

Position Paper for CBD COP 16

COP 16 is a key milestone to deliver on the promise of creating a fair and equitable multilateral mechanism for benefit sharing from the use of DSI. It is essential that the outcome of the negotiations remain true to the vision of increasing the resources available for biodiversity conservation and its sustainable use.

The draft decision (CBD/WGDSI/2/2.¹) coming out of the second meeting of the DSI Open Ended Working group in August 2024 leaves several issues unresolved. The DSI Scientific Network has identified 6 key topics for non-commercial DSI users:

1. Non-commercial users should contribute to non-monetary benefits, not to the Fund

The COP 16 decision needs to be very clear about the expected roles and responsibilities of commercial and non-commercial users of DSI.

- Contribution to the mechanism can encompass benefits shared as monetary and non-monetary benefits. Monetary benefits, channelled through the Global Fund, should come from commercial users of DSI, who generate a commercial profit from the use of DSI accessed through public databases.
- **Non-commercial users of DSI, such as academic organisations and other not-for-profit organisations, should not be required to pay into the Fund, if they do not generate a commercial profit from their use of DSI.**
- Non-commercial users in research and academia already generate non-monetary benefits (NMBs) through their use of DSI in the form of open data, open databases, open-source software, and open publications. These are essential to maintain the infrastructure that allows open access to DSI and need to be recognised, supported and increased, so that more NMBs flow through and benefit all. These are also benefits that for-profit users generally do not share.
- The meaning of “user” should be further clarified at COP16, so that there is clarity on which entities are deemed to have obligations (individuals as users vs. organisations as users) and this is used consistently throughout.

2. DSI capacity building should be a focus area for disbursement of funds

The allocation of funds from the global DSI mechanism should have a stronger emphasis on capacity building and development related to DSI, particularly for scientists in low- and middle-income countries and Indigenous Peoples and Local Communities (IPLCs). Capacity building can enhance the ability of stakeholders to manage, use, and in the long-run, benefit from DSI. It can also support biodiversity conservation and sustainable use, as well as the development of sustainable bio-economies.

¹ CBD/WGDSI/2/L.2: Further development of the multilateral mechanism for benefit-sharing from the use of digital sequence information on genetic resources, including a global fund. Available at: <https://www.cbd.int/doc/c/390d/2aa2/9dd274279e6dd54013cf892b/wgdsi-02-l-02-en.pdf>

- **Capacity-building activities could be focused on regions with “DSI data gaps”,** which refers to regions or countries where little DSI data originated from. A global analysis of DSI provision by country highlights these gaps, which are marked as dark spots on the world map shown here. DSI data is foundational to assess biodiversity and deliver the GBF targets. The lack of sequence records limits many countries’ ability to identify and record species composition and variation and track changes over time. It is crucial to encourage and facilitate in-country sequencing of genetic resources in biodiversity rich areas for biodiversity monitoring, which can provide crucial information for sustainable use of biodiversity and ultimately conservation policy ².
- Focusing on capacity building aligns with the principles of equity and inclusivity that underpin the Nagoya Protocol and the Kunming-Montreal Global Biodiversity Framework (KMGBF).
- Ensuring that DSI-focused capacity-building is a major component of the disbursement strategy will also facilitate meaningful participation and ownership of the DSI agenda by those who are most impacted. The allocation of funds for these activities should be separated from the capacity building that users contribute under NMBs.

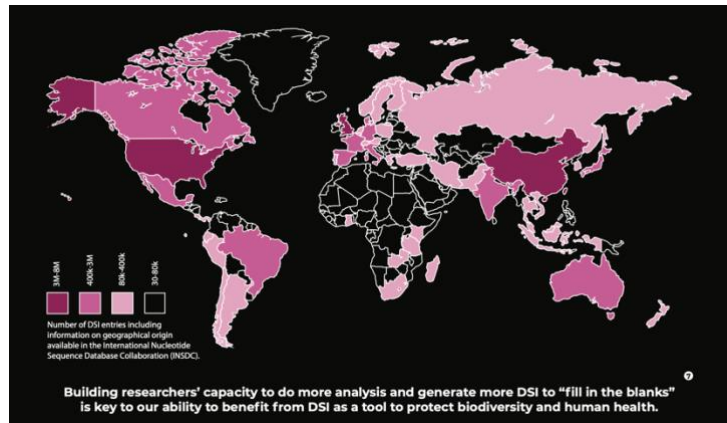


Figure 1: This world map shows the number of DSI entries of individual countries for DSI with geographical information available in the International Nucleotide Sequence Database Collaboration (INSDC). Source: DSI Scientific Network (2024) Understanding the use and provision of DSI

3. Further work is needed on Non-Monetary Benefit-Sharing

It is essential to recognize that the use of DSI is necessary to achieve the Global Biodiversity Framework. A study from the DSI Scientific Network led by the South African National Biodiversity Institute shows that 21 out of 23 KMGBF’s Targets rely on the use of DSI³. Open DSI is integral to achieving the KMGBF and these benefits must be acknowledged and continue flowing.

However, given the time constraints facing Parties, it is unlikely that an agreement on every aspect of the Multilateral Mechanisms can be achieved at COP 16. The sharing of non-monetary benefits is a topic that would benefit from further work between COP 16 and COP 17, before a clear and effective framework can be established.

At COP16, Parties should agree:

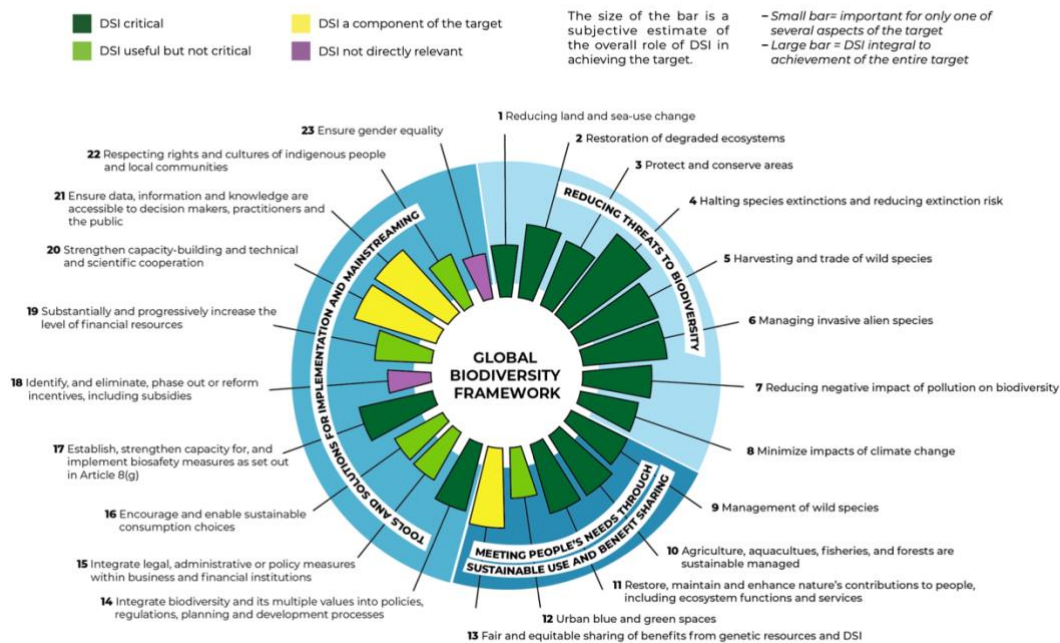
- **That non-commercial users of DSI contribute to the DSI mechanism by contributing non-monetary benefits.**
- **Some types of DSI non-monetary benefits can be assessed by the proposed KMGBF C.2 Headline Indicator:** The KMGBF headline indicator C.2 “non-monetary benefits arising from international ABS instruments” suggests six types of non-monetary benefits for genetic resources, three of which can be measured at the global level. These measures could readily be applied to DSI-related non-monetary benefits, facilitating the aggregation of data to begin developing global metrics for assessing the NMB resulting from the use of DSI.

² DSI Scientific Network (2024) Understanding the use and provision of DSI: A multidirectional flow of information - <https://www.dsiscientificnetwork.org/wp-content/uploads/2024/07/DSI-Use-provision-web.pdf>

³ DSI Scientific Network & the South African National Biodiversity Institute (2024) Meeting the goals of the Global Biodiversity Framework: what is the role of DSI?– https://www.dsiscientificnetwork.org/wp-content/uploads/2024/10/DSI-in-the-GBF_Final-for-Web.pdf

- **Acknowledge open access as a non-monetary benefit:** Open access, as provided through the INSDC, should be formally recognized as a non-monetary benefit⁴. This aligns with other UN mechanisms, such as the High Seas Treaty (BBNJ), and underscores its value in generating reliable data for biodiversity research and conservation. Publishing DSI in open-access databases is not an easy task; it demands time, money, and expertise from researchers. Scientists do it because the value of open data is a significant benefit. Open data can be checked, compared with other results, and further built upon. Capacity building efforts could ensure that open access becomes a benefit that is ever more widely shared in the future.
- **Commission a study on non-monetary benefits to address open questions:**
 - What is considered NMBS from DSI?
 - How can the multilateral system enhance sharing of NMBS?
 - How should NMBS be captured and measured without creating significant burden on researchers and research institutions? What do they cost? What impact do they have on biodiversity conservation and other priority research areas?
 - How can we capture NMBS beyond Headline indicator C.2?
 - What is the relationship between NMBS, capacity-building, and technology transfer?
 - Is a clearing-house or matchmaking platform for NMBS needed? What would it do and what impact would it have?

**KUNMING-MONTREAL GLOBAL BIODIVERSITY FRAMEWORK
Themes & Targets**



Source: SANBI & DSI Scientific Network (2024) Meeting the goals of the GBF: what is the role of DSI?

⁴ DSI Scientific Network (2024) What does open access mean for researchers? https://www.dsiscientificnetwork.org/wp-content/uploads/2024/08/DSI_Open-Access_2024.pdf

4. Advancing benefit sharing does not require a new database under the CBD

Establishing a new centralized database for DSI under the Convention on Biological Diversity (CBD) is not an effective means to ensure fair and equitable sharing of benefits. It would be duplicative and counterproductive.

- A new database would unnecessarily divert resources from more effective solutions, such as closing the DSI capacity gap, and use up a significant portion of the funding that is expected to come through the multilateral fund. (The estimated costs of maintaining the INSDC repositories, including staff and infrastructure, is at least USD 50-60 million per year⁵).
 - Setting up a new database would require setting up expensive and complex technical infrastructure and hiring informatic staff needed to handle thousands of sequence submissions per week, store and manage hundreds of petabytes (millions of gigabytes), and maintain interconnectivity with thousands of other databases and data types.
- Running a database requires specific expertise and knowledge. Databases already exist, offer open access to all researchers, and are run by expert groups. There is no value in duplicating the same databases already run by others. If new DSI databases are supported by the DSI Global Fund, they should address regional scientific priorities and be interconnected with the existing DSI landscape.
- If some DSI data was mandated to be only deposited into the new CBD database and the database kept separate from others, this would fragment the DSI landscape. The more DSI data there is to use and compare, the more valuable the data is for research. An isolated database would not be very useful to researchers, and this would also diminish the benefits of the other databases because they would miss access to some data.

5. Database practices can be improved, but database managers cannot be the ABS police

The open science practices of public databases enable the broader DSI ecosystem to exist and function. The DSI Scientific Network supports improving some current practices to strengthen both scientific research and fair and equitable benefit-sharing under the multilateral mechanism. Paragraph 9 should be revised to ensure supports these improvements without negative impacts on open access.

The Network supports:

- Para. 9.a: Public databases could **notify their users** of the multilateral mechanism, informing users that they may have an obligation to share benefits if they fall under specific sectors.
- Para. 9.c: Currently, when users submit DSI to the INSDC data repositories, the user's institution is required. INSDC also now requires that the country of origin of the data is included in the metadata that accompanies new submissions of nucleotide sequences, a subtype of DSI. DSI databases could **incorporate more detailed provenance information**, for example when possible including data on the origin of genetic resources from IPLCs lands when possible
- Para. 9.d: It is crucial that the DSI multilateral mechanism “**be consistent with open access to data**”. The FAIR and CARE principles can complement, if appropriate, but “open access” is and should remain agreed-upon text.

⁵ Rohden, F. et al. (2020) Combined Study on Digital Sequence Information in Public and Private Databases and Traceability. <https://www.cbd.int/abs/DSI-peer/Study-Traceability-databases.pdf>

The Network does not support:

- Para 9b: **Requirements of user registration is time consuming, extremely costly and would not improve existing database practices nor help benefit sharing.** It is also unclear what DSI databases would be expected to do with personal data about users and whether and with whom user data would be shared, raising significant legal and privacy challenges⁶.
 - Requiring registration is technically difficult and would negatively impact thousands of scientific databases: Registration required by 1 database means that all DSI databases (3000+) would need to start requiring registration. It would affect interoperability and hence make it very difficult to automatically share data from computer to computer, which is how most data is shared. This increases friction and will negatively impact the interconnectedness of many DSI and related resources and thus its scientific usability.
- Para 9e: **Databases cannot manually check on the ABS compliance** of DSI submissions. Tens of thousands of sequences are deposited in the INSDC alone every week. Furthermore, the scope of ABS national legislation varies greatly from country to country and national legislations have changed over time. This makes it impossible to easily determine whether a permit was required or not based on the national legislation of the provider country at the time, and so whether a GR was collected legally or not. In addition, there is no standardized way of verifying Nagoya compliance. Only 28 countries (Parties) currently generate Internationally Recognized Certification of Compliance (IRCCs) - the most standard permit - and most have only issued a few IRCCs and otherwise relied on national permits. Finally, databases do not have the legal remit to ensure such compliance, and could not be the ones to bear the responsibility of judging whether legal requirements have been met.

To ensure compliance with the provisions under the Nagoya Protocol, Parties should focus on developing domestic legislation and implementing compliance systems, to check if users within their countries obtain and use GR from provider countries according to their National Legislation. One example is the EU ABS Regulation (511/2014) where compliance checks and checkpoint communiqués have been established and implemented⁷.

6. Triggers: Option B offers the most viable and future proof option

From a researcher perspective, it is key that trigger points for benefit sharing are decoupled from access to DSI in support of open access and exclude non-commercial users for compulsory monetary contributions.

Amongst the current draft resolution in Para. 2, **Option B**, where sectors or companies contribute a percentage of their commercial profits, seems the most viable and future-proof. It combines several benefits:

- This option is most likely to ensure **a steady flow of funding, which can begin immediately** since contributions will not be dependent on possible revenue creation from individual products or services as suggested in Option A and C (a timeframe that highly varies among sectors) and avoidance is less likely.
- It is more future-proof than the other options because it **captures benefits from new, unpredictable uses of DSI**, including future artificial intelligence applications, that may not be tied to specific products or services.

⁶ Raposo, D. S., Orozco, P., McCartney, A., Freitag, J., Rouard, M., Ebert, B., & Scholz, A. H. (2024). Digital Sequence Information (DSI) data governance practices to support benefit-sharing and science. Zenodo. <https://doi.org/10.5281/zenodo.12755428>

⁷ EU ABS regulation: <https://eur-lex.europa.eu/eli/reg/2014/511/oj> and accompanying guidance document: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv%3AOJ.C_.2021.013.01.0001.01.ENG&toc=OJ%3AC%3A2021%3A013%3ATOC



- Option B is simple and straightforward for users because they **do not need to track and trace** whether and which DSI was used to develop individual products across their product portfolio and at every point along their value chain to assure compliance.
- Option B can readily **support harmonization** of DSI benefit-sharing across different UN fora.

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