



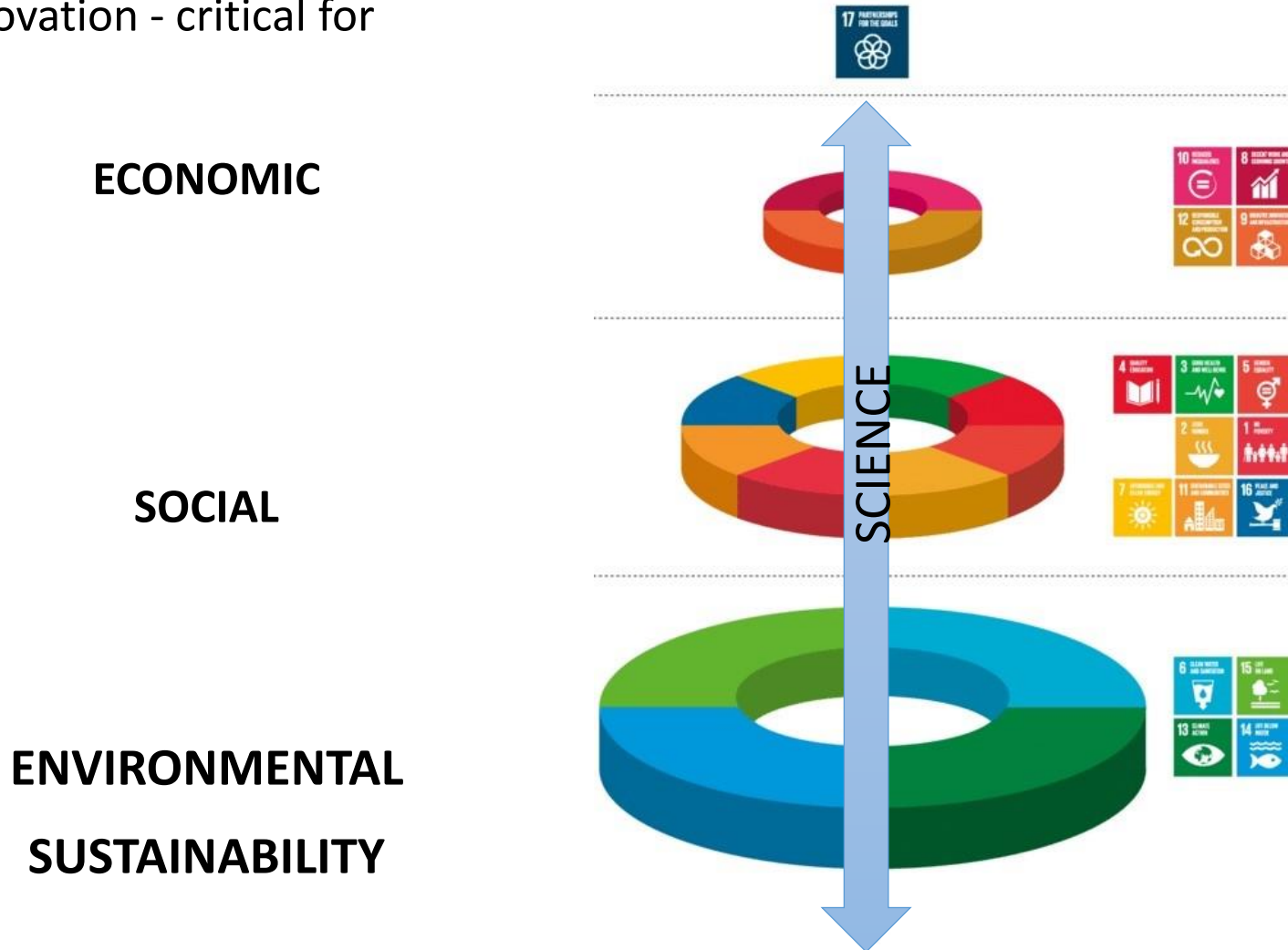
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UNESCO Recommendation on Open Science

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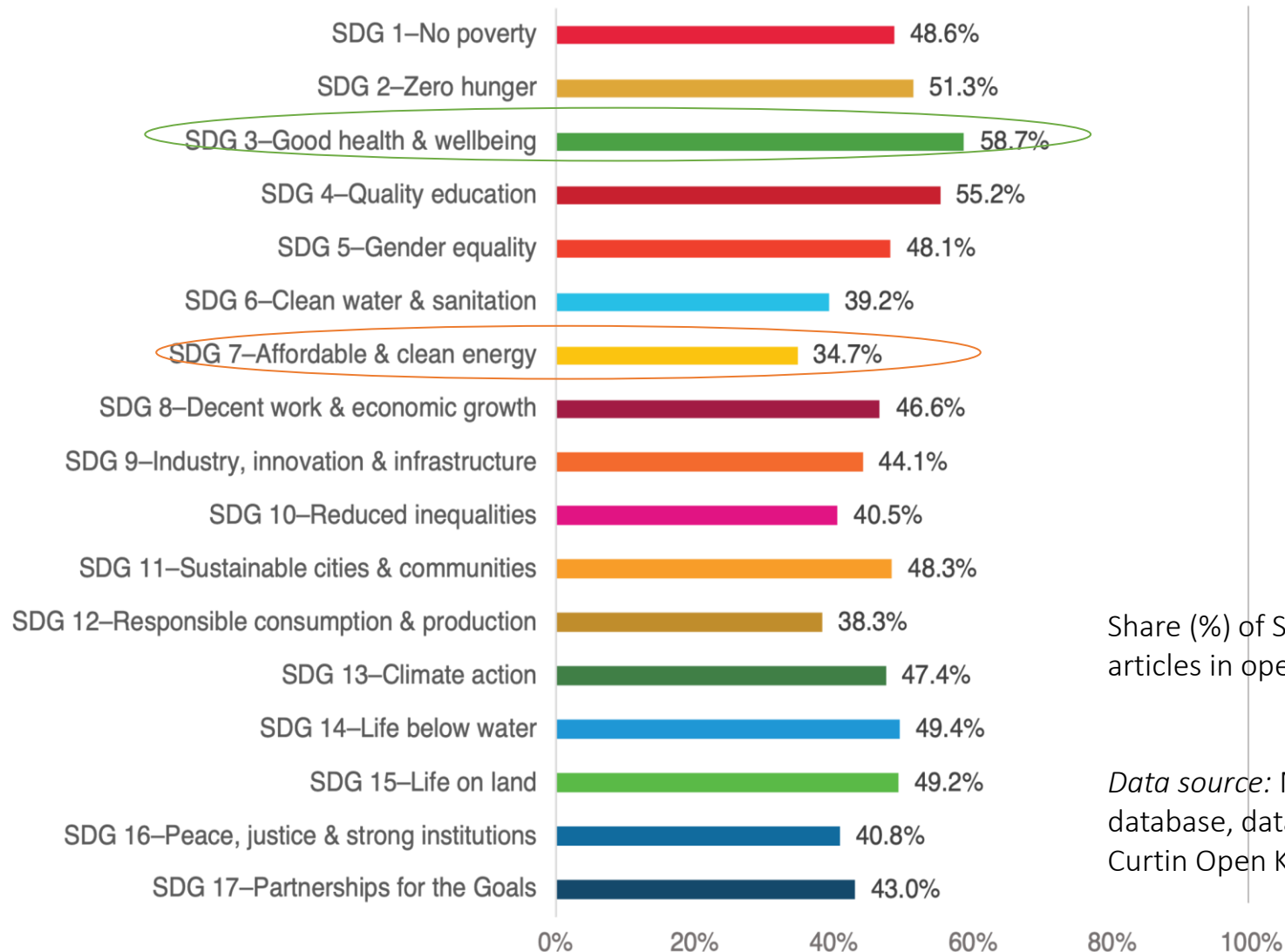
Science at the core of SDGs

Science, technology and innovation - critical for



Adapted from Azote Images for Stockholm Resilience Centre

Gaps in access to scientific information



Share (%) of SDG-related scientific articles in open access by SDG.

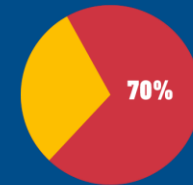
Data source: Microsoft Academic database, data provided by the Curtin Open Knowledge Initiative



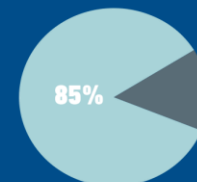
Need for Open Science

- 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

70%
of all scientific
publications
are locked behind
paywalls.



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



Need for Open Science

Achieving SDGs and overcoming the global challenges require accessible, efficient, equitable, transparent, collaborative and inclusive science, that can lead to innovative and sustainable solutions.



Everyone has the right to freely share in scientific advancement and its benefits.

Article 27 of the Universal declaration on Human Rights

Open Science has the potential of making science more **connected to societal needs** and more accessible for all. It can **bridge the STI gaps** between and within countries.

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

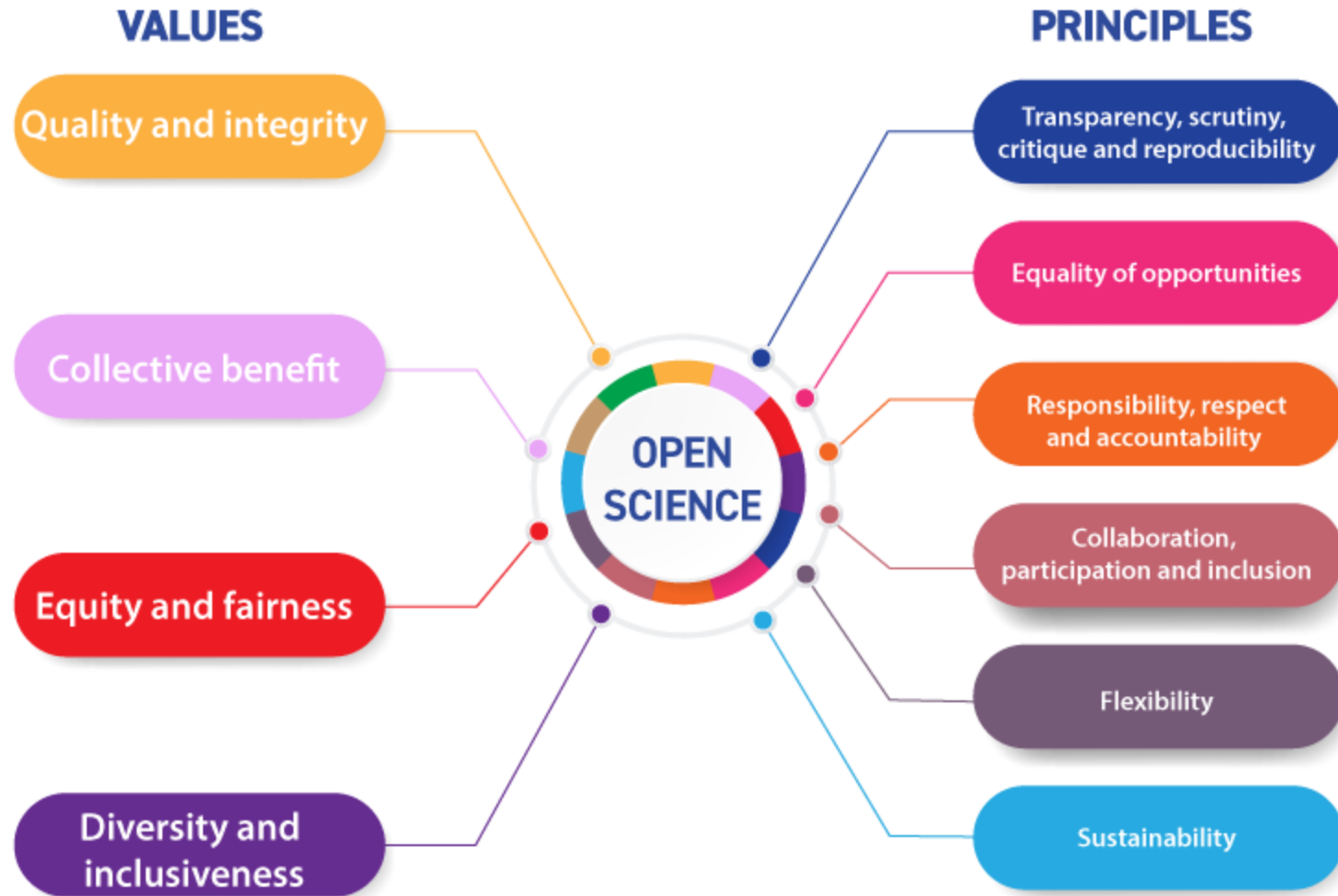
Open Science:

- ❖ 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.

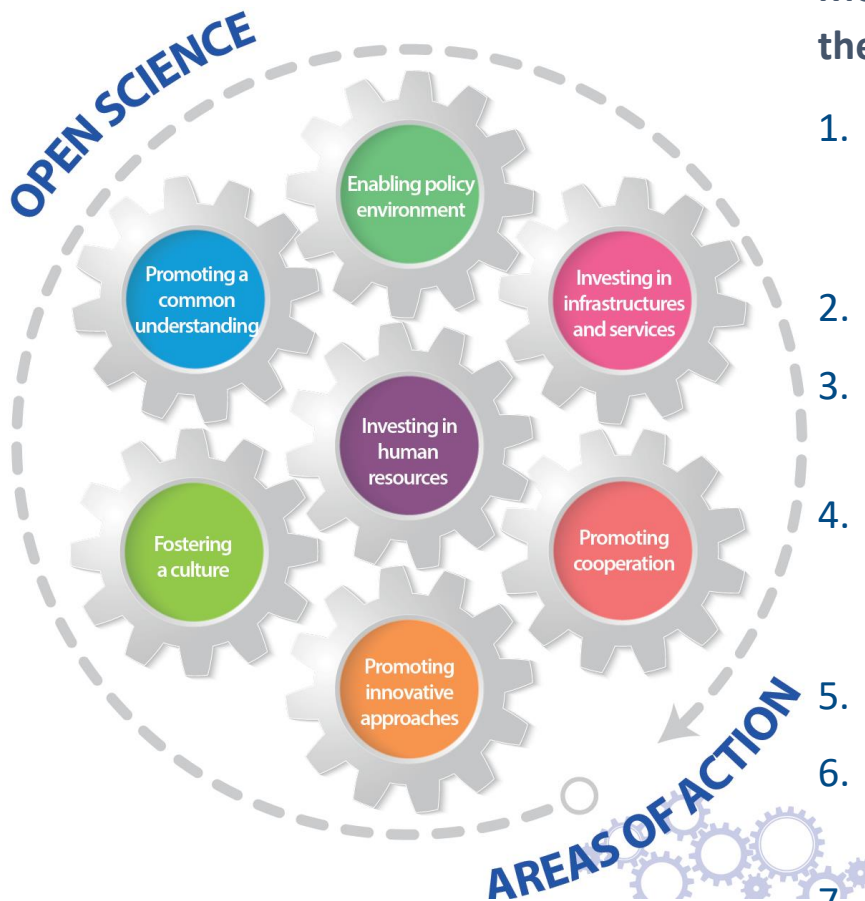
It comprises all scientific disciplines and aspects of scholarly practices, including basic and applied sciences, natural and social sciences and the humanities...



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 cooperation 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 (WFE0)
- ❖ Steering Committee for Open Science
- ❖ Open Science Working Groups



Upcoming elements of the UNESCO Open Science Toolkit



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UNESCO OPEN SCIENCE · TOOLKIT



IMPLEMENTING THE UNESCO RECOMMENDATION ON OPEN SCIENCE

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)



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* Search conducted in Oct–Dec 2021, in English, French and Spanish.

Join the Global Open Science Movement



UNESCO Open science website:

<https://on.unesco.org/openscience>

Contact: openscience@unesco.org

Contribute to global call on best practices in open science

Join *UNESCO's Working Groups on Open Science*

Join the *Open Science Day* on 7 December, during the *World Science Forum*: <https://worldscienceforum.org/>



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Thank you



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Educational, Scientific
and Cultural Organization