

11. Involve researchers and new users in open science

The problem

While researchers in various areas have long supported open science principles, the ways in which science is currently institutionalised will need to be modified to enable the implementation of those principles.

There are career barriers; there are conflicting demands and researchers receive conflicting messages about the value of open science to their work. The guidance they receive is too generic and sometimes contradictory. In addition, there are strong constraints for opening science to society (e.g. citizen science) and there is a lack of knowledge among researchers about the wide variety of methods to open up scientific processes. The same holds for private parties involved in science, e.g. through public-private partnerships.

Although the potential impact of open science on society by making scientific knowledge available to new users is huge, many potential new users are unaware of this, or they lack the skills to find relevant information. With the enormous growth of freely available publications and data, new users might get lost in their search for information, or draw wrong conclusions.

The solution

- Raise awareness among all stakeholders of best practices in support of open science.
- Train and support students and researchers in open science principles, their societal responsibility and role, and in extending the impact of their work to society at large.
- Develop new types of services to researchers in support of open science and train support staff (for instance in ICT services and libraries) to deliver these services.
- Identify and acknowledge barriers to career progression at the European level.
- Involve researchers, by discipline if required, in compiling research data management and software sustainability protocols that fit their disciplines' requirements and needs, and publish those protocols for public reference.
- Foster the creation of programmes targeting real societal challenges, enhancing society's problem-solving capacity.
- Train and educate new user groups in searching and finding academic information.
- Identify the new users, what they need and how they can be helped and supported best;
- Build platforms of new user groups to create communities and ensure their permanent involvement.

Concrete actions

- **National authorities and European Commission:** acknowledge the value of open science in scientific evaluation and funding; develop strategies to involve new users in the scientific process through Horizon 2020.
- **Research funders and Research Performing Organisations:** adopt a positive, integrated approach of career progression systems to remove obstacles that impede open science practices; raise awareness and promote open science in universities and other knowledge institutions. Develop training and skills, tailored to each discipline, including ICT and library personnel etc. Involve new user groups through platforms and otherwise and give them the opportunity to take up a role when funding projects.
- **All actors:** foster the existing relations between science, society and business, and develop training and skills for all parties to help them seize opportunities that promote open science.

Expected positive effects

- A broader uptake of open science working practices among researchers;
- A quicker uptake of new working methods in the scientific community and faster development of new research tools;
- Better connections between science and society;
- Better science by involving citizens;
- Better, more and quicker solutions for societal challenges and better, more and quicker market opportunities;
- Development of new publishing models.