



FRIDTJOF NANSENS INSTITUTT  
FRIDTJOF NANSEN INSTITUTE

# The Convention on Biological Diversity (CBD): Global governance of biodiversity and genetic resources

**Kristin Rosendal – Fridtjof Nansens Institute**

Training Session for expert / October 4<sup>th</sup>, 2023 / Online



Views and opinions expressed are those of the author(s) only and do not necessarily reflect those of the European Union or the European Commission. Neither the EU nor the EC can be held responsible for them.



# Guide to Acronyms & Concepts

**CBD: Convention on Biological Diversity (1992) with Nagoya Protocol on access and benefit sharing (ABS) from use of genetic resources (2010)**

and

**GBF (Global Biodiversity Framework) (Montreal/Kunming, 2022)**

**IPR: Intellectual Property Rights (patents, breeders' rights)**

**ABS: Access and Benefit Sharing**

**Genetic resources defined as** genetic material of *actual or potential value* ; genetic material means any material of plant, animal, microbial or other origin containing *functional units of heredity* (CBD, 1992).

**DSI: digital sequence information**

**IPBES: Intergovernmental Panel on Biodiversity and Ecosystem Services (2012)**

**IPCC: Intergovernmental Panel on Climate Change (1988)**

# Overview of presentation

- The nature crisis in international fora: loss of biodiversity / ecosystem services
  - Agreed scientific knowledge and why it matters
  - North-South conflict hamper implementation
- Efforts to resolve the nature / biodiversity crisis:
  - The CBD and the ABS regime
- Why we fail to implement CBD biodiversity goals:
  - From international agreement to implementation
  - Conflicting interest structures
  - Lack of quick-fix investments & technological solutions



# Agreed scientific knowledge

- **Scientifically agreed: gravity of loss**
  - Loss is 10-100 times faster than 'natural extinction rate'
  - 25% of mammal species & 41% of amphibians threatened
  - 50% of wetlands lost, 33% of coral reefs seriously damaged
  - **96% of mammals are humans and domesticated animals, only 4% are wild animals**
  - 75% of all land significantly altered by human activities
  - Increase in zoonoses
  - Loss of biodiversity: Reduced pollination, increased flooding
- **Scientifically agreed: humans causes loss**
  - Loss is due **primarily to land use change**, but also pollution, invasive alien species and climate change
- **IPBES and IPCC agree on nature and climate crises**



# Economic value of Biodiversity

- **Increased attention to value of biodiversity:**
  - Agriculture and aquaculture depend on access to a diversity of genetic material to retain high yields, adapt to climate change and resist diseases
  - Centres of diversity for food plants in the South; seeds collected in international seed banks
  - Less than 1 % of all plants, insects, marine and microbiological organisms has been bioprospected (examined) for medicinal and chemical traits
  - Bioprospecting: systematic search in nature for medicinal, biochemical and genetic information of commercial value
- **Rapid loss + high value = political focus**



# Value of genetic resources: food and medicine



- **Global pharmaceutical market (patent applications):**
  - BAFS holds 50% of patent applications on marine genetic material
- **Global seeds market:**
  - Bayer, Cortega and ChemChina control 50% of global transactions with seeds
- **Guestimates, but central for understanding increasing concentration in and governance of genetic resources**

# Efforts to stop loss of biodiversity

- **Prior to CBD: Conservation of wildlife, sector-based**
  - Species: CMS, Convention on Migratory Species
  - Ecosystems: Ramsar Convention on Wetlands
  - Trade: CITES, Convention on international trade in endangered species of flora and fauna
- **With the CBD: from sector-based to comprehensive; from wild to valuable**
  - **Comprehensive:** the diversity of all ecosystems, species and genetic resources
  - Including **valuable** biodiversity increased incentives to conserve,
  - increased conflict between 'providers' and 'users' of biodiversity



# CBD negotiations: North-South conflict

- Shaping the CBD (regime formation):
  - The bulk of terrestrial species diversity and plant genetic resources is found in tropical areas
  - Genetic resources, including seeds, and traditional knowledge are major input factors for biotechnology
  - Privatisation of agriculture & pharma: patents and IPR needed and introduced within life sciences
  - Patents hardly applicable in developing countries
  - Stories of biopiracy fuelled debate
- The South argued (and argues still): Why should we give away our genetic resources for free; carry the costs of biodiversity conservation, and pay dearly for patented seeds and medicines?





# The broader North-South conflict (shaping CBD)

- Uruguay round (1988-94): harmonising and strengthening intellectual property rights, also in biotechnology/life sciences
- FAO Undertaking (1989): Seeds no longer common heritage of mankind, but subject to intellectual property rights
- Increased (bio)technological ability to exploit genetic resources + strengthened IPR gave the North the benefits from utilising genetic resources; less benefits going to the South.
- The global distribution of biological diversity gave the South bulk of the costs of conservation, with less costs directly falling on the North.
- *CBD negotiations: the (primary) users of the resource ask the (primary) owners to conserve the resources*



# Biopiracy: The story of the rosy periwinkle

Patents limited applicability in developing countries

*Rosy periwinkle*



International agreement in CBD: Balance access to genetic resources with equitable sharing of benefits

# Convention on Biodiversity

- 1992: signed in Rio, now 196 Parties
- CBD main objectives:
  - 1. conservation of biodiversity,
  - 2. sustainable use of biodiversity,
  - 3. equitable sharing of benefits from utilization of the genetic resources accessed (ABS regime)
- 2010: Aichi targets (small effect)
- 2010: Nagoya Protocol on ABS (small effect)
- 2022: Global Biodiversity Framework in Montreal /Kunming



# ABS: Access and benefit sharing regime of CBD

- Equitable sharing of benefits from use of genetic resources (third objective of CBD)
- Access on mutually agreed terms
- Access based on prior informed consent
- Symbolic victory for developing countries
- Not accepted by USA
- Still, 2010: further strengthened by the Nagoya Protocol (in force since 2014)

# CBD and ABS : interaction

- ABS in the CBD was a breakthrough for developing (provider) countries' principle of
  - linking access to benefit sharing
- Developed (user) countries prefer free-of-charge access to continue, while
  - maintaining and strengthening IPR on genetic material
- This is where the CBD/ABS regime interacts with:
  - access to seeds (FAO), access to pathogens (WHO), and intellectual property rights (IPR) systems of WTO/TRIPS.
- These regimes have different approaches to regulate use of genetic material.



# WHO: Access to virus & vaccines



- WHO and Indonesia conflict over avian flu
- Norms spreading from ABS to WHO:
  - Pandemic Influenza Preparedness (PIP) framework for access to viruses and vaccines
  - PIP grants fast-track access to virus strains in case of pandemic influenzas
  - PIP grants fast-track access to vaccines
  - the ABS of PIP is seen as lesser threat to corporate pharma (limited to influenza)
- Signals implementation of CBD principles

# CBD: Evolving ABS conflict

- Contested issues:
  - Definition of genetic material and technological developments: Genetic resources defined as material with ‘functional units of heredity’ or defined in terms of valuable information? Inclusion of digital genetic sequence information (DSI) in ABS regime?
  - Sector approaches to valuable genetic resources: Food, medicines, bioprospecting the oceans
- Developing countries hold that DSI and sector approaches could undermine ABS
- Interaction with other regimes is key for assessing implementation of the CBD objectives

# CBD implementation: National ABS policies



- CBD parties have enacted 279 policy measures to implement the ABS regime
- 24 parties have ABS procedures, mostly providers
- The EU follows ABS norms:
  - include genetic ‘information’, like enzymes (DSI)
  - accepting monetary benefit sharing (Reg. 511/2014)
  - May link ABS to patent system (disclose origin on genetic material)
- Norway and Switzerland have similar acts, but few other user countries do



# Implementing CBD: The 20 Aichi targets



- No Aichi targets reached at global level by 2020
- Target: protect 17% land and 10% ocean
- Achieved: 15% land and 8% ocean (quality?)
- Six of the 20 targets 'partially achieved'
- 2020: Aichi seen as failure by UN and CBD
- High hopes for new Global Biodiversity Framework prior to COP15 in Montreal/Kunming

# COP15: Montreal-Kunming, 2022



- Main achievements of Global Biodiversity Framework (GBF): Parties agreed to
  - Protect 30% of land and 30% of oceans
  - Restore 30% of degraded ecosystems
  - Reduce harmful subsidies by US\$500 billion annually by 2030
  - Mobilize US\$200 annually by 2030, biodiversity funding
  - Strengthen GEF by annual US\$30 by 2030, biodiversity funding
  - New accounting system to value nature: means that nature costs must be included in definition of the 'green transition' (e.g. of biofuels and mining for rare minerals)

# COP15: Gaps in GBF

- Insufficient (actual) funding
- Lacking targets for halting species extinction
- Uncertain future of ABS and DSI (digital sequence information):
  - definition of genetic resources: ‘functional units of heredity’ (DSI is out by definition)
  - DSI could undermine ABS regime
  - COP15 agreed on a DSI multilateral mechanism: Global fund
  - the modalities of this Global DSI fund remains to be worked out



# GBF scope for success: Institutional design



- Higher scope for success this time?
- Institutional design:
  - functioning monitoring and reporting system: the national biodiversity strategies (NBSAPs)
  - clear targets: 30% by 2030, can be monitored
  - increased resource mobilisation, but still no mandatory funding following the NBSAPs

# GBF scope for success: Conflicting interests and type of problem



- Malign problem structure:
  - overall scientific agreement & increased attention, but
  - severe local knowledge gaps (piecemeal loss: total impact)
  - protection lacks technological quick-fixes and investment options
  - IPBES (2012) and IPCC (1988): Nature crisis lags 25 years behind climate in communicating consolidated scientific knowledge
- Gap between funding promises and reality:
  - Promise: Global Biodiversity Framework Fund with annual US\$30 billion by 2030
  - Reality: GEF has provided \$23 billion total since 1992 (bio, climate..)
- Still, imagine contrafactual situation and consider the vacant spot for leadership

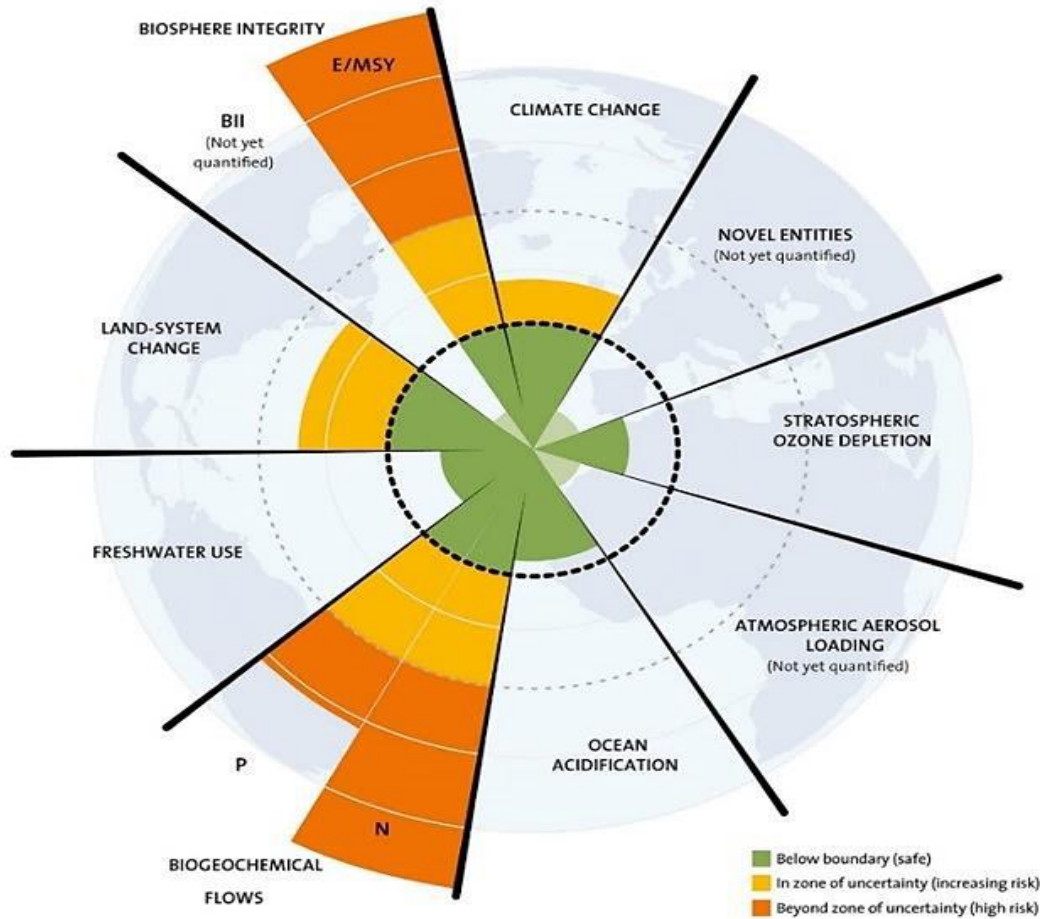
# Thank you for your attention!

Kristin Rosendal

krosendal@fni.no

Visit us at [www.fni.no](http://www.fni.no)





# Ecosystem services

- **Definition:** the direct and indirect contributions of ecosystems to human well-being
- **Provisional:** food, medicines, building materials
- **Regulating:** water purification, flood regulation, pollination, climate regulation (only 3% of ecosystems are swamps but they store 30% of CO2 globally)
- **Supportive:** the functioning of habitats, photosynthesis, genetic level (maintenance of viable species gene pool)
- **Cultural:** recreation, aesthetic
- **(Intrinsic value )**

