Informal Retreat on Digital Sequence Information (DSI)

10th to 11th November 2022, The Hague, The Netherlands

Organized by the ABS Capacity Development Initiative
on behalf of
the South African Department of Forestry, Fisheries and the Environment (DFFE) and
the Norwegian Government

hosted by the Government of the Netherlands

REPORT

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Contents[1]

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Short overview and outcomes

On behalf of the South African Department of Forestry, Fisheries and the Environment (DFFE) and the Norwegian Government the 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. The Retreat was held at *NH Atlantic Den Haag* in The Hague, Netherlands, from 10th to 11th November 2022.

While CBD COP 15 is approaching quickly, views on a number of key DSI issues continue to diverge widely among Parties. Ultimately, the shared goal of the international community is to find a policy approach that supports the CBD objectives of biodiversity conservation, sustainable use and benefit-sharing, while covering and meeting the broadest possible needs of all stakeholders. However, several issues have not yet been resolved.

The overall **objective** of the 'DSI Retreat' was thus to promote a deeper mutual understanding of different perceptions, interests, and concerns regarding a potential future DSI system. In addition to key global negotiators, a small number of recognised DSI experts and representatives of Indigenous Peoples and Local Communities were invited to support the Retreat by contributing knowledge and perspectives. Participants attended in their personal capacities. Furthermore, observers, for example from the SCBD, were invited who did not take part actively in the sessions of the DSI Retreat.

Following the COP 14 mandate to conduct a science- and policy-based process on DSI, the informal Retreat was based on two previous Global DSI Dialogues, the first of which was held in Pretoria in November 2019, the second in virtual form in June and July 2021. In continuation of the spirit of these Dialogues, 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 Retreat was preceded by a relay meeting with DSI users of the private sector and public research institutions) who met at the 8th and 9th November at the same venue to discuss and elaborate key messages of users of DSI for negotiators and policy makers in the run-up to the COP 15 in December 2022 in Montreal. The Retreat itself started by informing participants about the status of the informal discussions on DSI, identifying the core issues in the discussion in the CBD and other fora

The exercises and plenary discussions (1) highlighted the **need for open access to DSI in databases**, (2) **diverging views about the triggers for benefit-sharing obligations**, i.e. at the time of access vs. time of commercialisation, and (3) supported the **identification of 'hopes' and 'fears' regarding various benefit-sharing approaches** leading to the following **general points of convergence**:

- The **bilateral and a multilateral approach need to coexist** with the possibility to opt-in and opt-out, especially taking into consideration for example the needs and rights of IPLCs.
- A multilateral system needs to be highly attractive on the benefit-sharing side for Parties willing to opt-in. There is **need for a distribution key of benefits**, easy to define and calculate.
- **Importance of compatibility with benefit-sharing systems of other fora**, such as BBNJ, WHO PIP Framework and ITPGRFA.
- **Negotiations cannot go on for years** (risk of continued 'business as usual').
- The context of the GBF negotiation sets **humanity in responsibility** toward securing sustainable development, securing functioning ecosystems and IPLCs' nature respecting lifestyles.
- The **scale of benefits** depends, whether on a **specific solution for DSI** or a **broader solution for payments for the use biodiversity as such**, including DSI, can be agreed upon
- Open access to DSI needs to be element of all solutions.

Regarding the **way ahead towards COP 15**

- There is still need for agreement whether benefit-sharing is a contribution to or integral part of resource mobilisation. Important to accept that a solution for DSI is required on its own right.
- Concerns about the funding requirements for an intensive intersessional process (formal and informal) on DSI between COP 15 and COP 16; regardless, whether a DSI-focused or broader solution is agreed upon at COP 15:
    - Suggestion to explore the possibility to connect the processes for DSI and resource mobilisation
    - Scope and intensity of the process depend on the extent and detail that is already put in relevant COP 15 decisions.

Participants thanked the ABS Initiative for the excellent facilitation of the meeting and for being part of the group, highlighting that it will be important to get all Parties on board of the process. The Retreat was closed by representatives of the ABS Capacity Development Initiative, the Governments of South Africa and Norway, and the Government of the Netherlands.

Relay of user messages to key negotiators

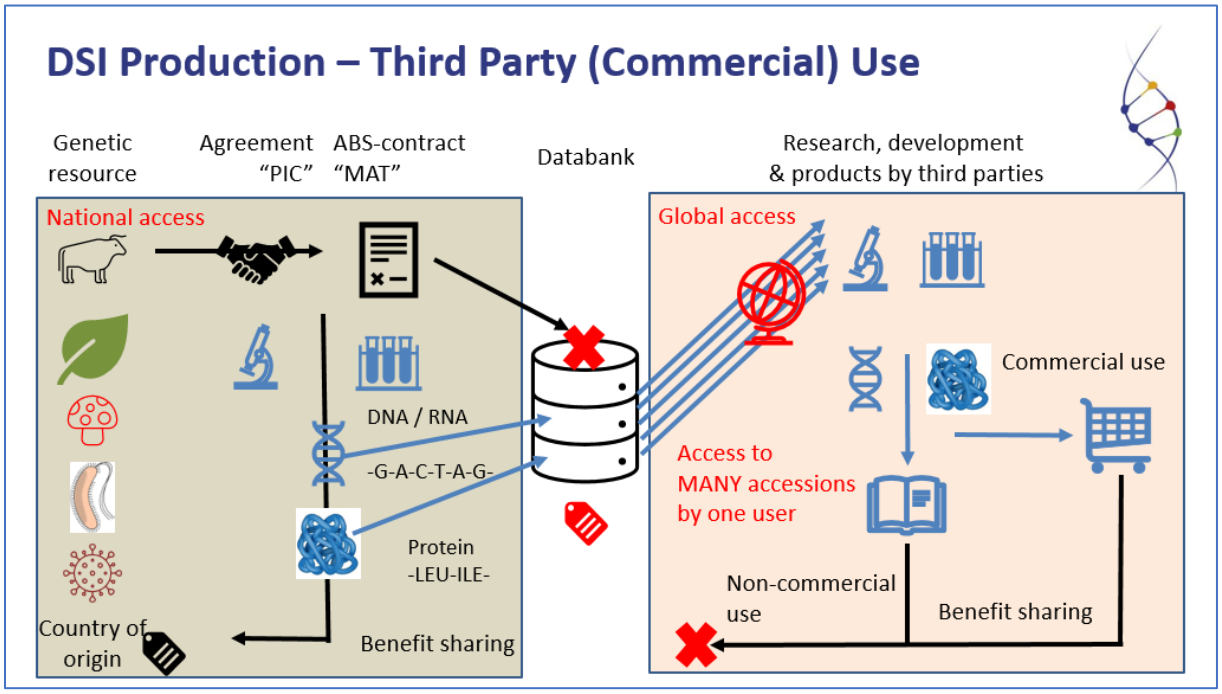
During the afternoon of the 2nd day of the preceding DSI Exchange among users of DSI who were meeting from the 8th to the 9th of November at the same venue participants of the Retreat had the opportunity to meet with the participants of the exchange and discuss key messages developed by users for consideration by negotiators and policy maker when discussing and agreeing of a solution for a DSI system at COP 15 in December 2022.

Opening of the Relay

Representatives of the sponsors, the host, and the organisers of the DSI Exchange and the DSI Retreat briefly welcomed the new participants.

Working with DSI in practice

Hartmut Meyer of the ABS Initiative highlighted in his presentation the interlinkage between the utilisation of genetic resources and the use of DSI while pinpointing to the existing different access regimes for genetic resources (bilateral approach under the Nagoya Protocol on ABS) and the open access regime one DSI has been uploaded into the international databases.



Charlotte Blom of Novozymes from Denmark provided a short overview on the role and importance of DSI as basis for innovation in biotechnology. She concluded her presentation with the following points for consideration:

- Genetic resources (GR) and DSI are closely linked, but are used differently:
  - The frequency and number of samples/records accessed.
  - The need for fast access to sequences.
  - DSI used for 'deep learning tools, advanced prediction models, artificial intelligence etc.
  - **Current and future research and innovation make use of big data sets.**
- Final product often derived from many donor organisms and/or consists of blends:
  - Protein engineering, e.g. using consensus analysis or shuffling.
  - Sequence redundancy –same sequence is found in multiple records.
- Legal certainty is important:
  - For risk mitigation during product development (cost and rights of use).
  - For global collaborations, incl. with academic partners.

Halima Benbouza of the National Council of Scientific Research and Technologies of Algeria highlighted the use of DSI for conservation and sustainable use of agricultural genetic resources. She concluded her presentation with the following remarks:

- Scientific capacity building and technology transfer should be fully considered for any policy option.
- Open access to data bases is crucial for research and innovation and should be considered with benefit-sharing in a way that respond to the expectation of all based on simplicity, transparency, fairness, and equity.
- Consensus definitions seems to be important to make sure that all stakeholders have the same understanding of the terms, concepts, and principles.
- Increasing the 'technology gap' between provider countries and users of DSI through different non-inclusive approaches and actions will not resolve issues of global concern (challenges of health and food security worldwide).

The following question and answer session focussed on the use of DSI by Novozymes. A participant pointed out that the presentation by ABS Initiative on the DSI production did not reflect the flowback of knowledge and information from access and use into the system.

Outcomes from the DSI Exchange

The ensuing discussion between users of DSI and negotiators was structured according to the three topics discussed by the participants of the DSI Exchange before opening the discussion to other topics of interest.

Benefit-sharing:

- Regarding the potential for resource mobilization, users mentioned that the scope of a solution for DSI needs to be broad to ensure simplicity but that the scale of resource mobilisation was not discussed. Negotiators highlighted that realistic expectations are needed and that substantive benefit-sharing should come out of any solution.
- Views of negotiators regarding the functioning of a global benefit-sharing fund:
    - Benefits should go back to the providing country, where success can be monitored.
    - Redistribution should be based on country needs and not the country of origin, which might be difficult for some countries to accept.
    - Redistribution based on needs means to look into projects that address specific needs, e.g., to address the capacity gaps. Focus on needs does not require much 'track & trace'.
- Regarding IPLC-related issues, users considered that:
    - a broad scope should include DSI, associated traditional knowledge, derivatives, and genetic resources.
    - the role and relevance of indigenous knowledge was not sufficiently discussed; focus was more on conservation and the importance of sustainable livelihoods.
- One negotiator warned that rights and interests of IPLCs about genetic resources and associated traditional knowledge also in developed countries might be undermined when establishing a multilateral benefit-sharing system.
- Regarding the question whether 'track & trace' would stifle R&D, users mentioned that the Nagoya Protocol already creates difficulties for using genetic resources and that DSI adds layers of complexity, e.g. when comparing a created sequence with thousands of other sequences from a database. Costs involved would be extremely high and unaffordable for many SMEs in the sector.

(Open) access to, and use of DSI

- Users highlighted in order to avoid a 'paywall' for access to DSI, a subscription system with e.g., a single global MAT would guarantee 'free' access to DSI.
- Users explained that information of the provenance of data could be used to establish a distribution key of benefits in a multilateral system rather than requiring users to track and trace the use through all R&D steps.
- Regarding the issue of ownership and the right to know who is accessing and using genetic resources and DSI, users responded that in case countries want to prevent use of DSI from their genetic resources, then they should not allow uploading in public databases, e.g., by restrictions in the MAT for access to their genetic resources.
- Commercial users reiterated the need for private databases which constitute a huge investment for achieving a comparative advantage over competitors.

Capacity building / Technology transfer

- Regarding the scope and monitoring of capacity building, there was broad agreement that capacity building is happening in many (long-term) research partnerships and sponsorship programmes for masters and PhD students. However, there are no corresponding reporting and monitoring requirements and methodologies.
    - Capacity building for DSI-based R&D for public health, agriculture etc. will have significant impact at socio-economic level.
    - There is a need for regional approaches as national approaches alone will not work.
    - Impact of capacity building will be diluted to be meaningless, if capacity building for improving IPLCs livelihoods will be included.
- Does track & trace stifle R&D? – Participants mentioned that experience from NP already demonstrates difficulties with dealing with one GR, but with DSI layers of complexity is added, e.g., comparing a created sequence with thousands of other sequences. Cost involved with a new system would be extremely high – unaffordable for many SMEs in the sector.

General issues:

Some negotiators argued that also private databases should be within the scope of a solution. Commercial users highlighted that the inclusion of private databases has not been discussed – this would require further thinking and that focus should be on open access to public databases.

Regarding the difficulty to separate commercial and non-commercial research users responded that it would be best to have a system which does not require such differentiation, e.g., benefit-sharing triggered by commercialisation, i.e., when monetary benefits are generated. On the other hand, only some DSI-based R&D leads to (successful) commercial products and the question remains how to assess the contribution of individual sequences.

Official Opening of the DSI Retreat

Gaute Voigt-Hanssen of the Royal Norwegian Ministry of Climate and Environment and Natalie Feltman of the South African Department for Forests, Fisheries and the Environment thanked the Government of the Netherlands for hosting the DSI Retreat. Both highlighted the usefulness of the relay meeting presenting and discussing key messages of commercial and non-commercial DSI users during the previous afternoon. They pointed to the urgent need to flesh out a solution for ensuring benefit-sharing from the use of DSI and encouraged participants of the Retreat to discuss the different aspects and views.

Andreas Gettkant of the ABS Capacity Development Initiative highlighted the accomplishments of the informal DSI process since the 1st DSI Dialogue in November 2019 in Pretoria through the many technical webinars and the dialogue meetings. He briefly mentioned that the ABS Initiative will continue in its new phase which started in September 2022 to work on new concepts for ABS implementation. He further stated that the key messages of the preceding DSI Exchange and the relay meeting provide a good starting point for the Retreat.

Technical Introduction

Hartmut Meyer of the ABS Capacity Development Initiative provided an overview on the informal dialogue formats and exchange meetings, including physical and virtual formats after the onset of the COVID-19 pandemic. He highlighted the roles of the 1st Global DSI Dialogue (Nov. 2019) on identifying the original set of archetypes for a DSI solution and the 2nd Global DSI Dialogue (July/August 2021) on identifying key areas of convergence and divergence. Technical issues were discussed since 2020 in a plethora of webinars leading to the exchanges which took place in on the island of Vilm (Germany) and in Bellagio (Italy): The 1st Vilm meeting (Nov. 2021) identified implications of the policy options on practical work with DSI while the Bellagio meeting (May 2022) discussed the implications of the policy options on the applicability for other treaties. Key message: A purely bilateral option is unworkable. The 2nd Vilm meeting (Sep. 2022) clearly identified the preference of the private sector for a multilateral system for benefit-sharing from the use of DSI.

Kathrin Heidbrink, facilitator of the event, provided a brief overview about the agenda and reminded participants that the meeting is taking place under the Chatham House Rule[2]. With a view to create a trustful, constructive atmosphere, several brief exercises provided the opportunity for participants to get to know each other at a (more) personal level.

Setting the Scene

With a view to set the scene, Timothy Hodges, co-facilitator of the event, explained that he as former negotiator in various fora and as former Co-Chair of the ABS Working Group leading to the adoption of the Nagoya Protocol on ABS has no active role in the DSI negotiation process. He reminded participants about the constructive discussion with users of DSI at the previous afternoon and their responsibility as policy makers working towards a global solution for DSI under the Convention on Biological Diversity (CBD). Mr Hodges pointed to the need for a system that is flexible and future proof, considering that in the very end the Convention is about sustainable development and that technology development is always faster than law and treaty making. He closed his reflection by highlighting that a global problem requires a global solution, which cannot be achieved when local thinking prevails not responding to the given responsibility for the planet and the next generation.

[2] 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.

Plenary discussion: Exchange of views of where the DSI process currently stands

With a view to learn about the different perspectives on the process so far, participants were asked to discuss where progress has been made and what are still open issues. The following key points were made:

- The five proposals identified during the 1st Global DSI Dialogue provided an excellent starting point. They all included interesting elements, but none was sufficient. Priorities for a solution are the need for (1) fair and equitable benefit-sharing, (2) open access to DSI, (3) compatibility with national ABS systems, and (4) for respect of the sovereign rights of the countries of origin and the providers. Basically, the following questions need to be addressed:
    - What are the criteria to decide to create a multilateral system, possibly leading to a system with a broader scope?
    - What are the conditions when a bilateral approach would apply?
    - What will be the operational modalities of a multilateral system and how flexible would the bilateral window be?
- The situation of the process is significantly different as compared to the situation before and in Nagoya: While in Nagoya ABS was negotiated in a 'hidden' room and thus put out of sight of the other negotiators, today the DSI process is integrated in the three main columns of the Global Biodiversity Framework. The outcomes from Geneva and Nairobi provide useful guidance towards possible landing zones for an implementable solution contributing to resource mobilisation which is future proof.
- The solution must address all three objectives of the CBD. Sustainable use of biodiversity delivers in the end more benefits to everybody and the concept of benefit-sharing is key.
- Despite being important, too much focus has so far been on technical issues. A political decision is required that ensures benefit-sharing from the use of DSI, i.e., has DSI the same status as genetic resources under the CBD?
- Considerable progress has been made. The focus of the discussion has shifted from the relationship of DSI and genetic resources towards benefit sharing. The topics discussed now are supportive for finding a concrete solution.
- A levy option could simplify the discussion and help finding a solution. Questions in this context are "Who gives the genetic resources?" and "How high should the levy be for which kind of utilisation and for which purpose should it be used?"
- The outcomes of the GBF and COP decisions must result in implementable visible contributions towards conservation and sustainable use. The outcome needs to be simple, not undermine the role of the CBD, and monitoring should be possible.
- A successful outcome of COP 15 would lead to an ABS system that is less complex. The solution should not only focus on benefit sharing.
- A successful solution for DSI at COP 15 would be a political decision on a new multilateral system as the default option. Follow up discussions will need to define possible and necessary exceptions addressing the effective use of and access to DSI which are not compatible with the bilateral approach of the Nagoya Protocol on ABS.

Focus discussions

During the following sessions participants were tasked to focus their discussions around three key topics: (1) (Open) Access to and use of DSI, (2) Benefit-sharing from the use of DSI, and (3) Implications of various benefit sharing approaches.

1. (Open) Access to and use of DSI - Unpacking the meaning of open access

In order to arrive at a common understanding of what open access is – and what it isn't - participants discussed in table groups each of the following questions displayed one by one followed by a plenary exchange on each of the questions:

Question 1: What actually needs to be how open?

- There is mainly a relationship between the user of DSI and the database, the provider and the database.
- The discussion about open access is limited to public databases. Government obligations for open access to private databases owned by companies seem to be impossible. Utilisation of DSI from private databases resulting in innovation is not subject to benefit-sharing obligations.
- Some databases are not allowed to collect access fees.
- Lack of clarity whether country tags would be necessary as basis for benefit-sharing.
- The current public databases share their data, which is a benefit in itself. Thus, there is no point of putting conditions for access to und use of DSI.
- If the provider were to be responsible to upload sequence data, conditions could be attached, which would be against open access.
- Access is not open enough right now. Everybody should be able to access what is available in the databases and there should not be a transaction issue (e.g. connectivity, storage capacities), but that does not mean it should be free.
- There seem to be Parties who want to maintain openness while others wish to limit openness in the future.

Question 2: What room or ways do you see for improving the system?

- Consistent data sets would make data more useful.
- Does access mean to login to a database or that one can actually use the data? The value of DSI data increases with increasing links with other databases, the open-source development of tools, etc.
- A link to GBIF information would allow better environmental decision making in connection with the potential for more tagging (e.g. country, cultural provenance, species, possibly also ecological or landscape information).
- Capacity building and technology transfer need to enable equal access for all potential users around the world; the full potential will be seen when everybody has the tools to use DSI.
- Transparency on who uses (countries, private sector, public sector) the data. Whether such information should be open or private is questionable; possibly just to be revealed when a dispute comes up.
- Make the datasets bigger as the value grows exponentially and establish secondary data sets for certain purposes (as some companies have begun to do).

Question 3: Who would need to do what for improving the system?

- The UN/CBD should send clear messages who needs to change what.
- Quality data have to be maintained to be useful. Data have a price. Access should not be free for all.
- There is a need for funding and capacity building to use the system:
    - The system should be open for other stakeholders to include additional information.
    - The system must be able to accept tags.
    - Users need capacity building for proper tagging.
- It is important to prove that open access adds value for everyone as some countries see open access as a threat to their (sovereign and ownership) rights.
- Regarding a match making platform for capacity building:
    - Clearinghouse Mechanism for recording who is doing what.
    - A platform for developing countries to flag their R&D needs and/or inform about partnerships etc.
- Building African and South American nodes and databases for inclusion in the International Nucleotide Sequence Database Collaboration (INSDC) would support significant capacity building in both regions.

During the following plenary exchange, participants raised concerns regarding a possible proliferation of additional platforms and suggested that it might be more effective to build appropriate measures in the already existing institutions. Others wondered about the potential role of the necessary NBSAP revision after the adoption of the GBF (possibly with a multilateral benefit-sharing system) and the connected financial resources (e.g., guidance to the GEF, national resource mobilisation based on ABS).

2. Benefit-sharing from the use of DSI - Unpacking different visions

The next session served to arrive at a better mutual understanding of where views con- or diverge, and why. In the first part of the session, only the negotiators were invited to participate by forming a large circle. Four 'chapeau' questions were displayed one by one and on each question, individuals were invited to step into the centre of the circle and make brief statements about the respective 'chapeau' question. Other participants were requested to move closer to or further away from the centre, depending on the degree to which they agree with the statement. For each statement, 3-5 participants from the circle were interviewed about the rationale of where they positioned themselves. All non-negotiators in the room served as observers during this part of the session.

In the second part of secession observers and negotiators shared impressions about their observations in plenary.

Question 1: What should be triggers for benefit sharing?

- On commercialisation, when financial conception happens:
  - *Close*: clear trigger point, easy to identify through checkpoints; point when monetary BS happens.
  - *Distant*: Unclear what commercialisation exactly means, e.g., patent or product on the market. Commercialisation does not necessarily guarantee huge benefits.
- Benefits must come from the private sector as public sector is already substantially investing in conservation and sustainable use:
  - *Close*: Public investments are providing benefits.
  - *Distant*: Private sector does not invest in capacity building and technology transfer.
- Retail sales should be triggers:
  - *Close*: Simple measure, but need fro track & trace to NOT de-couple access from benefit-sharing.
  - *Distant*: cannot see how that should work; unintended economic consequences regarding market function, especially for companies in the biodiversity sector; a levy should intervene along value chain; will not fly at political level.
  - *Middle*: Excludes benefit-sharing from scientific research, such as sharing data etc.

Question 2: Who along value chains should pay/ share benefits?

- Anyone who derives a financial benefit from the use of DSI:
  - *Middle*: Agree, but whoever uses DSI should provide monetary or non-monetary benefits, i.e., capacity building or tech transfer; everyone who uses DSI is able to pay; agrees in principle, but how would that work in a decoupled system.
  - *Distant*: Don't agree, if that means that everyone along the value chain pays.
- Anybody who makes commercial profits from the use of DSI.
  - *Distant*: Impossible to establish who makes profit; profit difficult to track– too many loopholes; along the value chain increases the cost for consumer unreasonably.
  - *Middle*: Proposals for exemption must be possible, e.g., if bilateral approaches work; should be focussed on the entity along the value chain that makes profit from the use of DSI;
- No one along the value chain should have to share non-monetary benefits – only R&D using DSI.
  - *Distant*: University start-ups could share non-monetary benefits; value chains start with basic research.

- *Middle*: Product development might be more efficient; value chain starts with research when you do not know the value of the potential product.

Question 3: Where and for what should benefits be used?

- At national level for IPLCs and conservation and sustainable use, at international level for multilateral fund:
  - *Distant*: No bilateral approach as this requires track & trace.
  - *Middle*: The 'where' is not properly answered, e.g., COVID data in public health; also for the system to function; need for a mechanism where funding is most urgently needed.
- Benefits from multilateral system should be used for conservation and sustainable use:
  - *Close*: The 'where' needs further clarification.
  - *Middle*: Where the need is greatest, including IPLCs, whether developing or developed countries; there should not be exclusive use for conservation and sustainable use, but include e.g., public health; it's about the biodiversity crisis in the first place.
- Benefits are essentially for developing countries.
  - *Close*: Developed countries have larger responsibility for supporting developing countries.
  - *Distant*: Nagoya Protocol is not based on the distinction between developed and developing countries, but a new system might explicitly include such differentiation and also consider the special role of IPLCs.

Question 4: Is there a case for earmarking, i.e., for pre-allocating certain benefits to certain purposes?

- Yes, ring-fencing product development associated with traditional knowledge and facilitating the database system:
  - *Middle*: Agree, earmarking yes, but ring-fencing might be too much; not just for IPLC infrastructure, but to expand IPLC capacities to better contribute to conservation and sustainable use.
  - *Distant*: Worried about implementation that funds are pre-allocated and might be needed more urgently somewhere else; indigenous knowledge does not have academic meaning; good use would be capacity building for people outside the system.
- Need for earmarking for specific DSI sectors, such as public health and agriculture:
  - *Close*: There needs to be a discussion.
  - *Distant*: Will not be discussed at COP 15; several multilateral instruments in place to discuss; need to be very careful about earmarking as countries might have different priorities for conservation and sustainable use.

Observations during plenary:

The exercise showed the gradient of agreement. Many participants highlighted that differences are getting less while some participants highlighted the need for more convergence at COP 15

- Broad agreement about the importance of IPLCs:
  - However, more convergence is needed; asymmetry about non-monetary and monetary benefit-sharing for different stakeholders, e.g., scientist vs. IPLCs. IPLCs are interested in monetary benefits. How can non-monetary benefits be useful for those who conserve biodiversity?
  - According to the International Indigenous Forum on Biodiversity (IIFB) substantive benefits should meet IPLC objectives such as support for conservation relevant DSI research by governments funding of science. There should be significant investments in conservation.

- Need for alignment across different fora:
    - Public databases contain DSI of potentially all organisms and for various forms of utilisation. If benefit-sharing is not aligned across the different fora this might create track & trace requirements at user side.
    - GBF determines actions in all other relevant fora, e.g., ITPGRFA negotiations will build on DSI and GBF decisions as the COP 15 outcomes.
- Capacity building for fair and equitable benefit-sharing is necessary; Art. 22 of the Nagoya Protocol on ABS refers explicitly to capacity building for developing countries.
- Encouraged to be able to identify agreeable language for COP – consensual but also non-consensual issues are identified. Helpful for further work.
- More efforts needed for consensus at COP; concern how much can be done at COP.
- A process decision alone will not do. Need to start discussing what can be already agreed.

3. Implications of various benefit sharing approaches: Sharing hopes and fears

The third focus discussion was designed to arrive at a better understanding of hopes and fears concerning different positions. The discussion of benefit sharing 'schemes' along two basic dimensions was guided by the question "What are hopes and what are fears of providers and users regarding the respective 'scheme'?"

- Triggers for benefit-sharing: Access to DSI from databases – vs. – Commercialisation of a product
- Pathways for benefit-sharing: Indirect (multilateral) – vs. – Direct (bilateral)

Four randomly formed groups were tasked to share their hopes and fears regarding one of the four possible 'schemes':

Trigger for benefit-sharing: **Access to DSI from databases**
Pathway of benefit-sharing**: Indirect (multilateral):**

Board 1	Providers (incl. IPLCs)	Both / no differenciation	Users
Hopes	• Constant/instant revenue. • Encourages providers to share; trust -> benefits • With well defined criteria redistribution of benefits will match needs of providers.	• Easy to define access. • Fosters expansion of databases. • Fosters participation.	• Legal certainty. • Potentially simple for users. • Easy to understand.

Fears	• May not generate significant revenue
	• Scale of return NOT proportional to provision.
	• Small benefit-sharing.
	• Loss of control:
	  ○ Associated traditional knowledge does not fit well in system.
	  ○ Re-distribution of benefits does not match with providers' needs.
		• Can't access/afford my own DSI *everyone uses, but not providers*	• Global MAT/legal obligation creates need for 2nd checkpoint -> bureaucracy
			• Not implementable over thousands of databases *especially with a paywall*
			• Users in low-income countries can not afford access -> worsens gap

Trigger for benefit-sharing: **Access to DSI in databases**
Pathway of benefit-sharing**: Direct (bilateral):**

Board 2	Providers (incl. IPLCs)	Both / no differentiation	Users

Hopes	• Provider of the genetic resource from which DSI derives is identifiable.
	• Directly receiving and maximising the benefits originating from the utilization of DSI.
	• Resources are available for monetary and non-monetary fair and equitable benefit-sharing.
	• Track & trace is implemented, thus allowing traceability of DSI use.
	• Databases include info on IPLCs:
	  ○ Flow of benefits to IPLCs.
	  ○ Respecting their rights and role.
	  ○ Acknowledges the sacred value of genetic resources.
		• Databases include information on the species and geographic origin of the genetic resource of the accessed DSI.	• Predictable funding to pay access fee (for non-commercial users).
			• Standard conditions for access and benefit-sharing between all countries.

Fears	• Not knowing who is the actual provider of the genetic resources from which DSI originated.
	• Inability to perform track & trace and to enforce benefit-sharing.
	• No benefits arise:
	  ○ Due to complexity of system.
	  ○ Unwillingness to pay for access.
	• Jurisdiction shopping due to different MAT.
	• Users will fully obstruct traceability by modifying DSI.
		• More expensive access disincentivises research-> less benefits.
		• Incentivises use of private databases (vs. pay for public databases).
			• Unclear line between commercial and non-commercial users.
			• Track & trace increases costs and affordability of DSI access and use.
			• Having to deal with different PICs and MATs at the same time, each one with different conditions.

Trigger for benefit-sharing: **Commercialisation of a product**
Pathway of benefit-sharing**: Indirect (multilateral):**

Board 3	Providers (incl. IPLCs)	Both / no differentiation	Users
Hopes	• Closes loopholes (no avoidance). • Provides more money than use of other triggers. • Captures all utilisations.	• Expands benefits over ABS (monetary and non-monetary). • Generation of resources for conservation and sustainable use. • Availability of resources to develop non-monetary benefits. • Simple enough to facilitate compliance (no track & trace). • Open access is preserved. • Can work across all sectors and instruments. • Legal certainty for providers, users and recipients.	• Very easy compliance (low transaction costs). • Applicability also to genetic resources (not exclusively to DSI). • Willingness to adapt national legislation for the system.
Fears	• Loss of sovereign control over genetic resources and associated traditional knowledge (no track & trace). • Conflict over mismatch between provision and benefits. • Unclear about non-monetary benefits, which may be neglected. • Compatibility with national regulations.	• No generation of significant resources for biodiversity. • 'Elite' capture of benefits (unfair/inefficient). • Clarity about scope and modalities (legal certainty). • It will take long to develop the system.	• Double payment.

Trigger for benefit-sharing: **Commercialisation of a product**
Pathway of benefit-sharing**: Direct (bilateral):**

Board 4	Providers (incl. IPLCs)	Both / no differentiation	Users
Hopes	• Sense of control. • Ability to decide on the terms. • Legal certainty (provider country). • Equity – I provide, I receive. • Targeting benefits to e.g., IPLC, capacity building. • Incentives for conservation and sustainable use.	• Open access should be preserved. • Opportunity for non-monetary benefits.	• Trigger on commercialisation is preferable to trigger on access. • Ability to negotiate the terms.

Fears	• Concern that user might not transfer MAT to user who actually commercialises.
	• Monitoring compliance.
	• Unequal distribution of benefits globally.
	• No benefits for historic data without geo-tags.
	• Handling multiple uses of DSI.
		• Complexity – so many MATs (time-consuming too).
		• Insufficient geo-tagging.
		• Too much paperwork or process could hinder R&D.
			• Legal uncertainty:
			  ○ Quantity of MATs.
			  ○ Can / will user who accessed DSI passes MAT terms along the value chain.

During the ensuing **plenary discussion** participants discussed what they found remarkable about the groups' findings before engaging in a broader discussion about common fears:

- All boards look very similar – even split between pros and cons, providers and users, i.e. making not much difference between the approaches.
- The most restrictive regime seems to be on Board 2 (Access to DSI in databases / Direct (bilateral)).
- Many cards are in the middle on the boards, especially Board 3 (Commercialisation of a product / Indirect (multilateral)). Providers and users have a lot of common fears and most of the fears relate directly or indirectly to the **lack of trust**. Obviously, there is need for building more trust.
- **A broad solution is not on any of the four boards.**
    - So far, there is no adequate reflection of the **scale of benefits** which can be generated; there is urgent need for a transformational step for resource mobilisation to address the biodiversity crisis as reflected in the 'hopes' of Board 3. The scale of benefits depends, whether on a specific solution for DSI or a **broader solution for payments for the use biodiversity as such**, including DSI, can be agreed upon; in the latter open access applies to all DSI, i.e., **link to the loss of control**.
    - Decoupling access from benefit-sharing makes DSI freely accessible, which is an enormous good for everyone. However, the DSI data set will not compensate for the enormous biodiversity loss. What is the best thing we can do to preserve both points?
    - Coupling access and benefit-sharing leads to a lot of difficulties.
    - What is the difference between the grand bargain and a technical solution for DSI? For a **grand bargain** a number of components need to be taken care of; everybody is a provider and a user; necessary to channel benefits to groups who are in need; the need of control (of what?) has to to be discussed for such case, e.g. an **opt-out solution** of a multilateral system due to the **need to separate associated traditional knowledge and IPLCs**.

- **Loss of control is common:**
    - In a bilateral system control is lost when DSI is uploaded in a database.
    - An **opt-out solution** from a multilateral system **is not viable**: If data have been entered into the open system their use cannot be controlled.
    - The approach of an open access licence does not enable provider to know what happens with the DSI; the poor responsiveness of jurisdictions will lead to forum shopping, thus: Incentive to create **a broad system creating benefits**.
    - **IPLCs** are in conflict between hope for instant benefits of a multilateral system and the fear of loss of control over DSI from their genetic resources.
    - For **IPLCs** the Nagoya Protocol on ABS resulted in a bioprospecting lottery, but for access to IPLC 'owned' genetic resources **the bilateral approach needs to continue**, i.e. MAT has to explicitly allow to enter DSI into a database.
- Parties hope to establish a **trusted multilateral system** with the relevant elements; key question is how to build a bridge from the bilateral approach of the Nagoya Protocol to a multilateral system; one possibility is an **open access licence** provision when uploading DSI in a database with a trusted multilateral benefit-sharing system.
- If a country does not want to be part of a multilateral system, then it will not receive benefits from the multilateral fund. Instead, it would bet on the DSI benefit jackpot for the one block buster drug under a bilateral MAT.
- Indirect systems for benefit-sharing do not promote non-monetary benefit-sharing; a multilateral solution is interesting; but considering **associated traditional knowledge** etc. **a direct system needs to continue to exist**.
- Concern if the current system continues, more and more DSI will go into private databases as there is no incentive to make interesting DSI broadly available.
- Costs for sequencing are going down, which might lead to constant sequencing of pathogens (in WHO) – no reflection on these concerns yet.
- In the discussion there is still a lack of differentiation between a provider of genetic resources and a database as provider of DSI.
- Gap between developed and developing countries. Inability to afford access to data.

Before closing the session, participants were asked to collect in plenary the issues which so far haven't been deeply discussed (**'parking lot'**):

- Compatibility of a multilateral system with existing ABS national systems.
- Mutual supportiveness with other ABS agreements.
- How to build safeguards to address fears and lack of trust? What are the elements of the system which can create trust?
- The "left" part of the system (see graphic, page 5): Provider of genetic resources <-> DSI <-> Databank
- Reflection about pros and cons of a salary (constant benefits under a multilateral system) vs. lottery (hope for blockbuster under the bilateral approach).
- A tailor-made solution for DSI vs. a broad solution for payments for the use of biodiversity.
- BBNJ proposal: all states contribute to the fund based on the UN contribution system.
- Fear of the loss of control vs. increasing opportunities for benefits.
- New approaches for linking the bilateral with multilateral systems.
- Consequences of "business as usual" for the further future of the DSI-database system: less sequencing, less uploads?
- Fair distribution scheme for benefits; based on three pillars: (1) Need, (2) IPLC rights, and (3) Origin, i.e., where did the genetic resource come from?
- Need to model the benefits to be generated by a multilateral system.

In the ensuing discussion the following points were highlighted by participants:

- A multilateral system needs to be highly attractive on the benefit-sharing side for Parties willing to opt-in. There is urgent **need for a distribution key**, easy to define and calculate. **Negotiations cannot go on for years** (risk of continued 'business as usual'), taking into consideration for example the needs and rights of IPLCs.
- The context of the GBF negotiation sets **humanity in responsibility** toward securing sustainable development, securing functioning ecosystems and IPLCs' nature respecting lifestyles.
- **After agreement on principles the distribution key can be defined** based on needs and IPLC rights; importance of compatibility with other fora, such as BBNJ, WHO PIP Framework and ITPGRFA.
- During the negotiation of the Nagoya Protocol the underlying assumption was that a huge amount of benefits would be generated, which however did not happen either due to flaws in the Protocol itself or due to bad implementation; some **modelling of generated benefits** by a multilateral system might be useful to support the further discussion about appropriate solutions.

The way ahead: On the road to COP 15

In order to support the preparation for COP 15, participants were asked to share views and ideas in mini-groups (3 individuals per group, randomly formed). One of the following three questions was randomly assigned to each mini-group and participants were asked to document their answers on flipcharts:

Question 1: What political signal/message beyond principles, should the COP set?

- Level of political ambitions determines the further process: Ambitious, transformative, about sustainable development and inclusive for other ABS agreements. Affirm that DSI is a critical tool for all countries to attain all three objectives of the CBD.
- Commit to sharing benefits from DSI use fairly and equitably for supporting the CBD's objectives
- Take actions to make countries equally able to access, use and benefit from user of DSI
- Spell out vision and principles; strong enough to convince society
- DSI is an important element of the GBF (to be included in Target 13) -> ABS and DSI under the GBF.
- Benefit-sharing for DSI in a multilateral system is the basis. MLS included in the COP decision adopting Target 13bis of Goal C of the GBF and in the GBF monitoring framework. Decision by COP establishes and agrees on principles of a global multilateral benefit-sharing mechanisms (GMBSM).
- Utilisation of genetic resources constitutes utilisation of biodiversity (subsequent interpretative agreement). Call on society to pay 1% benefits for biodiversity-based products.
- Mainstream DSI in 'capacity building' and 'resource mobilisation' as complementary processes:
    - DSI itself is most important tool to mobilise resources. The decision on Resource Mobilisation establishes modalities for a global biodiversity fund.
    - High profile for capacity building; leading to equality in using DSI.
    - Capacity building as part of benefit-sharing (-> 'projects'); as distinct element to implement.
- Report to COP 16.

Question 2: Scope of technical decisions at COP 15

- The political signal on how to address DSI in the GBF will determine which technical aspects need to be addressed and which process will be required.
- Identify headlines for element of the mechanics: Distribution of benefits and actors involved (databases etc.).
- Agree on principles and other elements, e.g., how to address specific interests of IPLCs or regarding endemic species.
- Define trigger points for benefit-sharing.
- Define a roadmap for operationalisation.

Question 3: Scope of process decisions towards COP 16

- Answer depends on question (1) and (2). Assumption: Agreement on multilateral benefit-sharing system for the use of DSI:
    - Need for a clear roadmap, including informal settings, towards a decision by COP 16; notable on trigger points for benefit-sharing, benefit-sharing arrangements, and distribution criteria.
    - Consultation regarding mutual supportiveness with other ABS instruments and on the relationship with existing national legislation.
- GMBSM starts to function after COP 15 parallel to the Nagoya Protocol on ABS and has proved by COP 16 that it has delivered BS, i.e., a safeguard that if it doesn't deliver one can switch back to business as usual.
- Scale of the process depends on the ambition and necessary details to be agreed upon.
- Need involvement of more people (stakeholders …).

During the **reflections in plenary** on the way ahead the following key points were made:

- Concerns about the funding requirements for an intensive intersessional process on DSI:
    - Suggestion to explore the possibility to connect the processes for DSI and resource mobilisation.
    - Scope and intensity depend on the extent and details that are already put in relevant COP 15 decisions.
- There is still need for agreement whether BS is a contribution to or integral part of resource mobilisation. Important to accept that a solution for DSI is required on its own right.

Official closure of Retreat

Participants thanked the ABS Initiative for the excellent facilitation of the meeting and for being part of the group, highlighting that it will be important to get all Parties on board of the process.

In their closing remarks

- On behalf of the ABS Initiative, Hartmut Meyer expressed his gratefulness for the open discussion on difficult topics by all participants looking forward to seeing again in Montreal.
- On behalf of the convenors
    - Shonisani Munzhedzi (South Africa) pointed to the power of informal meetings and conversations to shape history: "one finger cannot pick a grain", a collective effort is required, and
    - Gaute Voigt-Hanssen (Norway) stated that the outcome achieved in this informal space is going beyond positions and thanked the ABS Initiative for organising the meeting and the Government of the Netherlands as host.
- On behalf of the host, Kim van Seeters thanked the facilitation team and the participants for the open discussion even about disagreements in some cases.

Annex: Agenda of the meeting

Wednesday 9 November

11:30	Participants' Registration
12:30	Lunch
14:00	**Joint session with DSI users from preceding 'DSI Exchange'** • Welcome of negotiators
14:15	**Working with DSI in practice** • Inputs / information for negotiators; Q&A
15:15	**Outcomes from DSI Exchange sessions** • Presentation of key outcomes/messages to negotiators
15:45	Coffee/tea
16:15	**Discussion between users and negotiators** • Plenary discussion
17:45	**Closure** • Closing remarks
18:00	**End of session**
19:00	**Joint Dinner for users and negotiators, hosted by Dutch Government**

Thursday 10 November

09:00	**Opening of DSI Exchange** • Official welcome and introduction • State of DSI process • Getting to know (more of) each other
10:30	Coffee/Tea
11:00	**Setting the scene** • Context and current issues • Plenary discussions
12:30	Lunch
14:00	**(Open) ACCESS to and use of DSI: Unpacking the meaning of open access** • Group and plenary discussions
15:30	Coffee/Tea
16:00	**(Multilateral/hybrid) BENEFIT SHARING from the use of DSI: Unpacking different visions** • Group and plenary discussions
17:45	**End of session**
19:00	**Dinner hosted by the ABS Initiative**

Friday 11 November

09:00	**Implications of various BS sharing approaches for open access and use of DSI** **(and vice versa): Sharing hopes and fears** • Group and plenary discussions
10:45	Coffee/Tea
11:15	**Implications of various BS sharing approaches for open access and use of DSI** **(and vice versa): Sharing hopes and fears** (continued) • Group and plenary discussions
12:30	Lunch
14:00	**The way ahead: Expectations and remaining issues** • Plenary discussions
15:20	**Closure** • Closing remarks
15:30	Coffee/Tea
16:00	**End of DSI Retreat**