# Open Science:
# a priority for the European Union

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# Open Science: a new *modus operandi* in science

*"Open Science is a system change allowing for better science through open and collaborative ways of producing and sharing knowledge and data, as early as possible in the research process, and for communicating and sharing results".*
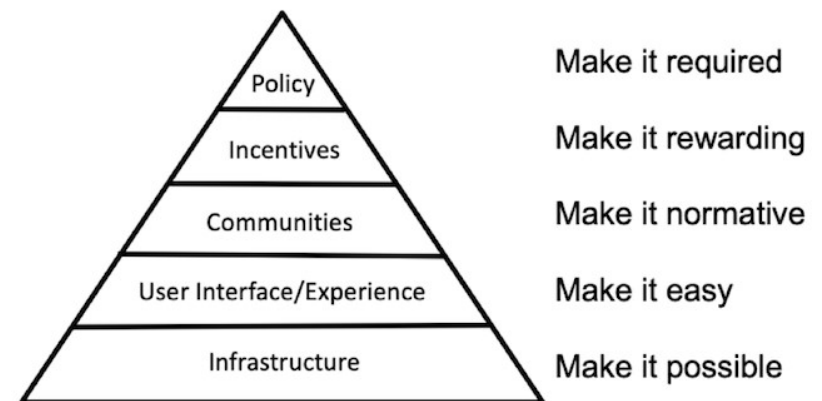
# Open Science: a new *modus operandi* in science

*"Open Science is a system change allowing for better science through open and collaborative ways of producing and sharing knowledge and data, as early as possible in the research process, and for communicating and sharing results".*

**It affects the whole research process:**

- Planning
- Results and tools:  data, software, protocols …
- Dissemination and scholarly publishing
- Re-use
- Evaluation & rewards, metrics
- Ethics and Integrity,
- Education and Skills,
- Citizen Science

**Multifaceted approach to OS needed**



Pyramid from top to bottom:
- Policy — Make it required
- Incentives — Make it rewarding
- Communities — Make it normative
- User Interface/Experience — Make it easy
- Infrastructure — Make it possible

# Why Open Science?



**Issues with current system**

Competitive and non-cooperative practices -> Slowdown scientific progress

Less attractive research careers

Quality and Replication crisis -> Less quality, inefficiency

Expensive commercial publication markets -> Sustainability, Equity

Knowledge ownership / knowledge access -> Overreliance in private actors

Relationship with society -> Diminish societal trust

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# An EU policy priority

- 2016 Council Conclusions on the [Transition Towards an Open Science System](#)

- 2018 EC Recommendation on [Access to and Preservation of Scientific Information](#)

- 2020 EC Communication on the [New European Research Area (ERA)](#)

- 2021 Council Recommendation on a [Pact for Research & Innovation in Europe](#)

- 2021 Council Conclusions on the [Future Governance of the ERA](#)
  (including the [ERA Policy Agenda 2022-2024](#))

- 2022 Council Conclusions on [Research Assessment and Implementation of Open Science](#)

- 2023 Council Conclusions on [High-quality, transparent, open, trustworthy and equitable scholarly publishing](#)

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# EC initiatives for OS

➢ **Policy**:

- Pact for Research and Innovation
- European Research Area 2022-24:
    1. Enable Open Science, including through the European Open Science Cloud (EOSC)
    2. Propose an EU copyright and data legislative framework for research
    3. Reform the Assessment System for research, researchers and institutions.
    4. Strengthen research careers

➢ **Implementation**

- Horizon Europe (2021-2027).
    Mainstream OS: requirements
    Funding for capacity building: WIDERA, INFRAEOSC…
- Some initiatives:
    Data, software…: European Open Science Cloud
    Scholarly publication: Open Research Europe
    Evaluation and rewards: Reform of Research Assessment

# OS in national policies (and beyond)

Increasing number of MS/AC have national policies/legislation in support of Open Science, as well as implementation strategies and funding mechanisms. Many international organisations (UNESCO, OCDE, WHO…) and research institutions (e.g CERN, NASA) have also put OS at the core of their strategies.

eosc OBSERVATORY

**23** out of **40**

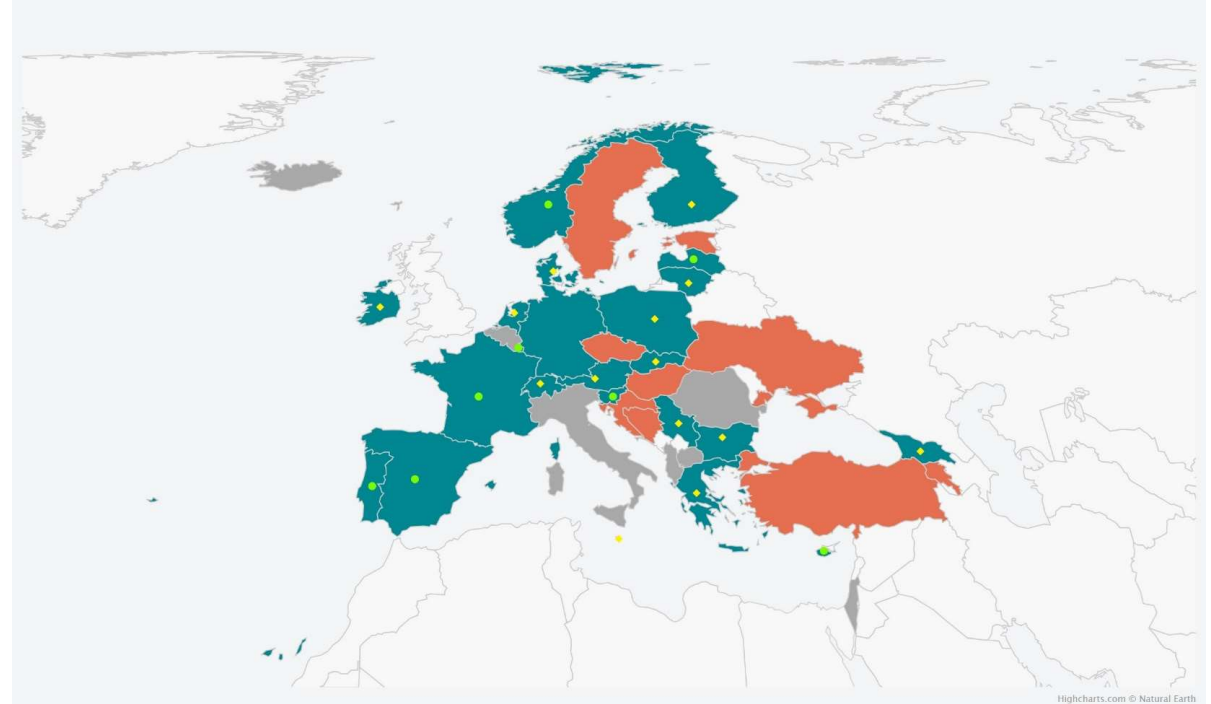countries have a national policy on open access publications

**10** out of **40**

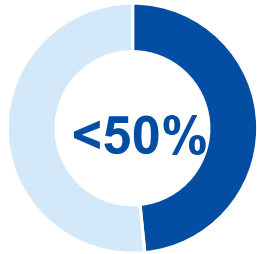countries have a national policy on data

**6** out of **40**

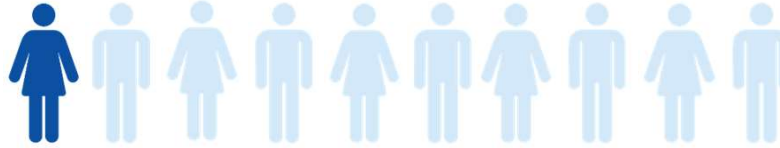countries have a national policy on open source software

**6** out of **40**

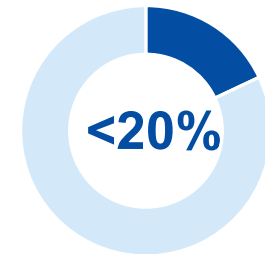countries have a national policy on offering services through EOSC



Highcharts.com © Natural Earth

**<50%**

Scientific publications
available in open access

Authors who retain copyright in contracts
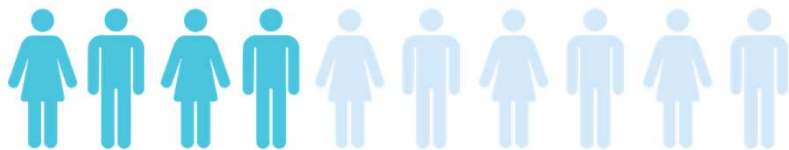with largest subscription journals

**<20%**

Researchers who put FAIR
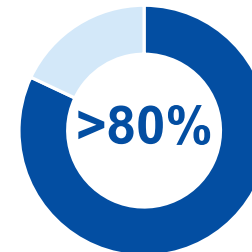principles into practice

**3€ billion per year**

National public funding for
pan-European Research Infrastructures

Researchers who occasionally store research
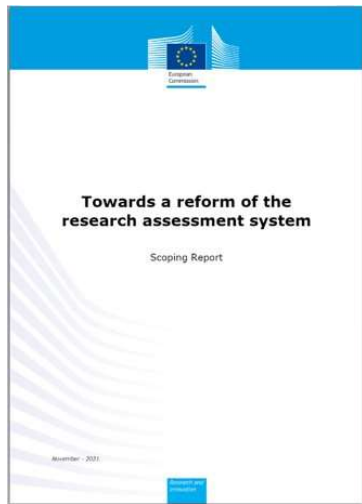data in shared/non-local repositories

Importance of publishing and attracting
external funding in a researcher's career

**>80%**

# Deepening the ERA: Action 3 – Reforming research assessment

# Initiative for reforming research assessment (ERA Action 3)

**Commission Scoping Report**
November 2021

**Agreement on Reforming Research Assessment**
20 July 2022

**Coalition Constitutive Assembly**
1 December 2022

**Next steps**

- **CoARA Working Groups and CoARA National Chapters** are being established

- Signatories start the process of **reviewing or developing criteria, tools and processes** in line with the Agreement principles and commitments

**644 signatories (7 Nov 2023)**

**606 members of CoARA (7 Feb 2024)**

# Common vision

Assessment of research, researchers, and research organisations, **recognises the diverse outputs, practices and activities** that maximise the quality of research and resulting impacts.

This requires basing assessments primarily on **qualitative judgement**, supported by **responsible use of quantitative indicators.**

**4 core commitments**:

1. **Recognise the diversity** of contributions to, and careers in, research in accordance with the needs and the nature of the research

2. **Base research assessment primarily on qualitative evaluation for which peer-review is central**, supported by responsible use of quantitative indicators

3. **Abandon inappropriate uses in research assessment of journal- and publication-based metrics**, in particular inappropriate uses of Journal Impact Factor (JIF) and h-index

4. **Avoid the use of rankings of research organisations** in research assessment

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# Key considerations

- **Flexible and evolutive**: assessment practices can vary according to the context, type and purpose of the evaluation

- Respectful of the **autonomy** of organisations and of their respective missions.

- Quantitative indicators: **responsible use**, not abandoning them

- **Timeframe**: Touch-base points in years 1 and 5 after signature to communicate progress, based on self-assessment

- Special attention to and involvement of **early career researchers**

- The agreement is only the starting point: changes to be developed and implemented by CoARA members

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**> 600 CoARA members**

**Universities**

**Academies, learned societies, associations of researchers**



**Public or private funders and their associations**



**National agencies**

**Research centres**

**Observers**

# CoARA Working Groups and National Chapters

## Working Groups

1. Towards Open Infrastructures for Responsible Research Assessment
2. Multilingualism and language biases in research assessment.
3. Experiments in Assessment – Idea generation, co-creation, and piloting
4. Reforming Academic Career Assessment
5. Responsible metrics and indicators
6. Improving practices in the assessment of research proposals (co-chaired by EC)
7. Supporting the alignment of research assessment systems with CoARA in biomedical disciplines through administrative reforms and governance
8. Towards Transformations: Transdisciplinarity, Applied/Practice-Based Research, and Impacts
9. Recognizing and Rewarding Peer Review
10. Early-and-mid-Career Researchers (EMCRs) – Assessment and Research Culture
11. TIER - Towards an Inclusive Evaluation of Research Ethics and Research Integrity Policy in Responsible Research Assessment for Data and Artificial Intelligence (ERIP)

## National Chapters

1. Cyprus
2. Finland
3. France
4. Germany
5. Hungary
6. Ireland
7. Italy
8. Norway
9. Poland
10. **Spain [ Led by ANECA, CRUE and CSIC]**
11. Switzerland
12. Ukraine

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# Gracias

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