



Open science

REBIUN

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#SOM
UIB

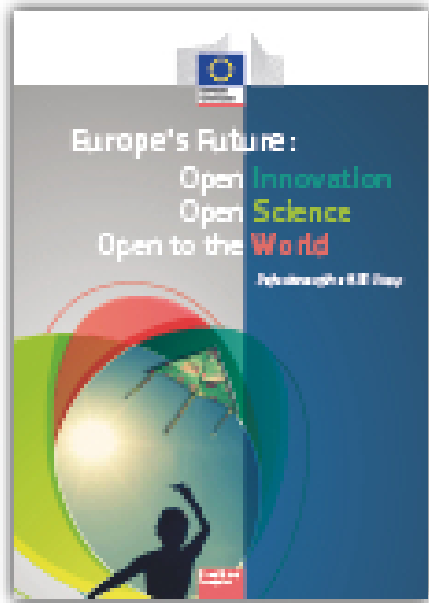
Reserch, Innovation, Science Policy Experts (RISE-HLG)

The RISE group gives strategic policy advice to the Commissioner for Research, Science and Innovation, Carlos Moedas, and to the European Commission

<https://ec.europa.eu/research/openvision/index.cfm?pg=expert-groups-rise>



I. Open Science, Open Innovation, Open to the World



2. Tour of Europe



Why open science?

1. Good for science for our R&I System

Why ?

Evokes a great change towards a public founded science to be more open

accessible

global

transparent

integer

reliable

collaborative

closer to citizens

2. Aligned with our democratic rights and values.

Democratic right to access publicly funded knowledge.

Transparency, integrity, collaboration.....

Bridges the gab between science and society.

Scientific excellence
Efficiency of our R&I system,



EU Competitiveness: growth and job creation.

OPEN SCIENCE IS A POLITICAL GOAL

ICT tools open more possibilities

Towards a definition of Open Science

What open Science means ?

Fundamental goals:

1. Accessibility and transparency of scientific communication:
open access publishing
2. Public availability and reusability of scientific data:
open access to data and metadata
3. Transparency in experimental methodology, observation,
and collection of data: **open source**
4. Improving scientific collaboration (by using web-based
tools): **open science notebook**

Goes together with:

Needs:

5. Strengthen dialogue between science and society (crowdsourcing, ...).
Science with and for society.

6. Link scientists (and society) in science policy making (SAM, RISE..., evidence-based policy making, Global system science, ..).
Open science policy making .

Tools:

7. Developing proper e-infrastructures, digital tools and services for open science (**no access limitations, free flow o data, HPC, European Open Access Cloud, ...**)

8. Changing legal tools and policy requirements for open science. (**intellectual property rights and licensing,...**)

Nothing is possible without

Foundations:

9. Skilled people for openness. (Open science training, changing researcher attitudes,...)
10. Responsible conduct of researchers, intrinsic to the values of research and the trust it engenders:
Research Integrity.

How to achieve the four fundamental goals?

Questions to take the right initiatives:

A. What barriers has to be removed to gaining widespread support for Open Science?

B. How our R&I system can be designed or modified to make these four goals the natural state of affairs for scientists?

**Public accessibility and transparency of scientific communication:
Fair open access publishing. (*Marie Farge*)**

**Public availability and reusability of scientific data:
Open access to data and metadata. (*Marie Farge*)**

***Funding and career advancement in an open science
environment. (Megan R. Carey)***

Open Science and Research Integrity. (Mary Ritter)

5. Strengthen dialogue between science (innovation) and society:

**Open Science benefits dialogue between science and society:
(and vice versa)**

- a) Increases the interest of the population in science**
- b) Facilitates the presence of science in education**
- c) Improves the appreciation of the scientific profession**
- d) Enlarges the use of scientific information**
- e) Rises the level of scientific literacy among citizens**

Dialogue between science and society (and then Open Science) contributes to:

1. **Make the S&I system strong:** widening social support. Isolated systems are weak.
2. **Improve human resources:** widen excellence.
3. **Make our society more democratic:** citizens have knowledge to form opinions, give ideas, make contributions (crowdsourcing), take rational and informed decisions on scientific and technical issues of social importance, and then, fully participate in the democratic processes of an increasingly scientific and technological society.
4. **Make a more attractive space for creativity and innovation:** creates a stimulating environment to make scientific breakthroughs. After all, getting new ideas is about seen things differently, breaking the rules, being tolerant of errors, listen to independent voices, encourage risk taken, and foster a climate of mutual learning.

- **Horizon 2020**

Article 18. Open Access

1. Open access to scientific publications resulting from publicly funded research under Horizon 2020 shall be ensured. It shall be implemented in accordance with Regulation(EU) No 1290/2013.

2. Open access to research data resulting from publicly funded research under Horizon 2020 shall be promoted. It shall be implemented in accordance with Regulation (EU) No 1290/2013.

Article 10: Open science

1. The programme shall encourage open science as an approach to the scientific process based on cooperative work and diffusing knowledge, in particular in line with the following elements:

- open access to scientific publications resulting from research funded under the Programme;

- open access to research data, including those underlying scientific publications.

These elements shall be ensured in accordance with Article 35(3) of this regulation. The latter shall also be in line with the principle 'as open as possible, as closed as necessary';

1a. The principle of reciprocity in open science shall be promoted and encouraged in all association and cooperation agreements with third countries, including agreements signed by funding bodies entrusted for indirect management of the Programme.

2. Responsible management of research data shall be ensured in line with the principles 'Findability', 'Accessibility', 'Interoperability' and 'Reusability' (FAIR). Attention shall also be paid to the long-term preservation of data.

3. Other open science practices shall be promoted and encouraged, including for the benefit of SMEs.

Conclusions and recommendations:

- 1. Leadership of governments, universities and research centres, research councils is necessary to succeed with this paradigm shift.**
- 2. Pushing for those changes should be the job of the established, not the beginners.**
- 3.**
- 4.**

“Amidst all the difficulty, there is room for opportunity”

