

## TEMPLATE FOR COMMENTS

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<b>Title of document reviewed:</b>	The Emergence and Growth of Digital Sequence Information in Research and Development: Implications for the Conservation and Sustainable Use of Biodiversity, and Fair and Equitable Benefit-Sharing – A Fact-Finding and Scoping Study Undertaken for the Secretariat of the Convention on Biological Diversity	
Comments on the draft fact-finding and scoping study		
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0	0	<p>Laird and Wynberg have provided the Secretariat of the CBD with a sound and well balanced review of how digital sequence information is produced and used in contemporary life science research and how it fits into the framework of Access and Benefit Sharing under the Nagoya Protocol. This study should help to inform the upcoming deliberations of the Ad Hoc Technical Expert Group (AHTEG) and those of parties to the Protocol and the CBD.</p> <p>The authors have also done a service to the AHTEG and the parties of the Protocol and the Convention by reminding them of areas of significant overlap and ambiguity arising from parallel initiatives of other UN Secretariats in their respective areas of remit; food, agriculture and public health. It is important for the AHTEG to take into consideration that sequencing technology has had a profound impact on basic and applied research over the past 25 years and that new developments that can positively affect the implementation of the ABS regime under the Nagoya Protocol occur on a near daily basis. Sequencing technology has become a fundamental and universal tool for understanding living systems and digital sequencing information now forms a principal means of describing living systems, from communities at the landscape level to subcellular events. Open public repositories provide the international scientific community with access to various forms of digital sequence information as well as the tools to analyse, manipulate, compare and model living systems. These public databases are a vital part of the international scientific infrastructure and are tightly intertwined with the scientific, technical, medical and patent literature as well as many other public and private databases. The importance of these resources is evident from the strong response from all sectors of the research community expressing concerns and reasons why digital sequence information should not and does not fall within the scope of the Nagoya Protocol.</p> <p>The Laird and Wynberg report provides the AHTEG with summaries of many reasoned objections why digital sequence information falls outside the scope of the Nagoya</p>

Protocol. These include cost-benefit of such an undertaking and existing policies of the major public data repositories that run counter to restriction on access and use of data. It is also important for the AHTEG to consider that biodiversity research is but one area that contributes to and benefits from these resources. These authors also provide the AHTEG with reasonable arguments regarding use of data that already exists in the public domain, may be of unknown origin, and may continue to be used long into the future for a variety of purposes. However, Laird and Wynberg may have missed the more compelling argument against restricting access to digital sequence information. That argument is found in the language of the Protocol and the Convention. This important point, along with the consequences is found in the invited submissions from Parties, other Governments, relevant organizations and stakeholders.

What is argued in those documents is that Article 1 of the Protocol establishes the objective of fair and equitable sharing of the benefits arising from the utilization of genetic resources and Article 2 of the Protocol establishes that the definitions used in the Protocol are those that are defined in the Convention. Article 2 further restricts the definitions of utilization of genetic resources to mean research and development on the genetic and/or biochemical composition of the genetic resources, including through the application of biotechnology as defined in Article 2 of the Convention. Biotechnology is defined as in the Convention as any technological application that uses biological systems, living organisms, or derivatives thereof to make or modify products or processes for specific uses. Article 2 of the Protocol defines derivative as a naturally occurring biochemical compound resulting from the genetic expression or metabolism of biological or genetic resources, even if it does not contain functional units of heredity.

Although the reasoning varies, the majority consensus that is expressed in the Laird and Wynberg report and in the supplemental documents is that digital sequence information falls outside the scope of Protocol. Digital sequence information is neither a natural product (it does not have a genetic or biochemical composition) nor can it be construed to be a derivative of a genetic resource as defined in Article 2 of the Protocol as it is not a naturally occurring biochemical compound that arises from the genetic expression or metabolism of a biological or genetic resource. Digital sequence information is a research artefact arising from an analytical methodology that is descriptive of a genetic resource. Digital sequence information is no different than any other data product (e.g, results of chemical analyses, geo-positioning information) or research publication that describes a genetic resource. Digital sequence information represents an observation of the genetic resource. While digital sequence information can be used in a variety of ways that have both commercial and non-commercial benefits, many of those benefits are already being shared by developed and developing nations, alike. Sequencing technology has advanced at an exceptionally rapid pace and the cost of entry has fallen to the point where the technology is or soon will be readily available to virtually every biologist as is the supporting infrastructure provided by the International Sequence Database Consortium. There are both social and legal expectations that the open and unrestricted use of digital sequence information will continue in the future, unabated and that the best strategy to ensure that the objectives of the Protocol are met is to embrace this change and develop flexible and adoptive policies the benefits continue to flow to the entire global community.