

Open Letter

7 MARCH 2022

We, the undersigned organizations and individuals, diverse representatives of the global research community, recognize that this is a critical moment for the Convention on Biological Diversity (CBD). Outcomes of the CBD Conference of the Parties in 2022 (COP 15) will shape the use of and access to Digital Sequence Information (DSI) for decades to come.

Open access to DSI and related data are important elements in any policy solution, as DSI has enabled ground-breaking advances in many fields of research and underpins the generation of knowledge and common goods that benefit us all.

At the same time, we recognize the sovereign right of nations over their natural resources, including their genetic resources, and the role and interests of indigenous peoples and local communities. Sensible solutions must be found that ensure fair and equitable benefit sharing from DSI.

We acknowledge the challenge that policymakers face in finding suitable compromises on this important issue. We believe that researchers who work with DSI can make an important contribution to the effort by countries to weigh the advantages and disadvantages of different policy options, and thereby aid the development of a fair and equitable system that will deliver benefit-sharing while protecting open access, supporting research and innovation, and promoting biodiversity conservation.

We, therefore, call on Parties to the CBD to:

- Ensure that **researchers are given a voice** in the process of developing national positions, in the weighing of DSI options, and in formal and informal CBD processes.

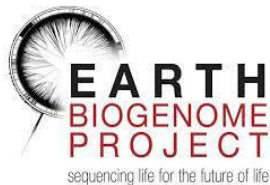
- Listen to calls from the scientific community for **multilateral benefit-sharing approaches** that incentivize the generation and contribution of DSI to the global system.
- Ensure that the outcomes of these negotiations **reflect the reality of the scientific process** and account for the thousands of interlinked databases that currently serve billions of sequences to millions of users around the world.
- Support **open access to DSI**. Open access drives research and innovation, improves scientific reproducibility, enables rapid responses to public health crises, facilitates capacity building and international collaborations, and promotes training and education.
- Learn from the experience of the Nagoya Protocol and other treaties and **avoid new systems for DSI** that would increase regulatory complexity and costs of research, disproportionately affecting developing countries where resources are particularly scarce.

Why
Multilateral?

Why Open?

A balanced approach must be found that protects openness and ensures benefit sharing if we wish to achieve the UN Sustainable Development Goals and implement the Post-2020 Global Biodiversity Framework. Without an open and equitable solution to DSI, the scientific community will be hindered in its ability to conduct research and develop solutions for current environmental and health crises.

Signatories





INSTITUT DE FRANCE
Académie des sciences



Background

In March 2022, negotiations on Digital Sequence Information (DSI) and benefit sharing will resume among Parties to the [Convention on Biodiversity](#) as they work to reach agreement on the new Post-2020 Global Biodiversity Framework, which sets new goals and aims to transform society's relationship with biodiversity.

The scientific community is the primary generator and user of DSI. The outcome of these negotiations will therefore shape our ability to use DSI and generate research that helps move forward sustainable development, protect biodiversity and address global health crises. Given the importance of DSI to our work, it is essential that our perspectives, expertise and experience be included in considerations of different approaches to benefit sharing for DSI.

DSI is used by researchers in a wide of contexts including for studying and monitoring biodiversity, understanding ecosystem impacts from climate change, improving crops, developing new medicines, and tracking the spread and evolution of new infectious diseases. Access to DSI is therefore crucial to research supporting many of the [UN Sustainable Development Goals](#).

A wide range of organizations and experts have called for DSI policy solutions that provide equitable benefit-sharing through multilateral mechanisms that protect open access DSI.

Why Multilateral?

“Multilateral” refers to policy solutions where access and benefit sharing for DSI would be facilitated by a set of common rules agreed to by all CBD Parties. Multilateral mechanisms are favored by many scientific organizations and other stakeholders, because DSI is already shared around the world through a complex network of databases and scientific collaborations. Common rules are therefore needed so that scientists

and databases around the world can continue to generate and share knowledge effectively.

Members of the DSI Scientific Network recently [published a paper outlining a multilateral policy mechanism for DSI that would ensure a “win-win” solution that balances open access with benefit sharing](#). This work expands on a set of key principles previously presented by the Network in a [policy position](#) submitted to the Convention on Biological Diversity (CBD) in response to a call for input from governments and other organizations ([CBD/WG2020/3/4](#)). Other research and development organizations have made similar submissions supporting multilateral approaches, including the Wellcome-Sanger Institute, Argentine researchers, several European research organizations, CGIAR and others.

Why Open?

The sequencing community's tradition of open sharing has immeasurable benefits for research, biodiversity conservation and the bioeconomy, and is a central part of the growing open science movement. The international trend toward open science, and its many benefits, are clearly recognized in the recently adopted [UNESCO Open Science Recommendation](#).

DSI is shared openly through a series of linked databases comprising the International Nucleotide Sequence Database Collaboration (INSDC). These databases currently contain more than [228 million annotated sequences](#), and serve many millions of unique users each year. A complex ecosystem of other databases and analysis tools depend on these core resources, and are used by scientists throughout modern biology, biodiversity and medical research. [DSI in public databases are used by researchers in all countries](#).

Further Resources

Submissions to the CBD

- [Submission by Wellcome Sanger Institute](#)
- [Submission by the DSI Scientific Network](#)
- [Submission by members of the Argentinian scientific community](#)
- [Submission by the Leibniz Institute](#)
- [Submission by EMBL-EBI on behalf of INSDC](#)
- [Joint submission by DNFS, VBIO and Leibniz Biodiversitaet](#)
- [Submission by the Global Plant Council](#)
- [Submission by CGIAR](#)

Recent peer-reviewed papers

- Ebenezer TE, Muigai AWT, Nouala S, Badaoui B, Blaxter M, Buddie AG, et al. Africa: sequence 100,000 species to safeguard biodiversity. *Nature* <https://doi.org/10.1038/d41586-022-00712-4> (2022).
- Scholz AH, Freitag J, Lyal CHC, Sara R, Cepeda ML, Cancio I, et al. Multilateral benefit-sharing from digital sequence information will support both science and biodiversity conservation. *Nature Communications*, <https://doi.org/10.1038/s41467-022-28594-0> (2022).
- Lawson C. Regulating Information in Molecules: The Convention on Biological Diversity and Digital Sequence Information. *Law, Technology and Humans* <https://doi.org/10.5204/lthj.2208> (2022).
- Bagley, MA. "Just" Sharing: The Virtues of Digital Sequence Information Benefit-Sharing for the Common Good. in press *Harvard International Law Journal* (2022). Preprint available at SSRN: <https://ssrn.com/abstract=3985083>
- Aubry S, Frison C, Medaglia JC, Frison E, Jaspars M, Rabone M, et al. Bringing access and benefit sharing into the digital age. *PLANTS PEOPLE PLANET* <https://doi.org/10.1002/ppp3.10186> (2022).
- Scholz AH, Lange M, Habekost P, Oldham P, Cancio I, Cochrane G, et al. Myth-busting the provider-user relationship for digital sequence information. *GigaScience*, <https://doi.org/10.1093/gigascience/giabo85> (2021).
- Laird S, Wynberg R, Rourke M, Humphries F, Muller MR, Lawson C. Rethink the expansion of access and benefit sharing. *Science* <https://doi.org/10.1126/science.aba9609> (2020).

Information on signatory organizations

The [DSI Scientific Network](https://www.dsiscientificnetwork.org) is a member-led organization, created in 2020, to help give the research community a voice in ongoing international policy discussions on digital sequence information (DSI). The Network's mission is to contribute to policymakers' and other stakeholders' understanding of DSI, its applications and its contributions to research, biodiversity conservation and public health.

The [Earth BioGenome Project](https://www.earthbiogenomeproject.org) is a global network aiming to sequence, catalog and characterize the genomes of all of Earth's eukaryotic biodiversity over a period of ten years.

The [Wellcome Sanger Institute](https://www.wellcome.ac.uk) is a world leading genomics research centre. It undertakes large-scale research that forms the foundations of knowledge in biology and medicine. Its findings are used to improve health and to understand life on Earth.

The [Global Plant Council](https://www.globalplantcouncil.org) is a coalition of organizations representing the plant, crop, agricultural and environmental sciences across the globe. It aims to promote plant science across borders and disciplines.

The [World Federation of Culture Collections](https://www.worldfederationofculturecollections.org) is a Federation within the International Union of Microbiological Societies (IUMS). It is concerned with the collection, authentication, maintenance and distribution of cultures of microorganisms and cultured cells.

The [African Biogenome Project](https://www.africanbiogenomeproject.org) is a coordinated pan-African effort to build capacity and infrastructure for the generation, analysis and deployment of genomics data for the improvement and sustainable use of biodiversity and agriculture across Africa.

The [International Barcode of Life \(iBOL\)](https://www.iobol.org) is a consortium of research organizations in 40 nations. Its mission is focused on registering all multicellular species and activating a global biosurveillance system before mid-century. To achieve these goals, its member organizations operate core facilities to gather sequence

data and develop informatics platforms to curate and analyze the resultant data.

The [Bird 10,000 Genomes Project \(B10K\)](https://www.bird10k.org) is an initiative to generate representative draft genome sequences from all extant bird species.

The [Centre for Tropical Livestock Genetics and Health](https://www.centreforlivestockgeneticsandhealth.org) supports programs that improve livestock-based livelihoods in the tropics. It is a strategic alliance of the International Livestock Research Institute, the Roslin Institute at the University of Edinburgh, and Scotland's Rural College.

The [Tara Ocean Foundation](https://www.taraoceanfoundation.org) is developing innovative and original open ocean science. It uses scientific expertise to raise awareness and educate young people and the public in general, to mobilize political decision makers at the highest level and to enable developing countries to access this new knowledge about the Ocean.

The [Global Biodata Coalition](https://www.globalbiodatacoalition.org) is a forum for research funders to better coordinate and share approaches for the efficient management and growth of biodata resources worldwide. It aims to stabilize and ensure sustainable financial support for the global biodata infrastructure.

The [Global Genome Biodiversity Network](https://www.globalgenomebiodiversitynetwork.org) aims to foster collaborations among biodiversity repositories in order to ensure quality standards, improve best practices, secure interoperability, and harmonize exchange of material in accordance with national and international legislation and conventions.

The [European Bioinformatics Institute \(EMBL-EBI\)](https://www.ebi.ac.uk) is an intergovernmental research organization funded by over 20 member states. It maintains the world's most comprehensive range of freely available and up-to-date molecular data resources.

The [China Biodiversity Conservation and Green Development Foundation \(CBCGDF\)](#) is a non-profit public foundation and a social legal entity dedicated to biodiversity conservation and green development.

The [European Virus Archive \(EVAg\)](#) is an international group of 25 laboratories, including 16 EU member state institutions and 9 non-EU institutions, that represent an extensive range of virological disciplines.

The [LOEWE Centre for Translational Biodiversity Genomics](#) sequences genomes across the tree of life to study the genetic basis of biological diversity and to make the data accessible for addressing societal knowledge demands.

Created in 1666, the French [Académie des sciences](#) is an independent assembly of scientists that conducts reflections on the political, ethical and societal issues raised by current and future scientific questions. Its work aims to provide a framework of expertise, advice and warning, on which public policies can be based, and more broadly to enlighten the debates and choices of our society.

[China National GeneBank \(CNCB\)](#) is a world leading integrated research infrastructure which has the capacity for preserving plant, animal, microbial and human samples. In addition, its high-throughput sequencing center generates petabytes of genomic data annually. Last, its scientific database (CNCBdb) helps researchers to easily archive and analyze genetic data.

The [French Alliance for Environmental Research \(AllEnvi\)](#) pools and promotes the whole expertise of French public research organizations, universities and grandes écoles, with a community of nearly 20,000 scientists, with the aim of identifying the future challenges and research priorities in the field of Environmental Sciences. AllEnvi gathers multiple types of expertise, hence ensuring a systemic, transverse, multidisciplinary approach to

environmental issues in regard of the Sustainable Development Goals.

The [European Culture Collections' Organisation \(ECCO\)](#) was established in 1981. The aim of the organisation is to promote collaboration and exchange of ideas and information about all aspects of culture collection activity. ECCO meetings are held annually as a forum for discussion and innovation on the future development of member collection activities.

As the core research and development institute of BGI Group, [BGI-Research](#) aims to promote study of the life sciences, and the development of biotechnology and human health. It carries out research on key and cutting-edge issues in technology and science, and participates in many international genome projects.

The [10,000 Plant Genomes Project \(tenKP or 10KP\)](#) aims to sequence over 10,000 genomes representing every major clade of plants and eukaryotic microbes. It is a genome project led by BGI-Research and China National Gene Bank (CNCB), with global collaborative efforts to assemble plant genomes and share the plant genome data.

The [Leibniz Institute of Plant Genetics and Crop Plant Research \(IPK\)](#) is a non-profit foundation and member of the Leibniz Association, dedicated to basic and application-oriented research on crop plants. The institute hosts one of the world's largest collections of plant germplasm, and conducts research directed towards an efficient and sustainable supply of food, energy and raw materials and thus towards meeting global challenges.

The [Verband Botanischer Gärten](#) represents more than 90 botanical gardens in Germany and neighboring countries, and is one of the largest conglomerates of botanical living collections worldwide. The Verband is active in conservation, public outreach, collection management and exchange, and thus has a serious interest in ensuring that its members' collections

remain useful for research, conservation and development.

The [BiodivOc Key Challenge](#), financed by the Occitanie regional council, aims to develop research projects that explore the dynamics, resilience and management of biodiversity and ecosystems subject to human-induced environmental pressures.

The [Scientific Board of the French National Centre for Scientific Research \(CNRS\) and the Scientific Board of the Institute of Ecology and Environment \(INEE\)](#) ensure the consistency of the CNRS' and INEE's scientific policies in coordination with other national scientific advisory bodies and the institutes' directors. The CNRS is a world-leading interdisciplinary public research organisation, whose scientists explore the living world, matter, the Universe, and the functioning of human societies in order to meet the major challenges of today and tomorrow. The Institute of Ecology and Environment (INEE) is a member institute of the CNRS whose mission is to develop and coordinate research in the fields of ecology and the environment, including biodiversity and human-environment interactions.

The [European Marine Biological Resource Centre \(EMBRC\)](#) is a research infrastructure within the European Strategy Forum on Research Infrastructures (ESFRI), operating under the status of a European Research Infrastructure Consortium (ERIC). It provides access to marine resources, cutting-edge services, and facilities that allow researchers, from both academia and industry to study life in the ocean and develop innovative solutions to tackle societal issues.

The [Royal Spanish Academy of Sciences](#) is a national public corporation dedicated to the study and research of mathematics, physics, chemistry, biology and geology, and their applications, as well as their promotion for the benefit of the society.

The [National Institute of Genetics \(NIG\)](#) is a research institute for genetics and life sciences under the Research Organization of Information and Systems (ROIS). NIG is located in Mishima City, Shizuoka Prefecture, Japan.

The [DNA Data Bank of Japan \(DDBJ\)](#) at the NIG captures, preserves, and presents nucleotide sequence information as a founding member of the International Nucleotide Sequence Database Collaboration (INSDC).