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UNESCO Recommendation on Open Science



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**UNESCO Recommendation
on Open Science**

Why a UNESCO Recommendation on Open Science ?

Need for an international policy and action framework

Need for a common definition of open science, shared set of values and principles

In 2021, at the UNESCO 41st General Conference, 193 Member States adopted the first international standard-setting instrument on Open Science in the form of a UNESCO Recommendation on Open Science.



UNESCO Recommendations

Legal instruments in which “the General Conference formulates principles and norms for the international regulation of any particular question and invites Member States to take whatever legislative or other steps may be required in conformity with the constitutional practice of each State and the nature of the question under consideration to apply the principles and norms aforesaid within their respective territories”.

Quick Update



- At the 41st session of the General Conference of UNESCO (November 2021) 193 Member States unanimously adopted the UNESCO Recommendation on Open Science
- Developed through a regionally balanced, multistakeholder, inclusive and transparent consultation process, this landmark international agreement **defines shared values and principles** for open science, and **identifies measures to make science more accessible**, the scientific process **more inclusive** and the outputs of science **more readily available** and relevant for society
- The assistance, support and promotion by numerous actors from all around the world in developing and leading to the successful adoption of the Recommendation is well acknowledged and appreciated.

Highlights of the Recommendation

- ❖ It is the first **international normative instrument** on Open Science;
- ❖ it contains the first **internationally agreed definition** of Open Science;
- ❖ it spells out the consensus **core values and guiding principles** of Open Science;
- ❖ it addresses **multiple actors and stakeholders** of Open Science;
- ❖ It recommends **actions on different levels** to operationalize the principles of Open Science;
- ❖ it proposes **innovative approaches for Open Science at different stages** of the scientific cycle;
- ❖ it calls for development of a **comprehensive Open Science monitoring framework**.



Definition of Open Science

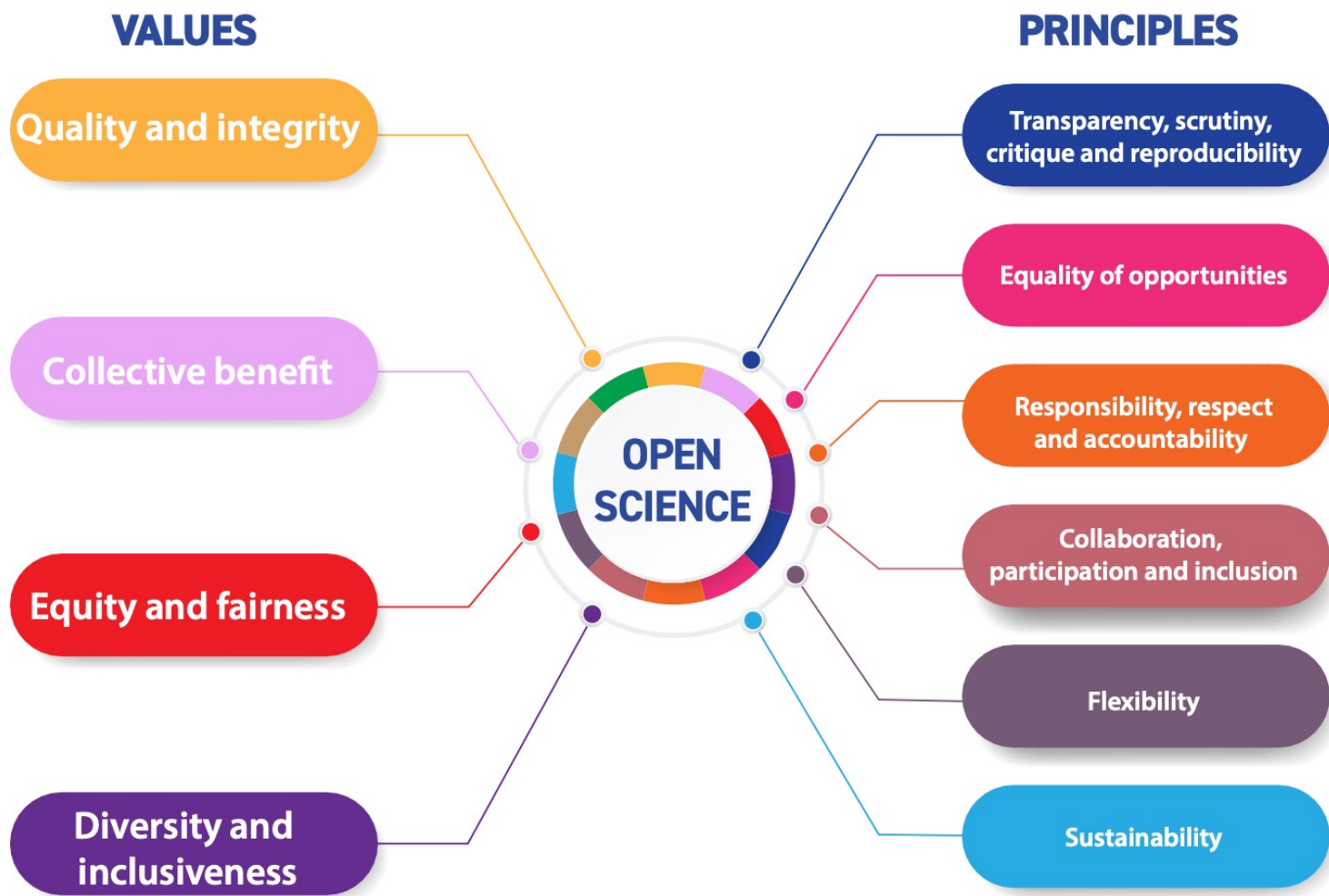
Open Science:

- ❖ makes scientific knowledge openly available, accessible and reusable for everyone,
- ❖ increases scientific collaborations and sharing of information for the benefits of science and society,
- ❖ opens the processes of scientific knowledge creation, evaluation and communication to societal actors beyond the traditional scientific community.

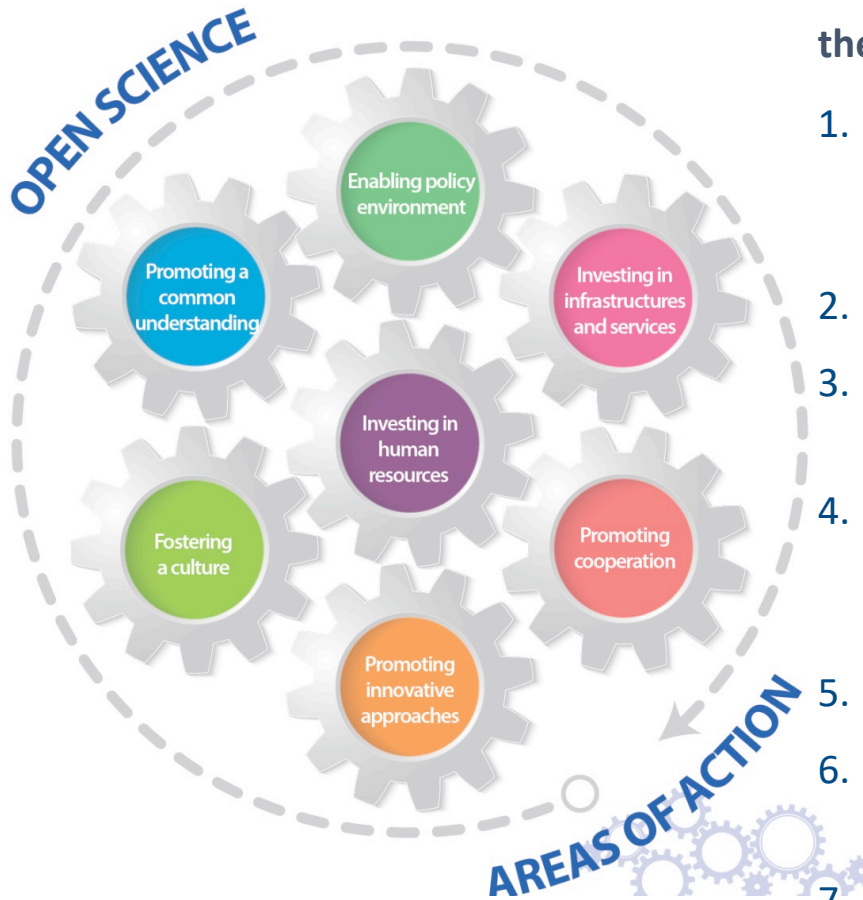


Shared values and principles

Member States are encouraged to take action in line with shared values and principles:



Key Objectives – Key Areas of Action



Member States are encouraged to prioritise seven areas in their implementation of the *Recommendation*:

1. Promoting a common understanding of OS and its associated benefits and challenges, as well as the diverse paths to OS
2. Developing an enabling policy environment for OS
3. Investing in infrastructure and services which contribute to OS
4. Investing in training, education, digital literacy and capacity-building, to enable researchers and other stakeholders to participate in OS
5. Fostering a culture of OS and aligning incentives for OS
6. Promoting innovative approaches to OS at different stages of the scientific process
7. Promoting international and multistakeholder cooperation in the context of OS with a view to reducing digital, technological and knowledge gaps.

Key challenges and high impact areas for the implementation of the UNESCO OSR



Change in the conventional scientific culture



Human and institutional capacity



Adequate infrastructures, including reliable internet connectivity



Alignment of incentives and revision of criteria for evaluation of scientific excellence and scientific careers



Addressing the unintended negative consequences of open science practices

CAPACITY BUILDING **POLICIES** **FINANCING/INCENTIVES** **INFRASTRUCTURES** **MONITORING**

A view from open science champions



Implementation of the UNESCO Recommendation on Open Science

At the international level...

- ❖ Developing a series of supporting tools - technical briefs, fact sheets and guidelines
- ❖ Collecting/mapping existing open science policies and strategies
- ❖ Collecting and sharing best practices
- ❖ Analyzing open science financing mechanisms and incentives
- ❖ Promoting open science infrastructures
- ❖ Building capacity
- ❖ Developing an open science monitoring framework

Partners

- ❖ Global Open Science Partnership
- ❖ Steering Committee for Open Science
- ❖ Open Science Working Groups (open-ended)



Addressing the challenges for Implementation of the UNESCO Recommendation on Open Science

Working Groups	Deliverables
OS capacity building	<ul style="list-style-type: none">• Compilation/index of the existing Open Science training modules and materials• Creation and delivery of new and additional necessary training modules on open science for different open science actors
OS policies and strategies	<ul style="list-style-type: none">• Global repository of open science policy instruments• Development of Open Science Policy Guide
OS financing and incentives	Proposals for regional and thematic open science funding mechanisms and recommendations for revision of the current research careers assessments and evaluation criteria
OS infrastructures	Support for /development of international, regional and thematic open science platforms for sharing of knowledge and best practices. Specific focus will be on thematic platforms in UNESCO's priority areas, including biodiversity, water, disaster risk reduction, geosciences, ocean sciences, climate change...
OS monitoring framework	Global monitoring framework for open science



Addressing the challenges for Implementation of the UNESCO Recommendation on Open Science

Working Groups	Deliverables
OS capacity building	<ul style="list-style-type: none">• Compilation/index of the existing Open Science training modules and materials• Creation and delivery of new and additional necessary training modules on open science for different open science
OS policies and st	
OS financing and	
OS infrastructure	
OS monitoring framework	Global monitoring framework for open science

Find out more and join at:
<https://www.unesco.org/en/open-science/implementation#open-science-working-groups>

All are welcome to join any Working Group; join by registering for a meeting or by emailing openscience@unesco.org



GUIDES

- **Building capacity** for open science
- **Developing policies for open science**
- **Funding** open science
- Bolstering open science **infrastructures** for all

CHECKLISTS

- Checklist for **universities** on implementing the UNESCO Recommendation on Open Science
- Checklist for **open access publishers** on implementing the UNESCO Recommendation on Open Science

FACTSHEETS

- Understanding open science
- Identifying predatory academic journals and conferences

OPEN INDEXES OF OPEN SCIENCE RESOURCES

- UNESCO Open Science **Capacity Building index**
- UNESCO Index of Open Science **Knowledge Sharing Platforms**
- UNESCO Global Observatory of Science, Technology and Innovation **Policy Instruments (GO-SPIN)**

<https://www.unesco.org/en/open-science/toolkit>





GUIDES

- **Engaging society in open science**
- **Nurturing open source hardware for open science**
- **Empowering journalism in open science**
- **Promoting open dialogue with other knowledge systems**
- ...

CHECKLISTS

- Checklist for an **institutional open science action plan**
- ...

FACTSHEETS

- Towards **equitable scholarly publishing**
- **Intellectual property rights** and open science
- Overcoming **challenges** to the implementation of open science
- ...

OPEN SCIENCE OUTLOOK





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UNESCO Open Science

Next Steps



Five Open Science Working Groups

Calendar for Working Groups (3rd meetings)

Date (2023)	Title
16 January	Open Science Monitoring Framework
20 February	Open Science Capacity Building
2 March	Open Science Infrastructures
15 March	Open Science Funding and Incentives
3 April	Open Science Policies and Policy Instruments



Implementation of the UNESCO Recommendation on Open Science

News >

UNESCO launches a global call for best practices in open science

Further to the adoption of the UNESCO Recommendation on Open Science in November 2021, UNESCO is launching a Global Call for Best Practices in Open Science.



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Global call for best practices (and learnings):

<https://www.unesco.org/en/articles/unesco-launches-global-call-best-practices-open-science>

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The resulting compendium of best practices will be a useful tool to better understand the current landscape of open science, share lessons learned, identify and connect open science actors around the world, and further develop innovative solutions for open science in a collaborative, inclusive and transparent manner.



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Keep in touch



UNESCO Open science website:
<https://on.unesco.org/openscience>



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