Evolving Perspectives on Marine Genetic Resources: Challenges and Opportunities Posed by Emerging International Legal Frameworks and Processes

Lyle Glowka
Former Legal Advisor, CBD Secretariat
and
Head, Convention on Migratory Species Office – Abu Dhabi
Overview

- Origins of access and benefit sharing (ABS)
- CBD / Nagoya Protocol innovations
- Marine areas beyond national jurisdiction
- Challenges and opportunities
CBD: Basic Framework for Action

• **Near universal membership**: 194 parties (193 States and the European Union) (multi-stakeholder forum)

• **Comprehensive “biodiversity” focus**

• **Applicable to terrestrial and marine areas**

• **National level**: Broad commitments for action by Governments

• **Three objectives**:  
  ✓ Conservation  
  ✓ Sustainable use  
  ✓ Benefit-sharing from use of genetic resources (access and benefit-sharing)
Origins of ABS

Pre-CBD: Access by anyone for any purpose with no obligation to share benefits with provider(s)

Equity: Primary principle driving CBD ABS negotiations
  • Aim: Redirect benefit flows back to provider(s)

Conservation incentives: Provide a value to biodiversity to help conservation
  • Aim: Direct benefits back to provider(s) for biodiversity conservation

High expectations for big financial windfalls from biotech (“Green Gold”)
CBD Innovation: “New” Equity Relationship

Access to genetic resources

IN EXCHANGE FOR

Fair and equitable share of the benefits derived from their use
CBD Provisions

Fundamental access-related principles (Art 15):

- Sovereign rights over natural resources (art 15(1))
- Prior informed consent (PIC) (art 15(5))
- Mutually agreed terms (MATs) (including the sharing of benefits arising from the commercial and other utilization of genetic resources) (art 15(4) and (7))
CBD Provisions

Six fundamental benefit-sharing obligations:

- Research and development results (article 15(7))
- Commercial or other benefits derived from use (article 15(7))
- Access / transfer of technology using genetic resources (article 16(3))
- Participation in biotechnological research on genetic resources (article 19(1))
- Priority access to results / benefits arising from biotechnological use (article 19(2))
- Traditional knowledge associated with genetic resources (article 8(j))
The Need for Legal Certainty

Outstanding key implementation challenges not fully addressed by CBD...

Provider countries:
• Capacity to regulate access and monitor use
  ✓ How to ensure benefit-sharing after materials leave country?
  ✓ How to prevent / respond to misappropriation / misuse?
  ✓ Role / responsibilities of “user” countries?
• Derivatives of genetic resources?

Users: Clear, transparent and efficient access rules / procedures
Nagoya Protocol: At Glance

WSSD (2002): “International regime”

CBD (2004): WG-ABS mandated to negotiate
✓ Highly participatory process

Adopted: 29 October 2010
✓ 92 signatories
✓ 51 ratifications (Entry into force: 12 October 2014)

Operationalizes: CBD third objective and article 15

Objective: Ensure benefits arising from utilization of genetic resources are shared fairly and equitably
Nagoya Protocol Innovations

Scope
✓ Biochemical compounds

Access-related measures
✓ Legal certainty, clarity and transparency
✓ Encourage research contributing to biodiversity conservation (+/- simplified measures)

Benefit-sharing measures
✓ Utilization, subsequent applications and commercialization
✓ Monetary and non-monetary benefits (short, medium and long-term)
✓ Direct benefits to biodiversity conservation

Compliance measures
Nagoya Protocol Innovations: Compliance Measures

Supporting compliance with provider country’s domestic ABS requirements (art 15)

Facilitating dispute resolution when non-compliance with MATs (contractual terms) (art 18)

Monitoring use (arts 14 and 17):

- ABS-CHM
- Designate “check points” to collect information at any stage of value chain (research, development, innovation, pre-commercialization or commercialization)
- Internationally recognized certificate of compliance

Encouraging model contractual clauses and codes of conduct (art 19 & 20)
Challenges and Opportunities: Nagoya Protocol and Marine Genetic Resources

- **Greater awareness on marine genetic resources (MGRs)**
  - Coastal states: Potential value of MGRs

- **Provider countries**
  - Finding appropriate balance: Protecting interests, facilitating access to MGRs and encouraging MSR (Protocol/UNCLOS mutual supportiveness)
  - Capacity-building

- **Users**
  - Building trustful collaborations
    - MSR community: Understand need for PIC, MATs and meaningful benefit sharing
  - Implementation of meaningful compliance measures

- **Protocol entry into force (balanced collection of States)**
  - More predictable conditions for ABS
  - Greater legal certainty
MGRs in Areas Beyond Limits of National Jurisdiction (ABNJ)
MGRs in ABNJ: Echoes of CBD & ABS?

- **ABNJ MGRs**: Accessible by anyone for any purpose with no explicit obligation to share benefits from use

- **Perceptions of in-equity**:
  - Limited number of countries with physical access are seen to benefit
  - Perceived financial windfalls
  - IPRs (Seabed and water column materials)
  - Claims that “first come, first served” is inequitable
  - MGRs should be seen as a “common heritage”

- **“Emerging” area**:
  - CBD: Jakarta Mandate (1995) (ISA)
  - CBD/UNDOALOS study (2003): “Legal” gap (ISA)
  - UN General Assembly (2004-present) (ISA and high seas)
Mandated to review legal framework for the conservation and sustainable use of biodiversity in ABNJ (2011)

Identify gaps and ways forward:
- Implementation of existing instruments
- Possible development of a new multilateral agreement under UNCLOS

Process to address as a “package”:
- MGRs (including questions on benefit-sharing)
- Conservation measures
  - EIA/SEA
  - Area-based management tools (including marine protected areas)
- Capacity building
- Marine technology transfer

• Define the problem?
  ✓ What aspects of the current situation are inequitable?
• What policy outcomes would be desirable?
• Can existing framework(s) address problem?
• What new tools needed?
Opportunities to explore a range of issues:

- Meaning and scope
- Extent and types of research, uses and applications
- Technological, environmental, social and economic impacts
- Access-related issues
- Types of benefit-sharing
- IPR issues
- Global and regional regimes on genetic resources, experiences and best practices
- Impacts and challenges to marine biodiversity in ABNJ
- Exchange of information on research programmes regarding marine biodiversity in ABNJ
Range of Issues to be Explored

• Extent and types of research, uses and applications
  ✓ “...there is not much information about State practice regarding MSR in ABNJ...” (UNDOALOS MSR Guide (2010), para 115, p32)
  ✓ Broader perspective: Understanding microbial diversity and its role in the oceans bio-geochemical cycles (NB: Not driven solely by biotech/commercial considerations)
    o Understand how MSR involving MGRs is undertaken
  ✓ Identify: Communities of practice involved with MSR/MGRs
    o Seabed: InterRidge (Vents), Integrated Ocean Drilling Programme (Geo-microbiology)
    o Water column: Identifiable community?
      ✓ Atlantic Meriontal Survey (UK)
      ✓ Tara Oceans (France/IFREMER)
      ✓ Malasquina (Spain)
      ✓ Sorcerer (Venter/Moore Foundation)
      ✓ [MicroB3 (EU/FP7) and PharmaSea]
    o ID what individual countries are doing (NB: developed and advanced developing countries)
  ✓ Trends: Funding and conditionalities (public and private)?
    o Sample and data-sharing policies and trends to open access?
  ✓ Commercial interest and use (see IPRs linkage)?
Range of Issues to be Explored

• Access-related issues
  ✓ In-situ access
    o Extent of international collaboration
    o Ship and submersible time, scheduling and cost
    o Standards to collect
  ✓ Ex-situ access (Culturable micro-organisms)
    o Publically available (World Federation of Culture Collections)
    o Non-publically available (Institutional and other culture collections)
    o Meta-information to find
    o Incentives to culture and make available with limited restrictions (MTAs)
  ✓ In-silica access (‘omics technologies)
    o Genomes: Culturable microbes
    o Metagenomes: Non-culturable microbes and their communities
    o Conditionalities of funding and publication: Deposit in publicly accessible databases
    o Standards: Contextual environmental/other information to make raw data meaningful
    o Bioinformatic capacity to mine and apply data

✓ Cross-cutting issues
  ✓ Sample and data-sharing policies and trends to open access?
  ✓ IPRs/licensing: Is everything commercially valuable?
Range of Issues to be Explored

- **Benefit-sharing**
  - **Monetary**
    - Realistic opportunities?
    - How to capture?
  - **Non-monetary**
    - Improved info exchange on research programmes and opportunities to participate (UNCLOS)
    - Fair and equitable access to:
      - Samples
      - Data (UNCLOS)
      - Research results and related publications (UNCLOS)
    - Improved efficiencies in MSR/MGRs
    - Increased bioinformatic capacity
    - Increased biotech capacity
Range of Issues to be Explored

• **IPR issues**
  • **Patents**
    • Trends: Landscape?
    • Disclosure of origin
    • Licensing and MTAs: Is it necessary to treat everything as potentially commercially valuable?
    • Responsible patenting and licensing approaches
  • **Copyright and data-sharing**
    • Databases
    • Journals (subscription-based and open-access)
    • Commercial contractual restrictions on data-sharing even if data generated with public funding
  • **Other IPR issues**
    • Article 241: Marine scientific research activities shall not constitute the legal basis for any claim to any part of the marine environment or its resources.
    • Trends in publically-funded science and the relationship with IPRs
ABNJ: Possible Minimum Policy Outcomes / Opportunities for Benefit-sharing?

• Ensure fair and equitable access to ABNJ MGRs for all countries in the world whether for basic research or commercial innovation

• Ensure public availability of as much of the physical materials and related genomic and other information as possible

• Lay basis for developing countries to increase capacities in marine biotech, the ‘omics and bioinformatics

• Ensure that continued access is not undermined by subsequent uses or IPRs (Can we find a balance between access, subsequent uses and responsible patenting and licensing practices?)

• How to get the MSR community involved as an active stakeholder to inform process, share needs and get actively engaged in implementation

• Ensure appropriate level of international regulation perhaps looking to other sectors / fora
Thank you for your attention!

Lyle Glowka

lglowka@cms.int