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A global roadmap for opening science to scientists and society: UNESCO Recommendation on Open Science

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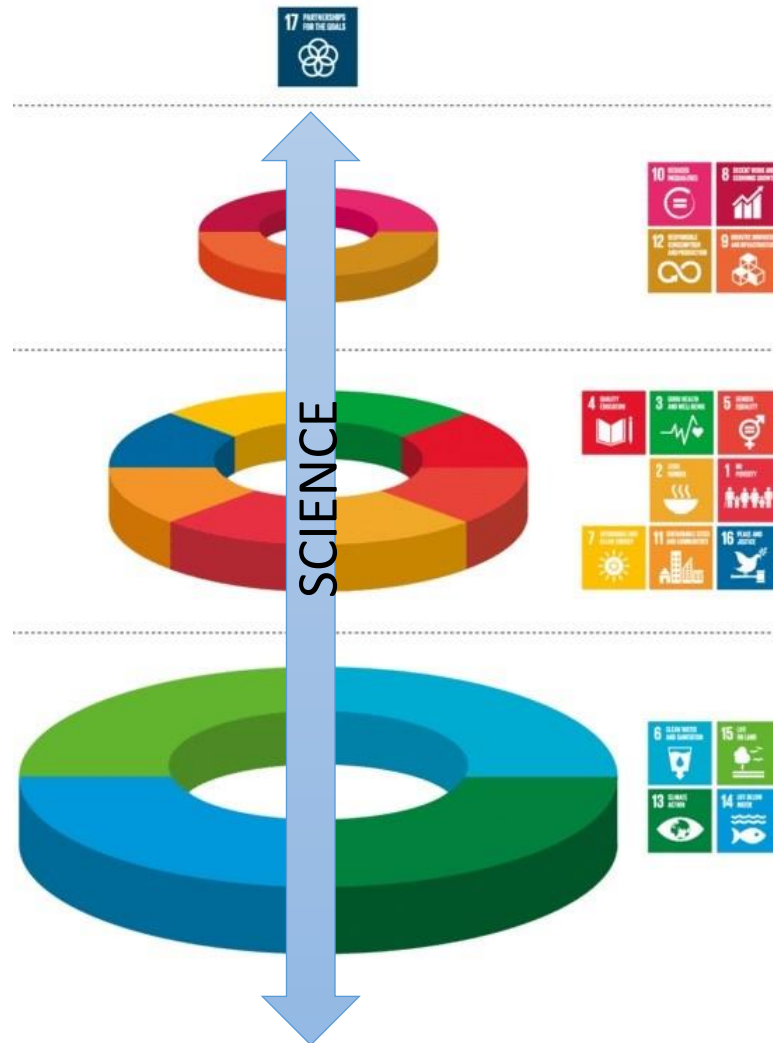
Science at the core of SDGs

Science, technology and innovation - critical for

ECONOMIC

SOCIAL

**ENVIRONMENTAL
SUSTAINABILITY**



Adapted from Azote Images
for Stockholm Resilience
Centre

Science for the People, Planet & Prosperity



The achievement of SDGs relies on sustainable and innovative solutions that require an **efficient, transparent and vibrant scientific community** not only stemming from scientists, but from the whole of **society**.

Need to **democratize science** and the entire scientific process and make it more **efficient, equitable, transparent and inclusive**.

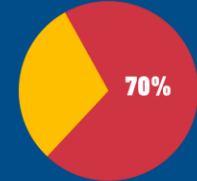
Need for Open Science

Lessons learned from COVID 19

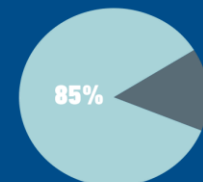
- Importance of timely and free access to scientific data, publications, information
- Importance of scientific collaborations and sharing of information at all levels
- Importance of science-policy-society dialogue

Need for Open Science

70%
of all scientific
publications
are locked behind
paywalls.



85%
of covid-19
related publications
are open access.



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”.

Open Science

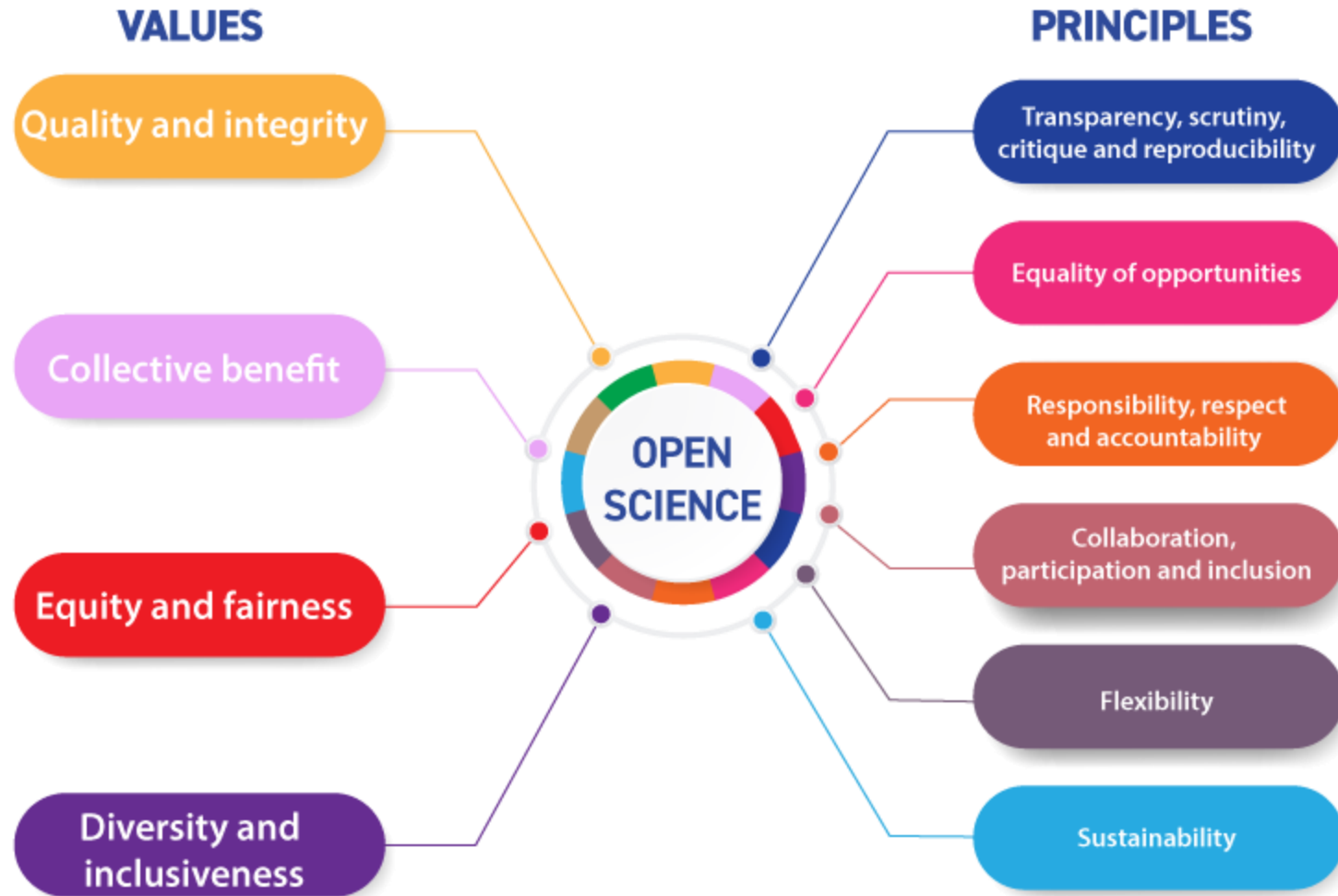
Open Science:

- ❖ 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.

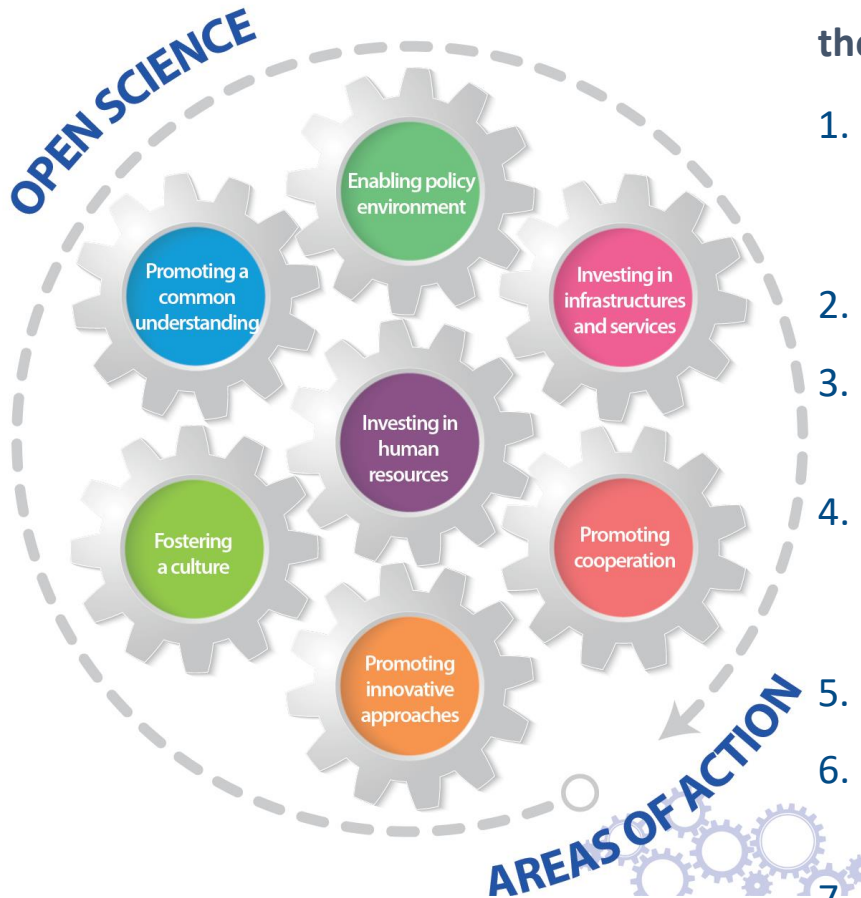
It comprises all scientific disciplines and aspects of scholarly practices, including basic and applied sciences, natural and social sciences and the humanities...



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 co-operation in the context of OS with a view to reducing digital, technological and knowledge gaps.

Key Challenges for Open Science for SDGs and for the implementation of the UNESCO OSR



- ❖ Change in the conventional scientific culture
- ❖ Capacity building
- ❖ Investment in 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, such as high article processing charges, predatory behaviors, migration, exploitation and privatization of research data.

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



The Potential of Open Science



Open Science has the potential of increasing the accessibility and the quality of science and making the entire scientific process and its outputs more accessible transparent, collaborative and inclusive.

Open Science can be a true game changer in **bridging the science, technology and innovation gaps** between and within countries and fulfilling the **human right to science**.

Open Science is increasingly recognized as a critical **SDGs accelerator**.

Join the Global Open Science Movement

Join the UNESCO Open Science Partnership!

Contribute to global open science calls !

Engage in the discussions of the working groups!

Be in touch!

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



Contact: openscience@unesco.org



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Thank you



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and Cultural Organization