

Marine Genetic Resources

ASEAN Workshop 1

Protection of Coastal and Marine Environment

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Questions for Consideration

Why are we considering marine genetic resources today?

What are marine genetic resources?

Is a new regime necessary?

What would an access-benefit sharing scheme for these resources look like in areas beyond national jurisdiction? To what extent could the model of the Nagoya protocol be used? Could the clearing house role be given to the ISA?

How is access to MGR regulated with a distinction between exploration through Marine Scientific Research and commercial exploitation?

Could the heritage of mankind be used as a guiding principle for the exploitation of MGR?

Can the ISA prevent exploitation of MGR within areas it has designated as Areas of Particular Interest? What could ISA do to prevent it?

Should ASEAN States become a party to the Nagoya Protocol?

The future?



Why Discussing Marine Genetic Resources?

Over the past decade UN General Assembly (UNGA) has responded to news of exploration and exploitation of marine genetic resources in the high sea and near the sea floor below

As will be described, the UNGA is poised to decide on the development of a new implementing agreement to the 1982 UN Convention on the Law of the Sea (UNCLOS or LOS Convention) specifically for the conservation and sustainable use of marine biodiversity beyond the limits of national jurisdiction

Important to understand what is meant by marine biodiversity and marine genetic resources before learning about the issues in play



What are Marine Genetic Resources (MGRs)

MGRs are applicable genetic materials from marine macroorganisms and microorganisms
The biodiversity of marine microorganisms is probably much higher than that of marine macroorganisms

MGRs are one of the most valuable parts of marine biological resources

65% of the ocean lies beyond exclusive economic zones (EEZs)

The potential hot spots for MGRs are mainly distributed in areas beyond national jurisdiction

However, MGRs from areas beyond national jurisdiction may share high similarity with that from areas within national jurisdiction

An endemic species possesses some unique MGRs but can easily become endangered or extinct if their restricted habitat changes

In general, migration and colonization enlarge the diversity of MGRs

Yiming Chen, "Basics of Marine Genetic Resources," 2013

http://www.un.org/depts/los/biodiversityworkinggroup/workshop1_abstracts_website.pdf

http://www.un.org/Depts/los/biodiversityworkinggroup/workshop1_chen.pdf



Is a new legal regime necessary?

Discussion that follows describes the background and situation today
help you decide if a new legal regime is necessary

Briefly review past work of the UN General Assembly, UN Conference
on Sustainable Development (Rio+20), and Ad Hoc Open-ended
Informal Working Group on Biodiversity beyond the Limits of National
Jurisdiction (BBNJ Working Group or BBNJ WG)

Discuss the tasks of the BBNJ Working Group and its
recommendations

Review the situation regarding each of the tasks



Use of Terms (1)

Biodiversity = diversity within species, between species, and of ecosystems
(Biodiversity Convention, article 2)

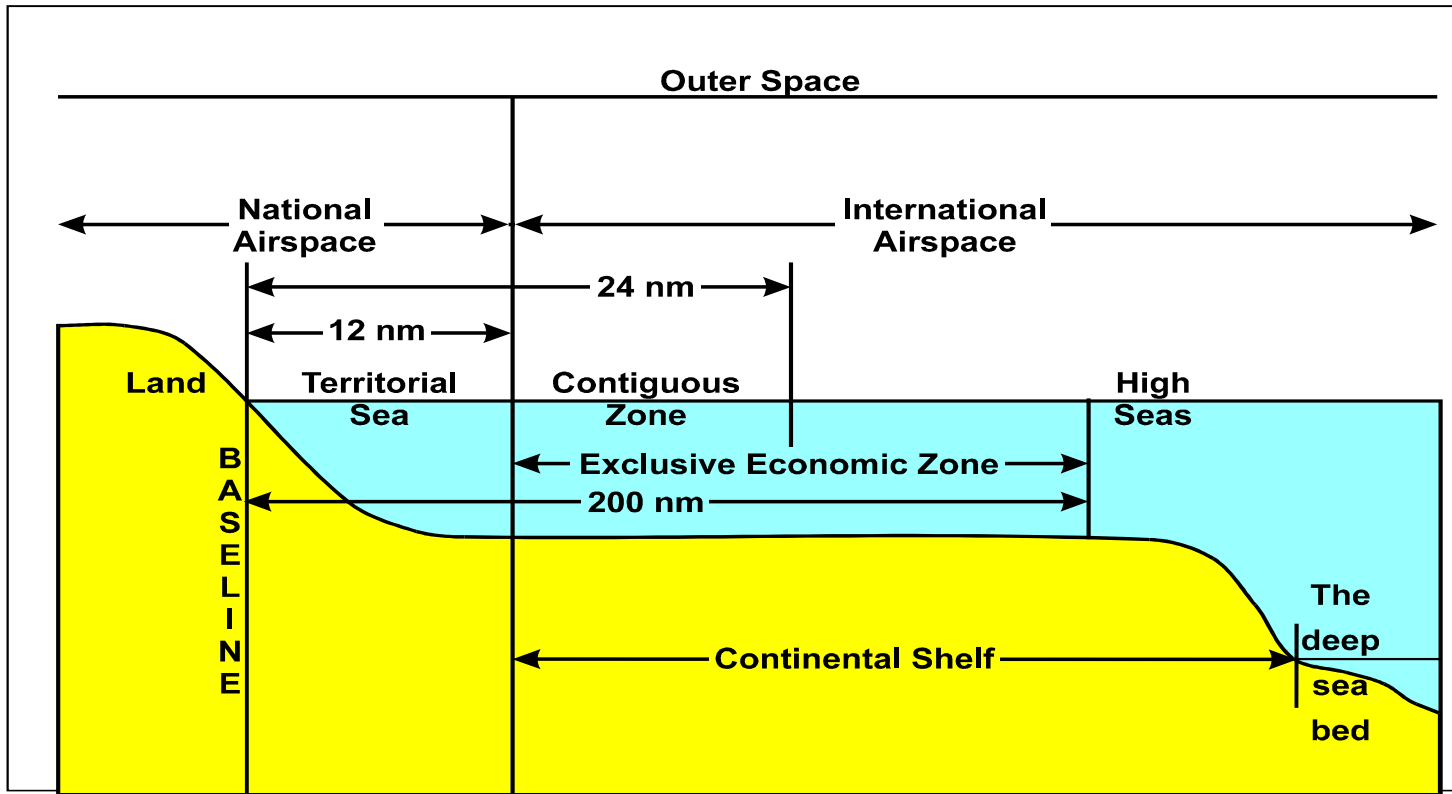
The variability among living organisms and the ecological complexes of which they are part make up biodiversity

“living marine resources” is not defined in the 1982 Law of the Sea (LOS) Convention

The LOS Convention addresses fish, marine mammals, sedentary species on the continental shelf, rare and fragile ecosystems, habitat of depleted, threatened or endangered species and other forms of marine life

LOS Convention does not mention marine genetic resources or biodiversity

Legal Boundaries of the Oceans and Airspace





Use of Terms (2)

BBNJ = Marine Biodiversity Beyond Areas of National Jurisdiction

“Beyond areas of national jurisdiction” =

- The high seas, i.e., seaward of the territorial sea and EEZ if claimed (UNCLOS article 86)
- The Area, i.e., “the seabed and ocean floor and subsoil thereof beyond the limits of national jurisdiction” (UNCLOS article 1(1)(1))
- “Limits of national jurisdiction” = the outer limit of the continental shelf, including the extended shelf if delineated (UNCLOS article 76)

UNCLOS = 1982 UN Convention on the Law of the Sea



Need for New Legal Regime

Currently no specific legal regime for the conservation and sustainable use of living marine resources BBNJ

Marine genetic resources (MGR) have been sampled and after extensive and expensive research some new drugs have been created

Tension between developed and developing countries has arisen with the latter wanting a share of the benefits including profits

Hence the international community's interest in developing such a regime



UN General Assembly (UNGA)

Since 2004 UNGA has addressed marine biodiversity

UN Informal Consultative Process on the Law of the Sea

(UNICPOLOS) 8th meeting, 25-29 June 2007, focused on MGR

Reported in UN document A/62/169, 30 July 2007, paras. 15-108 and
Annex

Panelists presentations and abstracts at

www.un.org/depts/los/consultative_process/8thmeetingpanel.htm



Rio+20 UNCSD Outcome Document

We recognize the importance of the **conservation and sustainable use of marine biodiversity beyond areas of national jurisdiction.**

We note the ongoing work under the auspices of the General Assembly of the Ad Hoc Open-ended Informal Working Group to study issues relating to the **conservation and sustainable use of marine biological diversity beyond areas of national jurisdiction.**

Building on the work of the Ad Hoc Open-ended Informal Working Group and before the end of the sixty-ninth session of the General Assembly, we commit to address, on an urgent basis, the issue of the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction, including by taking a decision on the development of an international instrument under the Convention on the Law of the Sea

A/RES/66/288, 11 Sept 2012, Annex The Future We Want, para 162,
<http://daccess-ods.un.org/access.nsf/Get?Open&DS=A/RES/66/288&Lang=E>



UNGA Oceans Resolution 2014

Annual resolution on oceans and the law of the sea, most recently A/RES/69/245 adopted 29 December 2014, section X paras. 211-216 on marine biodiversity:

Reaffirmed UNGA's central role relating to the conservation and sustainable use of marine biological diversity beyond areas of national jurisdiction (BBNJ)

The legal framework for the conservation and sustainable use of BBNJ should effectively address those issues by identifying gaps and ways forward, including through the implementation of existing instruments and the possible development of a multilateral agreement under the LOS Convention (UNCLOS)



UNGA Resolution A/RES/69/245 cont'd

Marine genetic resources, including questions on the **sharing of benefits, measures such as area-based management tools, including marine protected areas, and environmental impact assessments, capacity-building and the transfer of marine technology**

Reaffirmed before the end of UNGA 69 (September 2015) to take a decision on the development of an international instrument under the LOS Convention for the conservation and sustainable use of BBNJ

Tasked BBNJ WG 9 to make recommendations on the scope, parameters and feasibility of such an international instrument



BBNJ 9 Recommendations (1)

Report of BBNJ 9th meeting in January 2015 (A/69/780*, 13 February 2015) recommended UNGA 69 decide, inter alia, to:

- develop an international legally-binding instrument under the LOS Convention on the conservation and sustainable use of BBNJ
- establish a preparatory committee to make substantive recommendations to the General Assembly on the elements of a draft text of such an instrument and to start its work in 2016 and by the end of 2017 report to UNGA on its progress



BBNJ 9 Recommendations (2)

Before the end of UNGA 72 (August 2018) decide on the convening and on the starting date of an intergovernmental conference

Not undermine existing relevant legal instruments and frameworks and relevant global, regional and sectoral bodies

Neither the participation in the negotiations nor their outcome may affect the legal status of non-parties to LOSC or any other related agreements with regard to those instruments, or the legal status of parties to the LOSC or any other related agreements with regard to those instruments



PrepCom Agenda

Identify elements for a text covering the four topics identified in the 2009 package: conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction, in particular, together and as a whole

- Marine genetic resources, including questions on the sharing of benefits
- Measures such as area-based management tools, including marine protected areas
- Environmental impact assessments (discuss in next session)
- Capacity-building and transfer of marine technology



Access and Benefit Sharing (1)

Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity, 29 October 2010, entered into force 12 October 2014

<http://www.cbd.int/abs/text/default.shtml>

Does not apply to areas beyond national jurisdiction

Requires prior informed consent from country of origin to access to genetic resources

Consider global multilateral benefit-sharing mechanism

Established Access and Benefit-sharing Clearing-House

National compliance monitored through checkpoints

Not directly transferable to BBNJ



Access and Benefit Sharing (2)

Under Nagoya Protocol **monetary benefits** include:

Access fees/fee per sample collected or otherwise acquired

Up-front payments

Milestone payments

Payment of royalties

Licence fees in case of commercialization

Special fees to be paid to trust funds supporting conservation and sustainable use of biodiversity

Salaries and preferential terms where mutually agreed

Research funding

Joint ventures

Joint ownership of relevant intellectual property rights



Access and Benefit Sharing (3)

Under Nagoya Protocol **non-monetary benefits** include:

Sharing of research and development results

Collaboration, cooperation and contribution in scientific research and development programmes, particularly biotechnological research activities, where possible in the Party providing genetic resources

Participation in product development

Collaboration, cooperation and contribution in education and training

Admittance to *ex situ* facilities of genetic resources and to databases (cont'd)



Access and Benefit Sharing (4)

Transfer to the provider of the genetic resources of knowledge and technology under fair and most favourable terms, including on concessional and preferential terms where agreed, in particular, knowledge and technology that make use of genetic resources, including biotechnology, or that are relevant to the conservation and sustainable utilization of biological diversity

Strengthening capacities for technology transfer

Institutional capacity-building

Human and material resources to strengthen the capacities for the administration and enforcement of access regulations

Training related to genetic resources with the full participation of countries providing genetic resources, and where possible, in such countries (cont'c)



Access and Benefit Sharing (5)

Access to scientific information relevant to conservation and sustainable use of biological diversity, including biological inventories and taxonomic studies

Contributions to the local economy

Research directed towards priority needs, such as health and food security taking into account domestic uses of genetic resources in the Party providing genetic resources

Institutional and professional relationships that can arise from an access and benefit-sharing agreement and subsequent collaborative activities

Food and livelihood security benefits

Social recognition

Joint ownership of relevant intellectual property rights



Access and Benefit Sharing (6)

ASEAN countries party to Nagoya Protocol: Cambodia, Indonesia, Laos, Myanmar, Vietnam

Brunei, Malaysia, Philippines, Singapore are not parties to the Nagoya Protocol

All ASEAN countries are party to Convention on Biological Diversity (CBD)

Most researching States are not party to the Nagoya Protocol

But Nagoya Protocol does not apply in the high seas or the Area



ASEAN Parties to UNCLOS

All ASEAN States are party to the 1982 UN Convention on the Law of the Sea, except Cambodia



Capacity-building & Technology Transfer under LOSC

- . States, directly or through competent international organizations, shall cooperate in accordance with their capabilities to promote actively the development and transfer of marine science and marine technology on fair and reasonable terms and conditions (UNCLOS Article 266(1))
- . States shall endeavour to foster favourable economic and legal conditions for the transfer of marine technology for the benefit of all parties concerned on an equitable basis (UNCLOS 266(3))



UNCLOS Article 266(2)

States shall promote the development of the marine scientific and technological capacity of States which may need and request technical assistance in this field, particularly developing States, including land-locked and geographically disadvantaged States, with regard to the exploration, exploitation, conservation and management of marine resources, the protection and preservation of the marine environment, marine scientific research and other activities in the marine environment compatible with this Convention, with a view to accelerating the social and economic development of the developing States.



Protection of Legitimate Interests

States, in promoting cooperation pursuant to article 266, shall have due regard for all legitimate interests including, inter alia, the rights and duties of holders, suppliers and recipients of marine technology.

(UNCLOS Article 267)



High Seas

The legal status of the waters superjacent to the Area and airspace above those waters are unaffected by Part XI (UNCLOS article 135)

Freedom of the high seas extends to all States, who must exercise that freedom with due regard to the interests of other States in their exercise of the freedom of the seas (UNCLOS article 87)

The high seas are not subject to the sovereignty of any State (UNCLOS article 89)

UNCLOS Part VII Section 2 addresses “conservation and management of the living resources of the high seas” but “living resources” is not defined

Part VII Section 2 deals with fisheries in the high seas but does not specifically address other living resources, such as marine genetic resources in the water column above the Area

UNCLOS does not refer expressly to marine biodiversity



Seabed Resources

UNCLOS governs only mineral resources in the Area

The International Seabed Authority (ISA) regulates only “activities in the Area”, i.e., all activities of exploration for, and exploitation of, the resources of the Area (UNCLOS article 1(1)(3))

“Resources” are limited to “all solid, liquid or gaseous mineral resources *in situ* in the Area at or beneath the seabed, including polymetallic nodules, which when recovered are referred to as “minerals” (UNCLOS article 133)

The Area and its resources are the common heritage of mankind (UNCLOS article 136)

UNCLOS does not regulate living resources in the Area, such as those seabed, or benthic, ecosystems living on or near seamounts, hydrothermal vents and cold-water coral reefs, or bioprospecting



Common Heritage of Mankind

- As news of financial benefits from exploitation of MGR became known in early 21st Century, developing world called for BBNJ be designated common heritage of mankind
- Concept was that resources of deep seabed BBNJ belonged to all
- Spurred by discovery of manganese nodules, a valuable mineral resource, on deep seabed floor became well known in 1960s
- Made famous by Amb Pardo of Malta in 1967
- Accepted by UNGA in resolution in 1967
- First treaty text proposed by USA in PrepCom in 1970
- Existing regime applies only to mineral resources of the Area (UNCLOS Articles 133, 136)



in favor of Common Heritage of Mankind

MGR regime not equated to regime for living marine resources of high seas

Access and benefit-sharing based on common heritage principles

UNCLOS PP4 “equitable” utilization; PP5 “just and equitable international economic order” including needs of developing countries

Free access and private ownership not equitable

Obligation to cooperate (UNCLOS article 192)

MGR should be explicitly managed under UNCLOS

document A/62/169, paras 71-73



Against Common Heritage of Mankind

Activities re BBNJ regulated by customary international law in UNCLOS

Living Marine Resources (LMR) are not covered by Part XI and are outside ISA's mandate

- Except as LMR as part of marine environment to be protected in connection with mining activities

No new role for ISA, not needed

LMR covered by Part VII on high seas, esp. articles 117 -118, and Parts XII (protection of marine environment), XIII (MSR) and XIV (tech transfer)

Inhibit research, depriving mankind of its benefits

Interfere with high seas freedoms

See document A/62/169, paras 74-80



Protecting BBNJ

Biodiversity of living marine resources in areas beyond national jurisdiction already have protections through the MSR regime and ISA's Areas of Particular Environmental Interest (APEI)

Are they sufficient? If so,

May be no need for BBNJ Implementing Agreement to assign new role to ISA for protecting BBNJ

ISA's APEI protects LMR on, within, and near the seabed of the Area in those areas from effects of mining

What about the marine scientific research (MSR) regime in the LOS Convention?



LOS MSR Regime Protects BBNJ

Article 87(1)(f): freedom of the high seas includes MSR, subject to Part XIII

Article 117: all States have the duty to take, or to cooperate with other States in taking, such measures for their respective nationals as may be necessary for the conservation of the living resources of the high seas

Article 192: States have the obligation to protect and preserve the marine environment

Articles 256 and 257: all States have the right to conduct MSR in the Area (in conformity with Part XI, esp. Article 143) and in the water column beyond the EEZ

Article 240(d) requires MSR to be conducted in compliance with all relevant regulations adopted in conformity with this Convention including those for the protection and preservation of the environment

Article 241: MSR activities shall not constitute the legal basis for any claim to any part of the marine environment or its resources



International Seabed Authority Protections

In 2011 ISA Legal and Technical Commission (LTC) adopted an Environmental Management Plan for the Clarion-Clipperton Zone that included criteria for establishing “Areas of Particular Environmental Interest” in which no mining would be permitted to protect vulnerable ecosystems, including MGR (“closed to potential mining activities to protect and preserve the marine environment”)

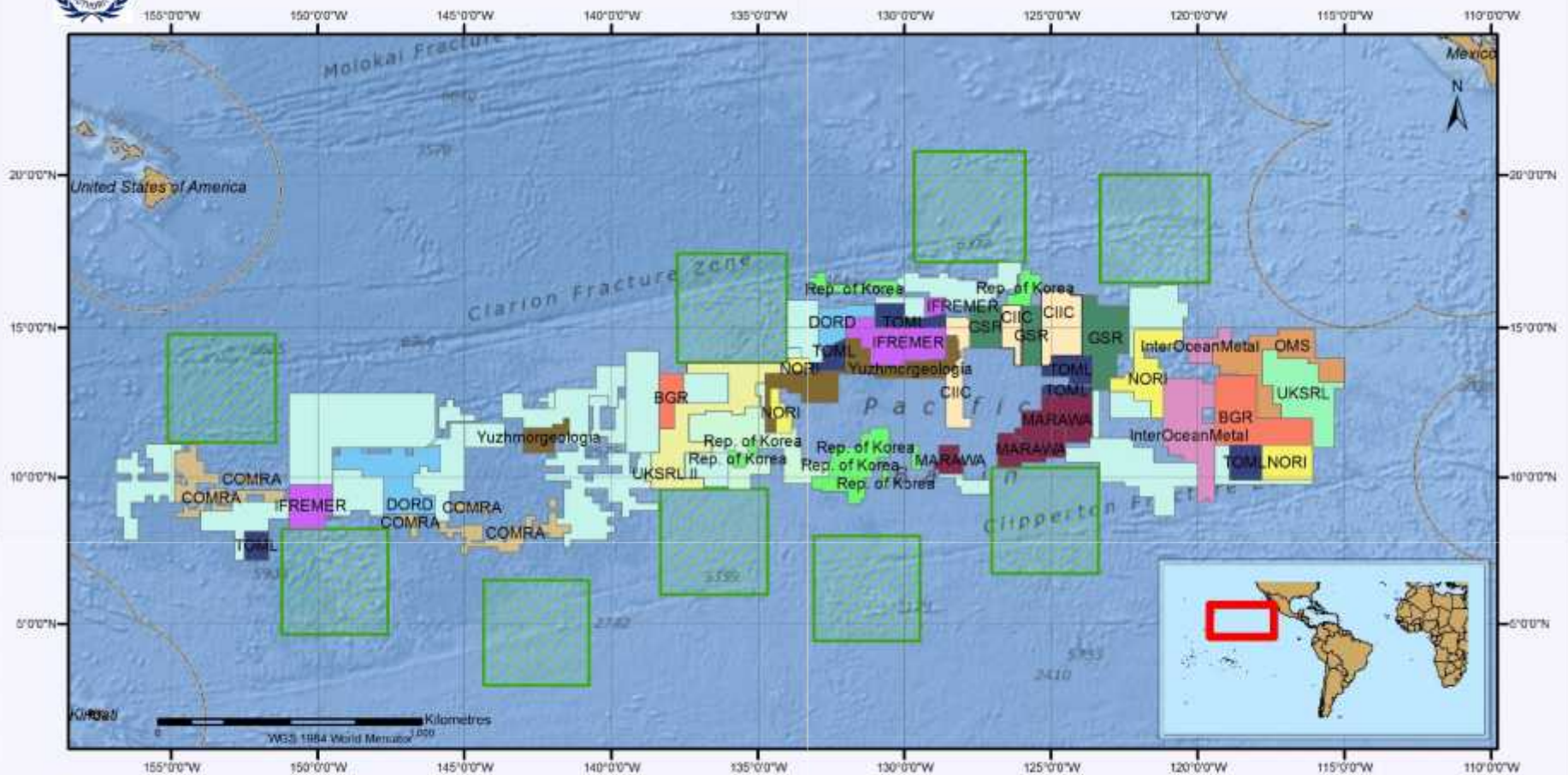
Document ISBA/17/LTC/7, 13 July 2011

ISA has already designated 9 such areas

Document ISBA/18/C/22, 26 July 2012



Polymetallic Nodules Exploration Areas in the Clarion-Clipperton Fracture Zone



- | | |
|---|---|
| Ocean Mineral Singapore Pte Ltd. (OMS) | Government of the Republic of Korea |
| Cook Islands Investment Corporation (CIIC) | Institut français de recherche pour l'exploitation de la mer (IFREMER; France) |
| Marawa Research and Exploration Ltd (Kiribati) | Interoceanmetal (IOM; Bulgaria, Cuba, Czech Republic, Poland, Russian Fed., Slovakia) |
| Bundesanstalt für Geowissenschaften und Rohstoffe (BGR; Germany) | Nauru Ocean Resources Inc. (NORI; Nauru) |
| China Ocean Mineral Resources Research and Development Association (COMRA; China) | Tonga Offshore Mining Ltd (TOML; Tonga) |
| Deep Ocean Resources Development Company (DORD; Japan) | UK Seabed Resources Ltd (UKSRL I; UK) |
| G-TEC Minerals Resources NV (GSR; Belgium) | Yuzhmorgeologia (Russian Federation) |
| Reserved area* | Area of particular environmental interest (APEI)** |
| Exclusive Economic Zones | UK Seabed Resources Ltd. (UKSRL II; UK) |

* In the case of polymetallic nodules, the so-called parallel system provides that each application for exploration by a developed State must cover two parts of "equal estimated commercial value". One part is allocated to the applicant and the other is to become the reserved area, which is set aside for the conduct of activities by the Authority or developing States.
 ** In July 2012, the Authority adopted an environmental management plan for the Clarion-Clipperton Zone to be implemented on a provisional basis over an initial three-year period. The plan includes the designation of a network of areas of particular environmental interest (ISBA/18/C/22).



ISBA Areas of Particular Environmental Interest (APEI)

The operational objectives for areas of particular environmental interest (APEI) are to:

Protect biodiversity and ecosystem structure and function by a system of representative seafloor areas closed to mining activities. The system must be in place before additional mining claims further compromise the ability to develop a scientifically robust design include a wide range of the habitat types present in the Clarion-Clipperton Zone within the areas of particular environmental interest (for example seamounts and fracture zone structures)



APEI Criteria

Establish an area of particular environmental interest system to avoid overlap with the current distribution of claimant and reserve areas (as was the basis for the current scientific design)

Provide a degree of certainty to existing and prospective contractors by laying out the location of areas closed to mining activities



Scientific Design Criteria for APEI

Based on generally accepted and widely applied principles for the design of marine protected area networks, e.g.,

- scientific guidance for selecting areas to establish a representative network of marine protected areas, including in open ocean waters and deep-sea habitats (Conference of the Parties to the Convention on Biological Diversity decision IX/20, Annex II, May 2008)
www.cbd.int/decision/cop/default.shtml?id=11663

Design utilizes geological, oceanographic and biological proxy data based on previous ISA workshops and reports, as well as the peer-reviewed scientific literature and experience of international experts in deep-sea biology



Area-based Management Tools

Scientific criteria for identifying ecologically or biologically significant marine areas (EBSAs) in need of protection in open-ocean waters and deep-sea habitats

CBD decision of COP 9, decision IX/20, Annex I

Four initial steps to be considered in development of representative networks of marine protected areas. CBD decision of COP 9, decision IX/20, Annex III:

- Scientific identification (ID) of initial set of areas
- Develop/choose classification system
- Iteratively use techniques to ID sites/network
- Assess adequacy and viability of selected sites



Conservation and Sustainable Use

Seabed mineral resources are not renewable

Exploration/exploitation of seabed mineral resources is inherently not sustainable

Living marine resources are renewable and sustainable so long as the resource is not over exploited or destroyed

Differences suggest significant differences in legal regimes



The Future

UNCLOS is considering whether to develop a new implementing agreement to UNCLOS on conservation and sustainable use of marine biological diversity in areas beyond national jurisdiction

No detailed proposals for a new implementing agreement have been developed or presented

Many existing provisions of LOS Convention are directly applicable to the issues – but have not been well implemented by States party to UNCLOS



So is a New Regime Necessary?

The foregoing discussion identifies the current situation

Existing provisions of UNCLOS and other international instruments provide protections for living marine resources in the water column beyond the EEZ, and in, on or near the deep seabed (the Area) and provide requirements for benefits to non-researching States

If the provisions of existing international law are fully implemented, a case can be made that an implementing agreement need only clarify applicability of the existing law to MGR



Next Steps

Informal consultations on establishment of PrepCom to be completed by August 2015

Decision by UNGA 69 on next steps before end of August 2015

Prepare for PrepCom

- Elaborate agenda
- Rules of procedure
- Identify elements for draft text
- Suggest texts for each element
- Use Fish Stocks Implementing Agreement as model?



Additional Resources

Thomas Greiber, "Access and Benefit Sharing in Relation to Marine Genetic Resources from Areas Beyond National Jurisdiction: A Possible Way Forward," Study in Preparation of the Informal Workshop on Conservation of Biodiversity Beyond National Jurisdiction, Bonn, Germany, December 2011, Research Project of the German Federal Agency for Nature Conservation, https://www.bfn.de/fileadmin/MDB/documents/service/Skript_301.pdf

Luca Morgera, "Benefit-sharing in marine areas beyond national jurisdiction: where are we at (part I)," 23 May 2014, <http://www.benelexblog.law.ed.ac.uk/2014/05/23/benefit-sharing-in-marine-areas-beyond-national-jurisdiction-where-are-we-at-part-i/>

Luca Morgera, "Benefit-sharing in marine areas beyond national jurisdiction: where are we at (part II)," 8 July 2014, <http://www.benelexblog.law.ed.ac.uk/2014/07/08/benefit-sharing-in-marine-areas-beyond-national-jurisdiction-where-are-we-at-part-ii/>

Luca Morgera, "Benefit-Sharing in marine areas beyond national jurisdiction: where are we at (part III)," 13 March 2015, <http://www.benelexblog.law.ed.ac.uk/2015/03/13/benefit-sharing-in-marine-areas-beyond-national-jurisdiction-where-are-we-at-part-iii/>



Thank you for your attention

Any questions?

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