TEMPLATE FOR PEER REVIEW COMMENTS
STUDIES 2 AND 3

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Title of document reviewed: **(Note: studies 2 and 3 are combined into one. Please complete a different form for each of the other studies reviewed)**	Combined study on DSI in public and private databases and DSI traceability ("Combined Study")

Comments on the study on traceability and databases		
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0	**0**	**General comments**: We preface our submissions below by stating that BASF's views on "DSI" are aligned with those of the International Chamber of Commerce (ICC)[1]. While we consider DSI (and NSD and SI as described in the Combined Study) to be distinct from tangible "genetic resources" (GR) as defined by the Convention on Biological Diversity (CBD), we welcome fact-based information on how publicly accessible DSI is accessed and used, and by whom. In this regard, we find the Combined Study to be an informative and valuable contribution to the CBD/Nagoya Protocol DSI access and benefit sharing (ABS) discussions. The Combined Study clearly demonstrates that "access" is not a critical issue for NSD, with millions of users throughout the world able to unconditionally and freely access the same dataset housed within the INSDC infrastructure. The imposition of an ABS regime that regulates access would therefore introduce inequities, and limitations on a form of significant non-monetary benefits currently available to all. This would be particularly detrimental for those countries shown in the Combined Study to be actively accessing NSD to a greater extent than they are able to contribute to it. We highlight that website "access" to NSD does not equate to "utilization" in the CBD/Nagoya Protocol context, nor does "utilization" equate to an easily quantifiable "value". These are more complicated issues that need to be better understood and properly addressed in the CBD/Nagoya Protocol DSI discussions. The capacity to generate NSD to contribute to the INSDC, and the capacity to use and extract value from NSD require investment in scientific investigation. This is where differences between countries are likely to be more evident, and these would be more effectively addressed through capacity building measures than benefit sharing regimes.

[1] Most recently submitted to the CBD Secretariat in May 2019: https://www.cbd.int/abs/DSI-views/2019/ICC-DSI.pdf.

		Comments on databases: BASF supports the Joint Statement[2] issued by public and private sector organisations, academic and scientific institutions, and data repositories and collections, that emphasises the importance of continuing unencumbered access to and use of DSI that is in the public domain, and that this is itself a globally inclusive form of benefit sharing. The findings reported in the Combined Study are confirmation of this view, and we highlight the following exemplary points:
12-13; 19-20 65		- The INSDC was founded in close collaboration with the scientific community based on the principles of **free and unrestricted use and permanent accessibility as part of the scientific record**. These principles are aimed at **maximizing benefits to society** by enabling information exchange that contributes to **scientific advancement**, as well as promoting **scientific integrity and accountability**. These principles are reinforced by scientific practice that requires publication of sequence information for literature publication. The private sector is a contributor to this scientific record and scientific advancement (see BASF SE Case Study).
17-18; 24-27		- The vast majority of NSD used in the public sphere is contained within the INSDC, which has up to **10-15 million users located in every country of the world**. Taking into account associated platforms and tools, there may be more than 500 million users worldwide. Information is downloaded from the INSDC by research institutions and companies hundreds of thousands of times each day.
21		- The sheer volume, infrastructure, and the scientific, technical and financial investment involved in the current INSDC system, e.g.: - The substantial cost involved in running and maintaining the INSDC is conservatively estimated at **USD$50-60 million annually** – but its use is **unconditionally free**.
22-23		- The number of bases in GenBank doubles approximately every 18 months; it is estimated that about 76% of the NSD in GenBank could be relevant to the CBD (not accounting for the USA which is the major NSD contributor and not a CBD Party, or temporal scope).
29		- There is a lack of commercial NSD databases; attempts to commercialize these are believed to have failed due to the over-valuation of NSD, and under-estimation of infrastructure and maintenance costs.
51-52		- An individual entry of NSD or small collections of NSD have little value; knowledge and value are generated by context and comparison with large NSD datasets that utilize and build upon other entries in the INSDC.
51-52		- If a new, separate database was established outside of the INSDC system for CBD-relevant NSD, it would be prohibitively costly, and its users would be at a disadvantage in terms of the scientific utilization of the dataset, the relatively limited functionality of the system, and their ability to publish, collaborate, and work openly.
38-43		We also highlight that the analysis presented in the Combined Study brings into question the provider/user country dichotomy of the CBD DSI/GR discussions. Where information on the origin (country) of the source GR was available or could be determined, this indicated that the vast majority of publicly available NSD does not originate from such "provider" countries. Conversely, the major contributors of NSD, who are also the major users, appear to locally source GRs. Also, there are many countries that access more NSD than they contribute. These findings not only support safeguarding the existing open-access system whose global users outnumber its contributors, but also suggest that the imposition of benefit sharing obligations may not result in the expected benefits for "provider" countries.

[2] Available at: https://iccwbo.org/content/uploads/sites/3/2018/06/7-joint-stakeholder-statement-on-digital-sequence-information-01-08-201.pdf.

44-54		**Comments on traceability**: The Combined Study outlines the two key bioinformatic tools for exchange and traceability of NSD: **Accession Numbers** that are generated and linked to every individual NSD submission in the INSDC, and Digital Object Identifiers (DOI) used by journals that link the submitted NSD to its respective scientific publication(s). Should traceability be required under the CBD/Nagoya Protocol, we generally agree that there are practical options for strengthening aspects of this existing system, and this is preferable (for the reasons outlined in the "database" section above) to creating a new parallel NSD system specifically to impose traceability.

Please submit your comments to secretariat@cbd.int or by fax at +1 514 288 6588.