

### **Questionnaire for inputs into the development of the UNESCO Open Science Recommendation**

The Open Science movement has emerged from the scientific community and has rapidly spread across nations, calling for the opening of the gates of knowledge. Investors, entrepreneurs, policy makers and citizens are joining this call.

However, in the fragmented scientific and policy environment, a global understanding of the meaning, opportunities and challenges of Open Science is still missing.

UNESCO, as the United Nations Agency with a mandate for Science, is the legitimate global organization enabled to build a coherent vision of Open Science and a shared set of overarching principles and shared values. That is why, at the 40th session of UNESCO's General Conference, 193 Member States tasked the Organization with the development of an international standard-setting instrument on Open Science in the form of a UNESCO Recommendation on Open Science.

The Recommendation 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. It will be developed through a regionally balanced, multistakeholder, inclusive and transparent consultation process.

The purpose of this questionnaire is to conduct an electronic consultation with stakeholders in view of providing inputs into the UNESCO Recommendation Open Science. The questionnaire is available online at <https://en.unesco.org/science-sustainable-future/open-science>.

For any further information, please contact the UNESCO Secretariat at [openscience@unesco.org](mailto:openscience@unesco.org).

### **Participant Information**

Name of the institution: International Federation of Library Associations and Institutions

Country:

Geographical coverage of the institution: *International*

Field: Libraries

### **Questions**

#### **A) On the meaning and practices of Open Science**

1. How familiar you are with the Open Science concept?

*I actively promote Open Science*

2. If applicable, in which way do you practice and/or promote Open Science?

*IFLA actively promotes Open Science in the international policy arena, in particular in relation to the SDGs. It facilitates the sharing of best practice among librarians and other information professionals and promotes the role of libraries in supporting OS. IFLA members (librarians and institutions) propagate and facilitate OS practices by advocating for the societal benefits of OS, providing training on OS related topics such as research data management and copyright and licencing, and through the development and provision of services and infrastructure that support OS practices and outputs e.g. support for open education, metadata, data curation, digital preservation, repositories, library OA publishing initiatives. Libraries are involved in all aspects*

*of the research and open science ecosystem, but have a particularly critical role in research design, publication, and dissemination and have been actively working with stakeholders and researchers to develop more open practices, bolster OS skills, engage citizens, and develop and facilitate access to open education.*

3. Does Open Science have a clear definition for you?

*Not completely*

4. What is your understanding of Open Science?

*Open Science as a practice is evolving which is why we say that the definition is not totally clear. Humanities and social science researchers have sometimes preferred similar but related language such as open scholarship, or open research. The goal of OS is much more clear: making scholarly outputs, research data and publications across all disciplines as accessible as possible. Such a goal also acknowledges that some research and data may not be openly accessible for cultural or other reasons. We support this goal in the context of Article 19 of the Universal Declaration of Human Rights and the right of people to seek, receive and impart information and ideas through any media and regardless of frontiers, and Article 27a reflecting the right to participate in cultural life and scientific advancement. We emphasise that access does not just mean free availability online, it encompasses equity of participation, discoverability and usability, which extends to the involvement of citizens and integration into open education.*

5. Which of the following aspects are relevant to Open Science? Please score them based on their importance from 0 (not important) to 3 (very important).

- Open access to scientific journals: **3**
- Open access to data: **3**
- Open notebooks: **2**
- Open access to educational resources: **3**
- Open source: **3**
- Open infrastructures (Open labs/Open hardware): **3**
- Open innovation: **2**
- Open evaluation: **3**
- Open collaborations: **3**
- Crowd sourcing: **2**
- Co-design of research projects: **2**
- Citizen science: **3**
- Links with indigenous and local knowledge: **3**
- Science outreach and communication: **3**

6. Which of the following aspects of Open Science (if any) are relevant in your specific field of work? Please score them based on their importance.

- Open access to scientific journals: **3**
- Open access to data: **3**
- Open notebooks: **2**
- Open access to educational resources: **3**
- Open source: **2**
- Open infrastructures (Open labs/Open hardware): **2**
- Open innovation: **I don't know**

- Open evaluation: **1**
- Open collaborations: **I don't know**
- Crowd sourcing: **3**
- Co-design of research projects: **I don't know**
- Citizen science: **3**
- Links with indigenous and local knowledge: **3**
- Science outreach and communication: **3**

7. Which other aspects of Open Science should be taken into consideration?

*The principle of “as open as possible, as closed as necessary” applies not only to data but also publications, and specific works such as sensitive or materials concerning indigenous populations. There are frequently reasons why parts of the research process need to be confidential, secure, or restricted access even if other parts of the same research project are open. Making ethical decisions about this is difficult but crucial for everyone. Retention, preservation and discovery are also important considerations. The proliferation of open data, for example, has created new issues in storage, curation, and preservation. This issue also requires careful consideration by funders, institutions, and researchers.*

*OS should go beyond equitable access to data and information and explicitly address inclusion and equity of participation. We cannot forget the basics in that access to infrastructure, broadband, hardware, and digital literacy education are a baseline for participation in OS.*

8. What infrastructures do you think are crucial for implementing open science policies? (e.g. access to high-speed internet, data repository equipment, etc. )

*Robust institutional repositories for preservation, curation and dissemination of publications, data, non-traditional research outputs, and other works.*

*Flexible infrastructure to enable OS to extend across all disciplines, and fully incorporate the discovery and reuse of creative works such as films, photographs, as well as code, software, models, and other outputs.*

*A healthy ecosystem that provides choice across project type, size, and discipline must be fostered.*

*Persistent identifiers.*

*Ensuring open science tools remain open source and openly available, not closed source or operated largely by commercial publishers.*

*Publicly funded and owned discovery layers, cloud infrastructure to host data and services.*

*Tools and platforms should be standards-based and interoperable, so that resources, publications, data and other outputs can be easily discovered, indexed, and exchanged between them to take advantage of global, networked ICT infrastructure.*

9. Which of the necessary infrastructures for Open Science are missing in your country?

*IFLA represents libraries in 150 countries - the gaps across those countries are extremely diverse but can be summarised as: lack of public internet access, lack of institutional repositories and public infrastructure to support collaboration, sharing, distribution and preservation of research information, lack of national funding or policies, lack of visibility for research originating from the country. Consequently there is a lack of incentives for researchers to adopt open science practices, cultural change and behaviour are as important as infrastructure.*

10. Are there any capacity building initiatives undertaken in your country to enable Open Science? If yes, kindly indicate what they are and which elements of open science do they address?

*Varied initiatives in different regions, ranging from European Commission funded infrastructure, capacity building and policy projects, IFLA's Open Access Task Force and other professional groups are building capacity among the library community, libraries are acting at institutional and national level to advocate for OS, deliver workshops on FAIR data, OA, citizen science and other aspects of OS. Many libraries have also been at the forefront of developing new research metrics. Hands-on training initiatives to embed related skills such as coding, instructional design for open education, copyright and licencing, research ethics are also being delivered in libraries. Libraries in many countries, but not all, collaborate closely on researcher-led initiatives in this space to develop infrastructure and solutions.*

11. In your experience, are current Open Science practices beneficial for all the relevant stakeholders in your country?

*Partly*

Do you have any complementary note?

*Open science practices are still not sufficiently rewarded and early career researchers may be indirectly penalised for choosing to adopt such practices. Some disciplines such as the humanities are not receiving the same support to transition to OS e.g. through development of digital skills, funding for OA monographs etc.. More should be done to convert OS outputs to open education. Whilst libraries actively promote OS practices, it also falls to libraries to provide additional support for these practices without any additional resources e.g. research data management support.*

12. In your experience, are the current open science practices beneficial for the scientists and other relevant stakeholders in both developed and developing countries?

*Partly*

Do you have any comments to add?

*Open science has the potential to address systemic issues in research visibility, promotion, measurement that has historically disadvantaged women, researchers in the global south, and emerging disciplines or those focused on issues such as national legislation or indigenous populations. Open science can be an important pillar in meeting the SDGs by making available the research and insights from all regions and facilitating equitable participation to solve global challenges. However, this has not yet been realised and more concerted work needs to be undertaken to ensure that open science achieves these goals.*

13. Do you have any concerns about the possible negative impacts of Open Science practices?

If yes, please specify

*We are not starting from a level playing field and there is a risk that OS could further entrench systemic inequalities if these are not addressed explicitly. The debate about the direction of OS needs to be opened to other voices that have not traditionally been strongly represented in the scholarly communications field. Access to infrastructure, tools, and training will also dictate who can fully participate in OS. Whilst commercial profit is the main driver behind the development of much scholarly communications infrastructure barriers to access and participation will remain. There is also the question of how sustainable OS will be in the long term. Many OS initiatives are funded on a project basis, whereas OS outputs need to be preserved and accessible over the long term.*

## B) On Open Science policy

14. Does your institution have an Open Science policy or strategy?

No

If yes, please specify.

*Because of the diversity of national and institutional approaches IFLA does not have a policy or explicit strategy. Some institutions that our member libraries belong to have started this process or have put policies in place. IFLA plays a role in supporting knowledge sharing, best practice, and coordination across regions and institutions.*

15. Does your country or region have a dedicated institution/entity dealing with Open Science?

No

If yes, please specify.

16. Does your country or region have a policy or strategy on Open Science?

No

If yes, please specify.

17. Are you aware of any international framework(s) for Open Science?

Yes

If yes, please specify.

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## C) On a global UNESCO Recommendation on Open Science

18. In your opinion, how important it is to reach a global consensus on Open Science?

It is important

19. Which key aspects of the transition to Open Science should be considered by a Global Open Science Recommendation

*Equity of participation in OS, sustainability of infrastructure to support OS (publicly owned, preservation, discoverability), establishment of key principles to ensure genuine 'openness', explicit connection to the UN 2030 Agenda and broader development goals. Mechanisms to facilitate collaboration between research institutions, universities, industry, and NGOs transnationally and nationally to provide focused evidence-informed research for other UN activities such as UN HRC, Aarhus Convention.*

20. What are the obstacles in reaching a global consensus on Open Science?

*Variance in disciplinary practices, emphasis on impact in different countries, lack of funding to build capacity and infrastructure, diverse regional approaches already progressing e.g. COAlitionS, competing interests of commercial players in the scholarly communications environment, diverse IP and copyright regimes, the competitive nature of research as evidenced by the University Impact Ranking. The need to consult with a range of Ministries -those concerned with research, education, community engagement, intellectual property- and the broader public.*

21. Do you know of any specific platforms to involve different Open Science stakeholders from your country or region in the consultation process for the UNESCO Open Science Recommendation?

*Relevant government ministries (education, culture, research and innovation). Organisations representing universities and research institutes at the national level. Overarching scientific bodies such as the International Council for Science. Disciplinary societies and associations. Research funders.*