

## The Convention on Biological Diversity, the Nagoya Protocol, and Digital Sequence Information: Principles of the *Earth BioGenome Project*

## Core Goals and Commitments of the *Earth BioGenome Project (EBP)*

As stated in the founding Memorandum of Understanding in 2018, signed by 44 Parties, and agreed to by 49 Affiliated Projects:

"Understanding, conserving and responsible stewardship of Earth's biodiversity are among the most challenging scientific and social challenges of the new millennium. Addressing these challenges requires fundamental new knowledge to fill the huge gaps in our understanding of the organization, evolution, functions, and interactions among organisms. This knowledge can be gained in part by sequencing and characterizing the genomes of all known eukaryotic species on Earth in a rapid and standardized fashion."

"To the greatest extent possible, EBP will conduct its activities in alignment with the objectives and principles of the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity (2014). The Parties acknowledge that the EBP will have an instrumental role in unleashing valuable inclusive bioeconomy innovations for biodiverse nations that can provide an alternative path for economic development that is sustainable by design."

## Background

The Earth BioGenome Project (EBP; https://www.earthbiogenome.org) is a global effort to generate and distribute to anyone anywhere in the world reference-quality genome sequences for all known species of plants, animals, and fungi. EBP is committed to creating a global public good: a repository of DNA sequences at the genome-level that can be used for diverse educational and scientific purposes - biomedical research, improving agriculture, conservation of biological diversity, reversing environmental damage, combating climate change, and many other applications.

The EBP fully supports the ambitions of access and benefit sharing set forth in the Convention on Biological Diversity (CBD) and the Nagoya Protocol and is fully aligned with the aims of these frameworks and treaties. The EBP is committed to developing an international scientific project and a global research community that enhances diversity, equity, inclusion, and justice as well as respects and promotes the sovereign rights of countries and indigenous peoples.

Digital Sequence Information (DSI) of the Earth's biological diversity is fundamental to advances in science, society, and the well-being of humankind. The open access and sharing of species genomic data, which is at the core of the EBP, is essential to enable all nations and peoples to progress and share the benefits of our global biodiversity. The EBP, therefore, advocates and promotes the following essential principles to assist in formulating a fair, universal, and practical protocol for the access and benefit sharing of DSI. The EBP has framed these principles to advance its scientific goals, to improve the ethical treatment of DSI for local people, nations, and the international community, and to focus the global discussion of DSI with respect to the CBD in a fashion that benefits all humanity.

## **EBP** Principles on Digital Sequence Information

EBP endorses the construction of a system for using DSI to achieve universal access and benefit sharing of genetic resources, as outlined by the CBD, that is based on these principles:

1) DSI invokes benefit sharing;

2) The benefits shared, before any commercialization, are consistent with the resources, scope, and goals of the research projects involved;

3) One or more classes of non-commercial scientific activities are recognized that create a resource for global public good;

4) Access procedures are kept as fast and simple as possible, and thus preferably multilateral;

5) Triggers are developed for negotiating multilateral, and sometimes bilateral, benefit sharing obligations when DSI is used in commercialization;

6) All digital sequence information is accompanied by evidence, which is recorded using an agreed auditable standard or is a voucher specimen in the case of reference genomes, on source location and indigenous interests in the sample from which the sequences were obtained; and

7) Benefits are shared not just with national governments, but with relevant indigenous and local communities.

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Contact: info@earthbiogenome.org