



THE **ABS**  
CAPACITY  
DEVELOPMENT  
INITIATIVE



L'INITIATIVE DE  
RENFORCEMENT  
DES CAPACITES  
POUR L'APA

## 2<sup>nd</sup> Informal Retreat on Digital Sequence Information (DSI)

*25<sup>th</sup> to 27<sup>th</sup> October 2023, The Hague, The Netherlands*

Organised by the ABS Capacity Development Initiative

on behalf of

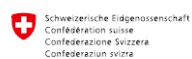
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### REPORT

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<sup>1</sup> Disclaimer: This report was prepared for the use and benefit of the participants of the DSI Retreat in The Hague, Netherlands, 25<sup>th</sup> to 27<sup>th</sup> November 2023, and it is provided for information purposes only. It contains a compilation of the participants' contributions and discussions. The report, however, does not purport to reproduce all debates and interventions in full. According to the Chatham House Rule, under which the informal retreat was held, the information provided is not attributed to the source. The presenters are, with their explicit permission, identified in the report. The statements in this report do not represent the views or opinions of the GIZ, the Governments of Norway and the Netherlands or the cooperation partners of the GIZ. The Secretariat of the ABS Initiative does not assume any liability for the accuracy or completeness of the report.

## Overview and outcomes

On behalf of the Norwegian Government the 2<sup>nd</sup> Informal Retreat on Digital Sequence Information (DSI) was organized by the ABS Capacity Development Initiative (ABS Initiative) and hosted by the Government of the Netherlands at *NH Atlantic Den Haag* from 25<sup>th</sup> to 27<sup>th</sup> October 2023.

With the Kunming-Montreal Global Biodiversity Framework (GBF) adopted by CBD COP 15 and related decisions on DSI, specifically Decision 15/9, a multilateral mechanism for sharing the benefits from the use of DSI is to be established in a time-bound process by COP 16. A number of informal meetings and webinars involving Parties and stakeholders took place during the last months to discuss how such a mechanism could look like taking into account the agreed criteria in Decision 15/9.

The **overall objective** of the Retreat was to reflect on various options for such a multilateral mechanism, including a global fund, thereby assisting preparations for the first meeting of the *Ad Hoc Open-ended Working Group on Benefit-sharing from the Use of Digital Sequence Information on Genetic Resources* (WGBS-1), which is scheduled to take place from 14<sup>th</sup> to 18<sup>th</sup> November 2023 in Geneva.

In addition to key negotiators from all global regions, a small number of recognized DSI experts from academia and the private sector as well as representatives of Indigenous Peoples and Local Communities (IPs & LCs) supported the retreat by contributing knowledge and perspectives. Observers, including from Secretariats of international organisations involved in DSI, were invited.

In continuation of the spirit of previous informal exchanges on DSI, the retreat provided a safe and welcoming space for open and constructive debate, aiming to improve mutual understanding and helping to brainstorm ideas about a possible way forward. The meeting was held under the Chatham House Rule, i.e. participants attended in their personal capacity.

Inputs by resource persons, group exercises and plenary discussions highlighted:

- The CBD can be seen as the first international sustainable development treaty. The grand bargain of the Convention addresses the need for resource mobilisation for the benefit of conservation and sustainable use. DSI as an expression of the scientific and technological progress is a component of ABS, and ABS is the justice component embedded in the CBD.
- The basis for the further time-bound negotiation process until COP 16 lies in Goal C and Target 13 of the GBF, the decision on the establishment of a Multilateral Benefit-sharing Mechanism (MBM) for the use of DSI, including agreement on criteria in paragraphs 9 and 10 of Decision 15/9, the recognition of the roles and rights of IPs & LCs as beneficiaries, and agreement that benefits should be used for conservation and sustainable use.
- Archetypes for a multilateral benefit-sharing mechanism currently being discussed are: (1) fully decoupled, i.e. no contractual relationship between the provider and the user, (2) multilateral system based on SMTAs (e.g. the FAO ITPGRFA MLS or the PIP Framework under the WHO) or a notification system (e.g. the BBNJ Treaty), (3) hybrid model with a) multilateral system as default and b) bilateral options for 'attributable' cases, and (4) an automated 'big data' system – analogous to the Global Biodiversity Information Facility (GBIF) with a governing body and sharing over 2 billion taxonomic records – that involves micropayments associated with cloud storage services.
- Participants widely agreed that more information and understanding is needed regarding:
  - what “automated big data” exactly entails and how it is different from other models;
  - what the implications are for governance and the role of IPs & LCs;
  - how to deal with non-monetary benefit-sharing;
  - how to deal with the sheer amount of access to DSI.
- Against the background of scientific and technological progress any interlinked global framework for the use of DSI has important practical implications for (1) Global Public Goods (health, food security, adaptation to climate change), (2) research and innovation, (3) non-monetary benefits, transaction costs, and monetary benefits, and (4) IPs & LCs.

- After exploring the practical implications of the potential approaches for the four impact areas participants' observations focussed on the following points:
  - Varying perceptions of terms like "transaction costs" lead to misunderstandings.
  - As presented, the archetype bundles were not seen as mutually exclusive, leading to overlaps and diverse interpretations, for example the implications of the different approaches for delinking access, benefit-sharing, and the final product.
  - Archetypes are viewed as a basis for creative thinking, acknowledging that a realistic approach involving global participation in the negotiation process is essential.
  - Limited technical understanding of the archetypes requires time and capacity development. The practicality of the 'big data' approach remains difficult to assess due to insufficient understanding of the model itself.
  - Consensus seems to evolve for moving away from a 'track and trace' (T&T) approach due to its cumbersome and costly nature.
  - A shift in focus from the system's efficiency to its potential for resource mobilization. Closing the funding gap was a significant concern.
  - Legal certainty and low transaction costs are crucial for the private sector. Concerns were raised about the need to determine the commercial viability of a potential product, i.e. predictability regarding costs and timeframe, early in the innovation process.
  - Governance issues are critical, especially regarding the involvement of IPs & LCs.
  - Consideration of exemptions and how countries could transition towards a multilateral system while respecting existing national regulations. The hybrid option acknowledges existing national systems in place.
  - A politically feasible solution is believed to exist but requires unveiling. Many DSI users are still unaware of the issues, necessitating more awareness raising, information sharing and consultation.
- Key points raised regarding the relationships between different international fora included:
  - Increasing the number of funds might not necessarily create more money. A single fund approach could provide a potential solution.
  - Consideration of scientists' preferences were highlighted, regarding a unified database for all DSI or fragmented databases for different resources.
  - Principles in COP Decision 15/9 should guide all fora discussing DSI.
  - Exploring the possibility of creating an inter-forum solution was suggested, but also challenges related to jurisdictional boundaries and generic laws for DSI were noted. The need for synchronicity among different fora and collaboration through entities like the Joint Liaison Group was emphasized.
- Collecting practical ideas to ensure capacity development (CD) in a multilateral system participants raised, among others, the following points:
  - Contractual and non-contractual CD is necessary. Providers should express needs clearly. Both public and private entities can and should proactively engage in CD.
  - Clarification is required of what CD regarding DSI could or should entail. A balance between global objectives, indicators and matrices is necessary. Legal certainty is critical, with existing instruments providing a foundation for CD initiatives.
  - CD involves both managing DSI at policy level and its technical aspects related to technology transfer and know-how transfer. It is necessary to clarify the distinction between CD as an activity that is funded by the DSI Fund and CD as an ODA contribution.
- To support implementation of the GBF, participants brainstormed elements of a DSI roadmap to COP 16 (and beyond) at different levels: international, regional, national and stake- and rights holders. The ensuing discussion focused on the international level:
  - Need to better understand the specifics of the different possible systems (especially the automated big data approach and the different options of a fully decoupled approach) and common definitions of recurring terminology.

- Without a negotiation text on the table for the WGBS-1 meeting in Geneva, agreement should be reached on an intersessional process between the two meetings of the WGBS including agreement on the questions to be clarified.
- Coordination with the other fora will be essential to avoid a fragmented landscape. A more formal coordination process might be useful.

## Official welcome

**Gaute Voigt-Hanssen** of the Royal Norwegian Ministry of Climate and Environment, **Natalie Feltman** of the South African Department for Forests, Fisheries and the Environment, and **Kim van Seeters** of the Dutch Ministry of Agriculture, Nature and Food Quality, welcomed participants to discuss a path to global sustainable development. The speakers highlighted that the adoption of the Kunming-Montreal Global Biodiversity Framework (GBF) is a tremendous success. Parties are now on the journey on "How can we do it?" and not "Whether we can do it?" Speakers reminded participants about the tight timeline until COP 16 next year to finalise the DSI mandate.

**Hartmut Meyer** of the ABS Capacity Development Initiative thanked the host and supporters. Referring back to the first DSI retreat in November 2022, he encouraged the participants to continue the open, constructive and fruitful exchange which had received much positive feedback.

## Technical introduction

**Kathrin Heidbrink**, facilitator of the event, introduced the agenda and reminded participants that the meeting was held under the Chatham House Rule<sup>2</sup>. With a view to create a trustful, constructive atmosphere, several brief exercises provided an opportunity for participants to get to know each other at a (more) personal level.

## DSI – a pathway for global justice and sustainable development?

### Opening reflection: The big picture – Underlying principles of benefit-sharing

**Timothy Hodges**, McGill University, co-facilitator of the event, former negotiator in various fora and former Co-Chair of the ABS Working Group leading to the adoption of the Nagoya Protocol on ABS, explained that he has no active role in the DSI negotiation process. Placing the subsequent discussion in a broader historical context (see presentation in Annex 2), he described the CBD as the first international sustainable development treaty. The need for financial resources for biodiversity conservation is mentioned several times in the preambular section of the CBD. Three different perceptions of the grand bargain of the CBD are common: (1) benefit-sharing in exchange for access, (2) recognition of sovereignty in exchange for conservation, and (3) benefit-sharing in exchange for conservation. DSI responding to the scientific and technological progress is a component of ABS, and ABS is a component of justice embedded in the CBD. Among the challenges for successful CBD implementation is the tendency to regulate rather than to facilitate, especially regarding ABS. Participants were invited to reflect on the following three questions:

- 1) How well has the CBD delivered on its benefit sharing objective?
- 2) What is the biggest impediment to achieving a functioning multilateral mechanism?
- 3) What would you do to overcome this impediment?

During the ensuing **plenary discussion**, the following key points were made:

- The CBD is connected to other interrelated issues and there is a need to think beyond national interests to find global solutions.
- ABS misses the impact reduction perspective: IPs & LCs want monetary and non-monetary benefits, but also a holistic perspective leading to a reduction of damage to biodiversity.
- The loss of biodiversity threatens human survival as much as climate change, but also biodiversity itself needs to be in focus; recognizing IPs & LCs rights and roles leads to more productive and positive possibilities of interaction.

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<sup>2</sup> "When a meeting, or part thereof, is held under the Chatham House Rule, participants are free to use the information received, but neither the identity nor the affiliation of the speaker(s), nor that of any other participant, may be revealed."

- The range of options is constrained by the diverging interests of countries and stakeholders.
- Access is increasingly being ‘decoupled’ from benefit-sharing, especially regarding traditional knowledge associated with genetic resources, and DSI.
- The relationship between ABS and conservation and sustainable use is not fully reflected in the BBNJ Treaty.
- There are many different possibilities for a multilateral system and the relationship between public and private interests is critical.
- The definition of justice depends on the perspective of the actors, especially when dealing with IPs & LCs.
- There is a lot to learn from science policy: Different policy tools and options depend on whether an egalitarian, communitarian, contractarian, or libertarian approach is chosen.
- Narrow national interests impede the functioning of ABS; governments do not respond to tipping points – impacts are not reflected in current legislature.
- Highlighting the positive spirit going from Montreal to Geneva, ALL negotiators need to feel responsible for the outcome of negotiations.

### Update on DSI-related processes in various international fora: "From Montreal to Oslo"

During a joint learning exercise, participants informally exchange their experiences with and perspectives on the recent DSI discussions in the formal processes of the CBD, the FAO Plant Treaty (ITPGRFA), the BBNJ Treaty and the WHO.

The following presentation by **Hartmut Meyer**, ABS Capacity Development Initiative (see Annex 3) elaborated on the scope of the different instruments and the respective ABS provisions established or being negotiated regarding genetic resources and/or DSI.

Representatives of the Secretariats of the relevant international fora supplemented the presentation of Mr. Meyer as follows:

- Meetings of the WGBS are scheduled for November 2023 and August 2024 based on Decision 15/9.
- Mutual supportiveness between international treaties is essential and built into the Plant Treaty and the Nagoya Protocol. Based on the “June 2019 package” the next meeting of the ITPGRFA Governing Body (late November 2023) will discuss the expansion of the gene pool covered by the Treaty, capacity building and non-monetary benefit-sharing, and take stock of the CBD COP 15 decisions.
- The Pandemic Influenza Preparedness (PIP) Framework of the WHO constitutes a niche ABS framework with partnership contribution as benefit-sharing. DSI is not explicitly included. The Pathogen Access and Benefit-Sharing (PABS) System under the draft WHO Pandemic Treaty will have a broader scope. The text is still under (early) negotiation.
- The BBNJ Treaty – complementing the CBD in geographical scope, i.e. all (non-human) species and all uses – benefitted from having the CBD decision on DSI. As in the CBD, DSI was not defined. Quite some discussion focussed on “track and trace”, as most marine DSI is uploaded in the same publicly accessible databases. The BBNJ Standardised Batch Identifier will be issued upon notification. Emphasis is on fair and equitable benefit-sharing from both marine genetic resources and resulting DSI.
- The FAO Commission for Genetic Resources for Food and Agriculture (CGRFA) addresses ABS for all genetic resource used for food and agriculture and works since 2017 on DSI with special focus for plant breeding purposes.

Finally, it was indicated that the informal DSI related meetings organised by the Meridian Institute during the last two years will be continued. The latest meeting at Oslo focussed on the design of the fund related to multilateral benefit-sharing system for DSI.

## Outcomes of COP 15: Global implications

With a view to identify interrelationship(s) between various components of the CBD decisions (esp. the GBF) participants discussed in groups what in their view are the top elements of the COP 15 decisions related to DSI. Groups were tasked to put the top 3 to 4 elements on cards:

- Establishment of a Multilateral Benefit-sharing Mechanism (6 cards)
- Benefit-sharing from DSI use (3 cards)
- Agreement on criteria in paragraph 9 (2 cards) / paragraph 9 and 10 (2 cards)
- Need for capacity development and technology transfer (2 cards)
- IPs & LCs as beneficiaries (2 cards)
- Goal C + Target 13
- Recognition of IPs & LCs rights
- Open access to DSI should be protected
- Benefits used for conservation and sustainable use
- Principles of data governance
- Time-bound process and principles
- Inclusion of DSI across other decisions, e.g., resource mobilisation and capacity building
- Non-definition of DSI

After providing a systematic overview of the DSI relevant components of the various COP 15 decisions and linkages to GBF targets other than 13 by **Suhel al-Janabi** of the ABS Capacity Development Initiative (see presentation in Annex 4), participants supplemented the following points:

- Resource mobilisation and indicators for Target 13 in the monitoring framework.
- Benefit-sharing should also include a gender and youth dimension, especially regarding capacity building.
- The importance of including young scientists in the process was highlighted several times. Feedback from young scientists has demonstrated a concern that currently discussed policy options might not be fit for the purpose.
- Conditions for IPs & LCs as custodians of biodiversity are deteriorating with a need to act fast and come to decisions. Also, IPs & LCs are concerned about understanding the implications of DSI use of and resulting returns.
- Benefit-sharing and resource mobilisation are separate discussions, but the latter depends on the first.

## Practical implications of possible multilateral systems

### Overview of four main possible systems

Laying a foundation for the subsequent discussions **Paul Oldham**, One World Analytics, provided in his presentation (see Annex 5) an overview of existing direct and indirect benefit-sharing models, starting with the bilateral direct benefit-sharing “Nagoya” model between providers and users to which 140 parties so far have acceded:

- Fully decoupled (multilateral) (indirect model): No contractual relationship between provider and user, the basic mechanism is a fund which is fed by measures such as micro levies (e.g. on sequencing machines), levies on products (1% African proposal), tiered fees (BBNJ), royalties on IPR, percentage of GNP or similar mechanisms. These ideas are still at a conceptual level.
- Multilateral system based on SMTAs (indirect model): Access is provided on the basis of an a prior agreed SMTA or a notification system:
  - The best known system is the Plant Treaty MLS, complemented with voluntary contributions by Treaty Parties; private sectors user will actively seek avoidance of



- benefit-sharing obligations or will not report / be noncompliant; another mechanism is the Crop Trust, an endowment fund which has raised 300 Mio USD.
- The WHO PIP Framework with its SMTA 1 (used by Parties to bring material into the system) and SMTA 2 (used to transfer material to users) of the PIP Framework; mandatory contributions from users plus voluntary contributions from “Partnership Contributions” by industry, the new WHO CA+. The draft Pandemic Treaty copies this model and adds DSI.
  - The BBNJ Treaty builds a notification system with a Batch Identifier. The indirect model is IT-based and the reporting is automated, enhancing transparency. The model includes a guaranteed funding stream drawn from national contributions as well as some novel elements on benefit-sharing to be considered by future COPs such as product payments, milestone payments, and/or tiered fees linked to aggregate indicators on the use of marine genetic resources. The details of these innovative approaches need to be established.
  - Hybrid (indirect and direct model): A two layer approach with the multilateral system as default, with bilateral options in 'attributable' cases (e.g. with origin tags). Verification works through IRCC (bilateral system) and payment certificates (multilateral system). This works when DSI is included in the MAT (consent for sequencing) and is reported in the IRCC and when uploading DSI then fill in the biodata information. It is important to remember that there are 140 Parties to the Nagoya Protocol. The Bahamas is an example including DSI in the automatically generated MAT created by its online permit system.
  - Automated 'big data' system (indirect model): GBIF is a good working model for an approach to DSI. GBIF has a governing body made up of developed and developing countries and shares over 2.1 bill taxonomic records. In 2016 GBIF introduced 3 creative common licences which apply to all records, including data from INSDC, and functions well. A similar approach could be adopted for DSI, where the foundational requirement for a licence would be that data must be deposited with databases participating in the benefit-sharing mechanism. For the private sector legal certainty is key and they might be willing to pay for this. A key problem with other models is that the IT infrastructure is taken as a given, which is not the case; it is very expensive to maintain. Also, there is a massive global increase in data, which is why big public DSI databanks, such as NCBI and EMBL have made contracts with the private sector (Microsoft, Amazon, Google) to handle the challenges. The use of the data could be coupled with micro fees, that would contribute to a nationally/regionally focused distributed global biodiversity fund to support biodiversity and the infrastructure. A start up/seed fund would be needed to operationalise the approach.

Participants raised the following questions for clarification:

- Unclear who is the user in these systems.
- What does “automated big data” exactly entail and how is it different to the other models?
- What are the mechanics of any multilateral mechanism?
- What are priorities for setting up a new system?
- What are the implications for governance and the role of IPs & LCs?
- In subscription systems access is often delinked from benefit-sharing.
- How to deal with non-monetary benefit-sharing?
- The sheer amount of access to DSI needs to be considered.

The replies to these points focussed on the different relationships of GR to DSI and benefit-sharing in the various models. The GBIF governance model provides a transparent approach while others, such as INSDC/GISAID, are less transparent. Trigger for payment in all cases is, “If you use, you pay!”

## Overview of four important impact areas

Laying a second foundation for the subsequent discussions **Pierre du Plessis**, Technical Adviser to the ABS Initiative, provided an overview (see presentation in Annex 6) of the practical implications of an interlinked global framework for the use of DSI in four relevant areas:

- Global Public Goods (health, food security, adaptation to climate change)
  - Health: wide surveillance, rapid detection, effective equitable response measures (speed is crucial)
  - Food security: genetically adapted crops and livestock; animal and plant health measures; resilience against climate shocks (diversity)
  - Climate adaptation: capacity to change productive ecosystems faster than natural evolution can (mutual interdependence)
- Research and innovation
  - Allows a wide range of researchers to participate (capacity is crucial)
  - Creates legal certainty for investment in research and innovation (predictability)
  - Rewards investment in successful research and innovation (fair social returns)
  - Avoids undue IP restrictions from limiting spread and adoption of innovations (open and responsible science)
- Non-monetary benefits; transaction costs; monetary benefits
  - Deliver usable non-monetary benefits (ensure capacity to use is available)
  - Allocate non-monetary benefits fairly (where they are needed, useful, sustainable)
  - Minimise transaction costs (to stimulate research and innovation, maximise profits)
  - Make a business case for monetary benefit sharing to support conservation and sustainable use (easy to collect and disburse)
- IPs & LCs roles and rights
  - Acknowledge, respect and reward the roles and rights of IPs & LCs (to support their biodiversity stewardship)
  - Avoid onerous transaction costs (to encourage use and investment)
  - Maximise benefits and transparently link them to conservation and sustainable use
  - Make best use of indigenous ecological wisdom

## 4 x 4: Exploring practical implications of the four multilateral approaches on the four impact areas

In a "merry-go-round" exercise four randomly mixed groups moved from board to board, brainstorming positive and negative implications of, as well as open questions on each of the four possible multilateral systems on four relevant impact areas. The design of the exercise allowed each group to work on all boards. Agreement with points made by other groups were indicated by "!", need for clarification by "?".

**Guiding question for each board: "What could / should / would it look like in practice?"**

### Board 1: Global public goods (health, food security, adaptation to climate change)

	<i>fully decoupled (multilateral)</i>	<i>multilateral based on SMTAs</i>	<i>hybrid (default = multilat., with bilat. option in 'attributable' cases)</i>	<i>automated 'big data'</i>
<i>positive</i>	<ul style="list-style-type: none"> <li>• Good for research (!)</li> <li>• Low transaction costs (!)</li> <li>• Facilitates access for all users (? !)</li> </ul>	<ul style="list-style-type: none"> <li>• Based on contract, not national laws</li> <li>• More sharing of data</li> <li>• Increase legal certainty for</li> </ul>	<ul style="list-style-type: none"> <li>• Maintains sovereign rights (?)</li> <li>• Allows more specific benefit-sharing</li> <li>• Maintains good regulation/legislation</li> </ul>	<ul style="list-style-type: none"> <li>• Lowest transaction costs</li> <li>• Next generation</li> <li>• Indirect benefits through science &amp; scientific infrastructure</li> </ul>

	<i>fully decoupled (multilateral)</i>	<i>multilateral based on SMTAs</i>	<i>hybrid (default = multilat., with bilat. option in 'attributable' cases)</i>	<i>automated 'big data'</i>
	<ul style="list-style-type: none"> <li>• Enough funds for public goods (?) – Assuming it is used for global public goods</li> </ul>	sharing public goods	practices and options (?) <ul style="list-style-type: none"> <li>• Increase legal certainty for sharing public goods</li> </ul>	<ul style="list-style-type: none"> <li>• Enough funds</li> </ul>
<i>negative</i>	<ul style="list-style-type: none"> <li>• Reduce legal clarity (?)</li> <li>• Mal-governance</li> <li>• Costs for securing GPG for developing countries increase</li> <li>• Challenges to distributive justice in global accounting</li> </ul>	<ul style="list-style-type: none"> <li>• Less R&amp;D for challenging DSI (?)               <ul style="list-style-type: none"> <li>• Not enough funds</li> </ul> </li> <li>• Increased costs of public goods not always negative</li> <li>• Captures revenue share from various R&amp;D</li> <li>• Discourages/barriers to collaboration and investment               <ul style="list-style-type: none"> <li>• Less income</li> </ul> </li> <li>• Disincentivises R&amp;I for global challenges</li> </ul>	<ul style="list-style-type: none"> <li>• Increased admin</li> <li>• Transaction costs increased</li> <li>• Transaction cost reduced</li> <li>• Reduces legal certainty</li> <li>• Funds dispersal</li> </ul>	<ul style="list-style-type: none"> <li>• Not clear enough</li> <li>• Threatens the rights of IPs &amp; LCs to be properly complemented</li> </ul>
<i>open questions</i>	<ul style="list-style-type: none"> <li>• Business as usual?</li> <li>• Sustainable use guaranteed?</li> </ul>	<ul style="list-style-type: none"> <li>• National or international standard terms (?)</li> <li>• Time frame for distributing benefits, urgency</li> </ul>	<ul style="list-style-type: none"> <li>• How to guarantee a fair negotiation (?)</li> </ul>	<ul style="list-style-type: none"> <li>• Infrastructure costs</li> <li>• Low transaction costs?</li> <li>• How does it work?</li> <li>• Legal certainty?</li> </ul>

## Board 2: Research and innovation

	<i>fully decoupled (multilateral)</i>	<i>multilateral based on SMTAs</i>	<i>hybrid (default = multilat., with bilat. option in 'attributable' cases)</i>	<i>automated 'big data'</i>
<i>positive</i>	<ul style="list-style-type: none"> <li>• No track &amp; trace necessary (! !)</li> <li>• No barrier to access (?)</li> <li>• Simplicity for research (!)</li> <li>• Open access (!)</li> <li>• Legal certainty</li> </ul>	<ul style="list-style-type: none"> <li>• Simple and certainty ! ?</li> <li>• Speedy distribution of outcomes of R&amp;I</li> </ul>	<ul style="list-style-type: none"> <li>• Control of context for IPs &amp; LCs (!)</li> <li>• Data sovereignty (!)</li> </ul>	<ul style="list-style-type: none"> <li>• Simple (?)</li> <li>• Long term maintenance of research infrastructure</li> <li>• Legal certainty for private sector (!)</li> </ul>
<i>negative</i>	<ul style="list-style-type: none"> <li>• Loss of context/control !</li> <li>• Legal confusion (?)</li> <li>• Cost for research community depending on option</li> </ul>	<ul style="list-style-type: none"> <li>• Disincentive for private databases/business</li> <li>• Access not guaranteed</li> <li>• More complicating for SMTAs than multi-partner agreements</li> </ul>	<ul style="list-style-type: none"> <li>• Forum shopping (?)</li> <li>• Lack of legal certainty and business predictability</li> </ul>	<ul style="list-style-type: none"> <li>• Threatens basic safeguards for IPs &amp; LCs</li> <li>• IP risk</li> <li>• Complex</li> </ul>

	<i>fully decoupled (multilateral)</i>	<i>multilateral based on SMTAs</i>	<i>hybrid (default = multilat., with bilat. option in 'attributable' cases)</i>	<i>automated 'big data'</i>
	<ul style="list-style-type: none"> <li>No guarantee on the enjoyment of Human Rights to benefit from scientific progress</li> </ul>	<ul style="list-style-type: none"> <li>More complex for a wide scope (vs. PIP etc.)</li> </ul>		
		<ul style="list-style-type: none"> <li>Needs track &amp; trace (?)</li> </ul>		
<i>open questions</i>	<ul style="list-style-type: none"> <li>Which trigger/model? (!)</li> <li>Where does decoupling occur? (!)</li> </ul>		<ul style="list-style-type: none"> <li>Lack of common understanding of track &amp; trace</li> </ul>	<ul style="list-style-type: none"> <li>Private databases will be involved?</li> </ul>
		<ul style="list-style-type: none"> <li>Time frame for distributing benefits, urgency</li> <li>Capacity building and tech transfer needs?</li> </ul>		
		<ul style="list-style-type: none"> <li>Positive &amp; negative for whom?</li> </ul>		
	<ul style="list-style-type: none"> <li>Potential to facilitate collaboration?</li> <li>What favours scientific cooperation?</li> <li>Why can't all the option contribute to data infrastructure?</li> <li>How can IPs &amp; LCs be included and supported in R&amp;I</li> </ul>			

### Board 3: Non-monetary benefits; transaction costs; monetary benefits

	<i>fully decoupled (multilateral)</i>	<i>multilateral based on SMTAs</i>	<i>hybrid (default = multilat. with bilat. option in 'attributable' cases)</i>	<i>automated 'big data'</i>
<i>positive</i>	<ul style="list-style-type: none"> <li>Fewer transaction costs</li> <li>More potential to raise more benefits (potentially) (? !)</li> <li>Unavoidable</li> <li>More visibility on the BS value</li> <li>Databases untouched</li> </ul>	<ul style="list-style-type: none"> <li>Lower transaction costs with standard contract; no need to negotiate (securing benefits) (!)</li> </ul>	<ul style="list-style-type: none"> <li>Better clarity on sharing of non-monetary benefits</li> <li>Better policy space for states to negotiate BS in MATS</li> <li>Easy targeting of benefits and beneficiaries</li> <li>Would include IPs &amp; LCs governance on non-monetary benefit-sharing</li> </ul>	<ul style="list-style-type: none"> <li>High potential to generate funds efficiently (! ?)</li> <li>Maintaining data infrastructure as a non-monetary benefit for research community (! ?)</li> <li>Direct non-monetary benefits</li> </ul>
	<ul style="list-style-type: none"> <li>Would address social considerations and environmental indicators</li> </ul>			
<i>negative</i>	<ul style="list-style-type: none"> <li>Less direct non-monetary benefit-sharing opportunities</li> <li>More transaction costs for states to secure non-monetary benefits ?</li> </ul>	<ul style="list-style-type: none"> <li>SMTA can't fulfil all stakeholder requirements</li> <li>Avoidable</li> </ul>	<ul style="list-style-type: none"> <li>Higher transaction cost when negotiating MTA bilaterally (securing benefits) (!)</li> <li>Jurisdiction/forum shopping =&gt; potentially benefits to fewer countries</li> <li>Way less BS dispersed</li> <li>Difficult/impossible to determine value of (single) sequence</li> <li>Difficult to implement</li> </ul>	<ul style="list-style-type: none"> <li>Longer process for distributing benefits (?)</li> <li>Less direct BS opportunities</li> <li>Data sharing not relevant to use (sometimes)</li> <li>To reestablish databases</li> </ul>

	<i>fully decoupled (multilateral)</i>	<i>multilateral based on SMTAs</i>	<i>hybrid (default = multilat. with bilat. option in 'attributable' cases)</i>	<i>automated 'big data'</i>
<i>open questions</i>	<ul style="list-style-type: none"> <li>• Various types of options (?)</li> <li>• Who decides who gets what and how much?</li> </ul>			<ul style="list-style-type: none"> <li>• Capacity to make use of data not equally distributed</li> <li>• Unknown transaction costs</li> </ul>
<ul style="list-style-type: none"> <li>• Implications for transaction costs across all ABS fora</li> <li>• Are the options feasible for all?</li> </ul>				

#### Board 4: IPs & LCs roles and rights

	<i>fully decoupled (multilateral)</i>	<i>multilateral based on SMTAs</i>	<i>hybrid (default = multilat. with bilat. option in 'attributable' cases)</i>	<i>automated 'big data'</i>
<i>positive</i>	<ul style="list-style-type: none"> <li>• More money (???)</li> <li>• Simplest (?)</li> <li>• Having secure and continuous funding</li> <li>• Inclusive distribution</li> </ul>	<ul style="list-style-type: none"> <li>• Clear terms, simpler than hybrid</li> <li>• More involvement depending on terms (?)</li> <li>• Would introduce contract not dependent on national laws</li> </ul>	<ul style="list-style-type: none"> <li>• More control depending on terms</li> <li>• More tailoring (!)</li> <li>• IPs &amp; LCs maintain rights</li> <li>• Compliant with Art. 8j and UNDRIPS Art. 31</li> <li>• Direct benefits</li> <li>• Autonomy over decision making</li> </ul>	<ul style="list-style-type: none"> <li>• Could generate a lot of funds that go to IPs &amp; LCs</li> <li>• More transparency</li> </ul>
<i>negative</i>	<ul style="list-style-type: none"> <li>• Losing control (!)</li> <li>• If money not upfront success not guaranteed</li> <li>• Conflict with IPs &amp; LCs values</li> <li>• Friction with UNDRIP Art. 31</li> <li>• No incentives for providers</li> </ul>	<ul style="list-style-type: none"> <li>• Legal uncertainty</li> </ul>	<ul style="list-style-type: none"> <li>• Greater transaction costs for administration</li> <li>• Less money (?)</li> </ul>	<ul style="list-style-type: none"> <li>• Very distant from IPs &amp; LCs and their governance systems</li> </ul>
	<ul style="list-style-type: none"> <li>• Ability to remove sequences that are discovered to have come from IPS &amp; LCs</li> <li>• Loss of proportional reward for contributions</li> </ul>			
	<ul style="list-style-type: none"> <li>• Avoidance (?)</li> </ul>			
<i>open questions</i>	<ul style="list-style-type: none"> <li>• How benefits will be distributed fairly and equitable</li> <li>• Governance and how IPs &amp; LCs are represented</li> <li>• Who is paying</li> <li>• What will be the role of providers in this?</li> </ul>	<ul style="list-style-type: none"> <li>• IPs &amp; LCs input on development of SMTA</li> <li>• Which SMTA terms and conditions would provide legal certainty for IPs &amp; LCs</li> </ul>	<ul style="list-style-type: none"> <li>• IPs &amp; LCs recognised nationally?</li> </ul>	<ul style="list-style-type: none"> <li>• Distribution of benefits entrusted at national/regional level should benefit IPs &amp; LCs</li> </ul>
			<ul style="list-style-type: none"> <li>• Practical implications depend on national contexts</li> </ul>	
			<ul style="list-style-type: none"> <li>• Are IPs &amp; LCs involved in the governance of the mechanism?</li> </ul>	

	<i>fully decoupled (multilateral)</i>	<i>multilateral based on SMTAs</i>	<i>hybrid (default = multilat. with bilat. option in 'attributable' cases)</i>	<i>automated 'big data'</i>
		<ul style="list-style-type: none"> <li>• How would IPs &amp; LCs be involved as direct beneficiaries?</li> </ul>		

## Complementing the identified implications

In order to clarify and comment on the implications and to improve mutual understanding

A Fishbowl discussion on the results of the preceding exercise allowed the participants to comment on and clarify the identified implications of the different possible systems, supporting mutual understanding. The discussion clearly showed the complexity of DSI implementation. Participants emphasized the need for clarity, trust-building, and justice-focused approaches involving all stakeholders.

- **Different perceptions and misunderstandings:** There are varying perceptions on terms like "transaction costs" leading to misunderstandings. The definition of what constitutes low or high transaction costs depends on the perspective and what is covered by the term.
- **Complexity of the different possible systems:** The archetypes are acknowledged as not mutually exclusive, leading to overlaps and diverse interpretations, for example the understanding of delinking access, benefit-sharing, and the final product.
- **Biodiversity as a global public good:** Biodiversity itself was not mentioned as an impact area, although it is the obvious one. The current use of biodiversity has to be seen as a market failure, highlighting the need for restructuring.
- **Transition away from track & trace (T&T):** There was a consensus to move away from T&T due to its cumbersome and costly nature.
- **Implementation challenges:** Participants debated which system was easiest to implement and politically feasible.
- **Limited technical knowledge:** Limited technical understanding of the archetypes requires time and capacity development. The practicality of the 'big data' approach remains difficult to assess due to insufficient understanding of the model itself.
- **Focus on resource mobilization:** A shift in focus from the system's efficiency to its potential for resource mobilization. Closing the funding gap was a significant concern, considering the possible reduction in Official Development Assistance (ODA) in the coming decade.
- **Private sector considerations:** Legal certainty and low transaction costs are crucial for the private sector. Concerns were raised about need to determine the commercial viability of a potential product, i.e. predictability regarding costs and timeframe, early in the innovation process.
- **Justice:** The perspective of justice seems lost, particularly concerning the involvement of IPs & LCs in the process. Governance issues are critical in this regard.
- **Avoidance of legal obligations:** Avoidance of legal regimes with complex and costly obligations was identified as a problem, especially regarding ABS obligations. DSI was seen as potentially exacerbating this issue.
- **Hybrid system recognition:** Consideration was given to exemptions and how countries could transition towards a multilateral system while respecting existing national regulations. The hybrid option acknowledges existing national systems in place. Concerns were raised about biodiversity-rich countries opting for bilateral systems, potentially generating fewer funds.
- **Need for trust:** Trust was deemed essential for innovation and negotiation processes. Trust-building requires more knowledge sharing, particularly related to private sector willingness to pay based on existing ABS agreements.
- **Undefined DSI:** The lack of a clear definition of DSI makes it challenging to assess its risk management capacity.

To conclude the exploration of practical implications of the various possible multilateral systems, a plenary discussion focused on identifying emerging trends or patterns from the discussions thus far, including the implications regarding political feasibility. Key points raised included:

- **Legally binding aspects:** Various approaches are possible, including a fully legally binding instrument like the Nagoya Protocol or a free-standing binding agreement outside the CBD, addressing private sector compliance and enhancing transparency to create a level playing field for all users.
- **Archetypes and creative solutions:** Archetypes are viewed as a basis for creative thinking, acknowledging that a realistic approach involving global participation is essential. None of the archetypes are finished. Some are not related to DSI alone. The discussion highlighted the importance of a hybrid system, considering national sovereignty embedded in CBD Art. 3. Closing loopholes, especially regarding avoidance (Art. 10), was deemed crucial. The African proposal also reflects a hybrid approach.
- **Political feasibility and public awareness:** A politically feasible solution is believed to exist but requires unveiling. Many DSI users are unaware of the issues involved, necessitating more awareness raising, information sharing and consultation.
- **Rights of IPs & LCs:** Differences between individual land rights and collective territorial rights, along with existing governance systems, will need more understanding of IPs & LCs rights to ensure legal and political certainty. Despite challenges, participants expressed hope for the involvement of IPs & LCs, especially in funding and capacity building.
- **Dealing with orphan DSI:** Concerns were raised about dealing with DSI of unknown origin. Political feasibility for a system respecting sovereign rights was emphasized. Text-based negotiations based on specific criteria were proposed.
- **Goal clarity and technological considerations:** The goal of DSI (benefits for all) is clear, but the extent remained uncertain. The lack of common understanding regarding the archetypes underscored the need for comprehensive, documented clarification, potentially facilitated by SCBD. Different options provide varying positive developments, especially in research and innovation. The discussion stressed the need for future-proof technology development, emphasizing linkages with synthetic biology.

## Connecting the dots: necessary linkages

### Relationships between different international fora

Gathering ideas for maximising synergies and avoiding conflict between overlapping or contradicting outcomes, participants worked in groups to identify potentially problematic as well as positive aspects about multiple international fora dealing with DSI. The results were collected in plenary:

Problematic aspects	Positive aspects
<ul style="list-style-type: none"> <li>• Different membership</li> <li>• Different stakeholders are involved in different fora &amp; different stages of negotiations</li> <li>• Different parties / people / timelines</li> <li>• Different timelines create confusion and delays</li> <li>• Timing / sequencing</li> <li>• Not taking advantage of high interest</li> <li>• Competing financial priorities</li> <li>• Different funds for different processes</li> <li>• Double payment</li> <li>• WHO PABS only for pandemic pathogens</li> <li>• Fragmentation</li> <li>• Fragmentation =&gt; different rules</li> </ul>	<ul style="list-style-type: none"> <li>• Tailored approaches</li> <li>• Different sectors don't have to wait</li> <li>• All organisations under the UN system – political clear process</li> <li>• Provide impetus (or pressure) for CBD</li> <li>• Opportunity to unify terminology?</li> <li>• Larger funding potential</li> <li>• Potential funding for diversified sectors</li> <li>• Potential common approach</li> <li>• Joined-up approach to complex system change</li> </ul>

Problematic aspects	Positive aspects
<ul style="list-style-type: none"> <li>• (Sectoral) use of benefit-sharing (IPs &amp; LCs) (conservation and sustainable use)</li> <li>• Enclosing IPs &amp; LCs in silos</li> <li>• Creating different rules could affect IPs' &amp; LCs' participation in DSI governance</li> <li>• Different industries interpret the same treaty differently (sometimes)</li> <li>• Different rules = lack of certainty</li> <li>• Overlapping creates confusion</li> <li>• Different terminology</li> <li>• Confusing terminology: DSI / GSD (genetic sequence data)</li> <li>• Difficult for researchers to use DSI if there are different systems</li> <li>• Lack of synchronised approach so far</li> <li>• DSI is not defined in the same way in different fora</li> <li>• Forum shopping</li> <li>• Things falling through the cracks</li> <li>• Threat to Nagoya Protocol?</li> <li>• Legal uncertainty (2x)</li> <li>• Complex governance</li> <li>• Institutional complexity</li> <li>• Potential inconsistent/stacking obligations</li> <li>• Oversimplification is a trap</li> </ul>	<ul style="list-style-type: none"> <li>• Points of intersection = common approach</li> <li>• Unify access – sectoralise at benefit-sharing</li> <li>• Awareness on the need for benefit-sharing</li> <li>• Raise awareness in all/different industries</li> <li>• Fragmentation allows experimentation under different fora</li> <li>• Forces different communities to dialogue</li> <li>• Responding to different challenges/needs</li> <li>• Broad sources for specialised expertise</li> <li>• Inspiration</li> <li>• Mutual learnings &amp; synergy from all fora</li> </ul>

The following plenary discussion on “What can be done to maximise synergies or minimise potential conflict?” brought about the following points:

- **Funding complexity:** Increasing the number of funds might not necessarily create more money. A single fund approach could provide a potential solution.
- **Scientific input:** Considerations of scientists' preferences were highlighted, debating whether there should be a unified database for all DSI or fragmented databases for different resources. Exploring options for use specific sections in INSDC was suggested.
- **Guiding principles:** Principles in COP Decision 15/9 should guide all fora discussing DSI.
- **Inter-forum collaboration:** Exploring the possibility of creating an inter-forum solution was suggested, but also challenges related to jurisdictional boundaries and generic laws for DSI were noted. The need for synchronicity among different fora and collaboration through entities like the Joint Liaison Group was emphasized.
- **Simplification and clarity:** Reduction of complexity was advocated through agreeing on terminology and clear, simple rules. The importance of knowing which rules apply was emphasized.
- **Maximizing synergies:** Secretariats should engage in the various processes, leading to cross-fertilization. The MBM could facilitate this, and the criteria lists could guide other forums.
- **Global public goods:** Discussions should address maximizing benefits for Global Public Goods.
- **Delinking benefit sharing:** Clarity on how and where money is spent was emphasized, especially concerning delinking benefit-sharing. The existing MLS for genetic resources of the Plant Treaty was noted, which will be overlaid by a MLS for data.
- **Legal and business certainty:** Legal and business certainty was stressed, especially concerning the rights of IPs & LCs. Intersection between fora was seen as necessary.
- **Fragmentation concerns:** Fragmentation in existing systems was identified, with reluctance of the private sector to disclose information. The risk of further fragmentation was noted, and proposals like the African Group's focus on the final retail step of product development for collecting benefits, were discussed.
- **Infrastructure and interoperability:** Recognition of the importance of interoperability, with a highlight on existing databases for specific purposes under the CGRFA.



These discussions showcased the diverse viewpoints and challenges faced in the management of DSI, emphasizing the need for international cooperation, clear guidelines, and equitable solutions.

### Capacity development in a multilateral system

Regarding "how to" make capacity development (CD) possible without bilateral MATs, five participants with different perspectives kickstarted the discussion with reflections on the question: "If CD is not a contractual obligation under bilateral MAT, how can it be ensured in a multilateral system?"

- **A negotiators' perspective:** The initial belief that CD for the use of DSI still remains a central point of agreement. There are questions about integrating CD into a multilateral system, especially considering the different applications of DSI. Medicinal applications often lead to skill development, and skills developed can be utilized in other research fields.
- **A science perspective:** Academia, industry, and international biotech should cooperate via platforms like the ABSCH for matchmaking among academia. There are concerns regarding brain-drain, emphasizing a need for partnerships, bioinformatics training, and international cooperation.
- **An agricultural perspective:** The Plant Treaty includes a requirement in the SMTA for sharing research information. Separate sections in the Treaty on CD and technology transfer involve sustainable use, farmers' rights etc. Indicators for non-monetary benefit-sharing and stocktaking of non-CGIAR activities are necessary.
- **An industry's perspective:** Companies can contribute to CD via participating in projects funded by MLS; however, clear goals for CD are needed. An MLS could potentially improve collaborations by a simplified legal framework. Companies are diverse and it would vary vastly how they will be able to contribute to CD, technology transfer and other global responsibilities.
- **An IPs & LCs perspective:** A multilateral benefit-sharing system is crucial for IPs & LCs. CD should reach diverse groups within IPs & LCs. Inclusion of IPs & LCs and women in fund related and CD activities is crucial. IPs & LCs should not be isolated but actively involved.

The following plenary discussion highlighted the complexity and importance of clear legal frameworks, funding mechanisms, and international collaboration in the context of CD for DSI:

- **CD perspectives:** Contractual and non-contractual CD is necessary. Providers should express their needs clearly. Both public and private entities can and should engage proactively in CD.
- **Civil society:** Civil society engagement in CD requires legal provisions. Proper regulation is vital to address issues related to DSI.
- **Challenges and future planning:** Clarification is required of what CD regarding DSI could or should entail. A balance between global objectives, indicators and matrices is necessary. Legal certainty is critical, with existing instruments providing a foundation for CD initiatives.
- **Meta-CD and technical dimensions:** CD involves both (1) understanding and managing DSI at policy level and (2) its technical aspects related to technology- and know how transfer to improve capacities on sequencing, upload/download, manage and utilize DSI. Further is necessary to clarify the distinction between CD as part of non-monetary benefit sharing and CD as an ODA contribution.
- **Historical context:** Previous attempts at CD discussions, e.g. technology transfer, were mentioned. Concrete discussions and decisions about funding and implementation are crucial.
- **Legal issues and governmental delays:** Concerns were raised about legal certainty and the possible delays caused by existing laws and regulations. Existing legal instruments were discussed, emphasizing the need for clear legal frameworks for CD initiatives.

### Implementing the Global Biodiversity Framework

To support implementation of the GBF and DSI-related elements of the COP 15 decisions, the final session of the meeting was used to brainstorm elements of a DSI roadmap to COP 16 (and beyond) at different levels: international, regional, national and stakeholders.

In another "merry-go-round" exercise four randomly mixed groups moved from flipchart to flipchart, collecting ideas for each level, with each group working on all four levels. Again, agreement with points made by other groups were indicated by "!", need for clarification by "?".

**Overall question: "To make progress on the road to a functioning DSI system, what needs to be done and by whom ...?"**

#### At international level

What	When	Who
Mechanisms for governance, contributions and distribution	COP 16	Negotiators
Focus and define informal process (IAG) incl. roadmap	WGBS-1	WGBS
Build inter-instrument dialogue	as soon as possible	Secretariats and Parties
Call to define/develop proposals for DSI system	WGBS-1 & WGBS 2 (narrow options)	Parties, stake- and rightsholders (call for outside proposals too)
Track 1.5 or 2 (informal) conversations	ongoing	Stake- and rightsholder, Parties
Accounting of work done at other levels	ongoing	
Analyse studies from SCDB	as soon as possible	
Testing options (modelling)	WGBS-2	Consultants (?), WGBS
Content think tank meetings (!)	ongoing	Creative thinkers (continuous group)
Systems thinking consultation at UN level (multidisciplinary)	WGBS	Outside the DSI family actors (IPs & LCs)
Consultations with international bodies		Negotiators, GEF, World Bank, UNFCCC donors
Discuss post COP 16 plans (next steps for COP 16 decisions through COP 16)	COP 16, post COP 16	Parties, stake- and rightsholders
Fund design	ongoing	Parties, stake- and rightsholders, private sector and development banks, GEF and others
M&E (indicators /shared indicators)	ongoing	Parties in coordination with other multilateral bodies
Activate offices/processes between international for a	as soon as possible	Secretariats (CBD etc.)
Discuss risks of failure	ongoing	
Get outside / independent evaluation (economic (sanity check, pressure test), impact on sectors, IPs &LCs)	before WGBS-2	OECD? (no agreement here)

#### At regional level (not necessarily linked to UN regions)

What	Who
Proposal(s) for the (draft) mechanism <ul style="list-style-type: none"> <li>• Dialogues: national vision =&gt; regional position</li> <li>• Information sharing</li> <li>• Sharing experiences, existing legislation/systems</li> <li>• Harmonisation of legislation in regions (? ! !)</li> <li>• Mapping of needs from national to regional (!)</li> </ul>	Existing regional leader/groups
Mapping of regional capacity/know how and gaps	
Digesting outcomes of WGBS-1	
Identifying commonalities between regions	
Stakeholder consultations	
Capacity building of IPs & LCs on data governance and of regions on data stewardship	
High level political interlinkages/trade-offs of various items	

Regional coordination on formalisation of database networks	
Regional funding for regional capacity building by regional banks or organisations	
Coordination across other international fora	Regional groups Government networks
Awareness raising in members of trade agreements	

### At national level

What
Stake- and rightsholder consultations, specifically focussing on women, youth, IPs & LCs, participation and involvement of all groups in the steps of the processes described below
CD to help people to understand DSI
Awareness raising
Cooperation and coordination between government departments (environment, health, agriculture, fisheries, treasury, economics, education, research, and a strong CBD NFP), Whole-of-Government approach
Whole-of-Society approach (Mainstreaming)
Assessment of the financial aspects of the current national ABS systems
National assessment of existing and new options for DSI benefit-sharing (e.g. open-access models)
Participation and involvement at regional and international processes
Developing national positions and proposals on DSI benefit-sharing
Strong commitment for implementing and enforcing a future COP decision on DSI, e.g. through national legislation
Responding to studies etc. from academia on ABS and DSI
Building high ambition on developing a DSI MLS contributing to Target 19
BBNJ ratification
National self-assessment of CD needs
Aligning DSI position / proposals in different fora, government needs to speak with one voice
Bilateral engagement with parties with similar approaches
Determining an entity for coordination of national activities
Ex-ante impact assessment of biodiversity effects of the DSI MLS / measures

### By stake- and rightsholders

What	Who
Awareness Raising / the expectations of the role of private sector in relation to COP 15 decision / process to users of DSI to allow them to be adequately involved	Governments Parliamentarians / policy makers Industry associations Umbrella academia associations and funding organisations
Policy capacity development / education of users of DSI	Governments NGO
Facilitation between stakeholder groups	NGO (TNC, IUCN, WWF)
Awareness raising / capacity development / education of users of DSI	
Awareness raising of consumers of biodiversity resource mobilisation necessity	Consumer organisation
Inputs to negotiations/negotiators on relevant technical issues	Academia Industry associations
Informing industry management and decision maker level on DSI process and expected role of private sector	Legal departments of enterprises Industry associations
Consultation For a if future draft MLM	Multistakeholder incl. IPs & LCs
Impact assessments by stakeholder groups of matures scenarios / options of multilateral mechanism implementation	All stakeholder groups
Building alliances, speaking with one voice	All stakeholder groups

Support alignment of processes / negotiations on DSI benefit-sharing in different fora (BBNJ/ITPGRFA/WHO/CBD)	Forum specific stakeholder groups
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The concluding plenary discussion focused on the international level, where participants highlighted the following points:

- Need for better understanding of the different possible systems (especially the automated big data approach) and common definitions of recurring terminology.
- Without a negotiation text on the table for the WGBS-1 meeting in Geneva agreement should be reached on an intersessional process between the two meetings of the WGBS including agreement on the questions to be clarified.
- Necessary informal consultations could be held online to save costs.
- Narrowing down the options based on criteria might be necessary to cope with the time constraints.
- Studies already commissioned by the SCBD will not include the new proposals as everything runs in parallel due to the time constraints.
  - Compilation of lessons learned as Inf-Doc before WGBS-1
  - Studies from §§20 and 23 ready for WGBS-2
- Coordination with the other fora will be essential to avoid a fragmented landscape. A more formal coordination process might be useful.

## Official closure

Participants thanked the ABS Initiative for the excellent facilitation of the meeting and for being part of the group.

**Gaute Voigt-Hanssen** (Norway), **Natalie Feltmann** (South Africa) and **Kim van Seeters** (Netherlands) highlighted that the rich and dense gathering with lots of exchange brought about very interesting ideas and contributed to know each other better. Now, with a steady ground under our feet, there is a mountain to climb with only 13 months left.

On behalf of the ABS Initiative, **Hartmut Meyer** expressed his gratefulness to all participants for the open and constructive discussion on difficult topics and looked forward to seeing each other again in Geneva.

## Annex 1: Agenda of the meeting

# International Retreat on Digital Sequence Information on Genetic Resources (DSI)

*hosted by the  
Government of The Netherlands and the Government of Norway  
in cooperation with  
the ABS Capacity Development Initiative  
25<sup>th</sup> to 27<sup>th</sup> October 2023, Den Haag, The Netherlands*



## Draft Agenda

25 <sup>th</sup> October 2023: DSI – a pathway for global justice and sustainable development?	
10:00	<b>Registration</b>
10:30	<b>Setting the scene</b> <ul style="list-style-type: none"><li>• Official welcome; technical introduction</li></ul> <b>Opening reflection: The big picture</b> <ul style="list-style-type: none"><li>• Underlying principles of benefit-sharing</li></ul> <i>Input and discussion</i>
12:30	Lunch
14:00	<b>Update on international processes</b> <ul style="list-style-type: none"><li>• DSI in various international fora: "From Montreal to Oslo"</li></ul> <i>Input, group and plenary discussion</i>
15:30	Coffee / Tea
16:00	<b>Outcomes of COP 15: Global implications</b> <ul style="list-style-type: none"><li>• Interrelationships between various components of CBD decisions, esp. the GBF</li></ul> <i>Input, group and plenary discussion</i>
17:30	End of day's programme
18:30	<b>Reception</b>

<b>26<sup>th</sup> October 2023: Practical implications of possible multilateral systems</b>	
<b>09:00</b>	<p><b>Overview of four main possible systems</b></p> <ul style="list-style-type: none"> <li>Fully decoupled; Multilateral based on SMTAs; Multilateral with bilateral options; Automated 'big data' system</li> </ul> <p><b>Overview of four important impact areas</b></p> <ul style="list-style-type: none"> <li>Global public goods; Research &amp; innovation; Benefits &amp; transaction costs; IPs &amp; LCs</li> </ul> <p><i>Input, Q&amp;A</i></p>
<b>10:30</b>	Coffee / tea
<b>11:00</b>	<p><b>Identifying practical implications</b></p> <ul style="list-style-type: none"> <li>4 x 4: four possible systems and their implications on the four impact areas</li> </ul> <p><i>Group work</i></p>
<b>12:30</b>	Lunch
<b>14:00</b>	<p><b>Further exploring the implications</b></p> <ul style="list-style-type: none"> <li>Clarifications and comments</li> </ul> <p><i>Fish bowl discussion</i></p>
<b>15:30</b>	Coffee / Tea
<b>16:00</b>	<p><b>Outcomes of COP 15: Global implications</b></p> <ul style="list-style-type: none"> <li>Overall observations, identifying possible trends or patterns</li> </ul> <p><i>Plenary discussion</i></p>
<b>17:30</b>	End of day's programme
<b>18:30</b>	<b>Joint dinner</b>

<b>27<sup>th</sup> October 2023: Connecting the dots: necessary linkages</b>	
<b>09:00</b>	<p><b>Relationships between different international fora</b></p> <ul style="list-style-type: none"> <li>Gathering ideas around maximising synergies and avoiding conflict</li> </ul> <p><i>Group and plenary discussion</i></p>
<b>10:30</b>	Coffee / tea
<b>11:00</b>	<p><b>Capacity development &amp; technology transfer in a multilateral system</b></p> <ul style="list-style-type: none"> <li>Collecting ideas for making CD &amp; TT possible without bilateral MATs</li> </ul> <p><i>Group and plenary discussion</i></p>
<b>12:00</b>	Lunch
<b>13:30</b>	<p><b>Implementing the Global Biodiversity Framework</b></p> <ul style="list-style-type: none"> <li>Brainstorming elements of a DSI roadmap</li> </ul> <p><i>Group and plenary discussion</i></p>
<b>15:15</b>	<b>Official closure</b>
<b>15:30</b>	Coffee / tea and farewell
<b>16:00</b>	End of the retreat, departures

## Annex 2: Presentation by Timothy Hodges



# THE BIG PICTURE AND THE UNDERLYING PRINCIPLES OF BENEFIT SHARING

## A Critical Overview of Context and Commitments

Informal Retreat on  
Digital Sequence Information on Genetic Resources (DSI)

The Hague  
25 October 2023

Timothy Hodges  
Professor of Practice  
Global Governance



## Genesis

1987

Bruntland Commission Report explored the causes of environmental degradation, attempted to understand the interconnections between **social equity, economic growth, and environmental problems**, and developed policy solutions that integrated all three areas.

### Early 1990s

UNEP Governing Council created an "Ad Hoc Working Group of Legal and Technical Experts" to prepare a new international legal instrument for the conservation and sustainable use of biological diversity. It was mandated to take "particular account of the need to share **costs and benefits between developed and developing countries** and ways and means to support innovation by local people."





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# The Convention on Biological Diversity

?



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## Nature of CBD – The First Global Sustainable Development Treaty



Courtesy:  
ISD



## CBD is Sustainable Development (SD)

Embracing key tenets of SD

- Environment
- Economic, social and cultural development
- Justice, ethics and rights



Courtesy: ISSD



## CBD Objectives

The fair and equitable **sharing of the benefits** arising out of the utilization of genetic resources, including **by appropriate access** to genetic resources and **by appropriate transfer of relevant technologies**, taking into account all rights over those resources and to technologies, and by appropriate funding.

The **sustainable use** of the components of biological diversity

The **conservation** of biological diversity



ISSD



## CBD Preamble Excerpts

*Acknowledging that the provision of new and additional financial resources and appropriate access to relevant technologies can be expected to make a substantial difference in the world's ability to address the loss of biological diversity,*

*Acknowledging further that special provision is required to meet the needs of developing countries, including the provision of new and additional financial resources and appropriate access to relevant technologies,*

*Noting in this regard the special conditions of the least developed countries and small island States,*

*Acknowledging that substantial investments are required to conserve biological diversity and that there is the expectation of a broad range of environmental, economic and social benefits from those investments,*

*Recognizing that economic and social development and poverty eradication are the first and overriding priorities of developing countries.*



## THE GRAND BARGAIN OF THE CBD V.1

Sharing the benefits derived from  
utilization

IN EXCHANGE  
FOR

Access to genetic resources







## THE GRAND BARGAIN OF THE CBD V.2

Recognition of sovereignty over  
biological resources



Conservation of biodiversity



## THE GRAND BARGAIN OF THE CBD V.3

Sharing benefits from the  
use of genetic resources

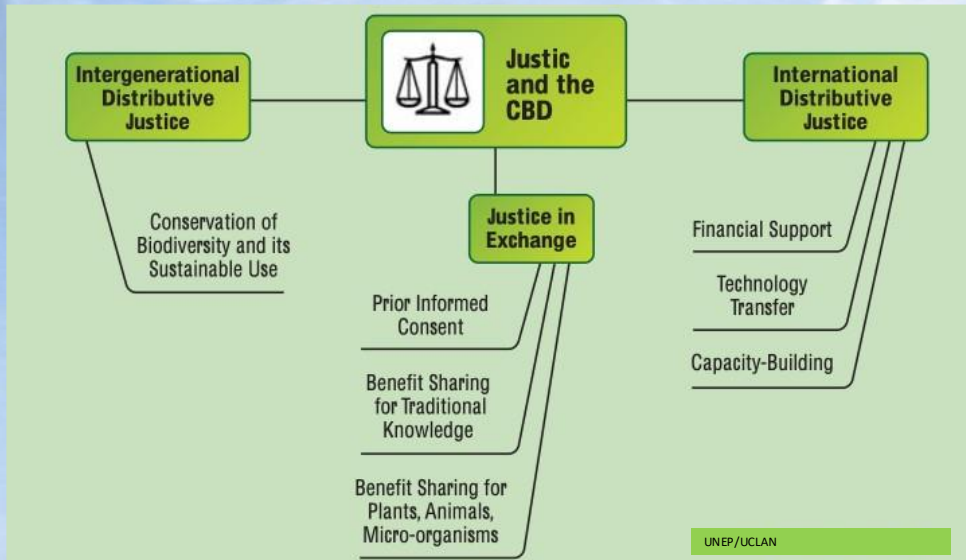


Conservation of Biodiversity





## Justice, Conservation & Sustainability



## CBD Multiple Challenges to Confront

- Multilateral malaise
- Complexity
- Ministerial silos, CBD silos
- Non-anticipatory in structure
- Flexibility in implementation
- Collaborate vs. regulate models
- Capacity building?
- Negotiators



ISSD



## Multilateral Reality Check for DSI Negotiator

- Limits to growth and to human capacity -- “The Great Derangement” and dealing with the unthinkable
- Geopolitical realities: Where have the global leaders gone?
- + The power of indivisible thinking and the Indigenous world view
- + The power of justice: human rights, ‘ecocide’
- + The power of individuals



## What is Benefit Sharing

Linguistically:

Benefit sharing is the action of giving a portion of advantages/profits to others

Legally:

Benefit sharing is the exchange between those who grant access to a particular resource and those who provide compensation or rewards for its use.





## Justification for Benefit Sharing

Normative :

Article 15(1) identifies the conservation of biological diversity as “a common concern of humankind”

WSSD agreed, in short, without fair benefit sharing the conservation and sustainable use of (non-human) genetic resources will continue to be at risk.

- This is a mutual benefit approach – in Aristotelian terms we would call it “commutative justice”, where each party gives one thing and receives another, with a focus on the equivalence of the exchange.



## Benefit Sharing: The DSI Connection

*“Beyond the requirement for a just exchange, the CBD also delivers an instrumental reason for compliance (beyond staying within the law). The protection of biodiversity is in the selfinterest of humankind. The loss of biodiversity threatens our food supplies, opportunities for recreation and tourism, and sources of wood, medicines and energy. It also interferes with essential ecological functions.”*

D Schroeder

- Benefit sharing is a tool
- For what? To achieve justice



## Kunming-Montreal Global Biodiversity Framework(KMGBF)

### Goals:

- Halting human-induced extinction of threatened species and reducing the rate of extinction of all species tenfold by 2050
- Sustainable use and management of biodiversity to ensure that nature's contributions to people are valued, maintained and enhanced
- **Fair sharing of the benefits from the utilization of genetic resources, and digital sequence information on genetic resources**
- Adequate means to implement GBF for be all Parties, particularly Least Developed Countries and Small Island Developing States



## Kunming-Montreal Global Biodiversity Framework(KMGBF)

- Phasing out subsidies that harm biodiversity, by at least \$500 billion per year
- **Mobilizing at least \$200 billion per year from public and private sources for biodiversity-related funding**
- **Raising international financial flows from developed to developing countries to at least US\$ 30 billion per year**
- Requiring transnational companies and financial institutions to monitor, assess, and transparently disclose risks and impacts on biodiversity through their operations, portfolios, supply and value chains







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## COP15 Decision 9

*16. Decides to establish, as part of the Kunming-Montreal Global Biodiversity Framework, a multilateral mechanism for benefit-sharing from the use of digital sequence information on genetic resources, including a global fund;*



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## Leadership: ABS, DSI,

October 2010, Nagoya, Aichi Prefecture, Japan



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## Three Questions

- How well has the CBD delivered on its benefit sharing objective?
- What is the biggest impediment to achieving a functioning multilateral mechanism?
- What would you do to overcome this impediment :  
In your current role? If you were in charge?

## Annex 3: Presentation by Hartmut Meyer

The slide features a background of a stylized DNA double helix with colored nodes (blue, yellow, red, green) and a network of grey lines connecting circular nodes. At the top, it displays the logos for 'THE ABS CAPACITY DEVELOPMENT INITIATIVE' and 'L'INITIATIVE DE RENFORCEMENT DES CAPACITES POUR L'APA'. The main title is 'Overview of DSI and benefit-sharing in international fora'. Below this, it states '2nd Informal DSI Retreat' and 'The Hague, The Netherlands, 25.-27.10.2023'. The presenter is identified as 'Hartmut Meyer' from the 'ABS Capacity Development Initiative'. At the bottom, there are logos for funding and implementation partners: 'Funded by' (German Federal Ministry for Economic Cooperation and Development, Norwegian Ministry of Foreign Affairs, Swiss Confederation, and German Federal Government) and 'Implemented by' (giz - Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH).

## International DSI Process



### CBD / Nagoya Protocol

- COP 13 2016: big “DSI bang” with decision on information gathering and studies
- COP 14 2018: negotiations with decision on “ how to address DSI in the context of the post-2020 GBF ” and studies on specific topics
- AHTEG 2 2020: options for operational terms and key areas for capacity-building
- **COP 15 2022: Decision on multilateral system for DSI benefit -sharing**
  - The benefits from the use of DSI should be shared fairly and equitably
  - Establishes a multilateral mechanism for benefit-sharing from the use of DSI as part of the KM -GBF

### Other Fora

- **WIPO standard on DSI in patent applications**
- **UNCLOS BBNJ agreement on marine GR and DSI benefitsharing**
- **WHO Pandemic Treaty(negotiations on pathogene and genomic data benefit -sharing)** & Pandemic Influenza Preparedness Framework
- **FAO ITPGRFA and CGRFA(studies, negotiations on inclusion of DSI in the SMTA of the IT, no DSI proposal for 10<sup>th</sup> Meeting of the IT Governing Body in Nov 2023)**

25.10.2023

2nd International DSI Retreat

# Convention on Biological Diversity / Nagoya Protocol



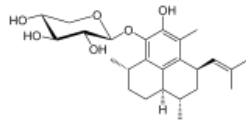
- Covers all organisms and viruses within national jurisdiction for any use
- Main focus in the context of DSI is on various applications in taxonomy, ecology, physiology, genetics, industrial biotechnology, cosmetics, drug development
- Modalities of multilateral system on benefit sharing from the use of DSI are under negotiations, DSI fund for monetary benefits could be established under GEF, modalities on the sharing of non -monetary benefits still to be negotiated



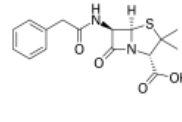
DNA



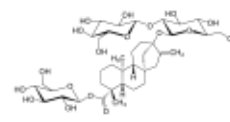
Proteins



Pseudoaterosin A  
*Pseudoaterogorgia* soft coral  
Cosmetics



Penicillin G  
*Penicillium* molds  
Antibiotics



Stevioside  
*Stevia* plant  
(Traditional) Sweetener

25.10.2023

2nd International DSI Retreat

3

# UNCLOS agreement on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction



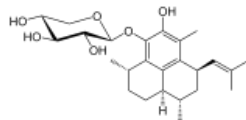
- Covers all activities with respect to marine genetic resources and digital sequence information on marine genetic resources of areas beyond national jurisdiction
- Light on the access side, heavy on the benefit -sharing side: Access to DSI is defined as non -monetary benefit-sharing, different kinds of monetary benefit -sharing adopted
- Developed in synergy with the Kunming - Montreal Global Biodiversity Framework



DNA



Proteins



Pseudoaterosin A  
*Pseudoaterogorgia* soft coral  
Cosmetics



25.10.2023

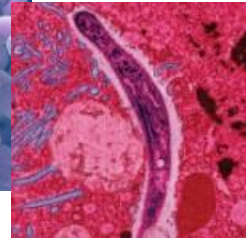
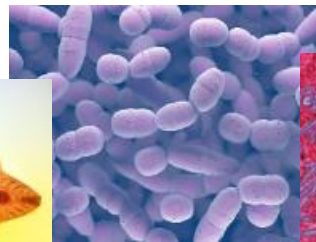
2nd International DSI Retreat

4

# Draft WHO CA+ on pandemic prevention, preparedness and response



- Covers pathogens with pandemic potential used to produce pandemic-related products, such as medicines
- Foresees multilateral system on benefit-sharing for pathogens, genetic sequences, products
- Products come from utilisation of pathogen genetic sequences, components and related information; benefit-sharing includes utilisation of DSI
- Parties will upload DSI of pandemic pathogens in “one or more publicly accessible database(s) of its choice”, utilisation of this DSI could be outside of the scope of the CA+ multilateral system on benefit-sharing and could fall under the CBD system



25.10.2023

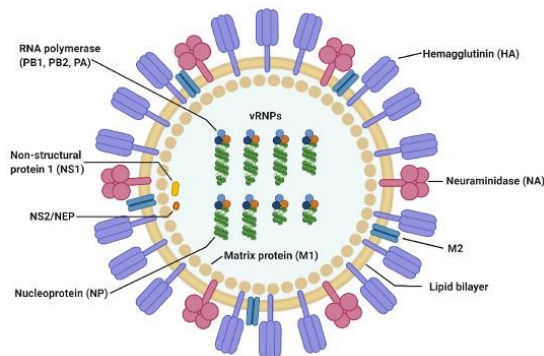
2nd International DSI Retreat

5

# WHO Pandemic Influenza Preparedness Framework



- Covers influenza viruses with pandemic potential and equitable access to vaccines and other benefits. Other benefits include the Partnership Contribution, diagnostics and other pandemic-related supplies
- The 2016 PIP Framework Review Group recommended including genetic sequence data in the definition of PIP biological materials but Member States have not yet reached a decision



25.10.2023

2nd International DSI Retreat

6



# FAO International Treaty on Plant Genetic Resources for Food and Agriculture



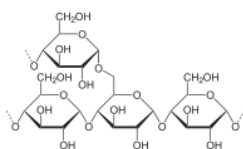
- Covers plants when used for food and agriculture, multilateral system for facilitated access to a gene pool of more than 1,4 million accessions
- Main focus of DSI use is plant selection and breeding (identifying genes, analysing genomes, understanding patterns of heredity as well as recombination and engineering of genes)
- DSI is hotspot in negotiations on the enhancement of the Multilateral System of ABS, formal negotiations group re-established in 2022 with high priority to DSI agreed upon, checkpoint of negotiations at the 10th meeting of the Governing Body in Nov 2023.



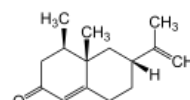
DNA



Proteins



Starch  
all plants  
energy component



Nootkatone  
*Citrus* plants  
food aroma

25.10.2023

2nd International DSI Retreat

7

## Annex 4: Presentation by Suhel al-Janabi

THE ABS  
CAPACITY  
DEVELOPMENT  
INITIATIVE



L'INITIATIVE DE  
RENFORCEMENT  
DES CAPACITES  
POUR L'APA



### DSI relevant outcomes of COP 15

25 October 2023

The Hague

Suhel al-Janabi

Funded by



Implemented by


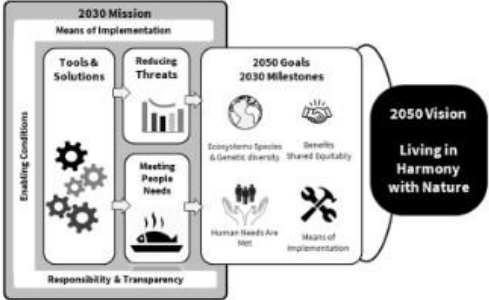



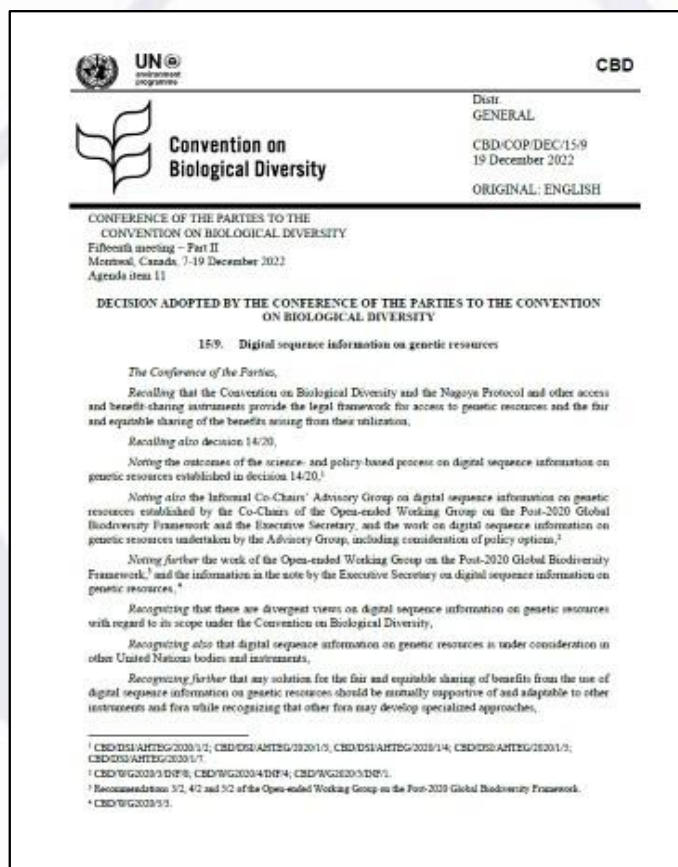
Schweizerische Eidgenossenschaft  
Confédération suisse  
Confederazione Svizzera  
Confederaziun svizra

Swiss Confederation  
Federal Department of Economic Affairs,  
Education and Research (SECO)  
State Secretariat for Economic Affairs (SECO)

## Content

- COP / MOP Decisions related to DSI
- DSI in the KM-Global Biodiversity Framework





CBD/COP/DEC/15/9

✓ **Benefits from use of DSI should be shared fairly and equitably solution to be developed**

- Divergent views on concept/ scope of DSI under CBD
- DSI also considered in other UN bodies- CBD solution to be supportive / adaptable
- Importance of Capacity B/D , tech-transfer, scientific cooperation
- Importance for KMGBF
- BS on DSI „wide ranging“ solution for RM / innovative revenue generation
- Value of depositing DSI data in public databases
- FAIR, CARE, OECD data governance, UNESCO Recommendation on Open Science
- Differences between public/ private databases
- T&T of all DSI not practical
- More DSI with metadata in public databases
- Multilateral approach on DSI BS potential to meet criteria



CBD/COP/DEC/15/9

#### 9 + 1 criteria

- (a) Be **efficient, feasible and practical**;
- (b) Generate **more benefits**, incl. monetary / non-monetary, **than costs**;
- (c) Be **effective**;
- (d) Provide **certainty and legal clarity** for providers and users of DSI;
- (e) Not hinder **research and innovation**;
- (f) Be consistent with **open access to data**;
- (g) Not be **incompatible** with international legal obligations;
- (h) Be **mutually supportive** of other access and benefit-sharing instruments;
- (i) Take into account the **rights of IPLC** including with respect to a TK associated with genetic resources that they hold

***Monetary / non-monetary benefits to be used to support conservation and sustainable use; and inter alia IPLC***

CBD/COP/DEC/15/9

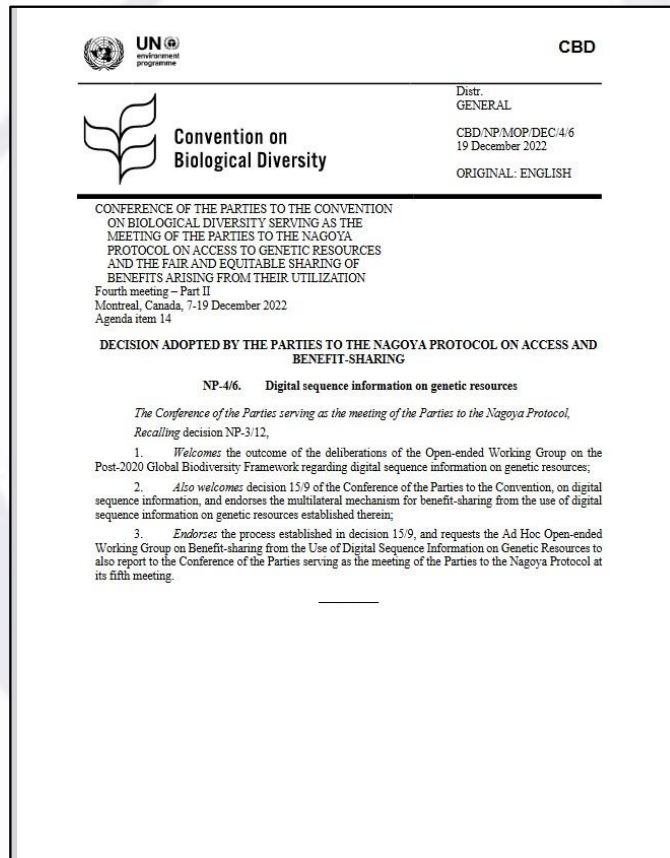
*Decides* to establish, as part of the Kunming-Montreal Global Biodiversity Framework, **a multilateral mechanism for benefit-sharing** from the use of digital sequence information on genetic resources, including a global fund;

*Also decides* to establish a fair, transparent, inclusive, participatory and **time-bound process** to further develop and operationalize the mechanism, as outlined in paragraphs 18 and 20 to 22 below, **to be finalized at the sixteenth meeting of the Conference of the Parties**

*Decides* to **review the effectiveness of the multilateral mechanism at COP 18** including, inter alia, the criteria laid out in paragraphs 9 and 10 of the present decision;

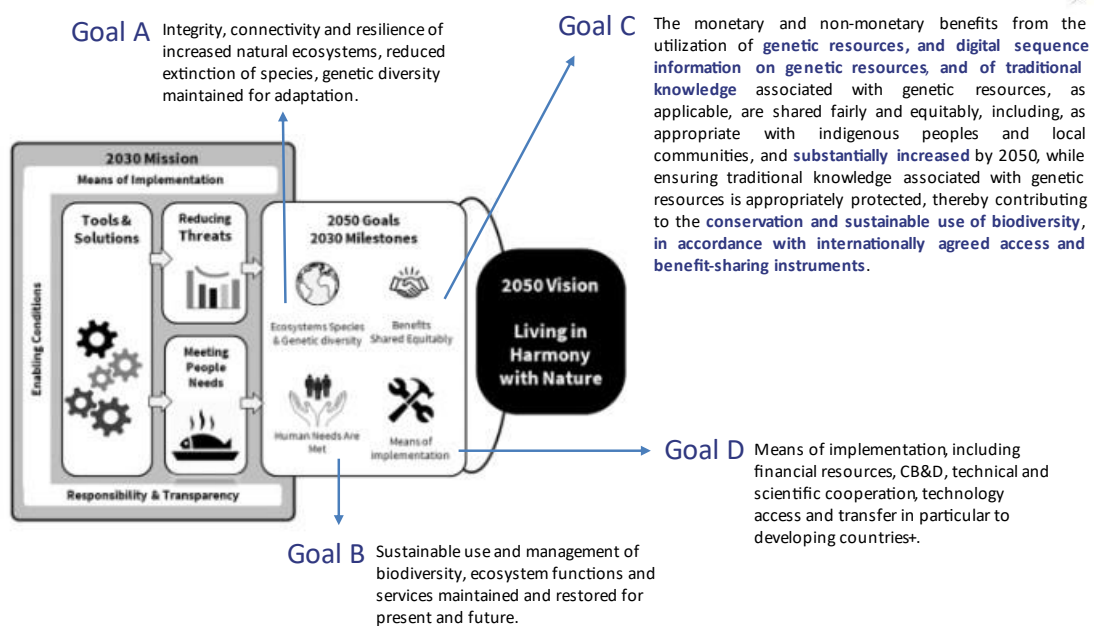
#### **Instruments:**

- OEWG
- Submissions / synthesis of views
- Lessons learnt from funding mechanisms
- Study: how all MLM / other options meet criteria;
- Study: options for revenue-generating measures at different points along the value chain, feasibility of implementation, cost / revenue



## The Global Biodiversity Framework

### Kunming-Montreal Global Goals for 2050 (long-term)



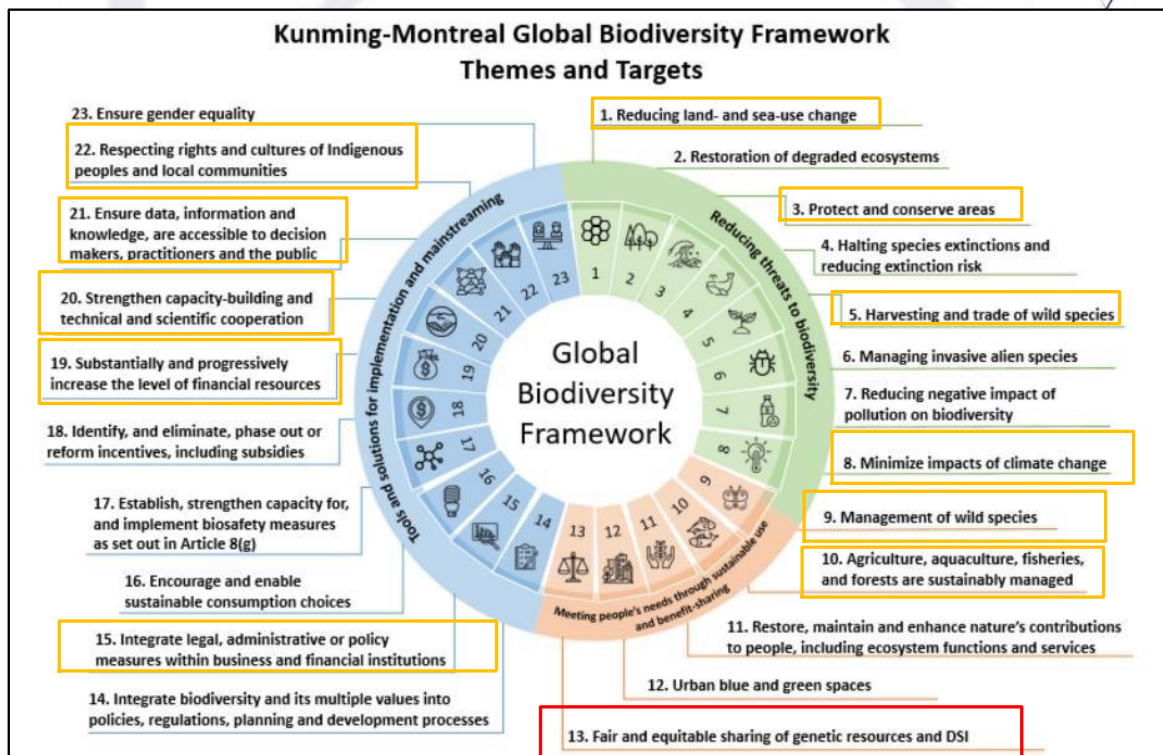


## Goal C

*The monetary and non-monetary benefits from the utilization of genetic resources, **and digital sequence information** on genetic resources, and of traditional knowledge associated with genetic resources, as applicable, are shared fairly and equitably, including, as appropriate with indigenous peoples and local communities, and substantially increased by 2050, while ensuring traditional knowledge associated with genetic resources is appropriately protected, thereby contributing to the conservation and sustainable use of biodiversity, in accordance with internationally agreed access and benefit-sharing instruments.*

### Target 13

*Take effective legal, policy, administrative and capacity-building measures at all levels, as appropriate, to ensure the fair and equitable sharing of benefits that arise from the utilization of genetic resources **and from digital sequence information** on genetic resources, as well as traditional knowledge associated with genetic resources, and facilitating appropriate access to genetic resources, and by 2030, facilitating a significant increase of the benefits shared, in accordance with applicable international access and benefit-sharing instruments.*



Source : Environment and Climate Change Canada , May, 2023

# Thank you!

*Further information can be found on our website:*

[www.abs-biotrade.info](http://www.abs-biotrade.info)

ABS Capacity Development Initiative  
Division Climate Change, Environment & Infrastructure  
GloBe - Department Sector and Global Programmes

Deutsche Gesellschaft für  
Internationale Zusammenarbeit (GIZ) GmbH  
Postfach 5180  
65726 Eschborn  
Germany



## Annex 5: Presentation by Paul Oldham



### When Access Met Benefit-Sharing

- Access: "I'm Difficult!"
- Benefit-Sharing: "You're Challenging"

OR:

- Benefit-Sharing: "I'm Difficult!"
  - Access: "You're Challenging"
- 
- Conclusion: "We are both quite challenging"

The famous scene where Sally declares "I'm difficult!" and Harry responds "You're challenging" perfectly describes the ABS relationship



### WHEN HARRY MET SALLY | 1989

DIRECTED BY ROB REINER  
WRITTEN BY NORA EPFRON  
PRODUCED BY ROB REINER AND ANDREW SCHEINMAN  
STARRING BILLY CRYSTAL, MEG RYAN AND CARRIE FISHER  
WITH BRUNO Kirby, STEVEN FORD, LISA JANE PERSKY AND MICHELLE NICASTRO  
RUNNING TIME: 95 MINUTES



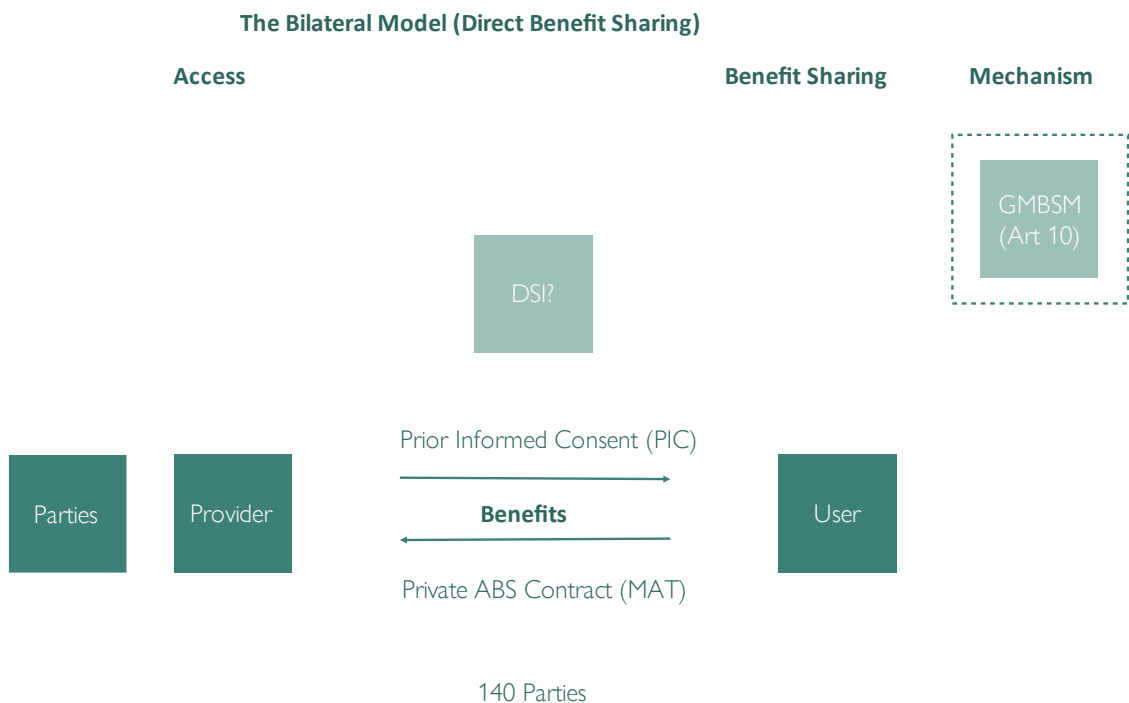
Image: Columbia Pictures



# Direct & Indirect Benefit-Sharing Models

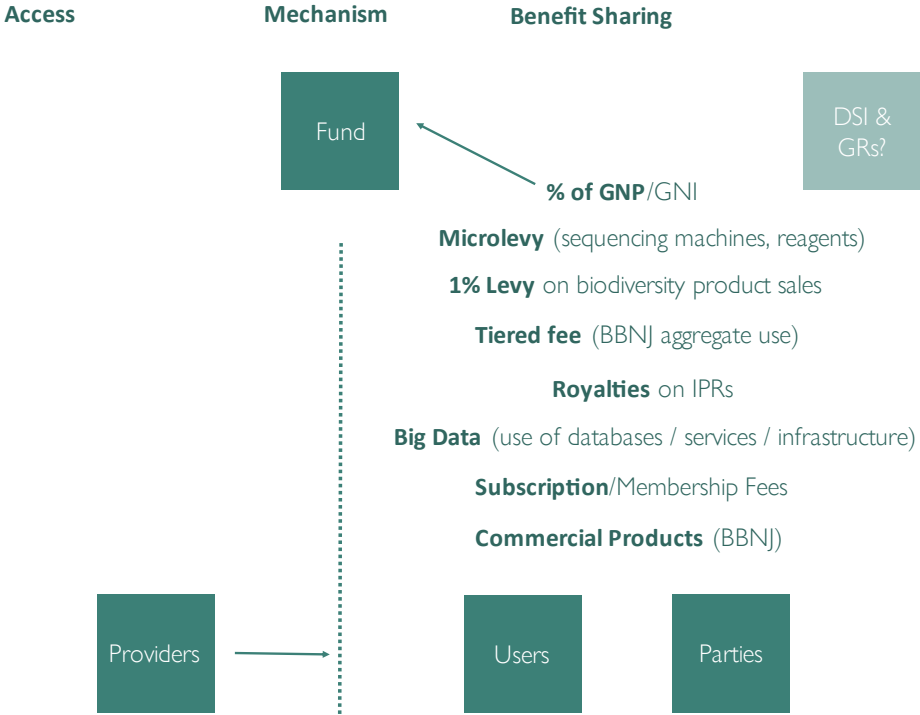
- [Bilateral]
- 1. Decoupling/Delinking
- 2. Standard Material Transfer Agreements (SMTA x 2)
- 3. Hybrid
- 4. Automated Big Data

The terms direct and indirect benefitsharing might be clearer than bilateral/multilateral. The question is not whether there should be benefit-sharing but the appropriate routes for benefit-sharing.



# Decoupling/ Delinking

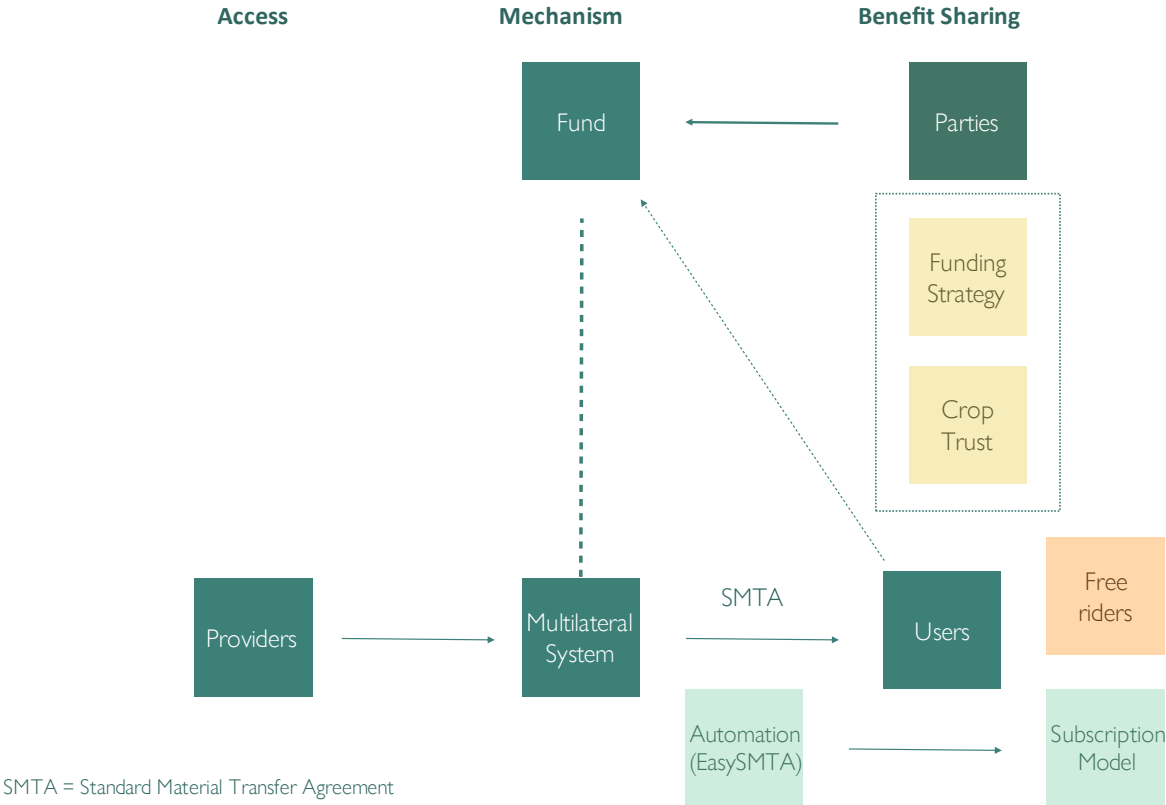
## Decoupling/Delinking Access from Benefit -Sharing (Indirect Benefit Sharing)



There are degrees of decoupling/delinking from biodiversity in the various proposals. The ordering is rough from the bottompu

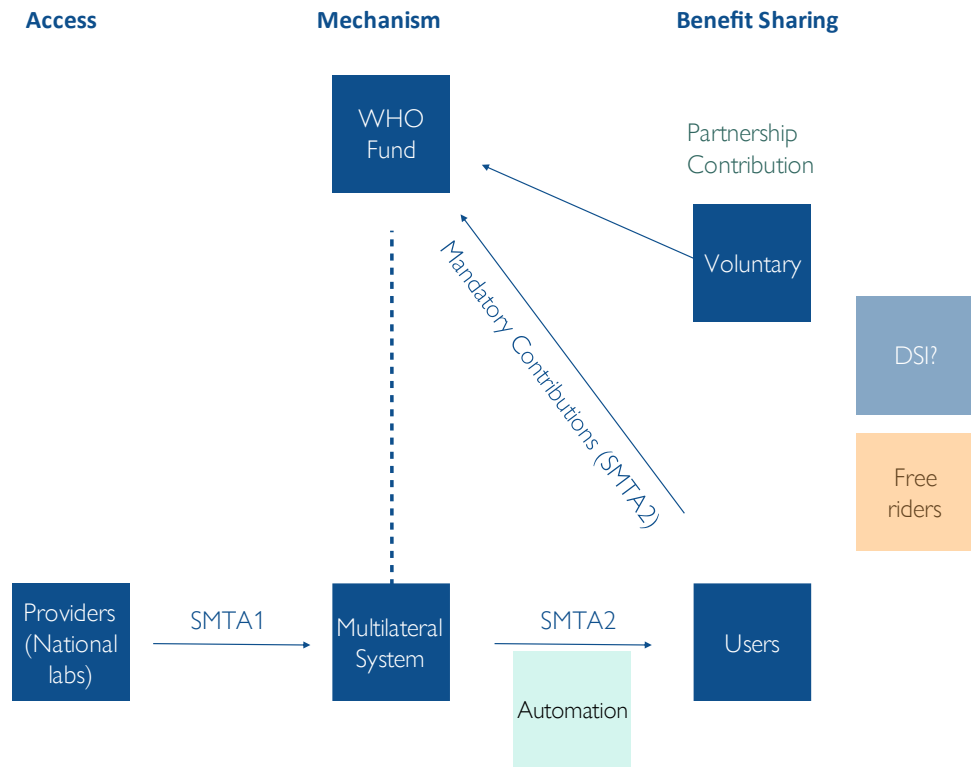
# SMTA

## SMTA Archetype: Plant Treaty (Indirect Model)



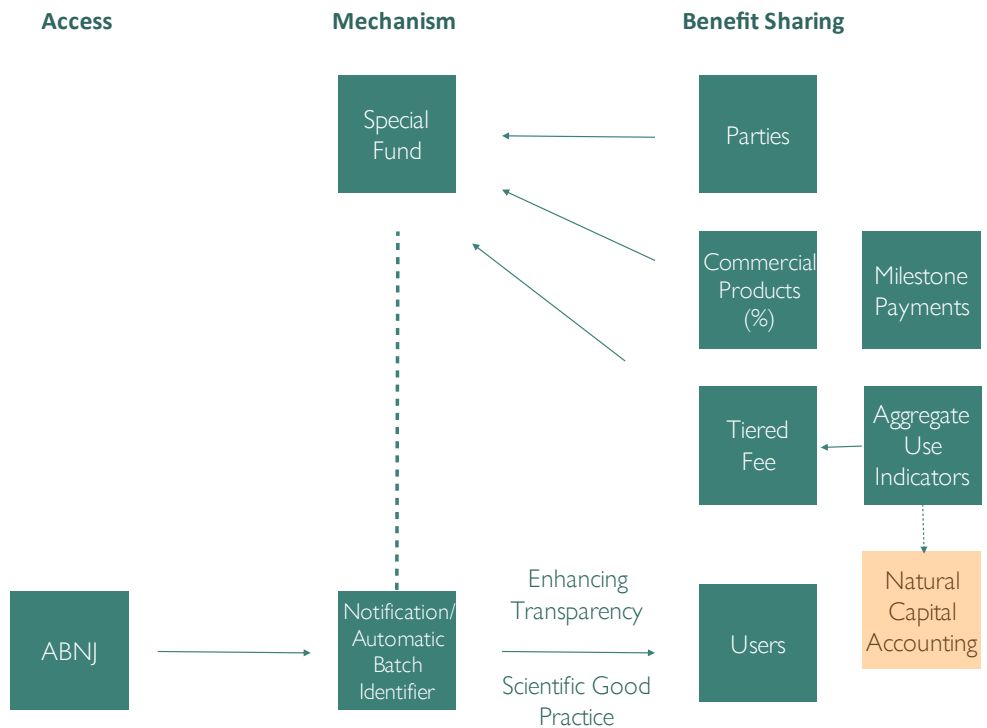


**SMTA Archetype: WHO 2011 PIP & PABS (ongoing) (Indirect Model)**



PIP Framework 2011. Negotiating Text WHO Pandemic Agreement 16 October 2023 version-hampton et al 2023 'Equity' in the Pandemic Treaty: The False Hope of 'Access and Benefit Sharing'.

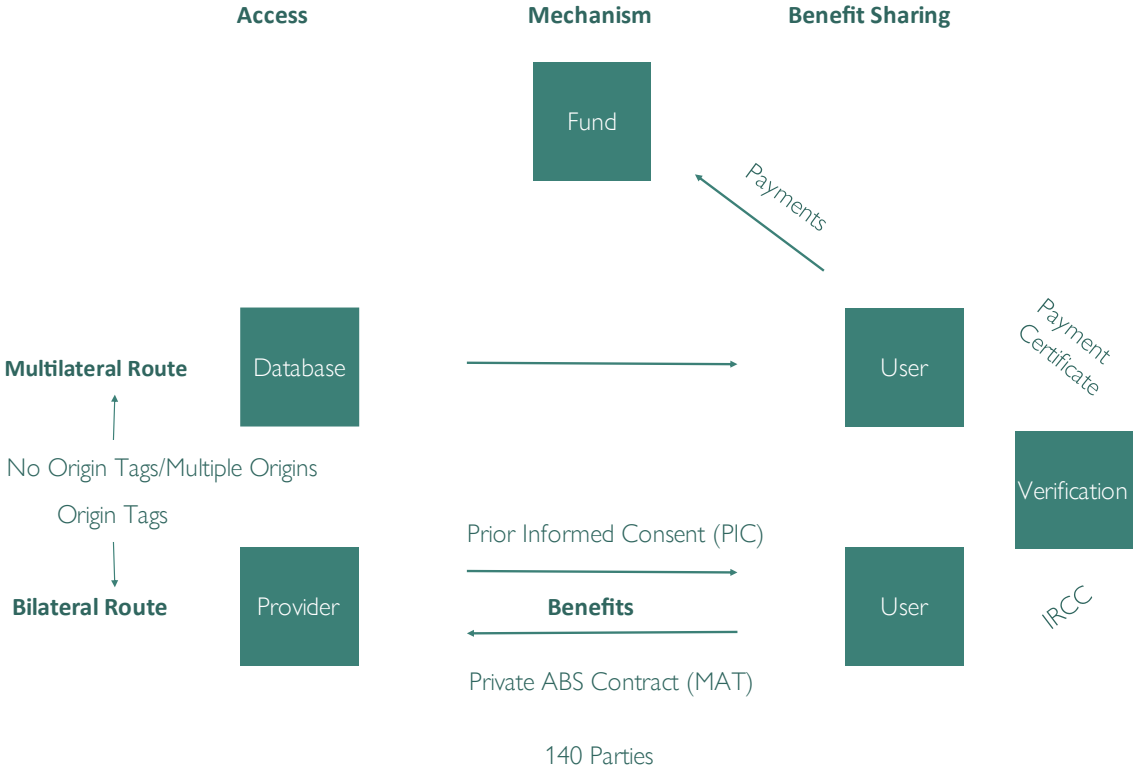
**BBNJ/High Seas Treaty (Indirect Model)**



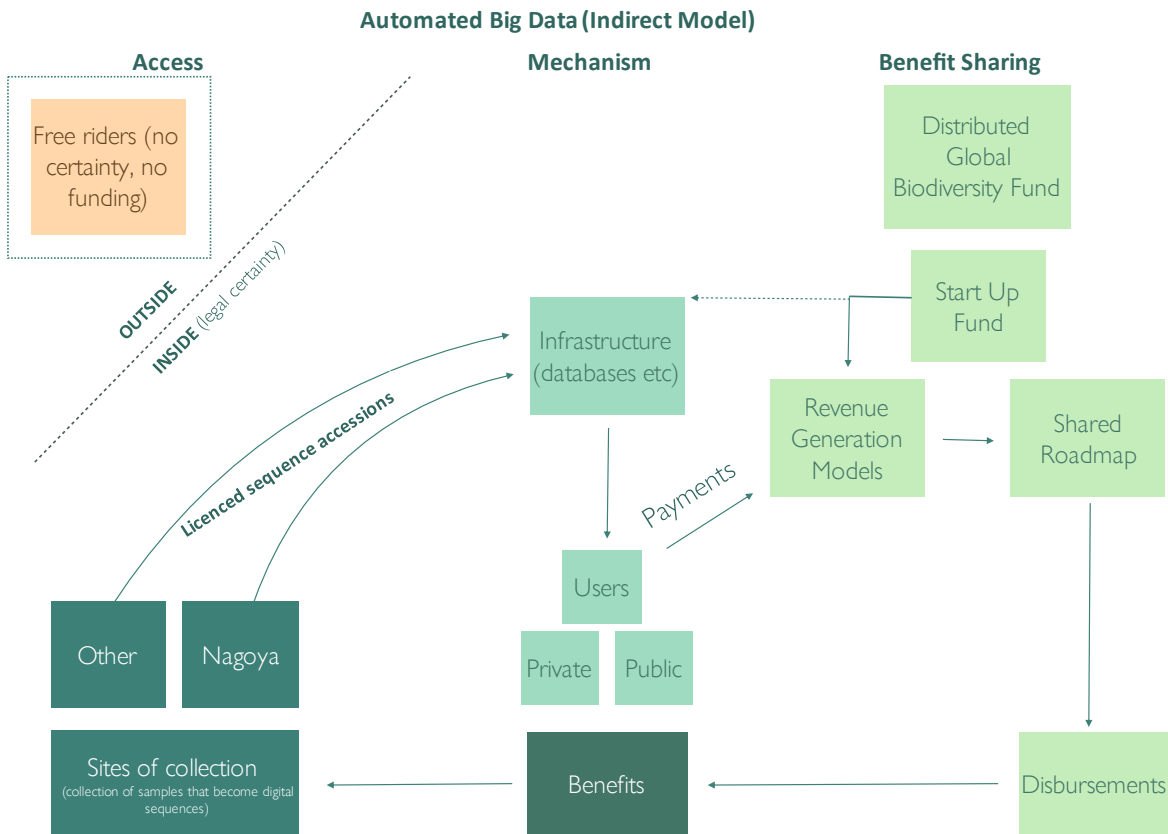
UNGA [High Seas Treaty](#) (adopted 19 June 2023). Oldham et al 2023 [DSI in the UN High Seas Treaty](#).  
Thambisetty et al 2023 [Developing State Positions in the Making of the BBNJ Treaty: An Expert Briefing Document on Marine Genetic Resources](#)

# Hybrid

## Hybrid (Direct & Indirect Model)



# Big Data



Use of terms: Other = Sequence data originating outside national jurisdictions (e.g. UNCLOS ABNJ/BBNJ) & from non-parties to the Nagoya Protocol.

Source: Oldham & Kindness (2022) Sharing Digital Sequence Information: Study for the European Commission. <https://doi.org/10.5281/zenodo.6557191>



## Flexible Solutions

Some parties may prefer a cake without tiers, others might prefer chocolate cake with coconut on the side and others might not like chocolate or coconut [or cake].

Sally describes their wedding cake. Image: Columbia Pictures.



## Thinking About Time Frames

Some elements of the eventual solution may take longer than others to implement... could some kind of 'phases' make sense in building trust and experience?

Sally explains that they marry 3 months after meeting on New Years Eve. Harry points out it took a while longer. Image: Columbia Pictures.



Thank You!

## Annex 6: Presentation by Pierre du Plessis

THE ABS  
CAPACITY  
DEVELOPMENT  
INITIATIVE

L'INITIATIVE DE  
RENFORCEMENT  
DES CAPACITES  
POUR L'APA

# International Retreat on Digital Sequence Information on Genetic Resources (DSI)

The Hague, The Netherlands, 25. – 27.10.2023

*Themes / impact areas / perspectives to consider*  
*Pierre du Plessis, Technical Advisor*

Funded by

Implemented by

## Practical implications of possible multilateral archetypes, assessed from different angles



### Four themes / impact areas / perspectives to consider:

- Global public goods (health, food security, adaptation to climate change)
- Research and innovation
- Non-monetary benefits; transaction costs; monetary benefits
- IPs & LCs roles and rights

**A thinking tool, not a comprehensive analysis!**

**Will be used to construct a matrix:**

Theme	fully decoupled (multilateral)	multilateral based on SMTAs	hybrid (default = multilat., with bilat. option in 'attributable' cases)	automated 'big data'
+ve				
-ve				
open Q's				

## Global public goods

*“For these reasons\* public goods will tend to be undersupplied if left to the private sector.*

*The importance of global public goods in our everyday lives becomes more salient with each new crisis—COVID-19 has increased demand for global public health, refugee crises for global peace, climate change for sustaining the global environment. These crises require a global framework that recognizes a shared obligation, clearly delineates each country’s responsibility, and enforces these commitments”*  
(IMF, 2021)

\* Free rider problem, spillovers and externalities, discounting future benefits against current costs

## Health, food security, climate change adaptation

**Growing populations > rising consumption & expectations > unfavourable weather > deforestation and ecosystem degradation > spread of diseases > malnutrition / obesity > loss of soil > loss of (agro-)biodiversity > increasing inequality > increasing conflict and migration > loss of faith in public institutions > rise of nationalist populism > delayed action >>>> “planetary polycrisis”**

DSI can help break this vicious cycle, if the world can design an interlinked **global framework** to use DSI for **global public goods**:

- Health: wide surveillance, rapid detection, effective equitable response measures (speed is crucial)
- Food security: genetically adapted crops and livestock; animal and plant health measures; resilience against climate shocks (diversity)
- Climate adaptation: capacity to change productive ecosystems faster than natural evolution can (mutual interdependence)

## Practical implications for global goods



### Examples of questions to consider:

- **Health:** Preparedness? Speed of response? Equity and affordability of access to countermeasures?
- **Food security:** Availability of diversity for breeding? Timeline for genetic improvement? Novel foods from biotechnology? Countering new and emerging agricultural pests and diseases? Novel crops?
- **Climate adaptation:** Impacts on global cooperation? Improving soil health (and sequestering carbon)? Innovative solutions to unknown problems?

## Research and Innovation

Basic research (new knowledge) > applied research (search for solutions) > research and development (developing potential products based on improved knowledge) > innovation (commercialising successful products to make solutions available, decrease costs, improve profits)



DSI (increasingly combined with AI) can help speed up research and innovation processes, if the world can design an appropriate interlinked **global framework** for the use DSI that:

- Allows a wide range of researchers to participate (capacity is crucial)
- Creates legal certainty for investment in R&I (predictability)
- Rewards investment in successful R&I (fair social returns)
- Avoids undue IP restrictions from limiting spread and adoption of innovations (open and responsible science)



## Practical implications for R&I



### Examples of questions to consider:

- **Basic research:** Administrative / compliance burden on researchers? Access to research materials / data?
- **Applied research:** Availability of sufficiently diverse data? Attribution of outcomes to particular data? International cooperation? Access to specialist skills?
- **Research and Development:** Legal certainty to invest in product development? Capacity to turn science into technology? Learning from failures?
- **Innovation (commercialisation):** Scaleability? Replicability / technology transfer? Cost effective production? Fair return to public investment? Non tariff barriers (standards, trials, dossiers, ...)

## Non-monetary benefits; transaction costs; monetary benefits



Societal benefits (available to all [who can afford]) > “free” NMBs (e.g. access to data) > NMBs that cost money and/or time (equipment, consumables, training) > “useless” NMBs (access to data but no capacity) > allocation of NMBs (without PIC and MAT)

Transaction costs in time (red tape) > access fees (exclude those who can't afford) > monitoring and reporting compliance (with laws, SMTAs, T&Cs) > opportunity costs (better use for time and money)

Monetary benefits from profits > sales minus input and transaction costs > only after investment (legal certainty) > cost of sharing

An appropriate interlinked **global framework** for the use DSI could:

- Deliver usable NMBs (ensure capacity to use is available)
- Allocate NMBs fairly (where they are needed, useful, sustainable)
- Minimise transaction costs (to stimulate R&I, maximise profits)
- Make a business case for monetary benefit sharing to support conservation and sustainable use (easy to collect and disburse)

## Practical implications for NMBs; transaction costs; monetary benefits



### Examples of questions to consider:

- **NMBs**: Cost effective in time and money? Useful to recipients? Fair and equitable to all?
- **Transaction costs**: Acceptable to users? Accessible to researchers with low budgets (e.g. academics in developing countries)? Proportionate? Avoidable? Cost of compliance? Disincentive to use DSP?
- **Monetary benefits**: Upfront? In arrears? At scale (in context of biodiversity funding gap)? Sufficient legal certainty to invest in commercialisation? Transparent and accountable application of funds (without excessive reporting required)?

## IPs & LCs roles and rights

Territories, resources and knowledge /innovations / practices > “embodied TK” in DSI > FPIC, PIC or approval and involvement > IPs & LCs same or different roles and rights? > “subject to national legislation”? > “appropriate, effective and proportionate” measures? > priority beneficiaries due to proven track record of biodiversity stewardship > process for channelling benefits > set own priorities? > accountability > longterm support to traditional cultural practices compatible with C&SU > promote wider application



An appropriate interlinked **global framework** for the use DSI could:

- Acknowledge, respect and reward the roles and rights of IPs and LCs (to support their biodiversity stewardship)
- Avoid onerous transaction costs (to encourage use and investment)
- Maximise benefits and transparently link them to C&SU
- Make best use of indigenous ecological wisdom

## Practical implications for IPLC roles and rights



### Examples of questions to consider:

- **Legal status:** Fair and equitable to all, regardless of national legislation? Devolved authority to manage territories and resources?
- **Voluntary participation:** Acceptable to rights holders? Reasonable transaction costs? Direct participation in decision making and governance? Supportive of established rights? Monitoring and sanctions for non-compliance? At the required scale to support C&SU?
- **Biocultural heritage:** Respectful of sacred knowledge? Supportive of customary practices? Opportunity to promote wider application? Easily understandable by and accessible to people in remote areas using minority languages?