



**Food and Agriculture
Organization of the
United Nations**



The International Treaty
**ON PLANT GENETIC RESOURCES
FOR FOOD AND AGRICULTURE**

Item 17.2 of the Provisional Agenda

NINTH SESSION OF THE GOVERNING BODY

New Delhi, India, 19–24 September 2022

**Compilation of Additional Inputs from Contracting Parties on Digital
Sequence Information**

Note by the Secretary

Through Resolution 13/2019, the Governing Body approved its Multi-Year Programme of Work (MYPoW). For this Ninth Session, the MYPoW includes the consideration of additional inputs from Contracting Parties on digital sequence information.

In response to the notification by the Secretary, a number of Contracting Parties and one organization provided inputs. This information document contains the compilation of such inputs, as received.

JORDAN

- Keep working on DSI and its Access and Benefit Sharing to reach a compromise;
- Raising awareness of practical consequences of digital sequence information;
- Adopted definition or definitions and access and benefit-sharing scenarios from a plant genebank's or in situ perspectives.

LEBANON

Suggest reactivating the negotiations on DSI in the MLS enhancement process for the objectives of the International Treaty (in the 10th session of the GB).

CANADA

Response from Canada to “Invitation to submit inputs on “Digital sequence information” from the Secretariat of the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) from May 25, 2022

Canada articulated its detailed views on digital sequence information (DSI) to the ITPGRFA Secretariat on March 31, 2019 (<https://www.fao.org/plant-treaty/overview/mypow/dsi/en/>).

The distinction between information and plant genetic resources for food and agriculture (PGRFA)/genetic material is clear in Article 2 of the ITPGRFA ("Genetic material" means any material of plant origin, including reproductive and vegetative propagating material, containing functional units of heredity). The ITPGRFA governs the exchange of PGRFA/genetic material. PGRFA are different from intangible information and cannot be governed in the same way. Information associated with PGRFA is essential for meeting the objectives of the ITPGRFA, such as the conservation and sustainable use of genetic resources. In article 12.3.(c) of the ITPGRFA, it is clearly stated that passport data shall be made available with the PGRFA. In addition, this article encourages Contracting Parties to make other information associated with the PGRFA available. It is Canada's position that digital sequence information belongs to associated information.

Expanding the scope of the ITPGRFA to an instrument that regulates access and benefit-sharing related to information on PGRFA, separate from the material, is not compatible with Canada's interpretation of the ITPGRFA.

It remains of great concern for Canada that the term DSI still lacks an agreed upon definition which makes it impossible to gain clarity about the impact and scope of decisions or resolutions that use the term DSI.

During the Eighth Session of the Governing Body of the ITPGRA, Canada actively supported the development and usage of the term Genetic Sequence Data (GSD) for the revised Material Transfer Agreement of the ITPGRFA to avoid the lack of clarity that arises from using the ill-defined term DSI. We suggest the following: “Genetic Sequence data (GSD)” or “Nucleotide Sequence Data (NSD)”, which indicates the order of nucleotides found in a molecule of DNA or RNA. These data contain the genetic information that determines, in part, the biological characteristics of plant genetic resources for food and agriculture.”

Publically accessible databases that contain GSD from PGRFA can support conservation and sustainable use of PGRFA and may result in economic benefits. Sharing such information openly is supported by Canada and is viewed as a critical form of non-monetary benefit sharing. Canada is also supportive of capacity building to enable all countries to realize the benefits from using this openly-shared information.

Canada has been following the ongoing processes related to DSI under the Convention of Biological Diversity (CBD). We recognize that the CBD and the ITPGRFA are different instruments but are operating in harmony (Article 1.1, ITPGRFA), with the ITPGRFA relating exclusively to PGRFA (Article 3, ITPGRFA). Contracting Parties and the Secretariat of the CBD have invested significant work in advancing the DSI discussion, and are currently carrying out examinations, discussions, and negotiations. The ITPGRFA processes cover the aspects related to PGRFA and need to avoid any duplication of work or risk of inconsistency between the ITPGRFA and CBD. Prior to reaching any decisions regarding the scope and Access and Benefit-sharing implications of DSI under the CBD, it may be appropriate for the ITPGRFA to further examine the implications for DSI on PGRFA.

At this stage, Canada considers a multilateral approach to DSI to be most appropriate due to the reality of global exchange and use of information but that this is not in the scope of the ITPGRFA.

AUSTRALIA

Australian submission to the call for inputs from Contracting Parties to the International treaty on Plant Genetic Resources on “digital sequence information” for the Governing Body’s consideration at its Ninth Session

NCP GB9-021 – DSI

Australia thanks the Secretary for the opportunity to submit inputs on digital sequence information (DSI), as communicated in Notification NCP GB9-021 – DSI.

Australia notes that, notwithstanding discussions to date, DSI still serves as a placeholder term and there is still no clear agreement on what term to use or what it specifically refers to. While Australia will support the scientific consensus on an appropriate term, the lack of clarity about the definition underscores the importance of caution on proposals to restrict use of such information. Broad understandings that DSI relates to data on genetic sequences in plant material of actual or potential value for food and agriculture do not provide adequate clarity.

Australia continues to be of the view that DSI is not ‘plant genetic resources’ or ‘genetic material’ under Article 2 of the Treaty. The current definitions refer to material containing functional units of heredity. Information on a resource’s genetic sequencing does not accord with this. Australia considers DSI as a ‘benefit arising from the use of a genetic resource’.

Australia recognises that DSI has actual and potential value in characterisation, conservation and sustainable use of plant genetic resources for food and agriculture. Australia supports the current open access to DSI which facilitates the sharing of benefits arising from the utilisation of genetic resources and is a public good that produces substantial global benefits through supporting expeditious advancements in multiple fields of science and research, and therefore must be maintained. Disproportionate administrative burden, or different restrictions to access, use and exchange of DSI will not only negatively affect scientific and research advancements, but will have a flow on impact to monetary benefit sharing.

As a global provider and user of both genetic resources and the DSI arising from their utilisation, Australia is a firm believer in the global benefit of sharing DSI, and that this should underpin how DSI is addressed under the Treaty. Australia is committed to the principles of open science, while recognising there are current inequities in the capacity to access, use and benefit from open access DSI. In this context, we also note the importance of capacity building in addressing these inequities.

Genetic resource and DSI providers and users seek legal certainty, simplicity and clarity. Any arrangements must preserve open access, be practicable and easily implementable, simple, provide legal certainty for users, be efficient and cost-effective, and be ‘future-proof’ to allow technological developments to be addressed.

KUWAIT

DSI is important for future for conservation and sustainable use of PGRFA.

- 1- As it is important in the development of the crops that have a commercial return, the farmer and producer must benefit from this share, therefore, DSI need to be discuss under MLS and benefit sharing for keeping farmers and providers right.
- 2- Increase the awareness about the important of DSI in conservation and sustainable use of PGRFA through the workshop and training courses for gene banks, farmers.

UNITED STATES OF AMERICA

U.S. Response to the Invitation to Submit Inputs on “Digital Sequence Information”

The term “digital sequence information” (DSI) on genetic resources remains undefined and is not commonly used within the scientific community. The United States reiterates our understanding that “DSI” refers to the genetic sequence data (GSD) that describe the order of nucleotides in DNA or RNA in genetic material. We maintain our view that GSD, as information describing material, should not be treated as a genetic resource.

Sharing of information associated with PGRFA, including GSD, advances all three objectives of the Treaty¹. In our view, GSD that are made freely available through publicly accessible databases represent 1 an important form of benefit-sharing that leads to the creation of broader social benefits. Restrictions on access to and use of public GSD would impede research that is critical for conservation and sustainable use of plant genetic diversity. GSD are also critical for breeding and innovation to make agriculture more resilient and sustainable, which is needed to address the climate crisis. In particular, we recall that the report of the 18th session of the FAO Commission on Genetic Resources for Food and Agriculture noted that “sharing information on biological control agents and invasive pests is especially important given that these species do not respect international borders.”

The United States does not support expanding the scope of existing international access and benefit-sharing (ABS) instruments, designed for material genetic resources, to include GSD. Information is not accessed or used in the same manner as genetic material. The potential value of GSD is only unlocked when it is aggregated into large datasets for comparison, making it difficult or problematic to assign value to a single sequence. It is not practical to restrict access to and use of GSD in existing public databases, and it is not technically or financially feasible to track and trace access to and use of GSD.

We recognize that some countries have in place domestic ABS measures that apply to GSD, however we do not believe that the transactional, bilateral approach to benefit-sharing is well-suited for GSD. The proliferation of domestic ABS measures creates a challenge for commercial and non-commercial research involving genetic resources and GSD. Researchers may avoid working with material or GSD from countries with overly complex or unclear ABS measures, or where compliance is too costly or time-consuming. This inhibits research and innovation and precludes benefit-sharing.

We are closely following the ongoing discussions related to “DSI” under the Convention on Biological Diversity. As a contribution to this process, the United States encourages consideration of approaches to benefit sharing that provide legal certainty for providers and users of data, encourage access to and use of GSD in public archives, and do not impede research and innovation.

We also view scientific cooperation and capacity building as integral components of any approach to benefit-sharing on GSD, to realize more equitable distribution of broader benefits that come from access to and use of data.

¹ See the U.S. Submission of views and information on “Digital Sequence Information” on Plant Genetic Resources for Food and Agriculture on page 24 of document [IT/GB-8/19/16.1/Inf.1](#)

EGYPT

Regarding the topic of the potential impacts of the uses of DSI, which may imply an impact on developing countries, it is necessary that the use of DSI come under the Multilateral System and DSI should be considered as plant genetic resources when used, so this creates a benefit-sharing in case of its exchange and use.

JAPAN

Japan's Submission of Comments on "Digital Sequence Information (DSI)" to the ITPGRFA Secretariat

1. Japan's Basic Interpretation on "DSI"

- Japan retains its view that the term DSI serves as a "place holder", used only for convenience in some discussions pertaining to access and benefit sharing at certain treaty processes¹. We think that it is more appropriate to use the terms genetic sequence data (equivalent to nucleic acid sequence data) or nucleotide sequence data, which are widely used in the scientific community and whose subject matter is clearer. Any other terms are not appropriate, due to the relative lack of clarity in terms of concept and scope.
- As per Article 3 and 2, plant genetic resources for food and agriculture (PGRFA) covered by the Treaty means any genetic *material* of plant origin of actual or potential value for food and agriculture, and "genetic material" refers to any material of plant origin, including reproductive and vegetative propagating material, containing functional units of heredity. For this reason, Japan believes that DSI is not within the scope of the Treaty.
- Under Article 10.2 of the ITPGRFA, benefits arising from the utilization of plant genetic resources for food and agriculture are indeed subject to benefit sharing requirements, but the use of DSI that is acquired *without* the use of material, including the acquisition of DSI that is publicly available, are not subject to benefit sharing obligations under the Treaty, in our view (please see section 3. on realities of PGRFA R&D below for reference).

Based on these basic interpretations (i.e. that DSI is not *material*), we believe that handling DSI under the Treaty should be taken with utmost care under the Treaty.

2. Relationships with Other Treaties and International Processes

- DSI is currently discussed not only under the Convention on Biological Diversity (CBD) and the Nagoya Protocol (NP), but also under the WHO, the CGRFA, and other organizations. As such, the Treaty needs to take into account ongoing discussions at those other processes.

¹ In this submission, the term DSI is used only as a placeholder term.

- ITPGRFA should be considered *the* specialized ABS instrument² for matters related to PGRFA, in order for us to fully be able to meet the objectives of the Treaty, in contribution to sustainable agriculture and global food security. All matters related to PGRFA (including DSI on PGRFA), therefore, should be determined under the Treaty's process.
- While the ITPGRFA is tasked to be "in harmony with" the CBD, in accordance with Article 1.1 of the Treaty³, it is important for ITPGRFA to take full ownership of all matters related to PGRFA, in accordance with GB8 Resolution 11/2019. To this end, we urge assurance of the following:
 - ✧ to promote coherence and mutual supportiveness (avoid duplication of efforts) between the respective legal instruments (Resolution 11/2019 para 7; para 6 Resolution 13/2017)
 - ✧ to ensure strong contributions from the International Treaty in the development and implementation of the new Post-2020 Global Biodiversity Framework (Resolution 11/2019 para 4),
 - ✧ to promote practical, harmonious and appropriate interfaces among them, both nationally and internationally (para 2); including in relation to the development of any criteria for specialized instruments under the Nagoya Protocol (Resolution 9/2017 para 2);
 - ✧ to expressly take into account the International Treaty and its Multilateral System of Access and Benefit-sharing and their monitoring and to rely, inter alia, on the monitoring systems available through the reporting systems of the International Treaty (Resolution 11/2019 para 3, bullet 3) for the Post-2020 Global Biodiversity Framework's targets on access to genetic resources and the fair and equitable sharing of benefits arising from their utilization;
 - ✧ to rely on contributions from and leadership of many United Nations institutions (including ITPGRFA) for the implementation of the post-2020 global biodiversity framework, with the targets designed with this in mind (Resolution 11/2019 para 3, bullet 4);
- It is our understanding that the CBD's consideration of policy approaches, options or modalities as it relates to digital sequence information on genetic resources is still at a stage of infancy (as of July 2022) relative to ITPGRFA. We observe that the process is far from reaching a common understanding on essential issues, including on open access, definitions and scope of DSI. Furthermore, the process has yet to take on the results of an independent analysis by a consultancy on the suggested approaches (currently in works), exploring essential issues such as viability, costs, efficiency, enforceability or capacity requirements for each option.

As such, we think that it is prudent for the Governing Body of ITPGRFA to exercise leadership in shaping discussions as it relates to relevant Targets and implementation of the Post-2020 Global

² Article 4.4 of the Nagoya Protocol stipulates that where a specialized international ABS instrument applies that is consistent with, and does not run counter to the objectives of the Convention on Biological Diversity, the Nagoya Protocol does not apply for the Party or Parties to that instrument. Thus, while the Convention on Biological Diversity and the Nagoya Protocol establish general rules for genetic resources, the Treaty establishes special treatment for plant genetic resources selected on the basis of their importance for food security and other factors. In other words, the Treaty is positioned as a special law to the Nagoya Protocol.

³ The objectives of this Treaty are the conservation and sustainable use of plant genetic resources for food and agriculture and the fair and equitable sharing of the benefits arising out of their use, in harmony with the Convention on Biological Diversity, for sustainable agriculture and food security

Biodiversity Framework, as requested by Parties in Resolution 11/2019 paragraph 3 of the Treaty.

3. Consideration of DSI-related Matters under the ITPGRFA

- In our view, DSI that is made available in public databases (through the generous contributions of a handful of Parties) should be available for use widely and free of charge for the following reasons:
 - (1) such open use of DSI in itself is an important form of benefit sharing arising from the use of PGRFA,
 - (2) many countries, including developing countries, can greatly benefit from the open availability of DSI of newly developed varieties for their own breeding purposes for food security.
- Linking payments to access to such DSI could hinder advancing scientific innovation, promoting plant breeding, and assisting developing countries' livelihoods
- When developing new varieties of plants, it has been our experience that it is extremely difficult in reality to safely and appropriately develop new varieties without using the genetic material itself, even if DSI may be used for related research and development. From that perspective, at least in the case of developing new varieties of plants, one cannot assume that the obligation to share profits can be bypassed by simply using DSI in replacement of genetic material. These characteristics about the industry must be fully and properly taken into account, in all discussions related to DSI including at the ITPGRFA.
- The need for a stable supply and increased production of food through sustainable agriculture has been increasing in recent years, in light of the impact felt from climate change, population growth, and recent global developments. Under these circumstances, facilitated access to material through the MLS is increasingly indispensable for addressing global food-security issues. No additional cumbersome obligations should, therefore, be imposed to undermine the objectives of the Treaty and the MLS.
- If new measures related to DSI are to be considered, a cost-benefit analysis of introducing such measures must be fully undertaken from various angles, including from the perspective of global food security.

Consideration of above points, in our view, is indispensable in the search for a solution to DSI through this Treaty.

ISF strongly supports the objectives of the International Treaty on Plant Genetic Resources for Food and Agriculture (Treaty) considering it to be the most suitable tool for access to and benefit sharing of plant genetic resources for food and agriculture (PGRFA). ISF was a major contributor to earlier efforts to enhance the multilateral system (MLS) of the Treaty. We made important, practicable proposals to improve the Standard Material Transfer Agreement (SMTA) and supported full expansion of the list of crops in Annex 1 of the Treaty. ISF and its members were very disappointed when the negotiations failed in 2019.

As we look toward Governing Body 9 (GB 9), like many stakeholders, ISF is deeply concerned that the access and benefit sharing (ABS) mechanisms currently applied and being further considered within the Convention on Biological Diversity (CBD), especially those that propose to regulate the use of digital/genetic sequence information (DSI), will impede future efforts to advance the objectives of the Treaty.

The Treaty should not wait for the CBD solution on DSI but rather create its own path forward. The MLS of the Treaty was created to replace the bilateral mechanisms of CBD which would hinder progress in plant breeding. This is still equally important today and would apply to DSI if covered under the CBD. The ongoing, already protracted discussions on DSI proposals under the auspices of the CBD will delay progress on the implementation of ABS mechanisms through the MLS and expansion of Annex 1.

We look forward to GB 9 to make progress toward a workable, fair and equitable MLS that creates legal certainty, is administratively simple, and reduces the administrative burden of tracking and tracing. Such a system will enable users to comply with all ABS obligations, result in realistic monetary benefit sharing, advance efforts to conserve and sustainably use PGRFA, and contribute to human well-being and food security. Key elements of a workable system still include an improved SMTA, expansion of Annex 1, and improved compliance with Treaty obligations by both Parties and users.

ISF understands that the current MLS would benefit from the key improvements mentioned above and is willing to work with the Parties to find effective solutions for a comprehensive enhancement of the MLS. Moreover, to achieve the objectives of the Treaty, ABS must be combined with other funding, resource mobilization, mechanisms and policy measures. Finding workable solutions needs active contributions from breeders but also governments and other stakeholders in the food value chain.

Please refer to earlier statements from ISF for more information:

ISF Statement: [The appropriateness of regulating access to and the benefit sharing resulting from the use of Digital Sequence Information \(DSI\) 2020](#)

ISF Submission to the Treaty Notification [“Invitation to submit views and other information on “Digital sequence information”” 2019](#)