



Towards a UNESCO Recommendation on Open Science Online Consultation for Indigenous Peoples on the UNESCO Recommendation on Open Science

15 January 2021

Background and Objectives

At its 40th session in November 2019, the UNESCO General Conference decided to prepare a standard setting instrument on Open Science, in the form of a Recommendation. This Recommendation on Open Science is expected to define shared values and principles for Open Science, and identify concrete measures on Open Access and Open Data, with proposals to bring citizens closer to science and commitments facilitating the production and dissemination of scientific knowledge around the world.

With the guidance of an international Advisory Committee, the first draft of the Recommendation was developed based on the wealth of perspectives, proposals, and expectations that emerged from a global survey and a series of regional and thematic consultations with different Open Science actors from around the world. On 30 September 2020, the first draft of the Recommendation was transmitted by the Director-General to the UNESCO Member States for their consideration.

Among several 'key elements' of Open Science addressed in the first draft of the Recommendation, the element of 'Openness to Diversity of Knowledge' is built upon the 'Openness to all Scholarly Knowledge and Inquiry' and, importantly, the 'Openness to Indigenous and Local Knowledge Systems'. Openness to indigenous and local knowledge systems follows the principles of the 2007 United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) and existing principles for indigenous data governance, such as for example the CARE principles¹. Such efforts emphasise the rights of indigenous peoples and local communities to govern and make decisions around the custodianship, ownership, research, storage, access and administration of indigenous and local knowledge.

The creation of a productive relationship between Open Science and indigenous knowledge systems is therefore highly important and understanding the views of indigenous peoples on opportunities, challenges, needs and ways forward for indigenous and local knowledge and Open Science was therefore essential. Therefore, prior to revision of the draft Recommendation, based on comments provided by Member States and other actors, UNESCO held an online consultation for indigenous peoples to ensure that the perspectives, needs, aspirations and concerns of indigenous peoples and local communities are taken into consideration.

This meeting was held on 15 January 2021 on the Zoom platform, in English, French and Spanish. Prior to the meeting, the first draft of the Recommendation was shared with the participants.

Summary

¹ The CARE principles stand for: Collective Benefit, Authority to Control, Responsibility, and Ethics

The consultation allowed UNESCO to gather feedback on the first draft of the Recommendation from 120 participants from over 50 countries.

Speakers and participants discussed aspirations, goals, key challenges and ways forward for Open Science and indigenous and local knowledge. From these discussions, several important points of consensus were developed.

A central point was the potential for Open Science to be either a benefit or a threat to indigenous and local knowledge systems, depending on the frameworks and relationships that Open Science is able to develop for working with indigenous and local knowledge systems. Participation of indigenous peoples and local communities at all stages of these processes will be crucial to ensure that they can participate in Open Science in ways that bring benefits for their communities and for science.

Key challenges and ways forward shared by the speakers and participants in the meeting include the following:

- Indigenous and local knowledge systems have been the basis of harmonious relationships between indigenous peoples and local communities and nature for millennia. However, the knowledge of indigenous peoples and local communities is often unrecognized, invisible or devalued in Western science systems. It is essential for Open science to emphasize the importance of indigenous and local knowledge for understanding and sustainably managing the Earth's resources. Specific incentives and practical steps are needed for establishing respectful links between indigenous and scientific knowledge systems.
- Many indigenous communities do not have the resources to perform their own research, making them reliant on outside researchers, which can then lead to issues regarding control, representation and access to research and knowledge. Indigenous peoples should be recognised as decision-makers in relation their knowledge. Capacity support for indigenous peoples and local communities to plan, implement and manage their own research will be essential for Open Science, including recognition of and support for existing community institutions. Co-production of knowledge with indigenous peoples and local communities as equal partners in research will also be important. Free, prior and informed consent (FPIC) at all stages of research processes is crucial.
- Indigenous knowledge also runs the risk of exploitation and economic expropriation in the context of existing social inequalities. Indigenous peoples currently face challenges in documenting and sharing their knowledge in ways that maintain their control and rights over access, and that ensure benefits for their communities. Open Science should ensure appropriate data governance by and for indigenous peoples, including through principles of data sovereignty.
- Indigenous and local knowledge systems are declining in many areas of the world. There is an urgent need for support for the intergenerational transmission of indigenous knowledge to prevent its further loss. Supporting knowledge transmission within communities should be an explicit aim of Open Science. This can include the inclusion of indigenous and local knowledge in education systems, and supporting community-based methods of learning and knowing.

- Indigenous women are holders of important knowledge. Women also often play crucial roles in transmitting knowledge to future generations. The recognition of indigenous women’s knowledge and indigenous women’s participation will be essential to Open Science.
- For indigenous peoples, existing international frameworks provide a baseline of rights that inform processes around research. These include the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) which includes the principles of Free Prior and Informed Consent (FPIC), and the Nagoya Protocol on Access and Benefit Sharing. These existing rights should provide a framework for work with indigenous and local knowledge in Open Science.
- There is a long history of exploitation, discrimination and violence that forms the basis of the relationship between many indigenous peoples and western science. Open Science should recognize and address these foundations throughout its development and implementation, including through the ways forward described above. Building trust and respect, and promoting a constructive, equitable and respectful relationship between science and indigenous and local knowledge will be crucial.

This report provides a detailed overview of the views, comments and recommendations discussed in the meeting. These inputs will be considered in shaping the final draft of the UNESCO Recommendation on Open Science.

Report

Opening session

During the Opening session, **Ms Shamila Nair-Bedouelle**, Assistant Director-General for Natural Sciences at UNESCO, welcomed the participants, in particular the indigenous elders, and marked the importance of international and intercultural collaboration to overcome and prevent global crises in our interconnected world. In this context she highlighted the potential of Open Science, which can be fulfilled if Open Science reflects the concerns of different actors and brings together different knowledge systems to bridge the gaps.

She added that UNESCO, in its standard-setting position, aims for a Recommendation on Open Science that defines shared values and principles for Open Science, and identifies concrete measures and proposals towards it. She reported that the first draft of the Recommendation is developed through a large multistakeholder consultative process. In this draft, inclusiveness is a core value and guiding principle of Open Science.

She invited the participants to share their comments and inputs on the first draft of the Recommendation and expressed her wish that the meeting can reinforce intercultural and transdisciplinary dialogues, stimulating synergies and complementarities between indigenous knowledge systems and scientific knowledge.

Ms Peggy Oti-Boateng, Director of the Division of Science Policy and Capacity Building, Natural Sciences Sector at UNESCO, provided an overview of the consultative process towards the UNESCO Recommendation on Open Science under the guidance of an international Advisory

Committee. This process has led to the development of a draft text, based on the inputs received from the UNESCO Open Science Partners as well as through the UNESCO online Global Consultation, the regional and the thematic consultations. She added that the thematic consultations with specific groups of stakeholders aim to advance the Open Science discussion in the global context and to build a broad open-ended and geographically balanced perspective on Open Science. At the end she highlighted the objectives of this specific meeting: to hear from indigenous peoples on opportunities, challenges, needs and aspirations for the interactions between indigenous and local knowledge and Open Science, as well as gathering their comments and recommendations on the draft Recommendation on Open Science.

First Draft of the UNESCO Recommendation on Open Science and indigenous knowledge systems

Ms Joji Cariño, Member of the UNESCO Open Science Advisory Committee and the Forest Peoples Programme, provided an overview of the of the first draft. In the preamble of the text, she highlighted the importance of science, technology and innovation (STI) for human progress, and the potential of Open Science to fulfil the human right to science and its benefits, as well as to democratize knowledge and to reduce inequalities in STI. She highlighted that the preamble particularly addresses the need to respect the diversity of cultures and knowledge systems around the world as foundations for sustainable development. She added that fostering an open and robust dialogue with indigenous peoples and local communities and diverse knowledge holders is emphasized in the text in order to encourage contemporary problem-solving and emergent strategies towards transformative change. The Recommendation reaffirms the 2007 United Nations Declaration on the Rights of Indigenous Peoples.

Ms Cariño noted that in the first draft, the definition of Open Science is mindful of the issues related to security, privacy, and respect for subjects of study. This includes protection for sensitive information such as sacred indigenous knowledge. She added that in this definition Open Science is presented as an umbrella concept that combines various movements and practices. As such, the Recommendation aims at increasing scientific collaborations and sharing of information for the benefits of science and society and opening the process of scientific knowledge creation and circulation to societal actors beyond the institutionalized scientific community.

Among several elements of Open Science, Ms Cariño marked the element “Openness to Diversity of Knowledge”, which promotes *Openness to Indigenous Knowledge Systems* in line with the 2007 UN Declaration on the Rights of Indigenous Peoples and the principles for indigenous data governance, such as the CARE principles. This element also embraces *Openness to all Scholarly Knowledge and Inquiry* in line with principles of non-discrimination established by international human rights law. Among the areas of action in the draft Recommendation, she highlighted promoting a common understanding of Open Science, transforming the scientific culture and aligning incentives for Open Science, which specifically concerns indigenous peoples and their traditional knowledge.

Panel discussion on Open Science and indigenous knowledge systems

This session was moderated by **Mr Nigel Crawhall**, Chief of Section LINKS/SIDS, Division of Science Policy and Capacity Building, Natural Sciences at UNESCO.

Ms Myrna Cunningham, leader of the Fund for the Development of the Indigenous Peoples of Latin America and the Caribbean (FILAC) and former Chair of United Nations Permanent Forum on Indigenous Issues (UNPFII), remarked on the timeliness of UNESCO's work on Open Science. She noted the necessity of a transition to address the interlinked social, environmental and economic challenges of human society. She also highlighted inclusiveness as a key aspect of the Open Science transition. She acknowledged the diversity of cultural perspectives towards the past, the present, and the future and the ways we understand the world and live in our ecological and environmental systems. She emphasized that Open Science should acknowledge the wealth of different knowledge systems, particularly the traditional ones, and the right of indigenous peoples to have the authority over the production and dissemination of their traditional knowledge and their ancestral understanding of their connection with their lands and history.

Ms Cunningham added that the knowledge streams of indigenous communities are being transmitted through generations and only sometimes in the formal education system. As such, traditional knowledge is not always taken on board the cutting-edge science system. She also referred to the exploitation and economic expropriation of indigenous knowledge in a context of existing social inequalities. She marked the vital need for legally supporting indigenous and traditional knowledge systems, as addressed by the UN Declaration on the Rights of Indigenous Peoples. She added that the COVID-19 pandemic can be an opportunity to start mutually enriching our knowledge systems to overcome the major challenges of our societies. Last but not least, she mentioned that the Recommendation on Open Science can create a global platform for science to benefit all humanity and to empower indigenous peoples to protect their knowledge.

Ms Lorna Williams, Professor Emerita of Indigenous Knowledge and Learning at the University of Victoria in Canada, shared her experience of the challenges that (Canadian) indigenous peoples face in recording, documenting, and sharing their knowledge in a respectful way. She noted that over the last centuries the knowledge of indigenous peoples, which has been at the base of them living in harmony with nature for millennia, has become very invisible and has been devalued by the Western science system. Referring to the damages caused by human actions to nature, she highlighted the potential of indigenous knowledge in enabling us to heal nature for the sake of our survival and thriving. Ms Williams acknowledged the very recent efforts in Canada for involving indigenous knowledge in academic systems. In this context, she underlined the challenges of publishing indigenous knowledge in the framework of the academic publishing protocols, which are based on a western scientific system. She called for concerted effort and mutual collaboration to stop the current exclusion of indigenous knowledge.

Ms Williams also highlighted that in the past much indigenous knowledge has been taken and reinterpreted without crediting indigenous peoples. This has caused the loss and inaccessibility of parts of that knowledge, e.g. languages, stories, and the documentation of plants, animals, and the lands, even for the indigenous peoples themselves. In the end, she asked UNESCO to pave the way for indigenous knowledge into the conventional science system and for publication and sharing of this knowledge.

Ms Victoria Tauli-Corpuz, former United Nations Special Rapporteur on the rights of indigenous peoples and funder of the Tebtebba Foundation, started her intervention by recalling that from the beginning of the adoption of international standards that promote indigenous peoples rights, protection of indigenous knowledge has been a major issue. Since then, many indigenous peoples have stressed the need for articles that address the intellectual property rights of indigenous peoples over their knowledge systems and practices. This consideration

has been included in the work of the Convention on Biological Diversity (CBD), Intergovernmental Platform on Biodiversity and Ecosystems Services (IPBES) and the UN Framework Convention on Climate Change (UNFCCC). She therefore applauded the human rights-based approach of the first draft of the Recommendation, which must be central for development of Open Science. She emphasized that indigenous knowledge is embedded in a long-term relationship with nature. Therefore, the right of the indigenous people to the lands, territories and resources, which are crucial for their survival, should be always acknowledged. She emphasized the role of indigenous women, in holding and transmitting knowledge and she highlighted the need for a more systematic transmission of indigenous knowledge to prevent its loss.

Ms Tauli- Corpuz asked for intercultural dialogues and joint work on producing knowledge, to fight the systematic discrimination of indigenous knowledge and to decolonize the science system. She added that capacity building for Open Science should include academics, scientists, and decision makers as well as indigenous peoples, to lead to a mutual understanding between the systems. She acknowledged that the core values and guiding principles for Open Science in the draft of the Recommendation are consistent with the values of indigenous peoples and can lead to a positive transition.

At the end of this session **Mr Crawhall** opened the floor to the participants to share their views and comments regarding Open Science and indigenous knowledge systems.

Mr César Carias, Venezuelan Vice Minister of Education and Ancestral Knowledge of the Ministry of Popular Power for Indigenous Peoples, noted the constitutional recognition and protection of the rights and knowledge of indigenous peoples in Venezuela. He also emphasized the importance of respectful relationships and promoting interculturality between knowledge systems.

Mr Santiago Obispo emphasized the use of the term "indigenous peoples and local communities" during the discussion.

Mr Dario Mejia, member of the UNPFII, urged the collective aspects of access to knowledge, in both the production and property of knowledge, to be better recognized in this Recommendation. He added that there is a need for clarification of the meaning of "open" in Open Science. By asking the question "open to whom", one must avoid expropriation in the name of global citizenship, which has happened in the past.

Mr Mejia also mentioned that safeguarding the values of ownership and access to science, and ensuring data governance by indigenous people, should be incorporated into this initiative. He added that in his view, a masculine language is dominant in the draft Recommendation, which should be avoided to end the historical exclusion of women in science. He emphasized that the Recommendation should take into consideration the importance of recognizing and strengthening indigenous educational systems.

Mr Freddy Condo, also a member of UNPFII, suggested that the Recommendation should recognize traditional knowledge as science. He criticized the ignorance of the international scientific community regarding the advances made by indigenous people, e.g. in traditional medicine.

Mr Kamilan Soleaga acknowledged the potential of Open Science in systematically promoting the interculturality between the knowledge systems. He also emphasized the need for

promoting the participation of women in science, and encouraging inputs in science from rural areas, in addition to urban areas.

Santiago Anaxiguat Epaj referred to the mistrust by the indigenous community, which is based on the historical background of exclusion and lack of attribution toward indigenous peoples and their knowledge. In a broader sense he referred to the lack of recognition of the rights of indigenous peoples as an obstacle to building trust between indigenous peoples and scientific researchers in the Western science system.

Panel discussion on good Open Science practices and incentives for collaborations between scientists and indigenous knowledge holders

This session was moderated by **Ms Ana Persic**, Chief of Section a.i of the SPP Division of Science Policy and Capacity Building, Natural Sciences, at UNESCO.

Stephanie Russo Carroll, Assistant Professor at University of Arizona, chair of the Global Indigenous Data Alliance (GIDA), and Co-lead in drafting the CARE Principles for indigenous data governance, highlighted the right of indigenous peoples and nations to govern the collection, ownership, and application of their data in the framework of human rights. Indigenous data sovereignty leverages laws, policies, and treaties such as the UN Declaration on the Rights of Indigenous Peoples, as well as nation-state recognition of indigenous peoples. She added that indigenous data sovereignty underscores that knowledge belongs to the collective and that the knowledge is fundamental to the identity of indigenous peoples. Ms. Russo Carroll provided an overview of the [CARE Principles](#), namely:

- *Collective benefit*, ensured by the use of data consistent with community values;
- *Authority to control* the data and active involvement of indigenous peoples in the governance of data;
- *Responsibility* of non-indigenous institutions to engage respectfully with indigenous communities and to ensure the use of indigenous data supports the strengthening of indigenous languages, cultures and capacity;
- *Ethics* that should inform the use of data across time and minimize harm, maximize benefits, promote justice, and allow for future use.

She commented that the first draft of the Recommendation does not address indigenous peoples' role beyond consumers of science. It does not mention tools enabling their engagement, effective decision-making and equitable benefit, and it does not refer to the right to self-determination. She suggested that the Recommendation could promote alternative licensing, beyond Creative Commons, and agreement systems that support communities in their engagement with Open Science.

Professor Maggie Walter, University of Tasmania, followed this intervention by emphasizing that in the context of Open Science, indigenous peoples should be recognized not as only as consumers but also as rightsholders and decision makers.

Mr Rajesh Tandon, UNESCO Co-Chair in Community Based Research and Social Responsibility in Higher Education, and Founder-President of Participatory Research in Asia, compared conventional science with indigenous knowledge. He explained that conventional science has evolved following the instrumental rationality for the benefit of (a part of) humanity, whereas indigenous knowledge is based on treating all creatures equally, including human beings and nature. He then emphasized the need for practical steps that incentivize the integration of indigenous knowledge in the dominant knowledge system, allowing the same problems to be addressed by both systems. He then described a few such steps: 1) Exposing science students

to indigenous knowledge, and its impact on the daily life of humans; 2) Taking into account ethical protocols developed by indigenous peoples and adopted by the scientific institutes; 3) Support and allocation of research grants for the translation of indigenous languages, as carriers of the knowledge, to facilitate the transfer of this knowledge to other systems.

Ms Lucy Mullenkei, member of the International Indigenous Forum on Biodiversity, referred to the challenge of holding and transferring indigenous knowledge with recognition and respect and assuring the benefit of knowledge holders. She noted that the draft Recommendation is in line with other international instruments such as the Convention of Biological Diversity and Nagoya Protocol, in acknowledging the role and knowledge of indigenous peoples. She also noted that customary laws and traditional institutions among indigenous peoples should be taken into account in identifying the providers and beneficiaries of knowledge. She emphasized the assurance of outreach and inclusion of knowledge holders in remote areas, by providing them access to technology.

Ms Mullenkei commented that recognition of the process of obtaining indigenous knowledge should be highlighted in the Recommendation. She also underlined that the modality of respectful documentation of indigenous knowledge and ensuring the fair distribution of its benefits needs to be addressed to overcome the mistrust and fear rooted in the historical experiences of traditional knowledge holders. In this context she referred to the potential of Knowledge centres (the Network of the Centres of Distinction on Indigenous and Local Knowledge), founded by indigenous communities and working with the Intergovernmental Platform on Biodiversity and Ecosystems Services ([IPBES](#)) in providing solutions. Ms. Mullenkei also noted that capacity building on indigenous issues should not only be provided for indigenous peoples but also for policymakers and the private sector. She emphasized the essential role and position of youth and women in this context.

Following the interventions of speakers, **Ms Ana Persic** highlighted that Open Science does not enforce the opening of data under any conditions and for any purpose. She added that UNESCO aims to elaborate the Recommendation on Open Science based on common values, to build trust and promote just collaborations between knowledge holders and systems to create solutions that are beneficial to all. She then opened the floor to other participants to share their points of view on Open Science, its challenges, and next steps in relation to indigenous knowledge.

Ms Silvina [last name unknown] warned for caution in making indigenous knowledge 'open', and underlined the responsibility of indigenous people to protect their knowledge, and their right to decide "with whom" and "what" should be shared. Pointing out the failure of uneven social and scientific development in the past, which has been based on capitalist values, she emphasized the need for change. She added that for a constructive change, recognition of the unity of human society besides acknowledging the historical background of Indigenous issues is crucial. She also emphasized the role of women in creating, bearing, and transferring indigenous knowledge.

Ms Sergio Aradix, added that guarantees for safeguarding indigenous cultures and maintaining the authority and monitoring over indigenous knowledge should be put in place, and that opening the knowledge should be the choice of knowledge holders.

Ms Antonella Santos highlighted the question of "open to whom" in the context of Open Science. She also expressed her concerns about sharing of knowledge out of its context, e.g. when shared online.

At the end of this session, **Ms Ana Persic** added that Open Science has emerged from the scientific community, opposing the restriction of access to the scientific knowledge in this

system. It is opening science to all, including indigenous people, with the aim of narrowing knowledge gaps between and within societies.

Closing Remarks

Ms Ana Persic noted that the next step of the process towards the UNESCO Recommendation on Open Science is revising the draft based on the comments provided by Member States, and different partners and actors from different regions, including those shared in this meeting. The revised draft will be negotiated by Member States in May, with the view of the adoption of the final version of the Recommendation to the 41st session of the UNESCO General Conference in November 2021.

On behalf of the Assistant Director-General for Natural Sciences and the Director of the Division of Science Policy and Capacity Building, **Mr Nigel Crawhall** applauded the valuable inputs provided by the community representatives and indigenous experts in this meeting.

He recalled the foundation of UNESCO with the view of fostering humanity's cultural, educational, and scientific capacities to create a world where we can all live together in peace. He underlined that, as the Covid-19 Pandemic has reminded us and in line with indigenous cosmology, we are all interconnected and therefore responsible to live in harmony with each other and with the planet to thrive.

He added that the Open Science initiative is to foster knowledge for sustainable development and the benefit of all humanity and to eliminate exclusion.

In the end, he informed the audience about the beginning of the United Nations Decade of Ocean Science for Sustainable Development in 2021 and the beginning of the International Decade of Indigenous Languages in 2022. By emphasizing the relevance and potentials of these two initiatives in supporting indigenous knowledge holders, particularly in developing countries, he invited the participants to continue the journey with UNESCO through its future activities.