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Elements of Open Science and Open Science Policies in different countries

Katharina Rieck

Tbilisi, 12.10.2022

EU funded Twinning project "Supporting inter-sectoral collaboration possibilities between Research and Industry"

Component 3 "Institutional capacity of SRNSFG with a view to strengthening international collaboration enhanced". Activity 3.1.1. "Promotion and implementation of the supporting schemes/preparatory activities and capacity building based on international standards"

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Agenda

- Open Science
  - Open Access to Publications
  - Open Access to Research Data
- Open Science Policies in different countries

Aim of today

Development of draft policy recommendations for a national Open Science Policy in Georgia

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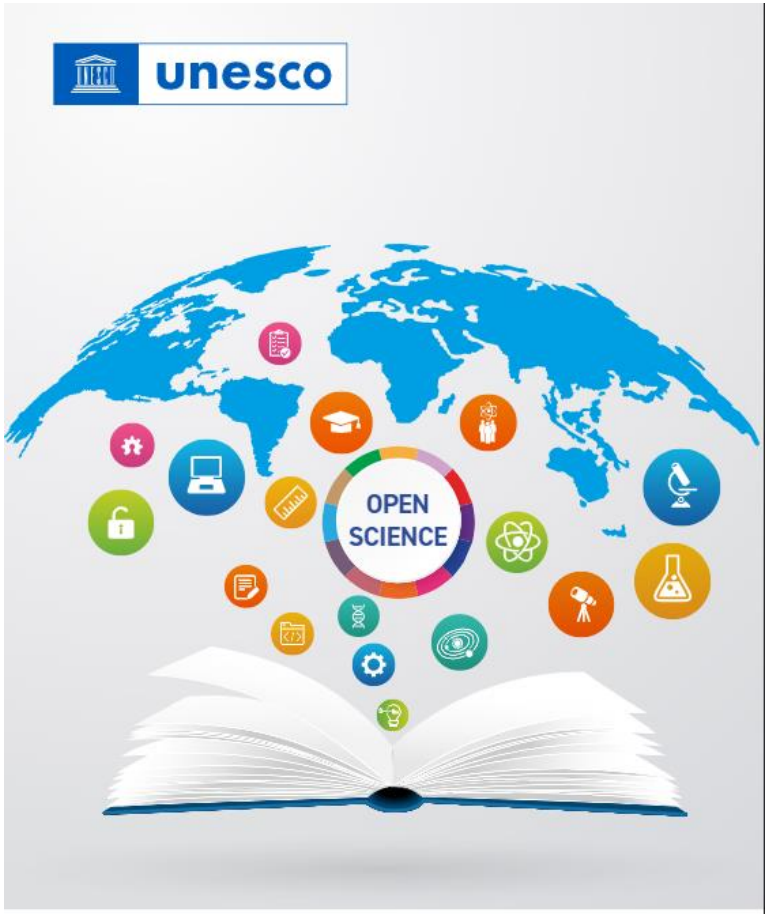
Open Science

Open Science - Definition

"(…) open science is defined as an inclusive construct that combines various movements and practices aiming to **make multilingual scientific knowledge openly available, accessible and reusable for everyone**, **to increase scientific collaborations** and **sharing of information** for the **benefits of science and society**, and to open the processes of scientific knowledge creation, evaluation and communication to societal actors beyond the traditional scientific community. It comprises all scientific disciplines and aspects of scholarly practices, including basic and applied sciences, natural and social sciences and the humanities, (…)"



Source: https://unesdoc.unesco.org/ark:/48223/pf0000379949/PDF/379949eng.pdf.multi

Open Science Benefits

- **Efficiency**: greater access to scientific inputs and outputs, can improve the effectiveness and productivity of the research system, by 1) reducing duplication and the costs of creating, transferring and reusing data; 2) allowing more research from the same data; 3) multiplying opportunities for domestic and global participation in the research process. Also, the user of open search tools can help increasing the efficiency of research and of its diffusion (The Royal Society, 2012).
- **Quality and integrity**: open access to scientific outputs, data and other assets that support the research process offer the opportunity of a wider evaluation and scrutiny by the scientific community, thus allowing a greater and more accurate replication and validation of research results. This openness also facilitates an early identification of any malpractice at science, such as fraud or errors, and therefore being easier to denounce and drop-out these practices in the benefit of scientific integrity. In this sense, openness to data contributes to maintain science's self-correction principle.
- **Economic benefits**: increased access to research results can foster spill overs not only to scientific systems but also innovation systems more broadly, as well as increase awareness and conscious choices among consumers. Science plays a key role in today's knowledge economies (The Royal Society 2012:19), and the higher efficiency associated to Open Science would not only benefit advanced economies but also developing countries.
- **Innovation and knowledge transfer**: Open Science can reduce delays in the re-use of the results of scientific research including articles and data sets by firms and individuals, and promote a swifter path from research to innovation to produce new products and services.
- **Public disclosure and engagement**: science should be open for the whole society, so it may promote awareness among citizens. It evidences the outcomes of public funded research, and would help to build trust and support for public policies and investments. Moreover, it promotes citizen's engagement and even active participation in scientific experiments and data collection.
- **Global benefits:** Open Science is inevitably international, and it must take advantage of it. It can promote collaborative efforts and faster knowledge transfer for a better understanding of challenges that require coordinated international actions such as climate change or the ageing population, and could help identify solutions more effectively.

What are the benefits of Open Science? | FOSTER (fosteropenscience.eu)

Open Science Benefits

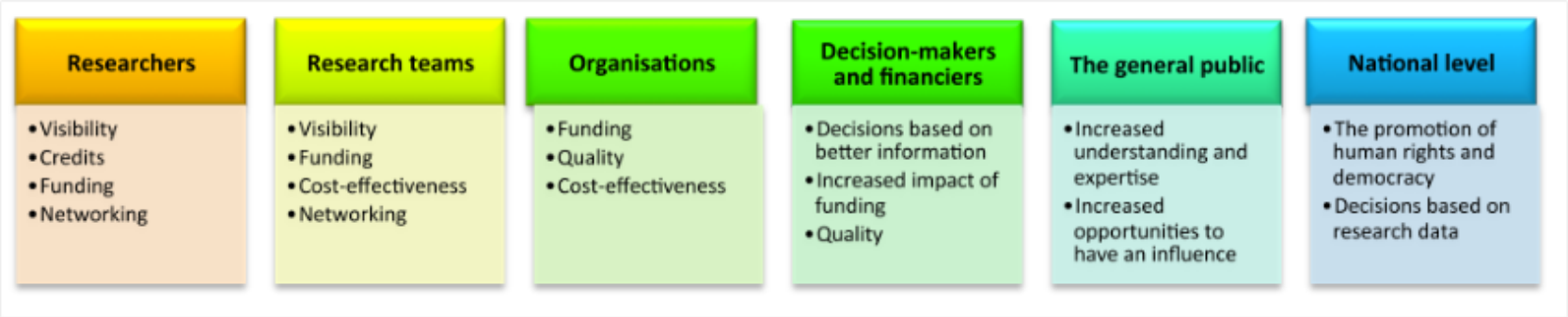


Figure 4. Benefits to different parties (Open Science and Research Initiative, 2014)

What are the benefits of Open Science? | FOSTER (fosteropenscience.eu)

The EU's open science policy

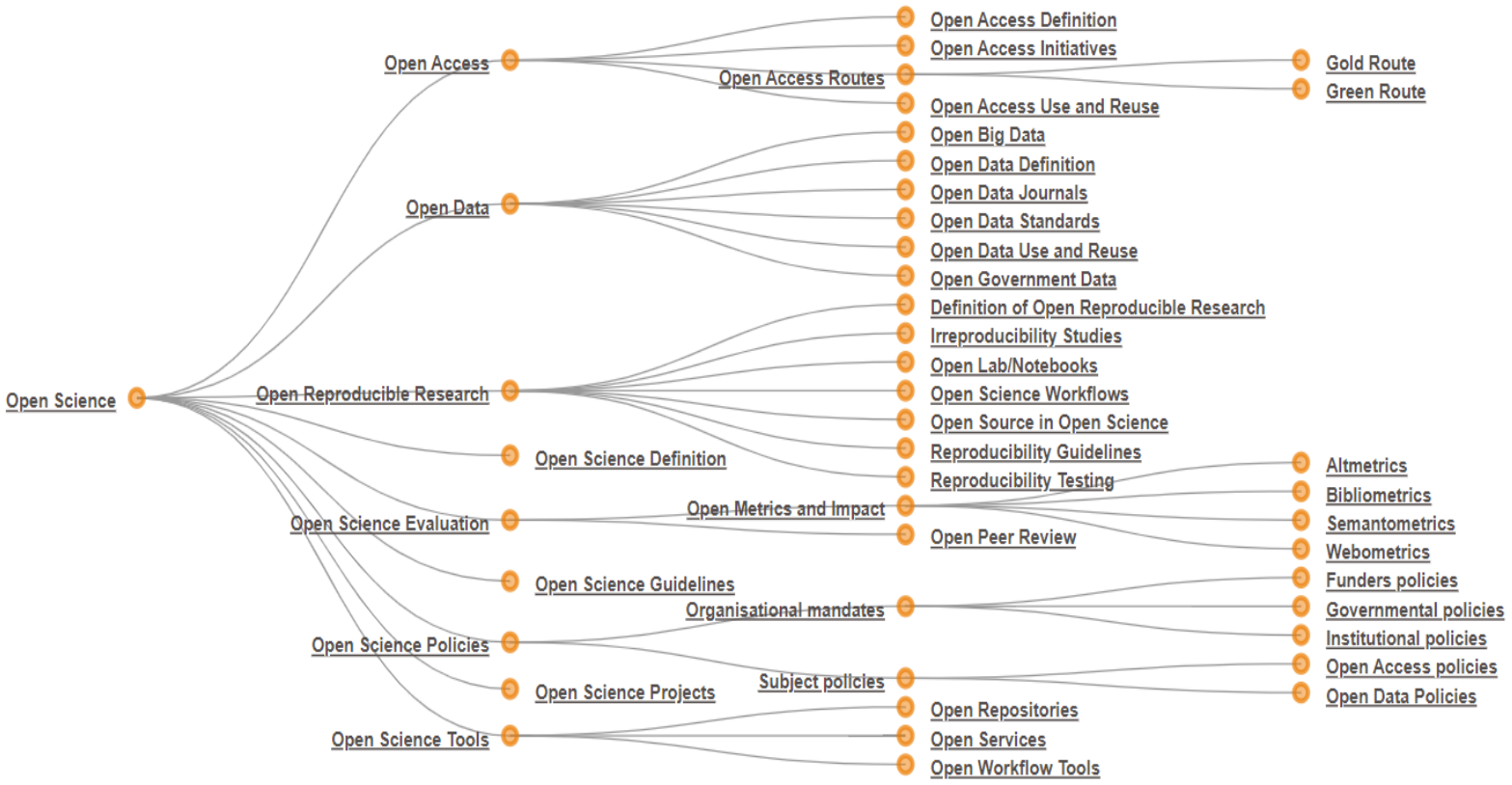
Open science is a policy priority for the European Commission and the standard method of working under its research and innovation funding programmes as it **improves the quality, efficiency and responsiveness of research.**

When researchers share knowledge and data as early as possible in the research process with all relevant actors it helps diffuse the latest knowledge.

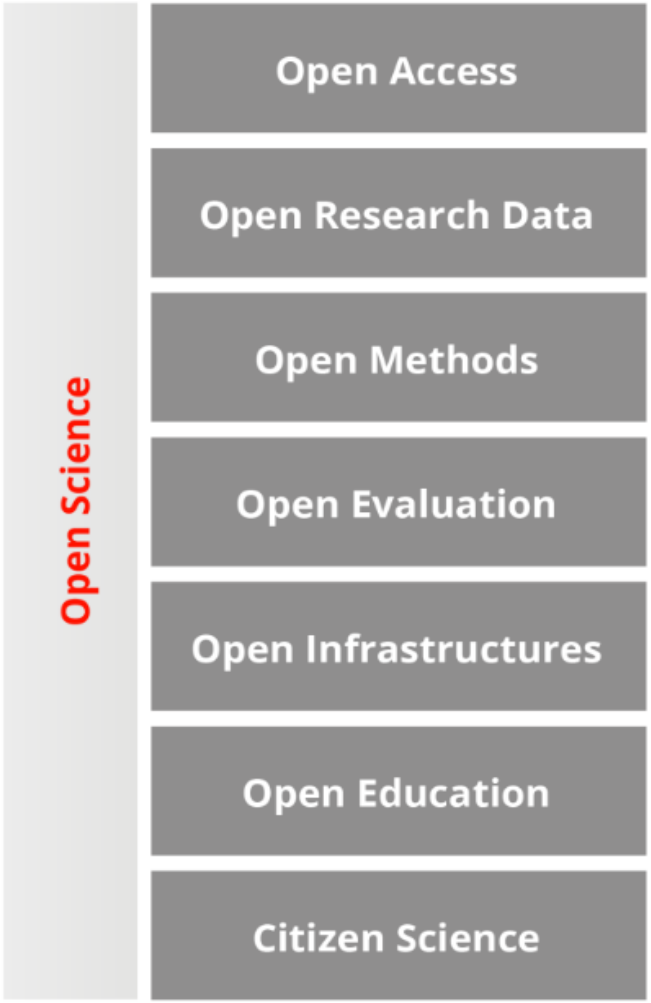
And when partners from across academia, industry, public authorities and citizen groups are invited to participate in the research and innovation process, creativity and trust in science increases.
That is why the Commission requires beneficiaries of research and innovation funding to make their publications available in open access and make their data as open as possible and as closed as necessary

Source: Open Science (europa.eu)

Elements of Open Science



Resources | FOSTER (fosteropenscience.eu)



Source: Empfehlungen für eine nationale Open Science Strategie in Österreich / Recommendations for a National Open Science Strategy in Austria | Zenodo

Open Access to Publications

- **Unrestricted access** to research publications on the internet

- **Author rights** → authors retain the copyright and can deposit their publications

- **User rights** → others can reuse publications; citation required (see Creative Commons License)

BERLIN DECLARATION

The Internet has fundamentally changed the practical and economic realities of distributing scientific knowledge and cultural heritage. For the first time ever, the Internet now offers the chance to constitute a global and interactive representation of human knowledge, including cultural heritage and the guarantee of worldwide access. We, the undersigned, feel obliged to address the challenges of the Internet as an emerging functional medium for distributing knowledge. Obviously, these developments will be able to significantly modify the nature of scientific publishing as

Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities

The Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities of 22 October 2003 was written in English. It is one of the milestones of the Open Access movement. The wording of the English version shall prevail.

Preface

The Internet has fundamentally changed the practical and economic realities of distributing scientific knowledge and cultural heritage. For the first time ever, the Internet now offers the chance to constitute a global and interactive representation of human knowledge, including cultural heritage and the guarantee of worldwide access.

We, the undersigned, feel obliged to address the challenges of the Internet as an emerging functional medium for distributing knowledge. Obviously, these developments will be able to significantly modify the nature of scientific publishing as well as the existing system of quality assurance.

In accordance with the spirit of the Declaration of the Budapest Open Access Initiative, the ECHO Charter and the Bethesda Statement on Open Access Publishing, we have drafted the Berlin Declaration to promote the Internet as a functional instrument for a global scientific knowledge base and human reflection and to specify measures which research policy makers, research institutions,

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Science Europe

Principles on the Transition to Open Access to Research Publications

Adopted April 2013

Science Europe Member Organisations share the view that:

- Publication and dissemination of results are an integral part of the research process. The allocation of resources within the research system must take this into account.
- Open Access to the published results of publicly-funded research will have huge value for the research community and will offer significant social and economic benefits to potential users in industry, charitable and public sectors, to individual professionals, and to the general public.
- Open Access, as defined in the Berlin Declaration, is not only about the right of access, but also about the opportunity to re-use information with as few restrictions as possible, subject to proper attribution.
- The common goal of Science Europe Members is to shift to a research publication system in which free access to research publications is guaranteed, and which avoids undue publication barriers. This involves a move towards Open Access, replacing the present subscription system with other publication models whilst redirecting and reorganising the current resources accordingly.

Principles on Open Access to Research Publications | Zenodo

International Initiative

Source: https://www.scienceeurope.org/coalition-s/

cOAlition S


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UK Research and Innovation
VINNOVA Sweden's Innovation Agency
FCT
Québec
Charitable and international funders & research organisations
BILL & MELINDA GATES foundation
World Health Organization
TDR For research on diseases of poverty
asap
hhmi Howard Hughes Medical Institute
TEMPLETON WORLD
European funders

Plan S

“With effect from 2021*, all scholarly publications on the results from research funded by public or private grants provided by national, regional and international research councils and funding bodies, must be published in Open Access Journals, on Open Access Platforms, or made immediately available through Open Access Repositories without embargo.”

Plan S Principles

In addition:

01 Authors or their institutions retain copyright to their publications. All publications must be published under an open license, preferably the Creative Commons Attribution license (CC BY), in order to fulfil the requirements defined by the Berlin Declaration;

02 The Funders will develop robust criteria and requirements for the services that high-quality Open Access journals, Open Access platforms, and Open Access repositories must provide;

03 In cases where high-quality Open Access journals or platforms do not yet exist, the Funders will, in a coordinated way, provide incentives to establish and support them when appropriate; support will also be provided for Open Access infrastructures where necessary;

04 Where applicable, Open Access publication fees are covered by the Funders or research institutions, not by individual researchers; it is acknowledged that all researchers should be able to publish their work Open Access;

05 The Funders support the diversity of business models for Open Access journals and platforms. When Open Access publication fees are applied, they must be commensurate with the publication services delivered and the structure of such fees must be transparent to inform the market and funders potential standardisation and capping of payments of fees;

06 The Funders encourage governments, universities, research organisations, libraries, academies, and learned societies to align their strategies, policies, and practices, notably to ensure transparency.

07 The above principles shall apply to all types of scholarly publications, but it is understood that the timeline to achieve Open Access for monographs and book chapters will be longer and requires a separate and due process;

08 The Funders do not support the 'hybrid' model of publishing. However, as a transitional pathway towards full Open Access within a clearly defined timeframe, and only as part of transformative arrangements, Funders may contribute to financially supporting such arrangements;

09 The Funders will monitor compliance and sanction non-compliant beneficiaries/grantees;

10 The Funders commit that when assessing research outputs during funding decisions they will value the intrinsic merit of the work and not consider the publication channel, its impact factor (or other journal metrics), or the publisher.

Open Access Policy

As a signatory of the Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities, the FWF is committed to advancing sustained open access to scholarly publications and research data. To this end, the FWF requires and supports all project leaders and project staff members to make their peer-reviewed research outputs freely available through the internet, if they result in full or in part from projects funded by the FWF.

The Open Access Policy consists of the following elements:

I. » Open Access to Peer-reviewed Publications
II. » Open Access to Research Data

to top

Support of Open Access Infrastructures and Tools

To further the transition to open access in the scholarly publication system, the Austrian Science Fund (FWF) annually supports the following open access infrastructures and platforms.

» Open Access Infrastructures

to top

Open Access Testimonials

In recent years, an increasing number of researchers from all fields have been supporting efforts to make scientific publications freely available on the Internet (open access). In 2012, following the Dutch model of "the experts speak", more than 40 outstanding researchers in Austria (incl. some Austrians abroad) from all branches of sciences and the humanities, from different institutions as well as from different age groups, were asked why they practice open access in one way or the other and why they think open access is important. For a list of the researchers and their testimonials.

» Open Access Testimonials

to top

Open Access to Peer-reviewed Publications

For peer-reviewed scholarly publications in academic journals, platforms, edited volumes, or proceedings resulting from FWF projects approved before 1 January 2021, the following Open Access policy (pdf, 89KB) applies.

For peer-reviewed book publications such as monographs, edited volumes, etc., the Open Access guidelines as formulated in the application guidelines for the » Stand-Alone Publications programme apply.

The following Open Access guidelines apply to peer-reviewed scholarly publications resulting from FWF projects approved after 31 December 2020:

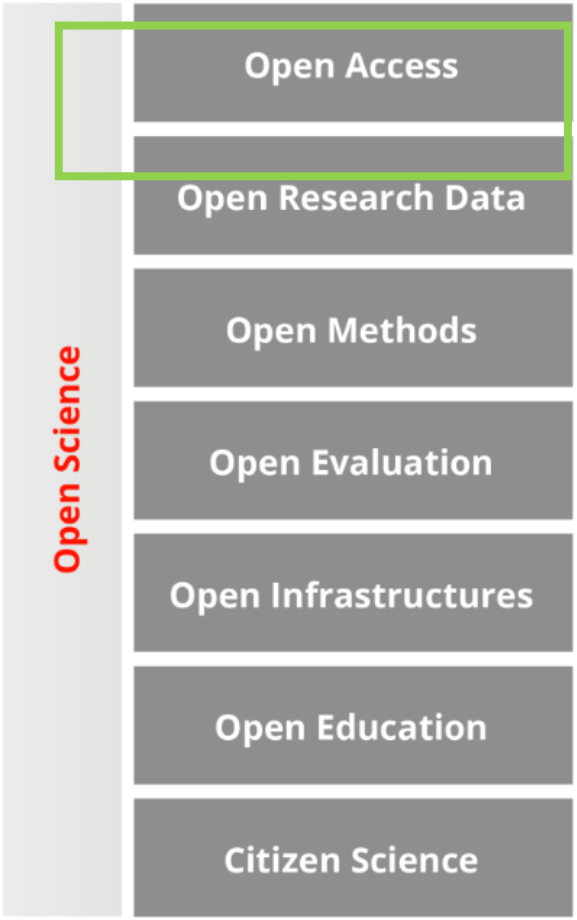
I. Open Access Options

In accordance with the Berlin Declaration and Plan S of cOAlition S, the FWF requires all project leaders and project staff members to publish their peer-reviewed publications open access on the Internet if they result in whole or in part from projects supported by the FWF.

Three open access publication options are available:

Option 1: Publication in an open access publication venue (Gold Open Access)

Open access to publications can be guaranteed by direct publication in an open access publication venue (e.g., academic journal, publication platform). In any case, the Creative Commons Attribution CC-BY licence[1] (or an equivalent open licence) must be used for publication. Journals and publication platforms must be listed in the Directory of Open Access Journals (DOAJ) and meet the technical requirements of Plan S. For scholarly contributions in edited volumes, the peer-review process must be presented transparently on the website of the publication venue.


Open Science
Open Access
Open Research Data
Open Methods
Open Evaluation
Open Infrastructures
Open Education
Citizen Science

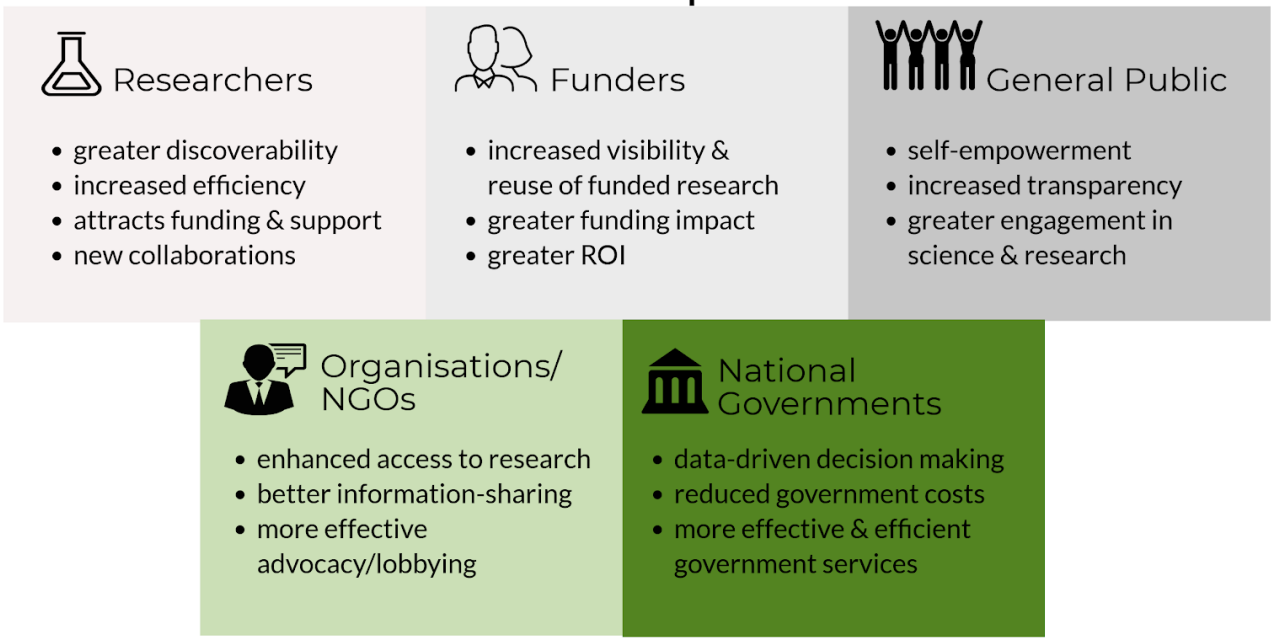
Open Research Data

- Open Research Data is data that can be freely used, reused and redistributed by anyone - subject only, at most, to the requirement to credit the curator and share under the same license.
- Open access to research data fits within the Open Science paradigm, situated within a context of ever greater transparency, accessibility and accountability. The main goals of these developments are to lower access barriers to research outputs, to speed up the research process and to increase the quality, integrity and longevity of the scholarly record.

As open as possible, as closed as necessary.

Source: what-is-open-research-data (openaire.eu)

Benefits of Open Data



Source: what-is-open-research-data (openaire.eu)

European Open Science Cloud

A federated and open multi-disciplinary environment to publish, find and re-use data, tools and services for research, innovation and educational purposes.

The EOSC enables a step change across scientific communities and research infrastructures towards

- seamless access
- FAIR (Findability, Accessibility, Interoperability and Reusability) management
- reliable reuse of research data and all other digital objects produced along the research life cycle (e.g. methods, software and publications)

EUROPEAN OPEN SCIENCE CLOUD

Source: EOSC | EOSC Portal (eosc-portal.eu)

Data Policy Alignment

Source: Science Europe (2021): Practical Guide to the International Alignment of Research Data Management - Extended Edition - Science Europe. https://www.scienceeurope.org/our-resources/practical-guide-to-the-international-alignment-of-research-data-management/

Open Science Policies in different countries.

Examples

Netherlands (2017)

nationaal programma open science

National Programme Open Science What is Open Science? Documentatio

Home

National Plan Open Science

For all educational institutions and research domains, open access publishing and optimal reuse of research data will be the norm in 2020. The motto here is: open if possible, closed if it must. The switch to open science requires ambition, investment in people and resources, and being alert to any risks.

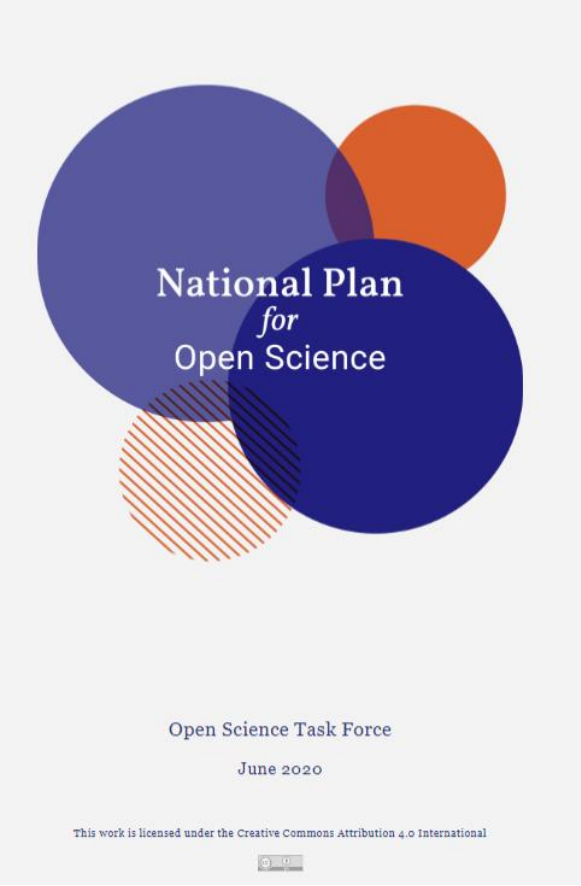
Switch to open science

Aligning the many initiatives and the huge ambition requires a major boost. As such, the OCW State Secretary asked a wide-ranging coalition of the parties involved to draw up a plan: the National Plan Open Science. This plan sets out the ambitions and lists the parties willing to take action and in what timeframe they aim to achieve their goals, and continues to build on the robust and ambitious Dutch open access policy.

Source: National Plan Open Science

Contents

Greece (2020)



Source: National Plan for Open Science | Zenodo

Commitments

Open Access to Scientific Publications

MAIN PRINCIPLE

Free online access to scientific publications resulting from publicly funded research.

Scientific publications relate in particular to peer-reviewed publications, books and monographs, conference proceedings, doctoral dissertations, studies, as well as all grey literature. They are distributed in machine-readable format through scientific journals, books, repositories or platforms that allow the access and extraction of their content (text and data mining). Copies of publications are kept in public open access repositories.

Policy

The policy aims to improve access to and preservation of scientific information in the national research area, ensuring the retention of intellectual property rights by the authors of scientific publications and the availability of publications with standardised, public, open licenses.

- Selection of the Green or Gold Open Access Route:
  - Green Open Access
    - An electronic copy of the publication is archived in an institutional or thematic literature repository. The copy may be in the form of pre-print, post-print, or the final published version.
    - Immediate access to the full text upon publication and in any case no later than six months after the date of

National Plan Implementation Actions

Open Access to Scientific Publications

- Upgrade institutional repositories and electronic journal platforms to connect with OpenAIRE and EOSC.
- Develop national aggregator for publications.
- Develop national Open Access platform for pre-prints.
- Realize an institutional service for reporting publication costs (APCs) and connect with the OpenAPC initiative [56].
- Develop national Open Access monitor and indicators according to European standards (EU Open Science Monitor [57], OpenAIRE/EOSC). Integrate standards for citations and usage data [58] [59].
- Upgrade research funding organisations' information systems to improve management, monitoring and impact assessment of research outputs: (a) use common metadata schemas for grants and other entities (e.g researchers, publications), (b) integrate and provide standard open interfaces to achieve interoperability and automate harvesting from catalogues and repositories.
- Update the Greek Law on Research (N. 4310/2014) in line with the national principles and the EU's acquis for Open Science.
- Support transformative agreements with scientific publishers according to PlanS Implementation Guidelines [60].
- Build bibliodiversity programmes to support discovery and explore new models for Open Access journals and books [61] and new business models for Open Access (e.g OA2020 [62], SCOAP3 [63] και OLH [64]).
- Create and apply rewards and incentives for researchers and academics to comply with Open Access principles, at institutional and funding levels.

France (2021)

Second_French_Plan-for-Open-Science_web.pdf (ouvrirlascience.fr)

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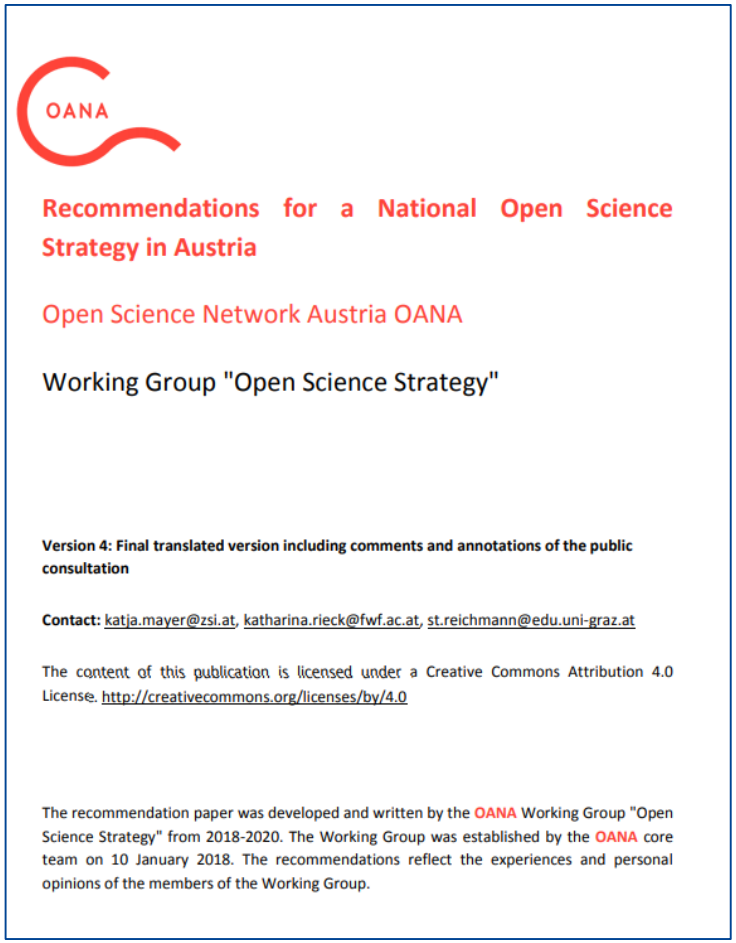

OANA

Recommendations for a National Open Science Strategy in Austria

Open Science Network Austria OANA

Working Group "Open Science Strategy"

Version 4: Final translated version including comments and annotations of the public consultation

Contact: katja.mayer@zsi.at, katharina.rieck@fwf.ac.at, st.reichmann@edu.uni-graz.at

The recommendation paper was developed and written by the OANA Working Group "Open Science Strategy" from 2018-2020. The Working Group was established by the OANA core team on 10 January 2018. The recommendations reflect the experiences and personal opinions of the members of the Working Group.

Source: Empfehlungen für eine nationale Open Science Strategie in Österreich / Recommendations for a National Open Science Strategy in Austria | Zenodo

Austria (2021)

Source: https://www.bmbwf.gv.at/Themen/HS-Uni/Hochschulgovernance/Leitthemen/Digitalisierung/Open-Science/Open-Science-Policy-Austria.html

Final Remarks

- Build on and adopt existing, shared guidelines, principles and policies (see Science Europe, cOAlition S etc.)
- From recommendation to mandate

Programme for today

12:15	Stocktaking: Open Science in Georgia Group work on flipcharts on existing Open Science activities, tools, infrastructures and actors in Georgia
13:00	Lunch
13:30	An Open Science policy for Georgia Identify Open Science elements/subtopics from the stocktaking activity and develop recommendations for an open science policy
15:00	Development of draft policy recommendations and identification of rapporteurs
16:30	Concluding remarks

19:00 Networking dinner and discussion, LadoNina restaurant, L.Gudiashvili street 11

We will be happy to welcome all participants!

Concluding Remarks

- Rapporteurs?
- Agenda for tomorrow:

09:00	Workshop rapporteurs: Preparation of the powertpoint slides Venue: SRNSFG Conference room

15:00	Presentation and discussion with the Ministry of Education and Science of Georgia

Information and Contact

FWF Open Access Policy for publications:

https://www.fwf.ac.at/en/research-funding/open-access-policy/open-access-to-peer-reviewed-publications

FWF Open Access Policy for research data:

https://www.fwf.ac.at/en/research-funding/open-access-policy/open-access-to-research-data

Research Data Management at FWF:

https://www.fwf.ac.at/en/research-funding/open-access-policy/research-data-management

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