



Grounding RRI Actions to Achieve Institutional Change in European Research Funding
and Performing Organisations

Grant Agreement n. 824521

STATE-OF-THE-ART REVIEW OF DOCUMENTED EXPERIENCES

*Document 5 – Collection of experiences on
open access*

Prepared by



May 2019





Disclaimer

The sole responsibility for the content of this publication lies with the authors. It does not necessarily reflect the opinion of the European Commission. The European Commission is not responsible for any use that may be made of the information contained therein.

Copyright

This document may not be copied, reproduced, or modified in whole or in part for any purpose without written permission from the GRACE Consortium. In addition, an acknowledgement of the authors of the document and all applicable portions of the copyright notice must be clearly referenced.

All rights reserved.

This document may change without notice.



Introduction	4
This document	4
SECTION ONE – OPEN ACCESS PUBLICATIONS	6
1. The issue.....	7
2. Examples of action	7
3. To know more	9
SECTION TWO – OPEN ACCESS DATA.....	10
1. The issue.....	11
2. Examples of action	11
3. To know more	14
SECTION THREE – OPEN SCIENCE EVALUATION.....	16
1. The issue.....	17
2. Examples of action	17
3. To know more	18
SECTION FOUR – OPEN ACCESS CULTURE	20
1. The issue.....	21
2. Examples of action	21
3. To know more	22
SECTION FIVE – GOVERNANCE, INFRASTRUCTURES AND POLICIES ON OPEN ACCESS	23
1. The issue.....	24
2. Examples of action	24
3. To know more	26



Introduction

In the framework of the Grounding RRI Actions to Achieve Institutional Change in European Research Funding and Performing Organisations (GRACE) project, under WP3 (Governance and Mutual Learning), a specific task (T3.1) is focused on “the collection of experiences documenting RRI-documented institutional changes” and on “the elaboration of these experiences into a set of short guidance documents”.

The overall aim of the Task is that of **assisting the GRACE partners** engaged in embedding RRI in their own institute to design and implement a set of RRI-oriented Grounding Actions (GAs), to integrate these GAs with each other (developing a unitary governance system for them), to ensure their sustainability and to use them as a platform for developing a Roadmap towards RRI going beyond the GRACE project lifespan (overall 8 years).

In order to pursue this objective, a state-of-the-art of documented experiences on RRI has been developed, the results of which are presented in **seven autonomous documents**, although connected to each other, i.e.:

- Document 1 - Collection of experiences on gender equality
- Document 2 - Collection of experiences on citizen engagement
- Document 3 - Collection of experiences in science education
- Document 4 - Collection of experiences on research ethics and integrity
- Document 5 - Collection of experiences on open access
- Document 6 - Approaches to RRI implementation
- Document 7 - Basic scheme for self-assessment

All the documents have been developed by Knowledge & Innovation (K&I), which is the leader of WP3. They are not formal deliverables and their circulation is restricted to the GRACE project consortium members.

This document

This is the 5th document of the series, devoted to the **experiences related to open access**. Its aim is helping GRACE partners reflect on possible GAs to develop in this area during the project implementation period or in the framework of the 8-year Roadmap towards RRI. The document includes **five sections**, respectively devoted to:

- Open access publications
- Open access data
- Open science evaluation
- Open access culture
- Governance, infrastructures and policies for open access.

It is to notice that most of the issues discussed in this document can also apply for developing policies in the framework of the most general strategy now identified as Open science (OS), which according to the EC represents a new approach to the scientific process based on cooperative work and new ways of diffusing knowledge by using digital technologies and new collaborative tools. Such a strategy, focusing on the whole research process, in the current formulation by the EC also embraces aspects related to other keys of RRI, i.e., citizen engagement, science education and research ethics and



integrity, respectively making the object of Documents 2, 3, and 4, which will be thus not included here.

The document has been developed by Giovanna Declich (K&I).



Section One – Open access publications



1. The issue

Any form of scientific output can be made openly available, simply by being posted onto a website. This can and does happen for journal articles, book chapters and whole books, datasets of all types (including graphics, photographs, audio and video files) and software. The term Open Access (OA), however, tends to be used about information made available in one of two structured ways, i.e.:

- The Green open access, which refers to the regular inclusion of publications in an open repository
- The Gold open access, which refers to the inclusion of publications in open access journals.

There is also a Hybrid open access, which refers to a publishing model where some articles are made openly available in an otherwise subscription-based journal (hybrid journal).

It is to be reminded that OA is currently an integral part of the research policies of the EC, making it compulsory that all funded research is published under this form. The compliance with this mandatory requirement can nevertheless be interpreted in a range of different ways by different institutions and research groups, starting from a minimal level (that is, leaving the responsibility for the fulfilment of the rule to individual researchers or financed groups) up to the adoption of comprehensive policies for the whole institution.

2. Examples of action

Some specific strategies pertaining to this area can be identified:

- Adopting measures for Green OA
- Adopting measures for Gold OA and Hybrid OA
- Adopting or promoting new mechanisms and forms of scholarly publishing.

a. Adopting measures for Green OA

The first strategy, related to the storing of research works in repositories, can be practised in different ways. The following actions may be envisaged.

- Supporting the **access to third parts' repositories** (included repositories for monographs such as OAPEN– Open Access Publishing in European Networks), by collecting and systematically disseminating information about them throughout the institution.
- In case an institutional repository already exists, **supporting its full functioning**, encouraging or even making it compulsory (when possible and appropriate) to post new articles, pre-prints and post-prints (i.e., the version accepted by the peer-review process of a journal), that is asking the author to either (1) retain the copyright and transfer only the right of the first print and electronic publication, or (2) transfer the copyright but retain the right to post-press storage.
- Facilitating **the repository use** (e.g., using software speeding up the upload function).
- Creating **incentives, and offer assistance** to those who **do not use open repositories** or who do not have the time **to deposit their own e-prints** (e.g., paying for a digital librarian to help



researchers put their past publications into digital form, deposit them in the university archive, and enter the relevant metadata).

- Creating an **institutional repository**, following the existing examples, for articles and monographs.

b. Adopting measures for Gold OA and Hybrid OA

As said above, the concept of Gold Open Access refers to the approach ensuring the full access to publications by publishing articles in Open Access journals, while Hybrid OA refers to an approach where some articles are openly available, and the others are not (hybrid journal). Authors can pay to make their own article Open Access while the rest of the journal remains toll-access. Whatever journal is chosen, the research institution can promote the OA publication in different ways. Among the possible actions to implement, the following ones can be mentioned.

- Regularly **disseminating up-to-date information on the existing OA journals** and the way to access them.
- Providing a **budget to cover the expenses for publication Open Access** of articles and books for which no other funds are made available by funding agencies (a cap of funds or a number of articles per researcher per year could be established).
- Supporting **researchers with advice and support on copyright and license issues** when approaching journals for publications.
- Giving the **due weight in hiring, promotion, and tenure, to all peer-reviewed publications**, regardless of price or medium, and stop using criteria that penalize and deter publication in OA journals.

c. Adopting or promoting new mechanisms and forms of scholarly publishing

In the last years, new models and methods of scholarly publication, more aligned with the OA philosophy, have emerged. In the same time, the market of academic monographs is collapsing, because of rising prices and lowering demand following the international push to “publish or perish”. These circumstances are giving birth to solutions adopted, either by individual institutions or shared by international networks of scientific organisations.

The following action lines can thus be pursued.

- Publishing **OA academic monographs and textbooks**.
- Joining **international platforms to share monographs and other scientific contents**, like OpenEdition and Knowledge Unlatched.
- Establishing agreements with **megajournals** (i.e., peer-reviewed platforms, in scope and concept bigger than the traditional span of a journal, presenting scholarly content to a global audience) to systematically publish peer-reviewed research works.



3. To know more

Some resources devoted to open access to publications are listed below.

- An introduction (in a very short version and a slightly longer one) to open access (OA) for those who are new to the concept, created and maintained by Peter Suber (Harvard University).
<http://legacy.earlham.edu/~peters/fos/brief.htm>
<http://legacy.earlham.edu/~peters/fos/overview.htm#repositories>
- A compendium of simple factual lists about open access (OA) to science and scholarship, maintained by the OA community at large.
http://oad.simmons.edu/oadwiki/Main_Page
- An article providing suggestions to create an institutional repository. titled “[Carrots and sticks: some ideas on how to create a successful institutional repository](#)”.
<http://repositorium.sdum.uminho.pt/bitstream/1822/7639/1/Carrots%20and%20Sticks.pdf>
- The website of the Confederation of Open Access Repositories (COAR), a not-for-profit association of repositories which enhances greater visibility and application of research outputs through global networks of Open Access digital repositories initiatives. <https://www.coar-repositories.org/>
- The searchable international registry charting the growth of open access mandates and policies adopted by universities, research institutions and research funders that require or request their researchers to provide open access to their peer-reviewed research article output by depositing it in an open access repository.
<http://roarmap.eprints.org/>
- The online resource SHERPA RoMEO that aggregates and analyses publisher open access policies from around the world and provides summaries of self-archiving permissions and conditions of rights given to authors on a journal-by-journal basis.
<http://www.sherpa.ac.uk/romeo/about.php?la=en&flDnum=|&mode=simple>
- The portal of Knowledge Unlatched, a leading player in finding economically sustainable ways to open or unlatch scholarly literature, both in journals and in books.
<http://knowledgeunlatched.org/about-us/>
- A set of websites about open access journals and resources.
<http://cofactorscience.com/journal-selector>
<http://www.eigenfactor.org/openaccess/fullfree.php>
<https://doaj.org/>
<http://www.oapen.org/>.
<https://www.openedition.org/6438>
<https://megajournals.info/>



Section Two – Open access data



1. The issue

Research data, as argued by projects aiming at spreading the practice of open data, is the new currency of the digital age. In the digital era, data is increasingly considered the main part of a scientific publication, while the paper serves the secondary role of describing and disseminating scientific results. This is because open data tend to survive the associated document. Indeed, others (professional researchers and interested members of the general public) can conduct a new analysis on these data and can do so in the context of new questions, leading to new scientific discoveries. Literature shows that scientific papers accompanied by publicly available data are on average cited more often and are moreover characterised by fewer statistical errors and a greater degree of robustness.

This is why the open science strategy of the EC incorporates the principle of FAIR (Findable, openly Accessible, Interoperable and Reusable) data, and a progressive and mandatory data openness is expected to happen over time.

However, serious gaps still persist in the level of preparation amongst European research performing organisations, mainly in areas such as policy development, awareness of current issues, skills development, training, costs, community building, governance, disciplinary/legal/terminological and geographical differences.

2. Examples of action

With reference to Open Data, the following action lines can be identified:

- Pre-assessing the situation of data management in the institution
- Preparing the ground for an institutional data policy or strategy including FAIR principles
- Providing services for data stewardship (i.e., accountability and responsibility for data and processes that ensure effective control and use of data assets)
- Providing access to infrastructure for storage and publication of research data
- Identifying and enhancing responsibilities and skills.

a. Pre-assessing the situation of data management in the institution

This action line is aimed at **verifying the state of the art in terms of open data management** in the concerned institution, which may vary considerably from one research area to another, before setting objectives for the full openness and establishing a programme of actions to achieve them. This can be done through the following actions.

- Conducting **an internal survey, questionnaire or audit**, at each research department, on which type of data are currently available for sharing and re-use, also utilising existing tools devised by existing networks or previous projects (e.g., DCC Cardio, DCC Data Asset Framework).
- Taking note of the fact that research funders increasingly require data management plans as a part of the submission of project proposals, **identifying the requirements of the main funders** in terms of data management to be fulfilled, and the related existing gaps.



- Mapping the **people interested in driving or getting involved with** the development of an open access data management system in the institution.

b. Preparing the ground for an institutional data policy or strategy

This action line is aimed at **establishing the conditions for an open data management policy**, to achieve the objectives of data openness in a reasonable time span. This could entail the following operations.

- Establishing a **working group or team for data management**, which brings together the range of critical institutional stakeholders and provides a forum for planning and operational oversight.
- Developing an **institutional Roadmap for Research Data** (in case it does not exist yet) which sets out the strategic objectives, tasks and actions required for compliance with research funder directives and to align with the general strategies of the institution.
- Providing **general information and guidance** on the topic of open research data.
- Publishing **‘basic principles’, general guidelines and examples** to help researchers in how to cite data, including links to existing demands from funding agencies, publishers and data centres, specific to the different disciplines.
- Deciding **which data** can be published, **which licenses** are to be used for different aims, and **which software** will be utilised.
- Establishing **regular forms of cooperation and common work with other universities and research institutions** to compare their experiences as they develop and implement research data management policies.
- Connecting with **international networks and alliances** aiming at promoting open data to get advice and support.

c. Providing services for data stewardship

This action line is geared at **providing researchers with professional support** in terms of skills for **stewardship and curation** (i.e., the active and ongoing management of data through its life cycle of interest and usefulness) **of research data**. Two main actions may be provided as examples.

- Introducing **specific job profiles** with career paths for data preparation and quality assurance staff – such staff may be embedded in research groups or hosted in data centres or libraries.
- Establishing a **dedicated service** to provide data stewardship to researchers.

d. Providing access to infrastructure for storage and publication of research data

Encourage reuse, data curation and metadata annotations (being metadata the information that describes the article, book, dataset, authorship, provenance, publication, location, date of publication,



object type and so forth) are key factors, along with reliable basic infrastructure for data sharing. This means the availability of well-curated and long-term maintained data infrastructures and a rich catalogue of standards and formats that are also constantly updated to keep pace with changes in technology and knowledge. The infrastructural challenge for research institutions includes, among others: the heterogeneity of research data (present in different formats and depending on specific research methodologies); the need of data management tools for creation, analysis, administration, documentation, archiving, publication and discovery; the choice of technical components, to be based on local desktops, servers or cloud services; the availability of dedicated staff in different departments and services of the institutions for management, system administration, curation, support, etc. Actions are necessary at all organisational levels (departments, research groups, library, central administration, etc.). Institutional actions in this field may include the following ones.

- Estimating **the costs for an institutional data repository**, considering different options (e.g., the possibility of sharing services with other institutions).
- Creating or enhancing a **“long tail repository”** (i.e., a facility providing access to datasets produced at the institution that do not fall within the scope of other discipline-based, or government repositories).
- Creating and updating a **data catalogue supporting re-use and open data**.
- In deciding which infrastructures to use, supporting, and contributing to, choose **platforms using free or open source software**, offering open data via an open license, and leveraging open standards where possible.

e. Identifying and enhancing responsibilities and skills

The data release is not sufficient on its own. For re-use to take place efficiently, which is the actual goal of open data, data sharing must become a custom routine, should encompass the entire research cycle and ensure long-term preservation. Furthermore, data sharing requires a certain amount of manual work and a specific change in research habits, for which the current credit research system should be adapted. This is why, besides the institutional services devoted to data management, it is important that **competencies about data management are progressively widespread**, being a common background for an increasing number of different components of each research institution. The following measures can be thus adopted.

- Organising **practical support for researchers**, including experts such as legal experts (for example the university’s legal office, should be prepared to give advice on relevant contracts, regulations and legislation), in addition to information on the website and presented in training sessions.
- Embedding **credited data management courses** within postgraduate training.
- Mapping the **skills currently available for data management** in the institution.
- Enhancing awareness among researchers and the wider community by engaging in **information activities and data audits**.
- Involving a broad range of stakeholders in **training development and delivery**, such as heads of graduate schools with a responsibility for training programmes, the HR department, research librarians, IT directors, accrediting bodies and policymakers.



- Incorporating **data curation** into library school education.
- Investing in quality (accredited) **continuing professional development** for both data scientists and librarians.
- Establishing **doctoral schools for advanced data management and exploitation** to increase numbers of data scientists in different disciplines.

3. To know more

Some sources addressing the working environment are listed below.

- A quick e-guide “Managing research data in your institution” issued by JISC, updated 2017 (Joint Information Systems Committee).
<https://www.jisc.ac.uk/guides/research-data-management>
- The introductory web-course on Managing and Sharing Research Data.
<https://www.fosteropenscience.eu/node/2328>
- The webtools provided by the Digital Curation Centre (DCC) to self-assess, **prepare for and deliver a research data support service for scientific institutions**.
<http://www.dcc.ac.uk/resources/tools-and-applications>
- An advice paper developed by LERU containing explanation and recommendations for different types of stakeholders concerning research data management.
<https://www.leru.org/files/LERU-Roadmap-for-Research-Data-Full-paper.pdf>
- An article on data curation.
<https://www.webarchive.org.uk/wayback/en/archive/2018/http://www.ukoln.ac.uk/ukoln/staff/e.j.lyon/150.pdf>
- The LEARN Toolkit of Best Practice for Research Data Management.
<http://learn-rdm.eu/wp-content/uploads/RDMToolkit.pdf>
- Three short documents all issued by the LEARN project on Research Data Management.
http://discovery.ucl.ac.uk/1546606/1/25_Learn_Model%20Policy_133-136.pdf
http://discovery.ucl.ac.uk/1546596/1/26_Learn_Guidance_137-140.pdf
http://learn-rdm.eu/wp-content/uploads/red_LEARN_Elements_of_the_Content_of_a_RDM_Policy.pdf
- The 20 RDM best practices recommendations, including Key Performance Indicators issued by the LEARN project.
<https://www.fosteropenscience.eu/content/20-rdm-best-practice-recommendations>
- The website of the Research Data Alliance (RDA), which promotes the development and adoption of infrastructure for data sharing and data-driven research.
<https://rd-alliance.org>
<https://rd-alliance.org/get-involved/studentearly-career-programms>



- The series of webinars on different issues related to RDM organised by the digital publisher Dataversity.
<https://www.dataversity.net/category/education/webinars/upcoming-webinars/>
- The website of the Mozilla Science Lab, which facilitates learning about open source and open data, and furthermore offers fellowships for early-career researchers.
<https://www.mozillascience.org/fellows>



Section Three – Open science evaluation



1. The issue

In a broader perspective, open access can be viewed also as part of Open Science, which, according to the European Commission, can be intended as “a new approach to the scientific process based on cooperative work and new ways of diffusing knowledge by using digital technologies and new collaborative tools”¹. Although Open Science is not directly considered in the GRACE project, it is anyhow connected with open access and therefore with the general structure of RRI.

In this document, we will consider only an aspect of Open Science, i.e., how the research evaluation systems are changing or expected to change under the pressure towards the open access of publications, data, and methods. In particular, a shift is occurring from exclusively or mainly quantitative and metric evaluation to a better and more sensitive mix of quantitative and qualitative evaluation. To be successful, it should also be aligned with a transition to evaluating performance of researchers on a broader, multidimensional basis, which includes not only research, but also a wider range of other professional results mostly related to Open Science and RRI including, e.g., educational commitment, group work and collaboration, supervision of junior colleagues, institutional citizenship, and service to the profession or society in general.

In this context, a crisis of the systems of peer review is also increasingly perceived. The researchers often denounce the fact that the peer review system is no longer working. A considerable number of articles have appeared in various journals that question the process and how it is used, raising problems with the consistency of the review, its definition, ethics, costs and the speed of the process. A more transparent system of peer review, able to stand against current flaws, preserving researchers’ integrity and ethics, is strongly required.

2. Examples of action

To foster a change of the ways in which evaluation is made, different action lines are being experienced. The following ones deserve to be mentioned:

- Promoting alternative metrics (Altmetrics) for scholarly outputs
- Including openness criteria in the evaluation of researchers, research groups and rewarding openness in research
- Including openness in researchers’ and HR’s careers.

a. Promoting alternative metrics (Altmetrics) for scholarly outputs

The term ‘Altmetrics’ stands for ‘alternative metrics’ for scholarly output. Altmetrics are metrics and qualitative data that are complementary to traditional, citation-based metrics. Two actions, among others, to promote their adoptions are listed below.

- Constructing **guidance for research administrators and academics** on good and bad practice in the use of traditional bibliometrics and in the development of new metrics, connecting with the relevant scientific communities in this endeavour.

¹ European Commission Open Science Policy Platform:
<http://ec.europa.eu/research/openscience/index.cfm?pg=open-science-policy-platform>



- Developing an **institutional bibliometrics policy grounded on the principles of the DORA** (San Francisco Declaration on Research Assessment) and the **Leiden manifesto** with the aim of changing the culture in the academic community about research assessment.

b. Including openness criteria in the evaluation of researchers and research groups and rewarding openness in research

To some extent, the evaluation of researchers and research groups pertains to the institutional strategies of research organisations and universities. Such institutions can thus promote openness through different kinds of action. Some of them are listed below.

- **Assessing** the extent to which **individuals, teams or units integrate Open Science** in their daily practice and **rewarding them for Open Science practice through different forms** (e.g., digital badges, enhanced access to institutional scientific communication etc.).
- Embedding **new forms of research evaluation in internal processes** for promotion/reward and research evaluation.
- Spreading **information** in an open and accessible way **about internal policies on** researcher evaluation.
- Promoting and implementing the **recommendations of DORA** and the **Leiden manifesto** to ensure that research assessment takes into account a wide range of scholarly contributions including research articles, preprints, datasets, software, patents and materials (e.g., in hiring, tenure, and promotion decisions).
- Testing and using **innovative methods** to disseminate the research results (e.g., those based on social media).

c. Including openness in researchers' and HR's careers

To support open evaluation, HR institutional policies should embed its principles through a set of specific actions implementing actions as:

- Verifying and testing (for example, through pilot projects) the **adoption of new holistic evaluation methodologies of scientific careers** incorporating different dimensions of Open Science, such as the **Open Science Career Evaluation Matrix (OS-CAM)**
- Integrating **Open Science in career frameworks** as an explicit element in recruitment, performance evaluation and career advancement policies for HR and other administrative employees.

3. To know more

Some sources addressing the open science evaluation are reported here below.

- The introductory clip “What are altmetrics”.



<https://www.altmetric.com/about-altmetrics/what-are-altmetrics/#prettyPhoto/0/>

- The Altmetrics manifesto J. Priem, D. Taraborelli, P. Groth, C. Neylon (2010), [Altmetrics: A manifesto](#), 26 October 2010.
<http://altmetrics.org/manifesto>
- The report Next-generation metrics: Responsible metrics and evaluation for open science.
<https://ec.europa.eu/research/openscience/pdf/report.pdf>
- The report OpenUp_D5.1_Altmetrics Status Quo.
http://openup-h2020.eu/wp-content/uploads/2017/01/OpenUp-Deliverable_D5.1_Altmetrics-status-quo.pdf
- The Altmetrics toolbox build by the OPENUP project including reports, papers guidelines and other resources on Altmetrics.
<https://www.openuphub.eu/assess>
- The EC document Evaluation of Research Careers fully acknowledging Open Science Practices; Rewards, incentives and/or recognition for researchers practising Open Science.
https://ec.europa.eu/research/openscience/pdf/os_rewards_wgreport_final.pdf
- The report of the Mutual Learning Exercise: Open Science – Altmetrics and Rewards.
https://www.zsi.at/object/news/4826/attach/MLE_OS_Final_Report.pdf
- The report on innovative dissemination methods issued by the project OPEN UP “Innovative dissemination methods: Good practices and lessons learned”.
http://openup-h2020.eu/wp-content/uploads/2018/10/OpenUP_D4.3_Innovative_dissemination_methods_Good_practices_and_lessons_learned.pdf



Section four – Open access culture



1. The issue

The full adoption of open access philosophy and practice represents a cultural change in the way stakeholders in the research, education and knowledge exchange communities create, store, share and deliver the outputs of their activity. For universities and other stakeholders, there needs to be a culture change in these organisations if this transition is to be successfully negotiated.

2. Examples of action

To foster a cultural change in organisations towards open access, the following lines of actions are being practised and recommended:

- Developing a programme of cultural change
- Establishing advocacy programmes
- Drawing up a communication strategy
- Providing and assessing training to different audiences.

a. Developing a programme of cultural change

This action line is geared at developing a programme of cultural change, which is necessary to support the changes in principle and practice which OA brings.

b. Establishing advocacy programmes

This action line aims at establishing advocacy programmes, necessary to identify the benefits of OA approaches, whilst being realistic about the challenges which they imply.

Advocacy programmes generally encompass:

- Creating an **evidence base** for the benefits of OA
- Making **the case of OA** for all the concerned internal players.

c. Drawing up a communication strategy

This action line refers to establish communication strategies enabling the whole organisation body to become familiar with Open Science practices.

The following activities can be envisaged.

- Promoting **targeted campaigns** inside the institution about Open Science and its advantages for the different audiences.
- Disseminating **information about international good practices of Open Science**, using available printed and electronic tools.



- Joining **international initiatives as the International Open Access Week**, celebrated every year in October by the scholarly community with events around the world that can be registered on the Open Access Week website.

d. Providing and assessing training to different audiences

This last action line includes the planning, implementation and assessment of training activities addressing the various components of a scientific organisation to promote the different aspects of Open Science. Some possible actions which can be promoted are given below.

- First and foremost, training **for early career researchers**, particularly those embarking on a course of doctoral study, providing training to enable them to embrace the change of culture and practice which the responsible use of metrics brings.
- **Skill trainings** focusing on specific aspects of open science.
- **Mandatory trainings** for specific categories of staff/researchers/students or for all on specific aspects considered particularly relevant to the Open Science policy of the institution.
- **Monitoring or assessing the provision, uptake and impact of Open Science skills training** for all the targeted audiences.

3. To know more

Some sources addressing the cultural change needed for OA are listed below.

- The Policy paper LERU Open Science and its role in universities: A roadmap for cultural change
ADVICE PAPER no.24 - May 2018.
<https://www.leru.org/files/LERU-AP24-Open-Science-full-paper.pdf>
- The open access week website, which contains all the events registered worldwide and open access advocacy material.
<http://www.openaccessweek.org/>
- The report of the Expert Group to the European Commission on the Future of Scholarly Publishing and Scholarly Communication.
<https://publications.europa.eu/en/publication-detail/-/publication/464477b3-2559-11e9-8d04-01aa75ed71a1>



Section five – Governance, infrastructures and policies on open access



1. The issue

Open Access can only be fully achieved if the right infrastructure is in place to enable global access and true interoperability and if an institutional policy is adopted. This requires, in turn, that the whole matter will be given a governance system.

It is to be noted that the diversity of research fields implies different degrees of implementation and practice of OA even within the same institution. National policies and institutional characteristics (e.g., a big generalist university and a research centre focusing on one research area) are other factors affecting the different pace of change. As argued by the LERU, committed to OA since the early 2010s, *“the pathway’ to Open Access is not a smooth one. Many parties are involved and there are many competing interests”*.

The institutional policy should include some key elements (see the UNESCO policy guidelines), including:

- The Open Access routes (‘green’, ‘gold’ or mixed modes)
- The Deposit locus
- Content types covered (journal articles, books, research data outputs)
- Embargoes (maximum embargo length permitted, i.e., the period in which the full text of the item remaining in the repository, but closed)
- Permissions: of the copyright holder ‘loophole’ for publishers to exploit
- Compliance with policies
- Advocacy to support the policy
- Sanctions to support the policy
- Waivers (for examples, for authors based in developing countries)
- ‘Gold’ Open Access (where available).

Possible actions to be taken at the central administration level of a research institution are presented below.

2. Examples of action

Some action lines pertaining to infrastructures and policies for open access can be identified, respectively referring to:

- Governance systems
- Policy development
- Infrastructure development.

a. Governance systems

This action line aims at endowing the institutions concerned with an appropriate governance structure to drive the process towards full open access, to mobilise the internal actors and stakeholders, and to timely produce data and information about advancements, constraints, and critical steps. A stable governance structure is needed to assure a comprehensive vision of the problems to be addressed



and an ability to change the types and intensity of the actions throughout the process, also reacting to unforeseen events. Two actions can be mentioned here as examples.

- Appointing a **senior manager to lead the whole process inside the organisation**, bringing open access near to the core strategies of the organisation.
- Creating a **core team for managing the process inside the organisation**, able to connect different internal stakeholders and groups.

b. Policy development

This strategy is aimed at developing a consistent internal policy as for concerns open access to research data and publication, creating synergies among the existing responsibility poles and making the most of the expertise available, on one side, and completing the framework by mobilising new resources on the other. A key issue is an alignment of institutional strategies with the new developments in at least the following areas: (1) Research/Teaching and Learning, (2) Copyright/Intellectual Property Rights (IPR) and (3) Publications.

Examples of actions which can be developed in this regard are listed below.

- Verifying the **state of compliance with the European OA policies**, by identifying projects and researchers that are obliged to adhere to the OA policies of the EC/ERC; providing basic information about these OA policies to project coordinators; pointing to the library for the deposition of publications and helping out with copyright issues.
- Assessing the **state of advancement of OA in the institution**, through self-assessment tools or with the help of external consultants and ascertaining if institutional mandates exist to support the move to full Open Access.
- In case mandates to achieve full Open Access exist, **verifying the presence of monitoring systems** to constantly follow the progress towards this goal.
- **Mapping the internal stakeholders in charge of OA activities** at different levels and in different parts of the institution (research departments and laboratories, libraries etc.)
- Establishing together with relevant stakeholders internal or external to research organisations a **roadmap** for how they, or specific groupings, can develop **plans for the future of scholarly publishing in the institution**.
- **Connecting the institution to national and international networks** for promoting open access to publications, open data, and open Education resources.
- **Negotiating with service-providers** clauses to avoid non-disclosure and to enable cost and price control, and compliance monitoring, also **promoting collective action** through joint initiatives (e.g., OpenAPC, providing free software and control services).

c. Infrastructure development



This action line is aimed at endowing scientific institutions with appropriate infrastructures for OA to research data and publications. It is to bear in mind that enhancing, or even more creating infrastructures, is a long and expensive task, whose cost and length depends upon several different factors.

Examples of actions which can be developed in this regard are listed below. Some of them have been already mentioned in other sections of this document. However, here they are considered for their contribution to the embedment of a governance structure for open access policies.

- Establishing **institutional data repositories**
- Fostering the **use of author identifier systems** such as ORCID or ISNI.
- Providing and facilitating **access to third-party repositories.**
- Establishing a **search and discovery service** enabling users to find what research data is available, and where it is located.
- Connecting to the **European Open Science Cloud (EOSC)**, by signing the EOSC Declaration as a statement of commitment at a local level.

3. To know more

Some sources addressing the policy and infrastructure development process are listed below.

- The LERU roadmap towards open access.
<https://www.leru.org/publications/the-leru-roadmap-towards-open-access#>
- The UNESCO Guidelines on open access Swan A, Policy Guidelines for the development and promotion of open access.
<http://www.unesco.org/new/en/communication-and-information/resources/publications-and-communication-materials/publications/full-list/policy-guidelines-for-the-development-and-promotion-of-open-access/>
- The Pasteur4OA document [Monitoring Compliance with Open Access Policies](#) which proposes useful information for monitoring.
http://www.pasteur4oa.eu/sites/pasteur4oa/files/resource/Brief_Monitoring%20compliance%20with%20OA%20policies_0.pdf
- The module [Open Access Monitor](#) that simplifies OA policy compliance for research institutions.
<https://symplectic.co.uk/elements-updates/introducing-open-access-monitor/>
- In-depth studies on relevant technical and legal issues.
<https://univerlag.uni-goettingen.de/handle/3/isbn-978-3-943363-00-5>
<https://univerlag.uni-goettingen.de/handle/3/isbn-978-3-86395-095-8>
<https://univerlag.uni-goettingen.de/handle/3/isbn-978-3-86395-147-4>
- Portals managed by international networks of organizations aiming at fostering open access and open science.
<http://scoss.org/>



<http://www.knowledge-exchange.info>

- Key documents on the European Open Science Cloud.

[https://www.eosc-](https://www.eosc-portal.eu/sites/default/files/CELEX%253A52016DC0178%253AEN%253ATXT.pdf)

<portal.eu/sites/default/files/CELEX%253A52016DC0178%253AEN%253ATXT.pdf>

<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32018H0790&from=EN>

https://www.eosc-portal.eu/sites/default/files/eosc_declaration.pdf

https://www.eosc-hub.eu/sites/default/files/EOSC_Portal_Booklet.pdf

