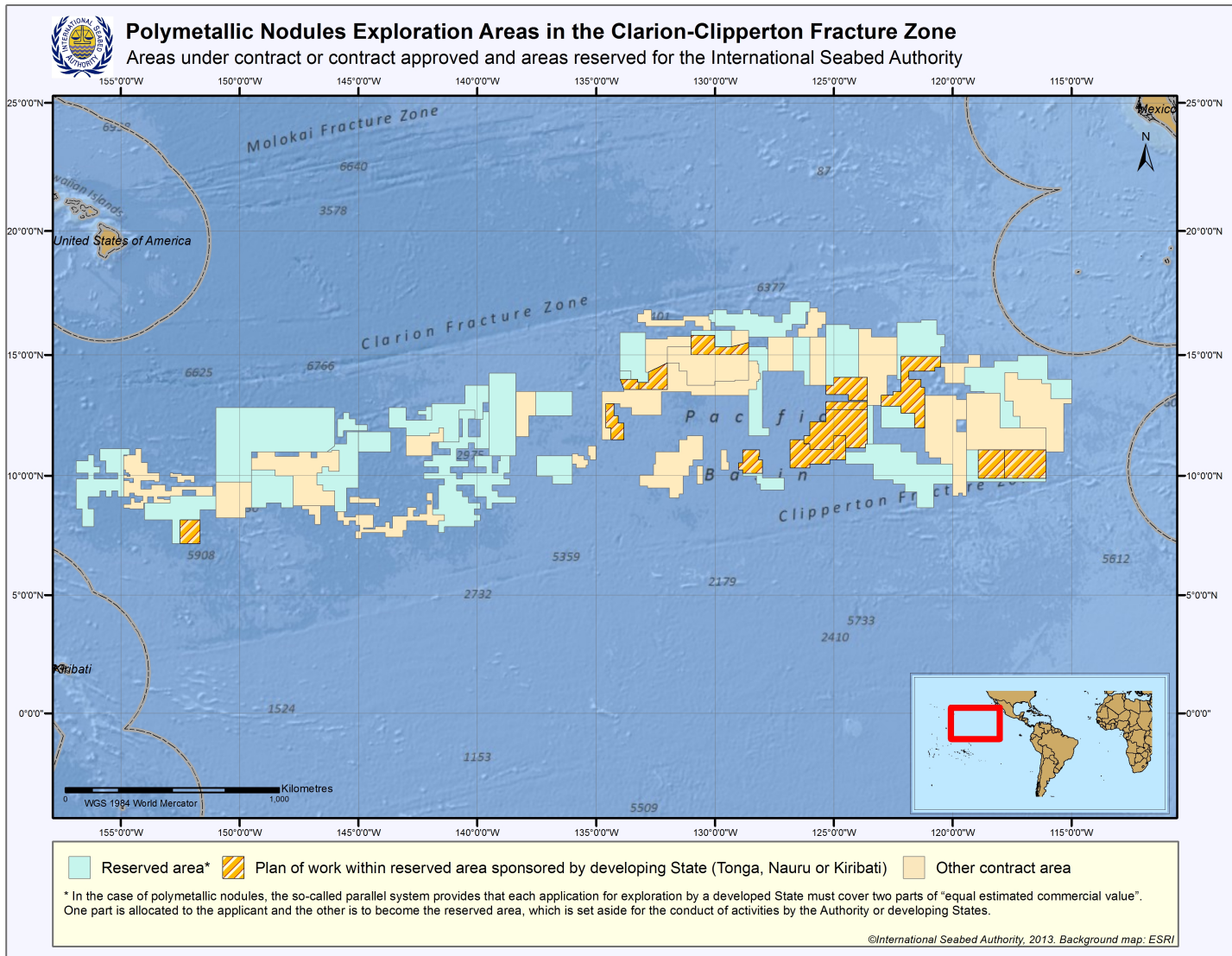
The “Reserved Areas”

Areas contributed by existing contractors



The “Reserved Areas”

Areas contributed by existing contractors



The “Reserved Areas”

Annex III and 1994 Agreement

- ❑ Reserved Areas open to application by:
 - The Enterprise;
 - Any developing State Party;
 - A natural or juridical person sponsored by and effectively controlled by a developing State Party.
- ❑ Advantage is that reserved areas known to have commercial value: no need for prior prospecting to identify potential site.
- ❑ If not used within 15 years, may revert to original contributor.
- ❑ Same contract terms and conditions apply as to any other contractor.

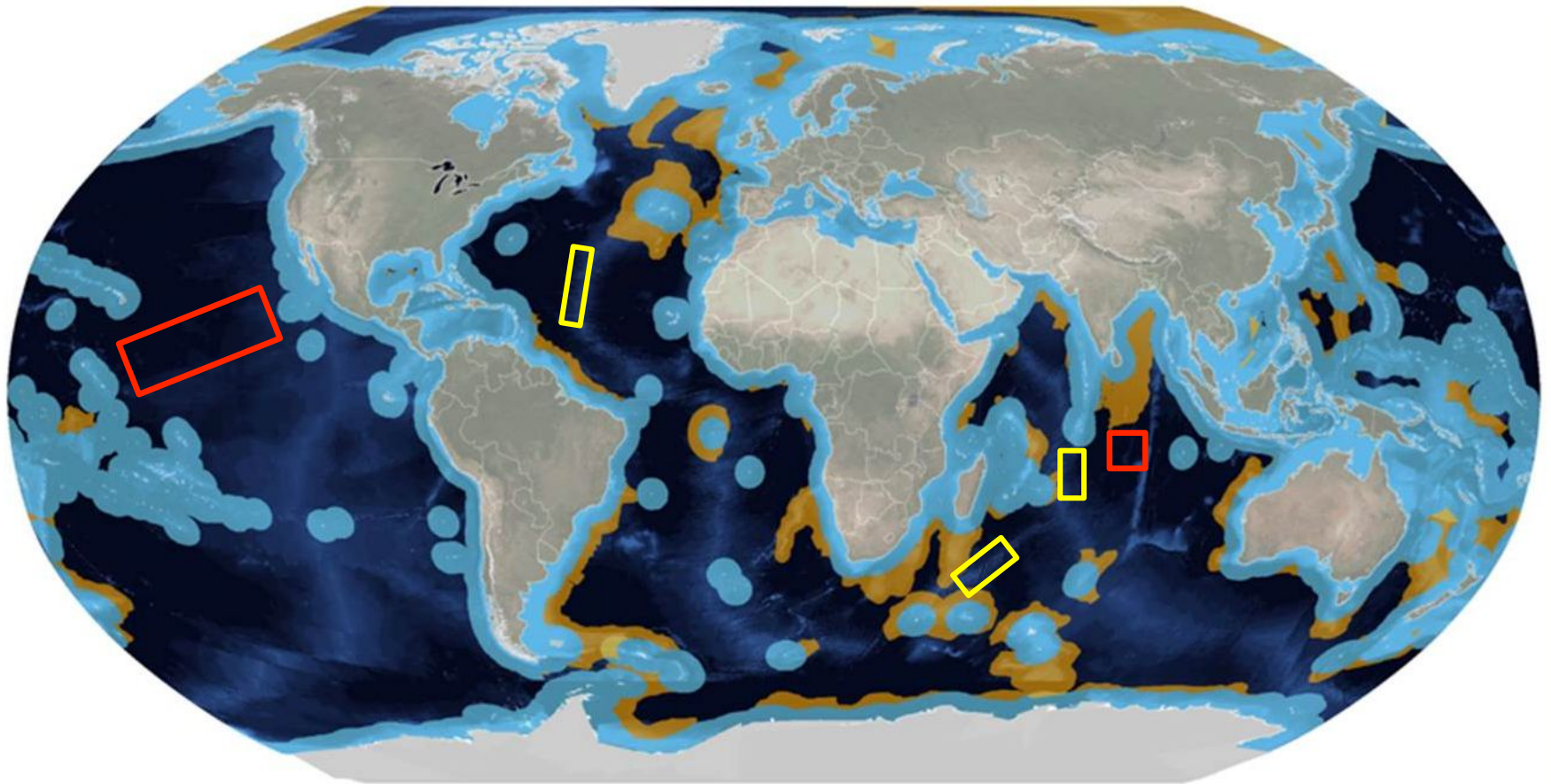
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Conclusions

- ❑ Deep seabed mining regime is a Conventional regime.
- ❑ Contractual nature of relationship with Authority.
- ❑ Strong similarities to national mining regimes.
- ❑ Equal access to dispute settlement.
- ❑ Special provisions for access to mine sites by developing States.
- ❑ Exploration code completed (nodules, sulphides, crusts).
- ❑ Twelve exploration licences issued in three oceans.
- ❑ Three applications approved and pending contract (Kiribati, Korea, France)
- ❑ Four new applications pending consideration (JOGMEC, Comra, Russia, UKSRL II)
- ❑ Work has started on developing terms and conditions for exploitation.

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Overview of licensing activity



Exclusive Economic Zones (VLIZ, 2011)

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