

Comments on the first draft of the UNESCO Recommendation on Open Science - CODATA IDPC

Dear Shamila Nair-Bedouelle,

I am pleased to provide some high-level feedback from the CODATA International Data Policy Committee on the first draft of the UNESCO Recommendation on Open Science.

CODATA's mission [1] is to “connect data and people to advance science and improve our world”, while CODATA's parent body, the International Science Council's (ISC) role [2] is “to stimulate and support international scientific research and scholarship, and to communicate science that is relevant to international policy issues ... promote developments that enable science to contribute more effectively to major issues in the international public domain ... defend the free and responsible practice of science”. CODATA's International Data Policy Committee (IDPC) has a focus on policy-related issues in this general context and is pleased to be able to provide some comments on the first draft of *UNESCO Recommendation on Open Science*.

The IDPC would like to congratulate UNESCO on an exemplary draft document that provides a clear description of the open science context, as well as a robust set of recommendations for supporting researchers in adopting an open science approach. Until Member States and other jurisdictions adopt the fundamental principles of open science, and implement policy and legislation to support open science, we will not realize the full potential of science to better society.

The document references the transformative power of Open Science in various sections, and we would highlight the opportunity to refer to this document itself as one intended to lead that transformative change in research and society at large. This document has the potential to inform and enhance the policy activity of Member States in such a way as to hasten the progress of more open and collaborative research globally.

One small way to ensure the transformative impact of this text would be to make sure the term **research** is used instead of **science** whenever possible, thereby ensuring the inclusion of all areas of research. We recognize that Open Science has come to mean research in all disciplines, and not just the traditional concept of science (e.g. the STEM disciplines), but suggest balancing this by highlighting that the application of Open Science norms to all areas of research is implicit in the language, regardless of usage.

The structure and flow of the document provides a solid framework for Member States to act in their local contexts, while retaining a common core across all jurisdictions. It is this multi-level scaffolding that will help achieve the needed cultural change in research. A series of diagrams depicting this structure, as well as the flow and interrelatedness of the principles and recommendations, would benefit the overall narrative.

The preamble does not explicitly mention the researchers themselves, and their role in this complex ecosystem. The text would benefit from a statement highlighting that researchers' interests and needs must be central to the design and delivery of services and resources, and that researcher-centric engagement, with autonomy and incentives to share their data, is critical to success in promoting an Open Science agenda.

The preamble would also benefit from a clear articulation of the role of open science in facilitating decision-making, including how all actors in the ecosystem intersect in achieving that decision-making goal. These distinctions are referenced in different sections of the preamble, but a statement that reinforces the idea of informed decision making as the apex goal in this context would be beneficial. Also, while Openness is one method to protect the integrity of science, another nuanced aspect of this is to ensure that “evidence” in support of decisions is not presented or accepted without proper transparency, questioning and critique. Data support certain scientific statements, and together with other evidence, such as cost factors, willingness of the population to accept specific outcomes, etc., will contribute to effective decision-making.

In the statement that starts with “*Recognizing* that Open Science originated as a movement to transform scientific practice...”, it might be useful to briefly comment on the current state, or that prior to the transformation. The Open Science transformation is emerging from the context of “individual control” of research outputs (where an individual can be a researcher or organization) to that of the Open Science approach described in the document. This prior context has been in existence since the first scientific publications arose in the 17th century, with relatively little change to the fundamental elements. The Open Science approach is indeed transformative, but should recognize its roots in order to effectively see the transformation through to the ultimate goal.

The statement that starts with “Noting that the global COVID-19 health crisis...” could be enhanced by highlighting the option of positioning the current pandemic as a lens through which to focus actions and policies that can lead to this transformative change.

the “Pandemic Lens” is available for all to consider short-term and long-term changes, impacts, and responses across a “continuum of urgencies”. Over months to years, years to decades, and decades to centuries, there is opportunity to construct informed decisions that optimize the available information that is practicably infinite and instantaneous in our digital era.[3]

The draft document highlights the CARE Principles (as well as other similar frameworks) in the context of indigenous data sovereignty, but these Principles should also be considered in the context of broader “population-based” contexts, e.g. national jurisdictions in the COVID-19 context.

The statement “*Further considering* that the collaborative and inclusive characteristics of Open Science...” could provide greater emphasis on the need to ensure equality, diversity and inclusiveness *in and from* science to make sure that the results reflect the characteristics of all members of society. In other words, in addition to equal opportunity to participate in research, all citizens should benefit equally from the efforts of research, and no group should be disadvantaged.

The CODATA IDPC would be happy to further engage with UNESCO on subsequent efforts to review and revise the text, and I would like to congratulate you and your team on what will be a truly influential document in the efforts to transform research.

On behalf of the CODATA IDPC