

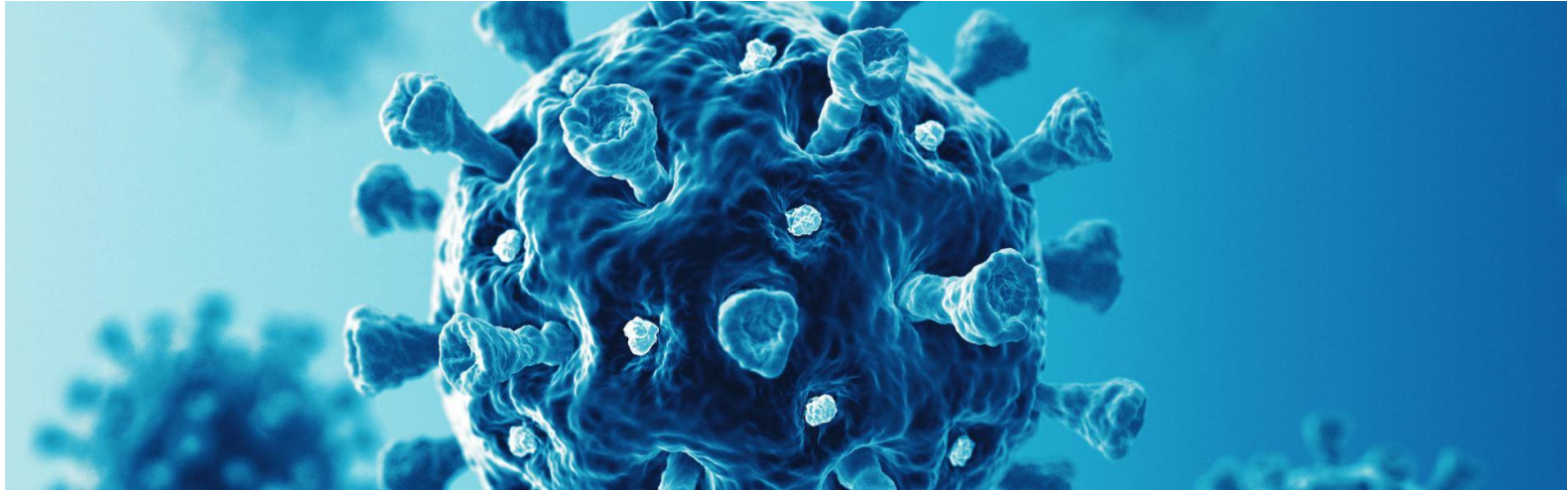


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# UNESCO Recommendation on Open Science



# Lessons learned from COVID 19



Importance of timely and free access to scientific data, publications, information

Importance of science-policy-society dialogue


Importance of scientific collaborations and sharing of information at all levels

**Importance of Open Science**

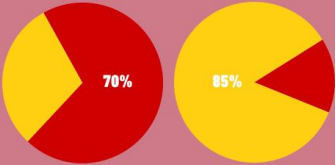


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# Opening access to knowledge



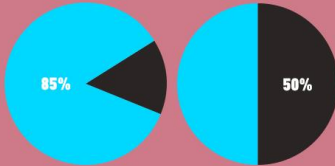
**70%**  
of all scientific  
publications  
are locked behind  
**paywalls.**



in contrast, **85%**  
of covid-19  
related publications  
are **open access.**



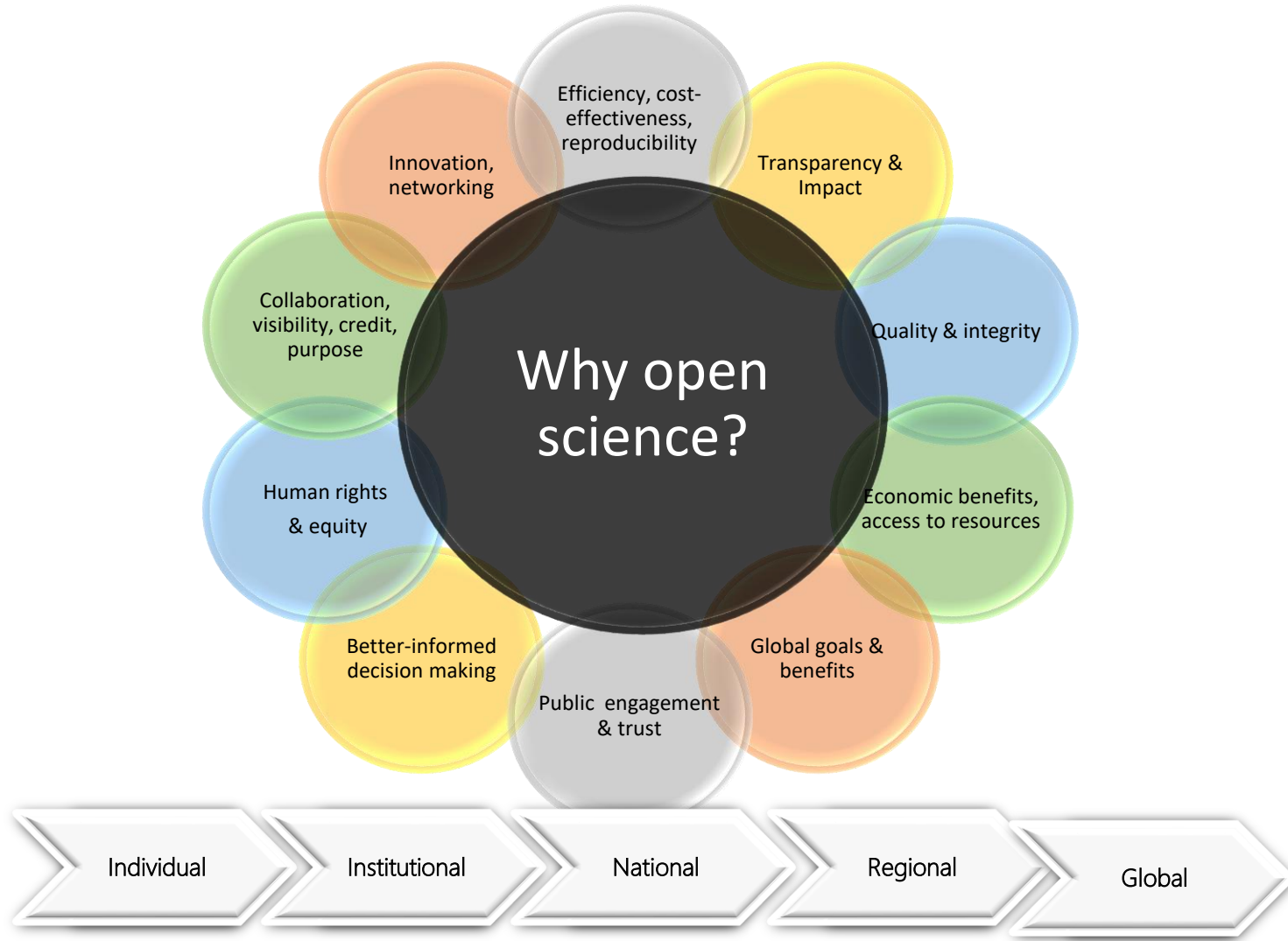
**85%**  
of covid-19  
related publications  
are **open access.**



For climate  
change **50%**  
of the publications  
are still locked behind  
**paywalls.**

Source: Dimensions

# Why Open Science? Open access and much more...



# Science for the Global Goals



The achievement of sustainable development relies on STI 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** to fulfill the **Human Right to Science** .

**Need for Open Science**

# 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 2019, at the UNESCO 40th General Conference, 193 Members States tasked UNESCO with the development of an international standard-setting instrument on Open Science in the form of a UNESCO Recommendation on Open Science.



# UNESCO Recommendation on Open Science

**Text of the Recommendation developed through a broad consultative, inclusive, transparent multistakeholder two-year process**



**Adopted by 193 countries at the UNESCO  
General Conference on 23 November 2021**



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# 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**.

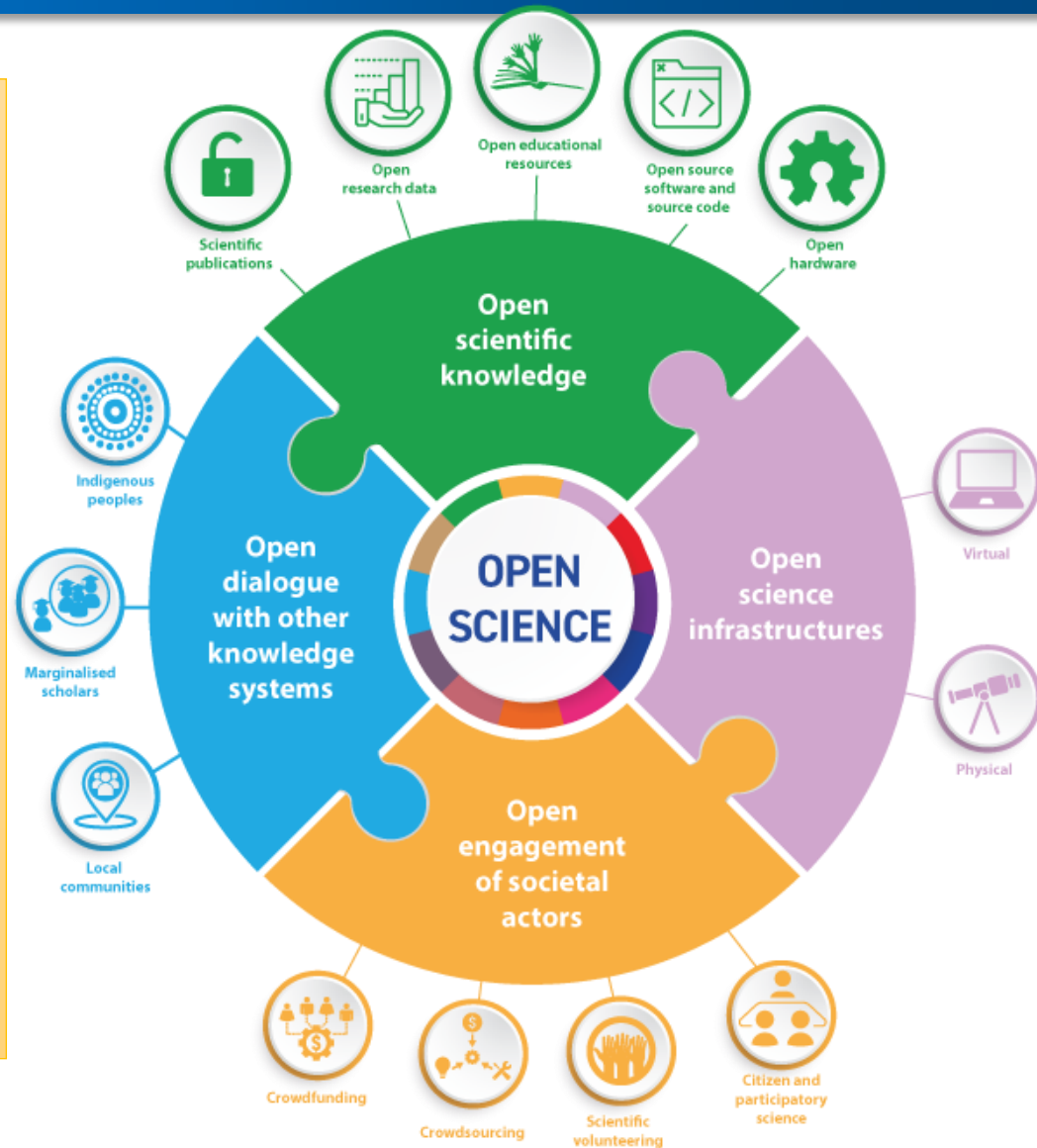




# Definition of Open Science

## 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.

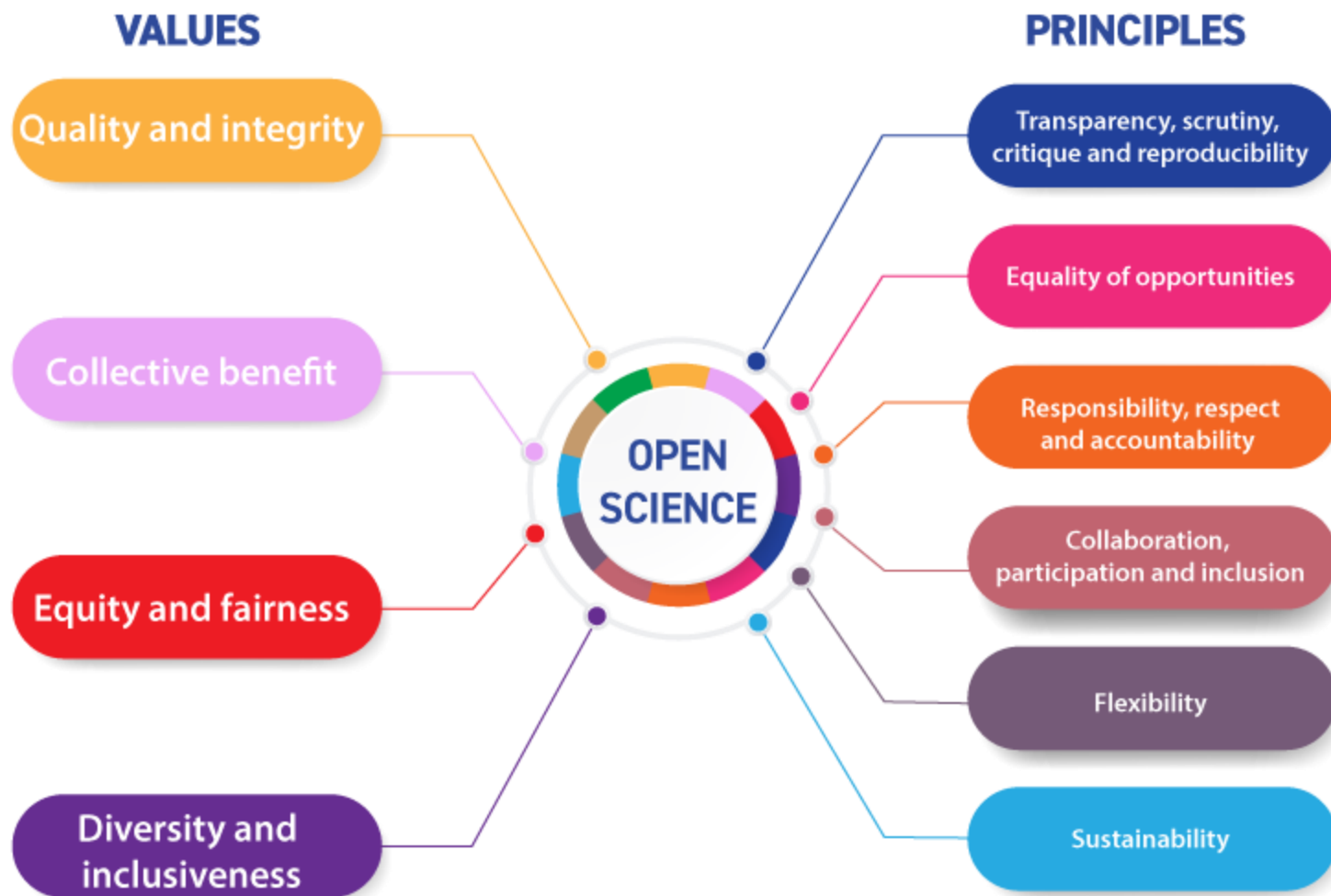


# As open as possible and as closed as necessary

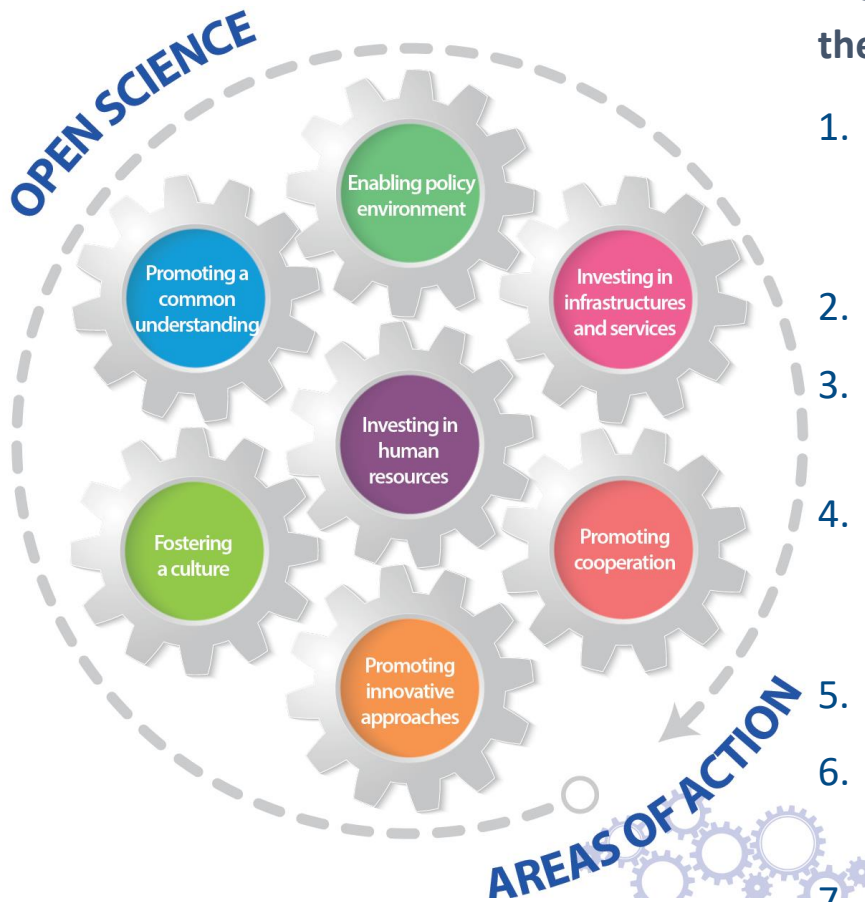
## **AS OPEN AS POSSIBLE**

Access to scientific knowledge should be as open as possible, but sometimes access may need to be restricted, for example to protect human rights, confidentiality, intellectual property rights, personal information, threatened or endangered species, and sacred and secret indigenous knowledge. Open science encourages scientists to develop tools and methods for managing data so that as much data as possible can be shared, as appropriate.

# Open Science: Values and Principles



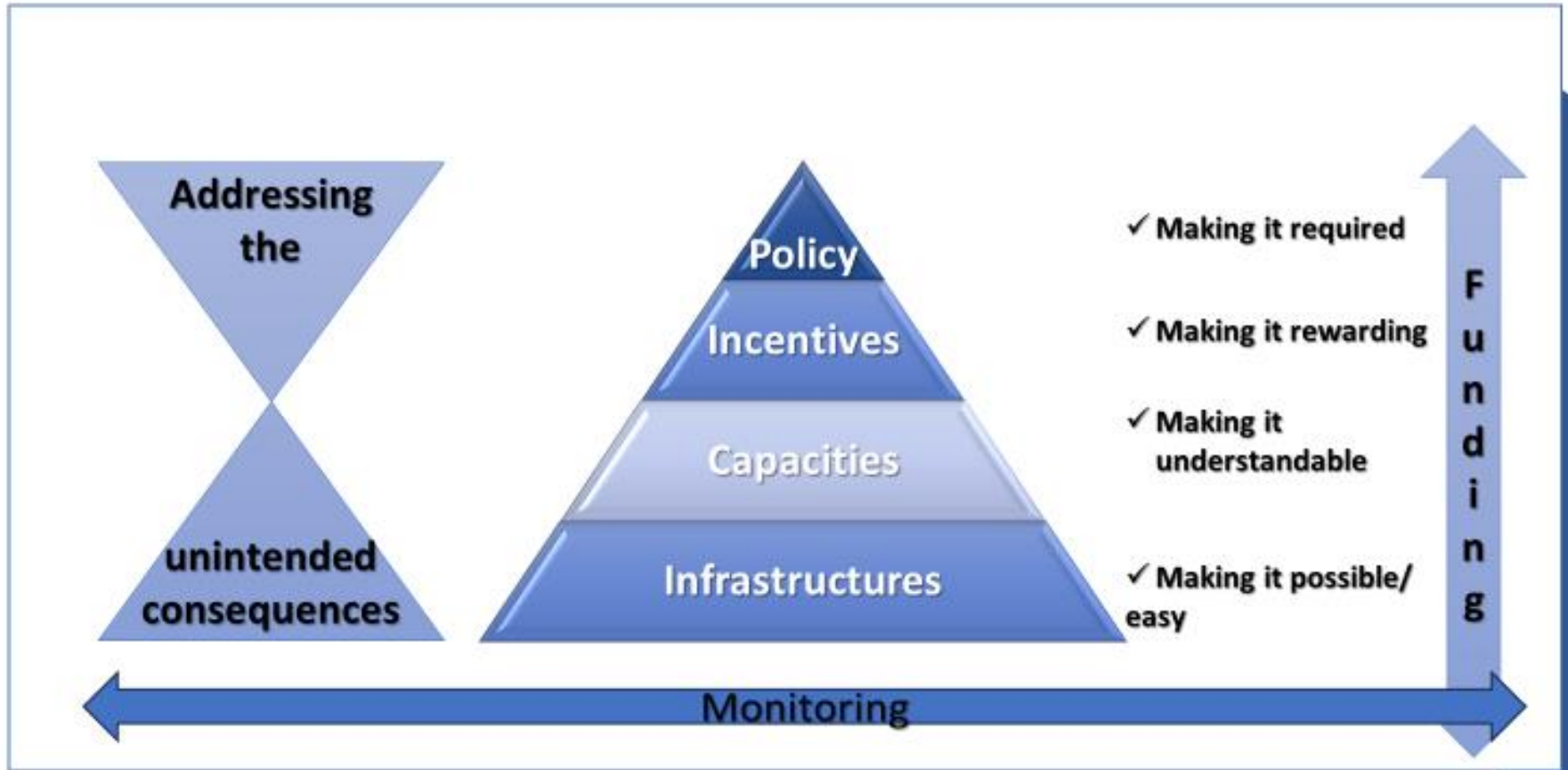
# Key Objectives – Key Areas of Action



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.

# Cultural Change towards Open Science



Based on Centre for Open Science's strategy for cultural change



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# 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**



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# Open Science for Transformation

## PROMOTING OPEN SCIENCE AS A KEY FRAMEWORK FOR TRANSFORMATIVE INTERNATIONAL EQUITABLE SCIENTIFIC COOPERATION

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

**UNESCO OPEN SCIENCE TOOLKIT:** tools to address the key challenges in transitioning to open science:

- understanding the open science paradigm shift/cultural change
- building capacity for open science
- developing policies for open science
- funding and incentivizing open science
- investing in infrastructure development



**Upcoming UNESCO Open Science Outlook**

# Join the Global Open Science Movement

**Join the UNESCO Open Science Partnership!**

**Contribute to global open science calls !**

**Engage in the global discussions!**

**Be in touch!**

**UNESCO Open science website:**

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



Contact: [openscience@unesco.org](mailto:openscience@unesco.org)



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# Thank you



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United Nations  
Educational, Scientific  
and Cultural Organization