



#HorizonEU

June 2021

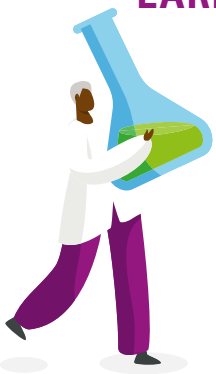


*"Horizon Europe will set a new standard for dissemination of knowledge and new skills across European societies. With clear and immediate open access requirements for beneficiaries, the Open Europe Research publishing platform and a strengthened European Open Science Cloud, we are well underway in making truly open science a reality".*

**Mariya Gabriel** Commissioner for Innovation, Research, Culture, Education and Youth

## OPEN SCIENCE

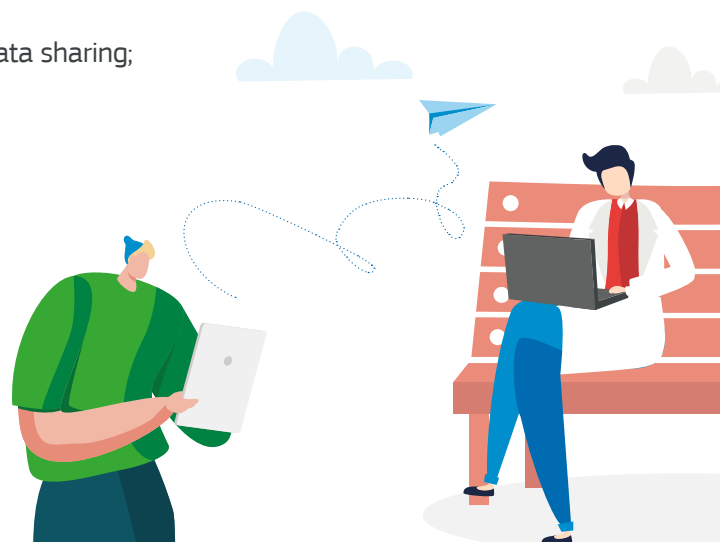
### EARLY KNOWLEDGE AND DATA SHARING, AND OPEN COLLABORATION



The challenge is for Europe **to embrace open science as the modus operandi for all researchers**. Open science consists in the sharing of knowledge, data and tools as early as possible in the Research and Innovation (R&I) process, in open collaboration with all relevant knowledge actors, including academia, industry, public authorities, end users, citizens and society at large. Open science has the potential to increase the quality, efficiency and impact of R&I, lead to greater responsiveness to societal challenges, and increase trust of society in the science system.

#### What are open science practices?

- Open access to research outputs such as publications, data, software, models, algorithms, and workflows;
- Early and open sharing of research, for example through preregistration, registered reports, pre-prints, and crowd-sourcing of solutions to a specific problem;
- Use of open research infrastructures for knowledge and data sharing;
- Participation in open peer-review;
- Measures to ensure reproducibility of results; and
- Open collaboration within science and with other knowledge actors, including involving citizens, civil society and end-users, such as in citizen science.



## Open science across Horizon Europe

**Legal provisions in the grant agreements will strengthen open access rights and obligations** for beneficiaries. Horizon Europe will require immediate open access to all scientific publications and responsible research data management so that data are **Findable, Accessible, Interoperable and Re-usable (FAIR)**. Data will be made ‘as open as possible, but will be allowed to stay as closed as necessary’, safeguarding legitimate interests or constraints. However access to research outputs shall be provided for third parties to be able to verify or validate publications.

The **criteria for evaluating research proposals** under Horizon Europe will take into account the quality and appropriateness of the open science practices in the submitted proposals. This will be assessed as part of the project’s methodology, under the excellence award criterion. This will provide a strong incentive for applicants and beneficiaries to practice open science.



Some **call topics of the different parts of Horizon Europe**, will encourage or require to adhere to open science practices. In particular:

- The programme will encourage innovative research practices to ensure that research results are timely, relevant, transparent and reproducible.
- Better interoperability and sharing of FAIR data will be a focus of several Clusters, Partnerships and Missions;
- Many parts of the programme will open up R&I for active societal engagement in order to more closely align R&I with societal values, needs and expectations.



The **‘Research Infrastructures’** part of Horizon Europe **will support the development and consolidation of the European Open Science Cloud (EOSC)** as a web of FAIR data, through a dedicated Partnership. In other parts of Horizon Europe, some topics may request the development of links and synergies with, or the use of EOSC.



The **‘Marie Skłodowska-Curie Actions’** part of Horizon Europe will promote the diffusion of open science practices and will support the development of appropriate skills among researchers.



The **‘Widening Participation and Strengthening the European Research Area’** part of Horizon Europe **will support the further development of the open science policy** and adoption of open science practices within the European Research Area. This includes increased coordination, exchange of good practices and tools, development of guidance and training, implementation of institutional changes, and consolidation of evidence on impacts.



The **Open Research Europe (ORE) publishing platform** will provide Horizon 2020 and Horizon Europe beneficiaries with the possibility of using a high-quality open access peer reviewed publishing venue, at no cost to them, during and after the end of their grants. This will not only help beneficiaries fulfilling their open access obligations, it also will further incentivise pre-prints and open peer-review. It is also expected that a new multidisciplinary, cloud-based and **open repository for research objects** from Horizon Europe projects will be developed, offering services at no cost to its beneficiaries.



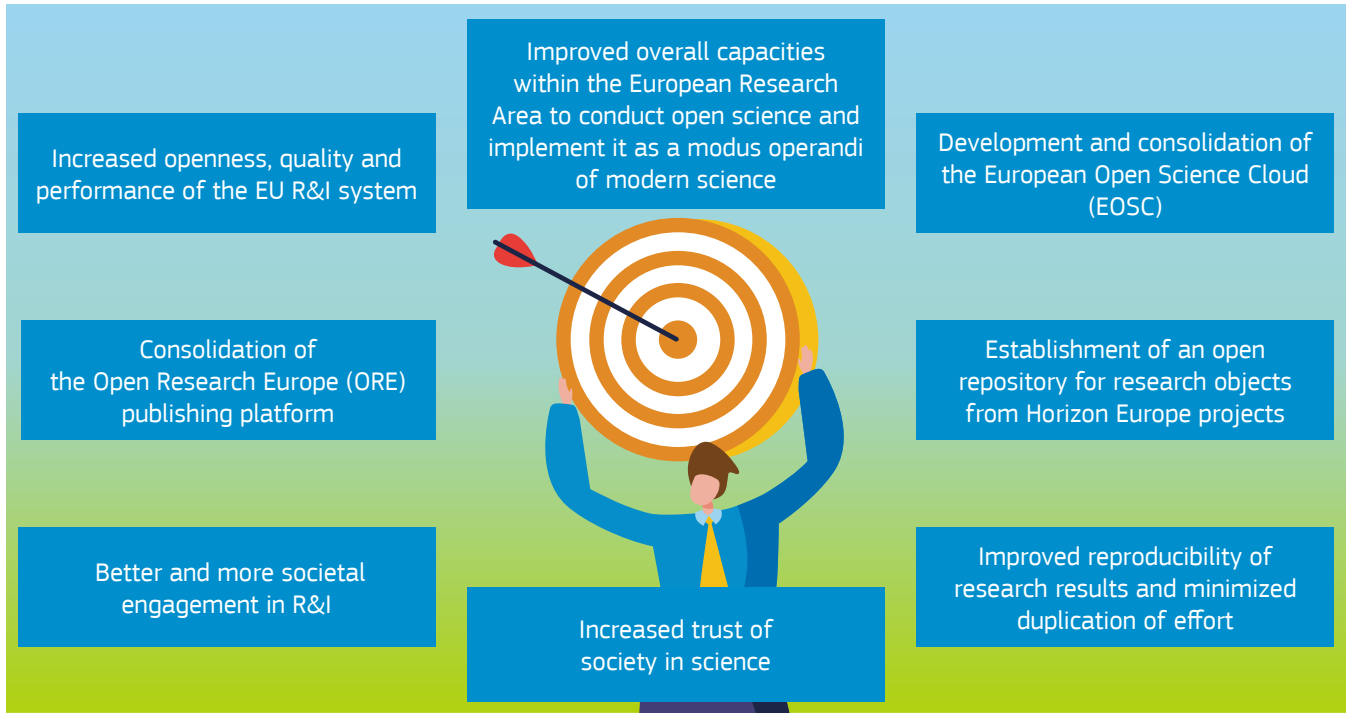
The impact at programme level will be monitored through nine **Key Impact Pathways**, of which two specifically address open science practices: The pathway ‘Fostering diffusion of knowledge and open science’ towards scientific impact, and pathway ‘Strengthening the uptake of R&I in society’ towards societal impact.



## How will it work together?

Open science is embedded throughout Horizon Europe: in the work programmes, in the proposal evaluation, in the grant agreements, in the project execution and follow-up, and in the programme evaluation.

## Expected results and impacts



## MORE INFORMATION

[EU's open science policy](#)  
[European Open Science Cloud](#)  
[Open Research Europe platform](#)  
[European Research Area](#)

**#OpenScience**  
**#EOSC**  
**#EuropeanOpenScienceCloud**  
**#OpenResearchEurope**



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