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Final Report

of the Project

“Establish and maintain/update Swiss-wide best practices of ORD expertise”

Action line B5.1 of the National Open Research Data Action Plan,

mandated by swissuniversities.

30 June, 2025.

KNOWLEDGE
CREATES
VALUE.

The project was commissioned to the University of Bern.
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Addendum by swissuniversities:
Statement by the Delegation Open Science on the final reports of ORD mandates B5.1, B5.4 and C2.3

Executive Summary

This report, commissioned by swissuniversities as part of the Swiss National Open Research Data (ORD) Action Plan, focuses on the development and maintenance of best practices for ORD expertise across Swiss Higher Education Institutions (HEIs). This report was authored by a working group assembled mainly from the members of the Swiss Research Data Support Network (SRDSN).

The primary objective of the project is twofold: to assess the current landscape of ORD support, both nationally and internationally, and to develop a framework that will guide the implementation and long-term fostering of ORD best practices during the 2025–2028 funding period.

To achieve these goals, the working group combined multiple research strategies, including a comprehensive landscape analysis of how ORD is being implemented in Switzerland and abroad, as well as a survey and a series of focus groups involving ORD experts working at Swiss HEIs. Additionally, international expert interviews provided comparative insights into international best practices.

The findings of the report reveal that ORD implementation across Switzerland is uneven, with significant variations among institutions and disciplines. Data stewardship programs are in development, but they differ substantially in terms of structure, funding models, and maturity. Institutional policies on ORD are generally non-binding and lack consistent integration into research assessment processes. Sustainable funding, awareness of ORD best practices among researchers, and strong leadership commitment remain areas of weakness. While most institutions are better positioned with regard to training and inter-institutional collaboration, there remains potential for further development, particularly in smaller institutions. Furthermore, Switzerland falls short in some international benchmarks, such as contributions to FAIRsharing and the early implementation of Data Management Plan (DMP) requirements.

Several challenges were identified throughout the mandate. Among them are limited commitment to ORD policy from institutional leadership, uneven institutional support, as well as insufficient communication and awareness of ORD support and best practices. Additional barriers to successful implementation of ORD best practices are limited recognition of ORD practices in academic career progression, and fragmented training and collaboration efforts.

In response, the report outlines a set of targeted recommendations. It calls on swissuniversities and the Delegation Open Science (DelOS) to lead long-term strategic planning, ensure coordinated funding, and align national policies based on a broad involvement of all relevant stakeholders. For HEIs, the report recommends establishing robust ORD policies, building sustainable support structures, offering incentives, and improving internal coordination of ORD support. The ORD support community is encouraged to contribute to policy

development on the national level, and to foster national and international exchange and networking to promote the professional development of data support roles.

Together, these efforts are intended to strengthen the ORD ecosystem in Switzerland, promote alignment with international standards, and enhance the sustainability and impact of ORD practices across Swiss academia.

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Introduction

This is the final report of a project that was mandated by swissuniversities to address action line B5.1, “Establish and maintain/update Swiss-wide best practices of ORD expertise”, of the national Open Research Data (ORD) Action Plan (swissuniversities, 2021b).

This final report is structured into four main sections:

(1) The introduction details the background of the mandate, laying the conceptual framework and outlining the methodology of this report and the research it is based on.
(2) The second main section comprises four chapters, each of which presents the results of the research activities conducted for this report, i.e. landscape analysis, survey, focus group discussions, and qualitative interviews.
(3) The third section summarizes all findings, taking them as the basis for recommendations and implementation suggestions, directed towards various stakeholders in the Swiss Higher Education (HE) system.
(4) The fourth section includes a list of abbreviations, a bibliography of literature that was referenced or otherwise used for this report, and annexes containing material that supports the report, that may be useful as additional context as well as for further investigations.

In this introduction, we will first summarize the mandate and give details on the group working on this project. After a clarification of basic terminology used in this report, we proceed to an exposition of the scope and aim of this report, using swissuniversities’ project mandate as the basis for building the conceptual framework. In the methodology section, this framework is translated into the research questions that guide our investigations. Additionally, we outline the general methodological approach of the research that we conducted.[1] The introduction concludes with information on the alignment with the mandates B5.4 (“Establish ORD expertise (e.g. data stewardship) as an independent career path at HEIs by 2028”, lead by the University of Basel) and C2.3 (“Framework for systematic communication between trainers and data stewards to facilitate professionalisation and the exchange of experiences, best practices, needs, and to develop training modules”, led by the Università della Svizzera italiana), which were working in parallel with B5.1. A final note explains the material in the annex.

Background

In 2021, swissuniversities issued a national ORD Strategy and a corresponding ORD action plan, mandated by the State Secretariat Education, Research, and Innovation (SERI). These documents set out general principles which determine the strategic direction and governance of ORD implementation in Swiss Higher Education Institutions (HEIs). Measure B5 of the national ORD action plan aims at defining, establishing, and strengthening the role of ORD experts (including data stewards, data scientists, IT specialists, and related roles). In order to

[1] Detailed methodologies for the empirical research we conducted can be found in the respective chapters “Survey”, “Focus Group Discussions”, and “International Expert Interviews”.

support inter-institutional and international cooperation, action line B5.1 aims at establishing, maintaining, and updating Swiss-wide best practices of ORD expertise (swissuniversities, 2021b, p. 24).

In this action line, swissuniversities issued a mandate with the aim of developing a plan that will enable the Swiss Research Data Management (RDM) community to establish and maintain or update Swiss-wide best practices of ORD expertise aimed at ORD experts, including all persons who work with research data (e.g., data stewards, data scientists, researchers, Data Protection Officers (DPOs), Information Technology (IT) specialists, library services, etc.) in all types of HEIs.

The main tasks of this mandate are to

- analyse the current situation in the development of best practices for ORD expertise nationally and internationally, and
- develop a plan on how to develop and implement best practices for ORD expertise within the next SERI funding-period 2025-2028.

To assign the mandate to appropriate experts, swisuniversities consulted the Swiss Research Data Support Network (SRDSN) a network of data stewards and other RDM specialists at Swiss HEIs. From this network, a task force was formed for mandate B5.1, consisting of members of the following institutions (in alphabetical order):

- Scuola universitaria professionale della Svizzera italiana SUPSI
- SIB Swiss Institute for Bioinformatics
- Swiss Centre of Expertise in the Social Sciences FORS
- Thurgau University of Teacher Education
- Université de Lausanne
- University of Bern (Leading House)
- University of Zurich, Center for Reproducible Science.

The work on this mandate officially began on October 1, 2024, and terminated on June 30, 2025.

Basic Terminology

Before the mandate's goal can be translated into a concrete research question, some basic terminology must be clarified.

The concept of ORD is crucial to the aim of this mandate. ORD as a concept is often used interchangeably with adjacent concepts such as RDM and FAIR data. While there is a certain amount of overlap between them, the meaning of these terms also differ in many respects (Higman et al. 2019). Therefore, it is necessary to outline definitions as a basis for a meaningful discussion. The following definitions will be used throughout this report:

Research Data Management (RDM) can be defined as all activities related to "storage, access and preservation of data created or collected in the course of research", either during or after a research investigation, also including activities

such as creating documentation and assigning metadata to research data, and public sharing or publication of research data (CODATA RDM Terminology Working Group, 2024). A **data management plan (DMP)** is an essential tool for conducting RDM in a systematic and timely manner, "describing how research data will be managed throughout a specified research project's life cycle — during and after the active phase of the research project — including terms regarding archiving and potential preservation of the data in a data repository" (ibid.).

The **FAIR Data Principles** (FAIR standing for Findable, Accessible, Interoperable and Reusable) aim at facilitating valorisation and re-use of research data. A strong focus is on creating documentation, metadata, and provisions on technical and organizational levels. The aim is that both humans and computers can access and process research data. (Wilkinson et al., 2016). These principles do not necessarily require data to be openly available, but they emphasize that the conditions of access and reuse are clear and transparent both for human and machine actors.

Open Research Data (ORD) can be defined as data that is produced or used by a researcher and "that can be freely accessed, reused, remixed and redistributed, for academic research and teaching purposes and beyond. Ideally, open data have no restrictions on reuse or redistribution, and are appropriately licensed as such." (Bezjak et al., 2018)

In the national ORD strategy, ORD is defined more broadly as including ideas from the FAIR data context and generally good RDM practices (swissuniversities, 2021a, pp. 6–7). For the purpose of this study, we follow this use of the concept, understanding ORD as RDM activities with the aim of making data openly accessible in accordance with the principle "as open as possible, as protected as necessary".

In line with this definition, **ORD practices** can be defined as "practices aimed at facilitating access to and reuse of research data by any interested party, contingent upon specific agreements based on the type of data", acknowledging that "open", and even "data", are terms that can have different meanings and hence practical implications across disciplines and epistemic cultures (Araujo, Bornatici, & Heers, 2024; Fecher & Friesike, 2014).

ORD expertise is defined in the national ORD Action Plan as well as in the mandate underlying this study in the following way: it "encompasses the management and monitoring of an organisation's data assets with the aim of providing access to high-quality data. As such, it represents the link between researchers and support units in the form of IT, libraries, and infrastructure providers" (swissuniversities, 2021b, p. 24 and identical in the mandate).

On this basis, we define that "**ORD experts**" include researchers and research support staff to the extent as they have meaningful expertise in ORD and engage actively in ORD practices, including supporting researchers in managing and publishing their research data according to ORD best practices. For the purpose

of this study, we understand **data stewards** to be ORD experts, as previously defined, in that they support researchers in managing and sharing data according to ORD best practices. At the same time, we acknowledge that their expertise and activities may extend beyond specific ORD efforts — for instance, when they focus on applying FAIR principles to highly sensitive data that cannot be openly shared. We call all activities that support researchers in implementing ORD best practices **ORD support**. This can include services that are not expressly dedicated to ORD, such as research management, IT, legal, or data science support, to the extent they enable researchers to manage their data according to ORD best practices.

It should be noted that the definitions above are intended as a conceptual basis for the analyses presented in this report. In real-life work environments, roles, functions, and activities may not be as clearly separated as these definitions suggest, or staff performing some or all of the functions mentioned above may have different job titles or think of their work in different terms.

Scope and aim of this report

The objective of this report is to survey ORD best practices and to make recommendations that will enable the Swiss ORD community to establish, maintain, and update Swiss-wide best practices of ORD expertise. To define the scope and aim of this project, we first use swissuniversities' project mandate to build a conceptual framework, which we will then employ in the next section to shape the research focus of this study.

According to swissuniversities' definition, ORD expertise has two aspects: (1) it "encompasses the management and monitoring of an organisation's data assets with the aim of providing access to high-quality data", and as such (2), "it represents the link between researchers and support units in the form of IT, libraries, and infrastructure providers" (swissuniversities, 2021b, p. 24).

We conclude that best practices for ORD expertise will also have two aspects:

Aspect 1: Best practices for RDM with the aim of providing openly accessible research data.

The "management and monitoring of an organisation's data assets with the aim of providing access to high-quality data" as defined by swissuniversities can be seen to represent actual RDM with the aim of publishing research data according to ORD best practices. There are already general best practices in RDM that are well-known and internationally adopted, complemented and specified by guidance that can be derived from principles like FAIR and CARE (Wilkinson et al., 2016; Carroll et al., 2020). Because issues and solutions in RDM depend highly on the methods and nature of data that disciplines or sub-disciplines use and/or produce, best practices and guidance need adaptation to discipline-specific contexts (Akers & Doty, 2013; Donaldson & Koepke, 2022; Netscher et al., 2024). This results in a broad spectrum of best practices that is difficult to

systematize or comprehensively assess. This disciplinary fragmentation presents a challenge for establishing unified Swiss-wide best practices, as it would require not only technical harmonization but also cultural and epistemological bridging across academic domains. In addition, most scholarly disciplines (including their methodologies) are international, and therefore the documentation and development of ORD best practices as such cannot be limited to national contexts.[2] All these factors make this aspect too complex to be dealt with within the scope of this project. Nonetheless, it should certainly be considered in future investigations.

On a conceptual level, however, we argue that ORD best practices need to be implemented in national, regional, local, and institutional contexts, taking into account, for example, legal frameworks, available technical infrastructure, and disciplinary diversity (cf. e.g. the case-study based approach in LEARN, 2017). At these levels, best practices should inform strategic decisions by leadership with regard to RDM governance and policy, as well as to sustainable infrastructure and service provision. The implementation needs to take into account the tools, infrastructures and services available at the local level (see for an exploration of the various factors van Gend & Zuiderwijk, 2023). Moreover, the implementation needs to be monitored, which is a resource-intensive process that must be well-defined and established. It is these points that the second aspect of swissuniversities' definition of ORD expertise relates to:

Aspect 2: Best practices for ORD implementation

According to swissuniversities, ORD expertise also "represents the link between researchers and support units in the form of IT, libraries, and infrastructure providers". Best practices in this context will deal with the question of how to organise ORD implementation across a variety of stakeholders at HEIs. In the Swiss context, the data stewardship implementation plans at Swiss HEIs have been a key factor in promoting ORD support.[3] These plans focus primarily on implementing or strengthening ORD support at the respective institutions. At the same time, they show that institutional environments and approaches to the implementation of ORD support vary considerably. It will be of substantial value for the further development and optimization of ORD support in Switzerland to secure proven practices and solutions that have emerged from these activities. Ideally, this approach will result in best practices for ORD implementation that can inform future strategic and practical directions for the development of the Swiss ORD landscape. In addition, determining best practices regarding institutional frameworks and conditions will help lay the groundwork for a meaningful exploration of discipline-specific best practices as discussed above (aspect 1). By focusing first on the level of institutional implementation, the report not only identifies gaps and successes at a practical level but also highlights how

[2] A good example is ELIXIR, the European Life Sciences infrastructure, which provides detailed life-science specific resources such as the RDMkit (https://rdmkit.elixir-europe.org/index.html) and the FAIR cookbook (https://faircookbook.elixir-europe.org/content/home.html). Links last visited on 5 June 2025.
[3] The action plans can be accessed at https://www.swissuniversities.ch/en/topics/open-science/open-science-programme/ord-projects, 25 June 2025.

the implementation can be strengthened at various levels, defining the framework for more tailored support of disciplinary ORD practices.
A set of best practices for building and sustaining ORD expertise in Swiss HEIs will add particular value if it addresses areas such as the following:[4]

- Securing organisational engagement and long-term commitment to ORD practices and support structures;
- Developing and operationalizing institutional ORD policies;
- Creating and maintaining technical infrastructures for ORD implementation;
- Establishing sustainable financial models for ORD services;
- Incentivizing ORD through integration into research evaluation and researcher assessment;
- Monitoring ORD-compliant outputs and assessing their quality.
- Providing effective training and professional development in ORD best practices
- Promoting ORD through targeted communication and awareness-raising initiatives

Such best practices must be differentiated according to the needs and roles of specific stakeholder groups – including but not limited to ORD support professionals, data scientists, IT staff, researchers, data protection officers, and library staff – as well as tailored to the institutional profiles of universities, universities of arts and applied sciences (UAS), and universities of teacher education (UTE). Disciplinary diversity must also be respected, as ORD challenges and solutions are often highly context-dependent. It is clear that not all of these aspects can be fully addressed within the scope of this mandate. This report, therefore, follows an exploratory approach and should be seen as a starting point for further development rather than a final assessment.

Methodology

To operationalize the conceptual considerations outlined above and in accordance with swissuniversities' mandate, we adopted the following steps for our investigation:
First, we conducted an analysis of the national and international ORD landscape. This involved collecting information on relevant stakeholders, the policy environment, and ORD implementation in Switzerland. We also gathered data to assess Switzerland's position relative to international developments.
Second, to complement these insights and to explore the themes identified in our conceptual framework in greater depth, we engaged with the Swiss ORD support community, as represented in the SRDSN. This community consists of ORD experts, many of whom have been closely involved in planning and implementing ORD action plans at their respective institutions. Their perspectives offer valuable insights into both the achievements and ongoing challenges of ORD implementation across Switzerland.

[4] To develop this framework, we used two papers issued by Science Europe (Boccali et al., 2021; Science Europe, 2021).

To capture the experiences of this community, we employed a two-pronged empirical approach. Through an online survey, we generated a set of quantitative data that provided broad insights into perceptions of ORD implementation at Swiss HEIs. To deepen our understanding of the survey results and enrich them with qualitative input, we then conducted focus groups with a subsample of survey respondents.

A similar approach was used for an in-depth examination of the international landscape. To supplement the insights gained from the landscape analysis and to provide a qualitative counterpart to the Swiss context analysis, we reached out to international ORD experts for personal interviews. The resulting set of qualitative data provided detailed information on best practices and the implementation of ORD in various institutional settings outside Switzerland.

Alignment with other mandates

As noted above, the work carried out under Mandate B5.1, which led to this report, took place in parallel with two other projects commissioned by swissuniversities. The first of these focused on action line B5.4, “Establish ORD expertise (e.g. data stewardship) as an independent career path at HEIs by 2028”, lead by the University of Basel; the second addressed action line C2.3, “Framework for systematic communication between trainers and data stewards to facilitate professionalisation and the exchange of experiences, best practices, needs, and to develop training modules”, led by the Università della Svizzera italiana.

Swissuniversities strongly encouraged coordination and exchange among the three mandates. The lead institutions met regularly throughout the project period (October 2024 to June 2025). Key areas of collaboration included shared organizational concerns across the mandates; the design and evaluation of the survey conducted in late 2024 and early 2025; and, toward the end of the project, the exchange of research findings and recommendations to swissuniversities. To support this goal, a joint workshop involving all three mandates was held in April 2025. The primary aims were to share updates on preliminary findings and to identify any potential discrepancies. While the workshop revealed no inconsistencies between the mandates, the project teams had not yet finalized their conclusions and recommendations. In addition, draft versions of the final reports were exchanged during the concluding phase in May and June 2025. For the final reports the three mandates shared certain text passages that were equally applicable to all three mandates (e.g., methods sections of survey and focus groups analyses). In this report, text adapted from the other mandates’ reports is indicated by footnotes.

Annexes

Some of the data used in the landscape analysis were not included in the main text to maintain the report's conciseness. These data are provided in the annex. In addition, the annex contains the survey questionnaire as well as the guidelines that were used for the focus group discussions and the expert interviews.

Note on the use of artificial-intelligence tools in the preparation of this report

In the preparation of this report, tools enhanced with artificial-intelligence technology were used for the following purposes:

- Online information search: Perplexity[5] was used for some internet searches. ChatGPT (free version)[6] was used to copy and reformat information from public websites into this report (e.g., generating tables with links and names of institutions). All content was thoroughly reviewed to ensure it corresponded with that of the official websites.
- Transcription of focus group discussion and interview recordings: noScribe[7] and Corv[8] were used. Both tools were run by mandate collaborators in local installations without internet access to comply with data protection legislation. For more details, see the methodologies of the respective sections below.
- Data analysis: ChatGPT was used for troubleshooting in scripts generating visualizations.
- Report writing: ChatGPT and Microsoft Copilot[9] (licensed by mandate collaborators' institutions) were used to summarize transcriptions as well as to formulate and revise sections of this report based on our own drafts. In addition, Deepl[10] was used for translations. Great care was taken to ensure that no confidential or personal information was processed by those tools. Names of persons and institutions as well as potentially revealing contextual information was deleted or masked before passed to these tools. All output generated by them was checked by the authors before inclusion in this report.

[5] https://www.perplexity.ai, 4 June 2025.
[6] https://chatgpt.com, 4 June 2025.
[7] https://github.com/kaixxx/noScribe, 4 June 2025.
[8] https://www.unil.ch/ci/fr/home/menuinst/catalogue-de-services/recherche/transcription-automatique-de-fichiers-audios-et-videos.html, 4 June 2025.
[9] https://copilot.microsoft.com, 4 June 2025.
[10] https://www.deepl.com, 4 June 2025.

Landscape Analysis

This landscape analysis provides an overview of the practical implementation of ORD policies in Switzerland. It begins with the broader context established by international organisations, then examines Swiss governance structures and the roles of various research and education institutions in supporting ORD. The analysis concludes with a comparison of Switzerland's approach to those of neighbouring countries. The findings are based primarily on online research, complemented by the diverse expertise and professional networks of our team.

Context: High Level Policies

UNESCO recommendation on Open Science

The General Conference of the United Nations Educational, Scientific and Cultural Organization (UNESCO) issued a recommendation on Open Science (OS) in November 2021 (UNESCO, 2021). This recommendation provides an international framework for OS policy and practice which recognizes disciplinary and regional differences, takes into account academic freedom and outlines common definitions, values and principles. As a member of UNESCO, Switzerland is embedded in this broader context that acknowledges the importance of the advancement of open science. More relevant to this report, the recommendation section on open research data specifies that ORD "(...) are available in a timely and user-friendly, human- and machine-readable and actionable format, in accordance with the principles of good data governance and stewardship, notably the FAIR principles, supported by regular curation and maintenance".

OECD Recommendation on ORD

The Organisation for Economic Co-operation and Development (OECD) provides a Recommendation of the Council concerning Access to Research Data from Public Funding (OECD, 2021). This recommendation promotes OS and ORD by encouraging member countries to make publicly funded research data openly accessible. It emphasizes principles such as openness, transparency, legal conformity, and professionalism in data management. In a section dedicated to technical standards and practices, most relevant to the present report, the OECD encourages its member countries to ensure that research data and digital outputs from publicly funded research are made findable, accessible, interoperable, and re-usable (FAIR) in a timely manner. This involves best practices such as assigning persistent identifiers and rich, machine-readable metadata. It also recommends building infrastructure and services that support access across disciplines, and that any related algorithms, software, or workflows are made available as open source. Countries are also encouraged to support the development and adoption of international standards.
The recommendation also highlights the importance of balancing open access with considerations for national security, privacy, and intellectual property rights.

It advocates for the development of clear institutional policies, professional standards, and international cooperation to enhance data sharing and reuse.

Development and implementation of ORD best practices in Switzerland

In Switzerland, various institutions play a key role in defining and implementing ORD practices. These include government bodies, research funding agencies, collaborative councils, professional organizations, as well as HEIs, research institutes, and research infrastructures. Together, they form an ecosystem that supports and advances ORD in the country.

Swiss governance and funding landscape

State Secretariat for Education, Research and Innovation (SERI)

The State Secretariat for Education, Research and Innovation[11] is part of the Federal Department of Economic Affairs, Education and Research (EAER). SERI funds swissuniversities, the national science foundation (SNSF), Innosuisse, the Swiss Academies of Arts and Sciences (Swiss Academies), and the Swiss HEIs. SERI organizes the national roadmap process for research infrastructures. It is involved in policy decisions (Open Access strategy, ORD strategy and action plan, European Open Science Cloud (EOSC) policy), and it mandates the ORD Strategy Council to coordinate the Swiss education, research and infrastructure stakeholders towards ORD.

The ORD Strategy Council (StraCo)

The goal of the ORD Strategy Council[12] is to strategically develop and consolidate the Swiss ORD landscape. It consists of the ETH board, the Swiss Academies of Arts and Sciences (Swiss Academies), the SNSF, and swissuniversities. StraCo operates under a cluster approach in which specific clusters of interest are defined within the complex services and infrastructures ecosystem to conduct in-depth landscape analyses. StraCo currently prioritzes three clusters: (1) Health and Life Sciences, (2) Social Sciences and Humanities, and (3) Data Science as a transversal cluster. Dedicated Task Forces are assembled to gather strategic analysis and assess the needs in each cluster. At the time of this writing, several landscape analyses and other papers have been published by or on behalf of the StraCo concerning the strategic development of Swiss research data infrastructures.[13] It is supported by the Coordination Group (CoG) which acts as the operational arm of the StraCo, as well as two Sounding Boards (Researchers and Service Providers) providing expertise from communities of stakeholders.

[11] https://www.sbfi.admin.ch/sbfi/en/home.html?_organization=1080, 23 June 2025.
[12] https://openresearchdata.swiss/the-strategy-council/, 23 June 2023. In addition, refer to the ORD Action Plan (swissuniversities, 2021b, p. 13)
[13] Cf. https://openresearchdata.swiss/all-resources/, 23 June 2023.

Swiss National Science Foundation (SNSF)

The SNSF[14] supports scientific research in all academic disciplines. It applied an incremental push in OS in Switzerland through various initiatives and policies.[15] The key element of the ORD policy is that the SNSF expects all funded researchers to store, share and deposit their data and metadata in existing public repositories. Researchers can apply for up to CHF 10'000 to prepare their data for publication. The SNSF requires DMPs for all funded projects. Their specific policies about DMPs and a comparison with funding agencies from other countries are discussed in the section Switzerland compared to other countries.

ETH Domain

The ETH domain is a network of the ETH Zurich, the EPF in Lausanne, and four research institutes: the Paul Scherrer Institute (PSI), the Swiss Federal Institute for Forest, Snow and Landscape Research (WSL), the Swiss Federal Laboratories for Materials Science and Technology (Empa), and the Swiss Federal Institute of Aquatic Science and Technology (Eawag). The Federal Institute of Technology Act[16] outlines the purpose of these structures. The ETH Domain has issued a position paper supporting ORD and runs a dedicated program that aims at promoting ORD projects, developing processes and infrastructures for ORD, and imparting relevant information and training.[17]

Swissuniversities

Swissuniversities[18] is the umbrella association of the Swiss HEIs. It has a Delegation Open Science (DelOS)[19] that steers the Open Science Programme.[20] It is also responsible, on behalf of the HEIs, for the implementation of the Open Access Action Plan, the Open Research Data Strategy, and its corresponding action plan.

Swiss Academies of Arts and Sciences

The Swiss Academies is an association of the Swiss academies of medical sciences, humanities and social sciences, natural sciences, technological sciences, and the competence centres Science et Cité and TA-SWISS.[21] The academies are key to raising awareness, disseminating and establishing best scientific practices, and their main mission is to strengthen networking in the scientific community. They also facilitate exchange between science and the general public as well as politics. The individual academies are committed to ORD practices.

[14] https://www.snf.ch/en, 23 June 2025.
[15] https://www.snf.ch/en/dMILj9t4LNk8NwyR/topic/open-research-data, 23 June 2025.
[16] http://www.admin.ch/opc/en/classified-compilation/19910256/index.html, 23 June 2025.
[17] https://ethrat.ch/en/eth-domain/open-research-data/, 29 April 2025.
[18] https://www.swissuniversities.ch/en, 23 June 2025.
[19] https://www.swissuniversities.ch/en/organisation/bodies/delegations/delegation-open-science, 23 June 2025.
[20] https://www.swissuniversities.ch/en/topics/open-science, 23 June 2025.
[21] https://swiss-academies.ch/, 23 June 2025. The academies are listed in Annex 1.

The ORD Unit of the Swiss Academies implements the Swiss National Action Plan for ORD.[22] In 2024, following the Action line D2.6, it launched a call in 2024 for writing codes of conduct intended to serve as guides and reference frameworks for specific data communities.[23] The Swiss Academies also coordinate the Sounding Board Researchers mandated by the StraCo.
Together with the SNSF, Innosuisse, and swissuniversities, the Swiss Academies issued a Code of Conduct for Scientific Integrity in 2021 that highlights the importance of good practices in Research Data Management and encourages both funding institutions and researchers to comply with the FAIR Data Principles (Aebi-Müller et al., 2021).

InnoSuisse

The Swiss Innovation Agency (InnoSuisse)[24] supports enterprises of various sizes and maturity levels in their research and development activities. Innosuisse also facilitates collaboration and knowledge transfer between the science and economy sectors. Innosuisse does not set explicit requirements for ORD or RDM, but according to its position statement,[25] funding recipients are required to comply with the Code of Conduct for scientific integrity that was developed jointly by the Swiss Academies, the SNSF, swissuniversities, and Innosuisse.

Switch

The Switch foundation's[26] core mission is to enable, maintain and promote a secure and networked research and education infrastructure in Switzerland. It provides the infrastructure for scientific collaboration and projects such as the Open Educational Resources (OER)[27] repository for Swiss HE which facilitates sharing and accessing educational resources.

ORD support at Swiss HEIs

Strategy and action plan

In response to an initiative of the SERI, in 2021 swissuniversities published the national ORD Strategy (swissuniversities, 2021a).The Strategy recognized that several scientific disciplines had not yet established standards or infrastructure for RDM and set this as a priority, and RDM was identified as a key practice for the creation of ORD. The Swiss ORD Strategy was later complemented by an Action Plan (swissuniversities, 2021b), which outlines key goals for supporting the creation and management of ORD. The Action Plan highlights the need to secure long-term funding for ORD infrastructures and services, as well as the need for higher-level services that enable access to and coordination of a wide range of ORD tools tailored for the needs of different researchers and disciplines.

[22] https://ord.swiss-academies.ch/, 23 June 2025.
[23] https://ord.akademien-schweiz.ch/codes-of-conduct/, 23 June 2025.
[24] https://www.innosuisse.admin.ch/en, 23 June 2025.
[25] https://www.innosuisse.admin.ch/en/scientific-integrity, 23 June 2025.
[26] https://www.switch.ch/, 23 June 2025.
[27] https://oer.switch.ch/, 23 June 2025.

The Action Plan recognizes that these services have to be provided by "ORD experts," defined in broad terms as the link between researchers and research support units such as libraries and IT.

Both the Strategy and Action Plan are not an ORD policy in the sense that they stipulate requirements, obligations or responsibilities to researchers or research performing institutions. The Strategy includes "guiding principles",[28] but these are primarily intended to guide the Strategy itself and its implementation rather than data practices at the level of researchers or institutions. Apart from that, the Strategy defines the framework "for governing the services and infrastructures that support researchers and enable ORD practices" (swissuniversities 2021, p. 4). It sets four objectives that the Action Plan translates into concrete action areas, which in turn are the basis for mandates and project calls promoting ORD. The four action areas are: innovative projects (Action Area A), consolidating sustainable infrastructures and services (Action Area B), raising awareness and education on FAIR and ORD practices (Action Area C), and incentivizing researchers while addressing legal, ethical, and policy alignment issues (Action Area D). The Action Plan also introduces the implementation governance, most notably the StraCo and its supporting bodies (cf. above).

Institutional Policies

On the institutional level, ORD policies or governance documents exist at multiple Swiss HEIs.[29] These documents are important for the implementation of ORD best practices, as they reflect an institution's commitment to ORD principles, outlining expectations for researchers, the support and infrastructures provided by the respective institution, and the responsibilities assigned to internal stakeholders. The ORD policies at Swiss HEIs were examined by a study performed by the project "recORD – Recognise Open Research Data" in spring 2024 (Araujo, Bornatici, Ochsner, et al., 2024). This study was based on a survey of respondents from Swiss HEIs and the SNSF. The study found that, according to the assessment of the respondents, the strategic commitment of Swiss HEIs to ORD was predominantly medium, with only 17% of represented institutions having mandatory elements in their ORD policies. One notable detail was that there were diverging perceptions within institutions regarding the existence of ORD-related roadmaps, strategies, or implementation plans, which indicates that in addition to an overall low-to-medium strategic commitment, intra-institutional communication of existing commitments is rather poor. The policy analysis by recORD concluded that on the strategic and policy level, ORD seems to be treated as a set of optional and recommended (rather than mandatory) best practices; this was noted regarding incentives and rewards but can be extrapolated to the overall approach to ORD policy.

[28] The Strategy discusses the following principles: FAIR principles; Good research practice includes openness; as open as possible, as protected as necessary; recognition of the value of data; respecting disciplinary diversity; connection to national and international ecosystems; sustainability (cf. swissuniversities, 2021a, pp. 6–7).

[29] Non-exhaustive lists of ORD policies in Switzerland can be found at https://forschungsdaten.info/fdm-im-deutschsprachigen-raum/schweiz/rdm-policies/ (April 17 2025).

The Swiss ORD Strategy defines data stewardship as follows: “Data stewardship encompasses the management and monitoring of an organisation’s data assets in order to provide users with access to high-quality data. As such, it represents the link between researchers and support units in the form of IT, libraries, and infrastructure providers at different levels. Data stewardship is discipline- or even community-specific and requires a certain set of skills on the part of researchers and supporting professions, which is why RDM training is essential” (swissuniversities, 2021a, p. 9).[30]

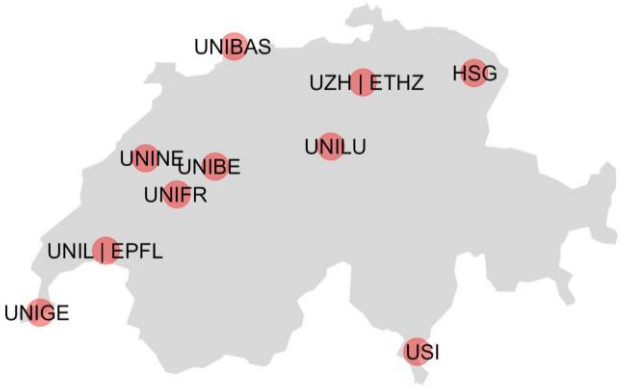
Support units for research data management had been in existence for several years at most larger Swiss HEIs. However, the decisive factor for implementing data stewardship on a broader scale, including smaller institutions like many UTE, was swissuniversities’ call for institutional data stewardship programs under line B5.2 of the national Action Plan. In the wake of this call, almost all Swiss HEIs took substantial steps to introduce data stewardship. Swiss HEIs are promoting and implementing data stewardship with very different models. They mostly differ in whether data stewards hold funded or unfunded positions and whether they are based in more *central* entities (e.g. part of a library or vice-rectorate) or in *decentralized structures* closer to researchers (e.g., at faculties or departments). A common challenge when implementing data stewardship at institutions is that discipline-specific knowledge is often required to provide effective support to scientists in their ORD activities. However, it is often not feasible to provide funding for enough data stewards to reach all research groups. Some institutions adopt a hybrid model in which a few centrally funded data stewards coordinate or support researchers who engage in ORD activities without dedicated funding or with only a fraction of their time allocated to those activities.

In addition, steps have been taken to professionalize data stewardship and ORD support in Switzerland. A Certificate of Advanced Studies (CAS) course in data stewardship has been developed as part of the project SwissDS-ENV,[31] led by the University of Lausanne (UNIL) and funded by swissuniversities (2023-2025) through the action line B5.2. of the national ORD Strategy. In addition, under action line B5.3, a network of RDM and ORD experts was formalized to become the SRDSN, which also pursues the aim of professionalisation of data stewards through organizing regular community exchange, working groups, and similar activities.[32]

It should be noted that most of these programs and projects have only recently begun and are limited in duration; therefore, they may change and evolve in the near future. A detailed analysis of the different data stewardship models might be more meaningful once they have been in place for some time and their uptake can be assessed more accurately.

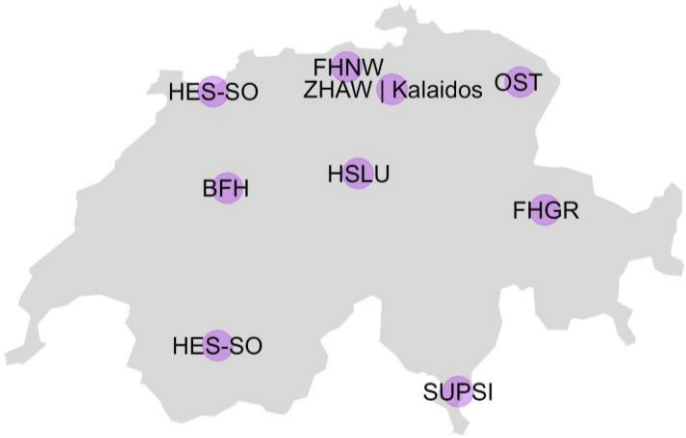
[30] For the understanding of data stewardship adopted in this report and its relation to ORD experts, cf. the chapter on Basic Terminology above.
[31] https://wp.unil.ch/swissds-env/, 26 June 2025.
[32] For more on the SRDSN, cf. the respective chapter below.

Swiss Universities



Like most Swiss HEIs, cantonal and federal universities have started setting up data stewardship, but they are at different levels of maturity and the details about the level of support (e.g., in FTEs) cannot yet be finally assessed. Thus, it is difficult to conduct a detailed landscape analysis of data stewardship at the individual institutions. But some examples can be mentioned to have an impression on some implementations.[33] The University of Zurich has a central data stewards network, coordinated by the University Library's OS services, which coordinates stewards at different core facilities and promotes knowledge transfer between data stewards and researchers engaged in RDM activities. The University of Lausanne has general support at UNIRIS and specialized data stewards at different faculties, and a similar model was implemented at the University of Basel. The University of Bern has five domains and two cross-domains covered by seven data stewards who are located centrally as part of the OS team at the university library. Some of these institutions operate their own research data repositories, such as the University of Bern or the ETH.

Swiss Universities of Arts and Applied Sciences

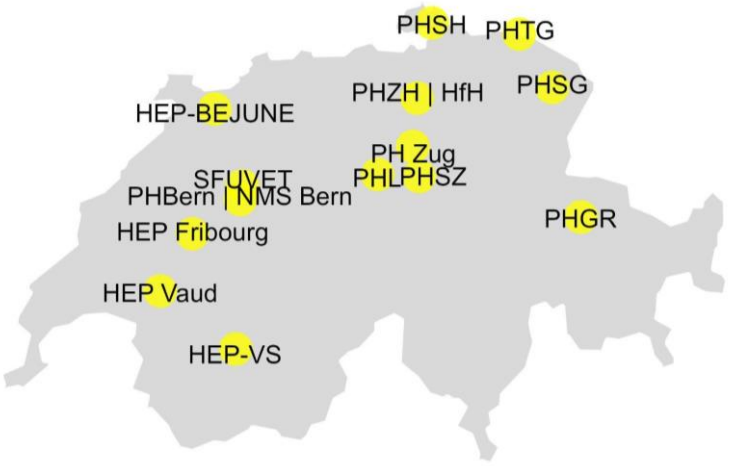


Several Swiss UAS are actively advancing their ORD efforts.[34] The Scuola Universitaria Professionale della Svizzera Italiana (SUPSI) has established an

[33] For a more comprehensive overview, as well as for references to the services mentioned, please refer to Annex 1.
[34] For a more comprehensive overview and for references to the services mentioned, please refer to Annex 1.

OS strategy and guidelines as well as a data stewardship committee to understand, apply, incorporate, and promote ORD within the scientific community. The Haute École Spécialisée de Suisse Occidentale (HES-SO) provides comprehensive guidelines for creating DMPs, protecting data, archiving, and sharing, supported by a dedicated data stewardship group. The Bern University of Applied Sciences (BFH) has a network of data stewards who are located at the various departments of this institution (Caduff et al., 2023); the stewards are coordinated by the vice-rectorate research. At Lucerne University of Applied Sciences (HSLU), data stewardship takes the form of a specialist librarian responsible for RDM service development and coordination between central services (IT, Grants Office, legal and data protection services) while also serving as a central point of contact for researchers for RDM support. Zürcher Hochschule für Angewandte Wissenschaften (ZHAW) offers RDM services through its library, covering the research data lifecycle from the planning to the publication stage.

Swiss Universities of Teacher Education



Several Swiss UTE complement the Swiss landscape, and some of these have ORD support in place.[35] At the University of Teacher Education Thurgau (PHTG) an ongoing data stewardship project funded by swissuniversities brings together several small and medium sized Universities of Teacher education to exchange experiences, organize workshops and cooperate to provide ORD support structures. The project cooperating partners are the University of Applied Sciences in Special Needs Education (HfH), St. Gallen University of Teacher Education (PHSG), the Swiss Federal University for Vocational Education and Training (EHB) and the University of Teacher Education Schwyz (PH Schwyz). At the University of Teacher Education Zug (PHZG), data stewardship is a role performed collectively by the OS team, including members from the research department, Department for advanced training, services and consultancy, and the library. Tasks of this team include implementing the ORD policy, addressing data protection and ethical issues in RDM, and providing ORD training and consultation for researchers.

[35] For a more comprehensive overview and for references to the services mentioned, please refer to Annex 1.

Swiss Research Institutions

Swiss research institutions also actively engage in ORD activities.[36] The Eidg. Forschungsanstalt für Wald, Schnee und Landschaft (WSL) maintains the EnviDat data repository and offers courses on data science, research reproducibility, and research data management. The Paul Scherrer Institut (PSI) supports FAIR RDM through its Data Curation Group and SciCat data repository. The Swiss Data Science Center (SDSC) accelerates data science use with platforms like Renku and Data Custodian. The Swiss Federal Institute of Aquatic Science and Technology (Eawag) stores open research data on the ERIC repository. The Swiss Federal Laboratories for Materials Science and Technology (Empa) offers consultancy on FAIR data management. The Swiss Institute of Bioinformatics (SIB) provides data stewardship and data management services, courses and guidelines.

[36] For a more comprehensive overview and for references to the services mentioned, please refer to Annex 1.

Swiss organizations also actively participate in ORD activities.[37] The Swiss Centre of Expertise in the Social Sciences (FORS) implements large-scale national and international surveys, offers data and research information services to the social science community, and conducts methodological and thematic research. FORS also has the operational lead in the development of the national SWISSUbase data-sharing platform for the social sciences and linguistics and coordinates the related service network for data curation and stewardship. The Swiss Data Science Center (SDSC) accelerates data science use and FAIR data management, offering platforms like Renku and Data Custodian. The Swiss National Data and Service Center for the Humanities (DaSCH) provides data management and preservation expertise as well as a dedicated repository and archive for data output from projects in the Humanities and neighbouring disciplines. The Swiss 3R Competence Centre (3RCC) develops ORD standards for animal research. Archiv für Agrargeschichte (AfA) digitizes and provides access to historical agricultural archives. Fondation Eurotube shares open data on hyperloop technology. Fondation Gosteli maintains an online repository for Swiss women's history. Istituto Ricerche Solari Locarno (IRSOL) shares solar physics data. Schweizerische Arbeitsgemeinschaft für Klinische Krebsforschung (SAKK) and Schweizerische Pädiatrische Onkologie Gruppe (SPOG) provide open-access clinical trial data for oncology research. The Swiss Centre for Applied Human Toxicology (SCAHT) offers toxicological research databases. The Swiss Clinical Trial Organisation (SCTO) promotes FAIR clinical trial data initiatives. The SIB provides bioinformatics databases and tools. Schweizerisches Institut für Kunstwissenschaft (SIK-ISEA) offers digital collections on Swiss art research. The Swiss GO Trial Group shares gynecologic oncology clinical trial data. The Swiss Polar Institute (SPI) provides data from polar research expeditions. Schweizerisches Sozialarchiv (SSA) maintains digital archives on Swiss social history. Service scientifique auxiliaire en géoscience (SSAG) offers geoscience datasets and GIS tools. Vitrocentre Romont (VCR)

[37] For a more comprehensive overview and for references to the services mentioned, please refer to Annex 1.

conducts research on glass heritage conservation. Versuchsstollen Hagerbach (VSH) shares experimental tunnel research data.

The Swiss Research Data Support Network

The SRDSN[38] is a network of data stewards and other research data support staff that fosters collaboration, knowledge sharing, and developing best practices among professionals in libraries, IT services, core facilities, research management offices, and elsewhere. During 2024, SRDSN was formalized thanks to the financial support of swissuniversities. One node in this network strengthens the collaboration between data steward network coordinators in Switzerland. Another node centering on management of sensitive data is currently being established, and the creation of additional nodes that contribute to the professionalization of RDM and ORD support is strongly encouraged.

ORD practices in SNSF-funded projects

SNSF released several reports evaluating DMP compliance of SNSF-funded projects which can serve as a proxy to assessing how researchers apply and conceive ORD best practices. The SNSF monitoring report 2017-2018 evaluated adherence and plausibility of DMPs (Milzow et al., 2020). One conclusion from that report is that researchers need more information on which of the many discipline-specific repositories are well-established, given the fragmented nature of the repository landscape. As an outcome of that report, SNSF included an overview of data repositories on its website with links to relevant institutional, generalist and discipline-specific repositories.[39]

As a follow up, a recent report took a first look at sharing practices among SNSF-grantees that required a DMP in their project (Gorin et al., 2024). The analysis showed that only 23% of grants completed in 2023 declared at least one shared dataset. Most of he declared datasets were in repositories that followed the FAIR principles, with Zenodo as the most popular choice. According to the report, the low percentage of available datasets may be due to several factors, including

- Data privacy issues or user rights that prevent data publication, combined with a lack of awareness among researchers that metadata should still be shared;
- Projects that generate little or no data;
- Challenges in sharing datasets that are too large ;
- Lack of awareness of ORD policies;
- Inadequate monitoring of external ORD resources, which may have led to some accessible data sets being missed by the authors of the study.

The positive outlook is that there seems to be an increase in the proportion of completed projects that reported sharing datasets. This increase also varies by discipline, with Mathematics, Informatics, Natural Sciences and Technology showing the largest increase together with Life Sciences. In contrast, Social

[38] https://www.researchdatasupport.ch, 5 June 2025.
[39] https://www.snf.ch/en/WtezJ6qxuTRnSYgF/topic/open-research-data-which-data-repositories-can-be-used, 23 June 2023.

Sciences and Humanities showed the slowest increase, possibly influenced by the fact that some of those disciplines often handle sensitive data and have longer publication cycles.
The percentages in the SNSF monitoring report are comparable to findings reported by the publisher PLOS (28% of articles linked to datasets)[40] and the European Research Data Landscape survey (22% of respondents storing data in repositories) (European Commission et al., 2022). This suggests that limited use of ORD data repositories is not unique to Swiss institutions.

Insights from recent analyses of ORD practices in Switzerland

Several projects conducted landscape analyses and surveys in which different stakeholders evaluated a number of elements relevant to OS and ORD best practices.

Strengthen the Interoperability and Reusability of Research Outputs (SIRRO)

The project "Strengthen the Interoperability and Reusability of Research Outputs" (SIRRO) (Furrer, Vergauwe, Hautekiet, Caro, et al., 2024) focused on the ORD practices of preregistration and data management planning. It aimed to strengthen the existing community engaged in ORD practices within the Swiss Reproducibility Network (SwissRN) and to intensify the systematic assessment of the implementation and impact of ORD practices.
The SIRRO survey (Furrer, Vergauwe, Caro Hautekiet, et al., 2024) used a stratified random sample of researchers employed at Swiss universities and UAS. It included questions to explore Swiss researchers' understanding and perceptions of ORD practices across disciplines and their perceived impact on academic careers. The results suggest generally positive attitudes towards ORD practices and reproducibility when they are broadly defined. The majority of respondents viewed ORD practices as relevant for advancing science, but not for advancing an academic career. The perception is also that reproducibility is currently not rewarded in research evaluation procedures. In the open questions of the survey, many respondents expressed a need to reform the scientific publishing system. Conflicts derived from open research policies were also mentioned, for example, regarding copyright, data protection or infrastructure resources.
There were two survey questions of particular interest for this report: "Q39 How much support do you get from your institution to make your research reproducible / more transparent" and the question "Q41 How much support do you get from within your discipline, e.g. through disciplinary guidelines, tools or best practices, to make your research reproducible or make your research process transparent?" Responses ranged from "no support at all" (0) to "very much support" (6) and "don't know" (8). About half of the respondents felt at least somewhat supported by their institution or discipline, scoring 3, 4 or 5. Fewer than 10 % indicated that they felt very well supported. In response to question Q39, approximately 9 % reported no support at all and 5.4 % responded "don't know". These results

[40] https://theplosblog.plos.org/2022/12/open-science-indicators-first-dataset/, 23 June 2025.

suggest that although some institutional support is available, there is room for improvement, either with regard to the support services themselves or to their promotion among their target audience.

A framework for avoiding the open research data dump (AFFORD)

Another recent project from the Center for Reproducible Science at the University of Zurich, yielded two additional reports that give insights into the state of ORD in Switzerland. The project “A framework for avoiding the open research data dump” (AFFORD) aimed at designing a sustainable support framework to lower the barriers to publishing data and other research outputs in an accessible form, by bundling know-how, workflows, and tools under the umbrella of a single organizational entity (Center for Reproducible Science & The Interface Group, 2024).

One study from the AFFORD project engaged stakeholders across the University of Zurich to identify which services would best support the sustainable adoption of ORD best practices (Wiel et al., 2024). The study combined a short survey of researchers with interviews conducted with support staff and policy makers. In the survey, researchers ranked their preferred services across six key service areas relevant to ORD (online information, stewardship, IT, data sharing, community and training). The results showed a strong preference for simpler, lower-resource services among researchers, highlighting the need for user-friendly and accessible support. Experts (support staff and policy makers) also emphasized the importance of professional data stewards and tailored support to address discipline-specific needs.

A second report from the AFFORD project provided a minimal set of ‘affordable’ recommendations for data stewards and researchers interested in data management (Fraga-González et al., 2025). The recommendations were derived from the experience of supporting FAIR data production in an actual project which involved multiple institutions, data types and research profiles. This report provides several insights relevant to the current project. First, it shows the challenge of defining a basic set of best practices (or distilling existing field-specific standards) that can be implemented with minimal data stewardship resources. Second, it provides reality checks by describing the difficulties researchers face when trying to implement such practices across diverse backgrounds, lab cultures and technical competences.

Recognise Open Research Data practices (recORD)

The project “recognise Open Research Data practices (recORD)” is a collaborative initiative in which 12 HEIs, SNSF and FORS aim to advance the recognition and valuation of ORD in the areas of (1) research proposal assessment, (2) recruitment and career development of researchers, and (3) evaluation of research-performing institutions. Their overview of practices and challenges identifies a consensus that research assessment needs reform, but also highlights a lack of established best practices for evaluation and recognition of ORD practices (Araujo et al., 2024). A conclusion of this project is that there is

no single framework for research assessment that could be implemented across the entire Swiss landscape. ORD and the collection and sharing of FAIR data are seen as important components, but there are core values across disciplines and stages of the research cycle that need to be considered for a change in research culture to take place. The different frameworks do not all agree on the identification of good practices, challenges and areas for improvement when assessing ORD.

Switzerland compared to other countries

Switzerland's approach to ORD strategies

When comparing Switzerland's approach to ORD to other nations, several key distinctions and similarities emerge.

European Union (EU)

The EU has been a pioneer in promoting OS through initiatives like Horizon Europe and the European Open Science Cloud (EOSC). These programs emphasize the FAIR principles and encourage member states to adopt national strategies that align with these principles. Switzerland, although not an EU member, aligns closely with these goals. Its national ORD Strategy and Action Plan mirror the EU's emphasis on infrastructure, governance, and researcher support. In Europe, several countries stand out for their maturity in the implementation of ORD practices.

United Kingdom (UK)

The UK has made significant strides in Open Research through UK Research and Innovation (UKRI) and Jisc.[41] These bodies provide strong support for data infrastructure, training, and policy development. Switzerland's strategy is comparable in ambition but distinguishes itself through its focus on incentivising and recognising ORD contributions in academic careers. The recORD project, for instance, proposes frameworks to integrate ORD into research assessments, a move that complements the UK's infrastructure-heavy approach.

The Netherlands

The Netherlands is widely recognised as a leader in OS and Open Research Data. Through initiatives like Open Science NL[42] and the Open Science 2030 agenda,[43] the country has established a vision and funding mechanisms to accelerate the transition to open and FAIR research practices. The 4TU.ResearchData consortium,[44] led by the four technical universities, provides a trusted digital repository and training infrastructure that supports FAIR data and software sharing. Dutch policies focus not only on data accessibility but also on reproducibility, software availability, and recognition of researchers. The integration of ORD into national research evaluation frameworks and the strong

[41] https://www.ukri.org/publications/ukri-open-access-policy/, 15 June 2025
[42] https://www.nwo.nl/en/open-science-nl, 15 June 2025
[43] https://www.openscience.nl/en/the-assignment-of-open-science-nl, 15 June 2025
[44] https://zenodo.org/records/14176780, 15 June 2025

alignment with European OS policies further reinforce the Netherlands' leadership. Switzerland is also making progress in similar directions, in particular in developing its ORD governance, infrastructure and researcher support, as will be seen later in this report.

Across the globe

United States

The U.S. has strong mandates for data sharing, particularly through agencies like the National Institutes of Health (NIH[45]) and the National Science Foundation (NSF[46]). However, the U.S. lacks a unified national ORD strategy. Policies are often agency-specific and vary in implementation. In contrast, Switzerland employs a centralised and collaborative approach, coordinated by swissuniversities, the ETH Domain, the SNSF, and the Swiss Academies. This structure offers a more organised and harmonised model for data sharing.

Canada

Canada is promoting ORD through initiatives such as the Tri-Agency Research Data Management Policy[47], which requires DMPs for funded research[48], and the Open Science Roadmap, which outlines principles for making federally funded research openly accessible. The Digital Research Alliance of Canada[49] also plays a key role in supporting infrastructure and training. However, Canada's ORD efforts are still in a developmental phase when it comes to forming a fully integrated national strategy. While there are strong individual components and policies in place, they are often distributed across different agencies and institutions and not yet unified under a single, coordinated national framework.
In contrast, Switzerland has its national ORD Strategy, backed by the Action Plan, and a strong emphasis on recognising and incentivising ORD contributions in academic careers. This makes Switzerland's approach more mature and cohesive at the national level.

Australia

Australia has developed a nationally coordinated approach to ORD through the Australian Research Data Commons (ARDC[50]), which provides large-scale digital infrastructure and supports thematic data commons across various disciplines, including health, the environment, and the humanities. Australia's infrastructure is centralized and mature, whereas Switzerland's approach is distributed and still in the process of national integration.

[45] https://datascience.nih.gov/nih-strategic-plan-data-science, 15 June 2025
[46] https://www.nsf.gov/digital/data, 15 June 2025
[47] http://science.gc.ca/eic/site/063.nsf/eng/h_97610.html, 15 June 2025
[48] https://science.gc.ca/site/science/en/interagency-research-funding/policies-and-guidelines/research-data-management/published-institutional-research-data-management-strategies, 15 June 2025
[49] https://alliancecan.ca/en/latest/news/alliances-corporate-plan-2025-2026-improving-and-investing-dri, 15 June 2025
[50] https://ardc.edu.au/, 15 June 2025

Swiss contributions to FAIRsharing

FAIRsharing[51] is a curated, informative and educational resource on data and metadata standards, interrelated with databases and data policies. Although FAIRsharing is not a policy directory, an exploration of this database can help identify organizations that are actively contributing to RDM and ORD policies, especially in the context of large, international collaborations. As such, FAIRsharing can be used to gain an initial overview of how Switzerland compares to other countries in terms of active engagement with research data policy and standards.

We conducted a search on "Policies" which FAIRsharing defines as "A registry of data preservation, management and sharing policies from international funding agencies, regulators, journals, and other organisations," and filtered results by "country" equal to Switzerland. The search returned four entries from international organizations that include Switzerland:

- Organisation for Economic Cooperation and Development — Principles and Guidelines for Access to Research Data from Public Funding https://doi.org/10.25504/FAIRsharing.n6vfkv . Year of creation: 2007.
- The European Organization for Nuclear Research Open Science Policy https://doi.org/10.25504/FAIRsharing.6e2b28 . Year of creation 2022.
- Open Access Policy for CERN Publications (CERN-OPEN-2021-009) https://doi.org/10.25504/FAIRsharing.ccba8e . Year of Creation: 2021.
- ExPaNDS — Final data policy framework for Photon and Neutron RIs https://doi.org/10.25504/FAIRsharing.50d3b7. Year of creation: 2021.

Another search was conducted, replacing the search term 'Policies' by 'Standards', which is defined as "A registry of terminology artefacts, models/formats, reporting guidelines, and identifier schemas", again filtered by "country" equal to Switzerland. This search returned 83 entries from diverse disciplines and different levels of maturity. We further explored the statistics provided by FAIRsharing to get an impression on how Switzerland was positioned in relation to other countries in the database. The main contributors to FAIRsharing were the United States and the EU, producing 39% and 32% of the content, respectively. Similar results were found when looking separately at standards and databases, although the United Kingdom led in the number of policy entries (45.2%). Switzerland produced 4.7% (212) of the records, 4.5% (83) of the standards, and 5.4% (123) of the databases, but was not among the top 10 contributors to policies or ontology entries in FAIRsharing.

In summary, although Switzerland is not a major contributor compared to other countries, several Swiss institutions are active contributors to international initiatives important for ORD, such as those registered in the FAIRsharing platform.

Data Management Plans

DMPs are a key tool for planning all interventions that ensure optimal handling, organisation, documentation, and storage of a project's research data. (Science

[51] https://fairsharing.org/, 23 June 2025.

Europe, 2021). They also help address key areas like the costing of RDM, ethical and legal compliance, and provisions for making research data openly available in a systematic and timely manner. For the implementation of ORD in research projects, mandatory DMP requirements by research funders serve as a powerful incentive for researchers to plan and implement ORD practices early on and throughout their projects.

However, the timing of when DMPs are required can be an important factor. In Switzerland, when the SNSF introduced a DMP requirement in 2017, DMPs had to be submitted at the proposal stage. This policy was changed in 2023:[52] researchers now have to complete the DMP only when the project has been selected for funding.

To our knowledge, the impact of the SNSF's policy change on ORD practices was never studied in detail (although the SNSF recently published an examination of sharing practices (Gorin et al., 2024), which we discuss elsewhere in this report). It is to be feared that this regulation is not favorable to systematic data management planning, as researchers may be prompted to plan their RDM only after the start of the project, which in many cases proves to be too late, especially when dealing with personal data or large data volumes. In addition, the later submission deadline may lead to researchers not requesting the funds made available for RDM, which would have disadvantages when preparing data for publication at a later date.

To better understand how Switzerland is positioned internationally with regard to DMP requirements — particularly the timing of DMP submission, which plays a critical role in fostering systematic data management planning — we have conducted a comparative review. This comparison focuses on Switzerland's neighboring countries as well as other leading European research nations.

European Union

Under Horizon Europe, a brief DMP statement is required at the proposal stage. A full initial version must be submitted no later than six months after the project begins. DMPs are considered living documents and are expected to be updated throughout the project. A final version is required at the end of the project.[53]

[52] https://web.archive.org/web/20230419064815/https://www.snf.ch/en/me0QWn9B8VJSprUe/news/data-management-plan-only-required-for-approved-projects (archived 19 April 2023, accessed 5 June 2025).

[53] https://www.openaire.eu/how-to-comply-with-horizon-europe-mandate-for-rdm and https://erc.europa.eu/manage-your-project/open-science, 4 June 2025.

Austria

Austria's main funding agency, the Austrian Science Fund (FWF), mandates that a DMP be submitted together with the grant application. The FWF provides a set of guiding questions to be addressed in the plan. Like in the EU, the DMP should be revised during the project and a final version must accompany the final project report.[54]

Germany

Applicants to the German Research Foundation (DFG) must address research data management explicitly in their proposals, guided by a structured checklist.[55] In some disciplines, additional DFG committees have issued specific recommendations on data management.[56]

France

The French National Research Agency (ANR), which in France plays a role comparable to that of the SNSF, requires funded researchers to submit a DMP within six months of the project start.[57] This timeline closely mirrors policies in both Switzerland and the EU.

Italy

Italy's main public research funders — the Ministry of University and Research (MUR) and the National Research Council (CNR) — do not currently impose official DMP requirements. However, many Italian research projects rely on European funding sources such as Horizon Europe or the European Research Council, and are therefore subject to their respective DMP policies.[58]

United Kingdom

In the UK, research funding is administered through domain-specific councils, many of which have long-standing and robust requirements for research data management. According to the Digital Curation Centre (DCC), most UK councils require a DMP to be submitted with the grant application, although the level of detail required can vary.[59]

[54] https://www.fwf.ac.at/en/about-us/what-we-do/open-science/research-data-management, 4 June 2025.
[55] requirement in application guideline §2.4, https://www.dfg.de/de/formulare-54-01-246830; checklist: https://www.dfg.de/resource/blob/174736/92691e48e89bf4ac88c8eb91b8f783b0/forschungsdaten-checkliste-en-data.pdf, 28 April 2024.
[56] https://www.dfg.de/en/research-funding/funding-initiative/research-data/recommendations, 28 April 2025).
[57] Cf. https://anr.fr/fr/lanr/engagements/la-science-ouverte/, as well as https://anr.fr/fr/lanr/engagements/faq-pgd/, 28 April 2025.
[58] Cf. Italy's national Open Science plan, https://www.mur.gov.it/sites/default/files/2023-01/PNSA_2021-27_ENG.pdf, 4 June 2025.
[59] https://dcc.ac.uk/guidance/policy/overview-funders-data-policies, 28 April 2025.

The Netherlands

The Dutch Research Council (NWO), with a funding volume comparable to the SNSF, requires applicants to complete a section on research data management within their application. A full DMP must be submitted after the grant is awarded, but before the project begins.[60]

Spain

In Spain, projects funded by the Agencia Estatal de Investigación AEI[61] require a DMP. The agency requires submitting an initial description of the data and plans for its publication in the project funding proposals. A complete DMP has to be submitted, when required, in intermediate and final stages of the funded projects. Similar requirements can be found in other specific research and development calls (e.g., strategic action on health research by Institute of Health Carlos III).[62]

In comparison with other European funding bodies, the SNSF's DMP policy aligns with those of the EU, France, and Spain, and to some extent with the Netherlands. However, in several countries — such as the United Kingdom, Germany, and Austria — earlier DMP submissions are required, particularly at the proposal stage or, as in the Netherlands, before the project begins. Within this landscape, Switzerland's position can be considered mid-range. Its policies are aligned with good international standards, but the stricter requirements in other countries seem to reflect a broader recognition of the benefits of engaging with data management planning as early as possible.

Implementation of International ORD Best Practices in Switzerland

A landscape analysis was recently conducted by the SRDSN. The SRDSN project was funded by the swissuniversities Programme Open Science I and launched on January 1, 2024. It aimed to foster an inclusive community for research data support in Switzerland. A key focus was to establish best practices in RDM. Work Package 7 was dedicated to international alignment. The landscape analysis produced by this working group (Bellanger et al., 2025) identified 26 international and 13 national RDM initiatives, which include initiatives such as the Research Data Alliance (RDA) and the European Open Science Cloud (EOSC). Especially relevant to the present report, several national initiatives and institutions provide frameworks, policies, and support for researchers to manage their data according to international standards. These activities can be considered as a proxy for the broader concept of best practices. The scholarly domains covered are mainly Life Sciences (initiatives including SCTO, SIB, SPHN)[63] as well as Humanities and Social Sciences (DARIAH-CH, CLARIN-CH, FORS, DaSCH). Natural Sciences (Swiss GeoSciences) and Science IT (EnhanceR) are also represented. Several actors address a cross-

[60] https://www.nwo.nl/en/research-data-management, 4 June 2025.
[61] https://www.aei.gob.es/, 4 June 2025.
[62] https://www.ciencia.gob.es/Convocatorias/2024/ISCIII-AES2025.html, 4 June 2025.
[63] For abbreviations that are not defined in the abbreviation list at the end of this report, please refer to the cited report.

domain audience (SNSF, Swiss Academies, SDSC, SwissRN). Many of these initiatives provide infrastructure and/or support to researchers, whereas others focus more on facilitating networking and dialogue among researchers about shared RDM issues. Actors such as the SNSF and the Swiss Academies are active on the policy level and contribute to shaping the framework for RDM and ORD in Switzerland. Despite the national focus of these initiatives, all of them are linked to international networks and initiatives in their respective fields, as is shown by examples such as DARIAH-CH, SIB, or SwissRN.[64]

Global and national position

Switzerland plays a significant role in the European research infrastructure landscape, actively participating in various European Research Infrastructure Consortia (ERICs), which facilitate collaborative research efforts across Europe. Switzerland is an active member of the following ERICs and European research infrastructures:

- Biobanking and Biomolecular Resources Research Infrastructure (BBMRI), represented by the Swiss Biobanking Platform (SBP)
- Consortium of European Social Science Data Archives (CESSDA), through FORS
- Digital Research Infrastructure for the Arts and Humanities (DARIAH), via the DaSCH
- European Clinical Research Infrastructure Network (ECRIN), through the Swiss Clinical Trial Organisation (SCTO)
- European Plate Observing System (EPOS), represented by ETH Zurich and the Swiss Seismological Service (SED)
- Integrated Carbon Observation System (ICOS), through ETH Zurich and ICOS-CH.
- European life sciences infrastructure ELIXIR, through the SIB.

Switzerland also holds observer status in four ERICs: ESSurvey ERIC and SHARE ERIC, both with Swiss nodes managed by FORS and the University of Lausanne; CLARIN ERIC, represented by LiRI at the University of Zurich and CLARIN-CH; and ACTRIS ERIC, through ACTRIS Switzerland.

By engaging in these consortia, Swiss research communities gain access to infrastructure and benefit from coordinated, transnational collaboration. This participation ensures that Swiss researchers can contribute to and benefit from standardized services, curated data, and shared scientific resources across Europe. It also enhances the international visibility of Swiss research and reinforces its role in shaping and advancing key scientific agendas.

Switzerland's international engagement goes beyond the EU, extending to North-South and global collaborations such as the EPFL's Center of Excellence in Africa (EXAF) and the swissuniversities Development and Cooperation Network (SUDAC) programme.

At the national level, Switzerland is investing in robust digital infrastructure through initiatives such as Switch, CSCS, DaSCH for humanities data, FORS for

[64] The full list of these national RDM initiatives can be found in table 2 of the report mentioned (Bellanger et al., 2025, pp. 9–12).

social sciences, and SPHN for health sciences. These initiatives support a decentralized ecosystem of interoperable research services.

Conclusions

Switzerland is a key player in the international ORD landscape, supported by robust infrastructures and a strong institutional commitment. However, in certain aspects, the requirements and expectations for research data practices appear less prescriptive than in some neighbouring countries. While many institutions have adopted comprehensive ORD policies, the practical implementation of these policies can be fragmented or difficult to identify, highlighting the need for more visible, coordinated, and operational support across the research ecosystem.

A Survey of the Swiss ORD Support Community

Methodology

To get[65] a broad picture of ORD implementation at Swiss HEIs, an online survey was conducted between November 22, 2024 and January 10, 2025, targeted at Swiss ORD experts as represented in the SRDSN, the key network of the ORD support community. This survey was developed in collaboration with the two other projects mandated by swissuniversities (B5.4 “Establish ORD expertise (e.g. data stewardship) as an independent career path at HEIs by 2028”, and C2.3, “Framework for systematic communication between trainers and data stewards to facilitate professionalisation and the exchange of experiences, best practices, needs, and to develop training modules”).

The survey was administered using the LimeSurvey platform hosted on a secured server at SUPSI. It primarily consisted of closed-ended questions, supplemented by a few open-ended questions. Respondents had the option to skip certain questions, leading to variations in participation rates across the different sections. The questionnaire consisted of 44 questions and was structured into five sections. The first and last sections were common to all three projects, followed by project-specific blocks of questions. Mandates B5.4 and C2.3 also used part of the data from project B5.1 (mainly regarding ORD implementation and ORD support):

1. Background information (questions 1-4)
2. Questions for mandate B5.1 (q. 5 -14)
3. Questions for mandate B5.4 (q. 15-30)
4. Questions for mandate C2.3 (q. 31-43)
5. Question regarding availability for follow-up interview or focus group (q. 44).

Questions 1-14 are provided in Annex 3.

The first announcement of the survey took place during an SRDSN meeting on November 7, 2024. Following this, an email was sent to all SRDSN members (n=171), encouraging them to participate in a survey on the implementation of ORD measures, ORD training, and ORD career paths in Swiss HEIs. Multiple responses per institution were allowed, as many Swiss HEIs have more than one staff member affiliated with the SRDSN.

Results

General overview

A total of 106 respondents began the survey. However, 16 skipped all the pages, providing no answers throughout, leaving 90 participants who engaged with the questions. Of these, 53 completed the survey in its entirety. The participants

[65] This chapter was adapted from the corresponding section of the final report of mandate B5.4, with kind permission of the project group.

come from six types of institutions (Figure 1; n=85, 5 participants did not specify their institution).

Institutions	Total
Cantonal Universities	
University of Basel (UNIBAS)	6
University of Bern (UNIBE)	6
University of Geneva (UNIGE)	4
University of Lausanne (UNIL)	6
University of Lucerne (UNILU)	3
University of Neuchâtel (UNINE)	1
University of St. Gallen (UNISG)	1
University of Zurich (UZH)	7
ETH	
Federal Institute of Technology Lausanne (EPFL)	9
Federal Institute of Technology Zürich (ETHZ)	4
Library for the Research Institutes (Lin4RI)	2
Swiss Federal Laboratories for Materials Science and Technology (EMPA)	1
Universities of applied sciences (UAS)	
Chur University of Applied Sciences (FHGR)	4
Lucerne University of Applied Sciences (HSLU)	1
University of Applied Sciences Northwestern Switzerland (FHNW)	1
University of Applied Sciences and Arts of Southern Switzerland (SUPSI)	1
University of Applied Sciences and Arts of Western Switzerland	3
Zurich University of Applied Sciences (ZHAW)	5
Zurich University of Arts (ZHdK)	3
Universities of teacher education (UTE)	
HEP Vaud	2
HfH	3
PH Graubünden	1
PH Luzern	1
PH Schaffhausen	1
PH Schwyz	1
PH Thurgau	1
PH Zug	1
PH Zurich	1
Other institutions	
Agroscope	1
FORS	1
Geneva Graduate Institute	1
Swiss Academies of Arts and Sciences	1
Swiss National Science Foundation (SNSF)	1
Total of individual answers	85
Total of institutions	33

Table 1: Number of individual answers by institution type[66]

[66] We decided to retain the local names of the UTE as they are primarily known by their local names. For the other institutions, we used the abbreviations from swissuniversities' website, https://www.swissuniversities.ch/en/organisation/members, 26 June 2025.

In percentages, the results are as follows (Fig. 1):

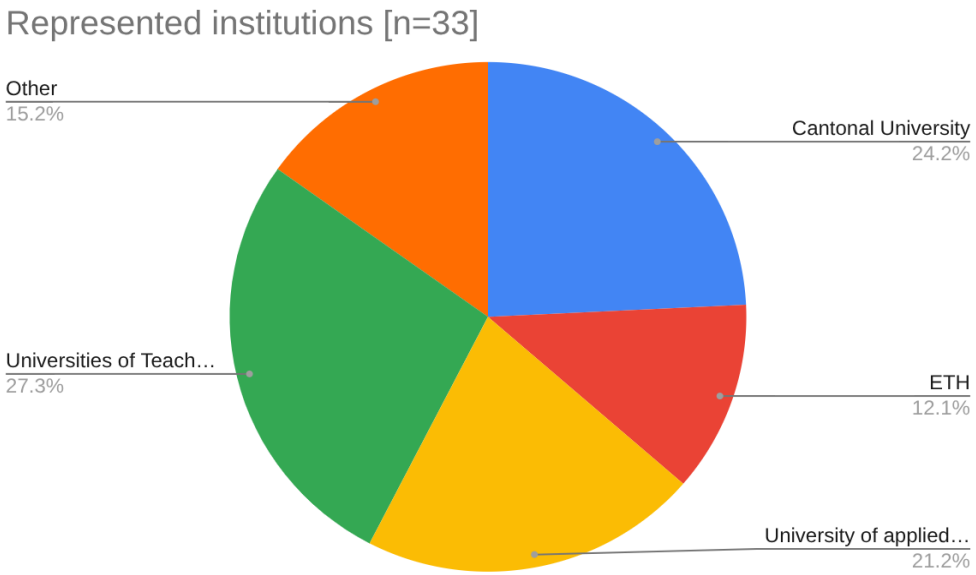


Fig. 1: Shares of HEI types among survey respondents

Due to the fact that the survey received multiple results from some institutions, the findings do not represent a formal assessment of the state of implementation of ORD at Swiss HEIs but rather offer a perspective on the current situation as seen primarily by ORD support staff — the survey's main target group.

The respondents reported a variety of roles, most of which can be associated with ORD support (Fig. 2). The survey, therefore, reflects the perspective of those directly involved in ORD support, rather than the views of researchers or institutional management and leadership.

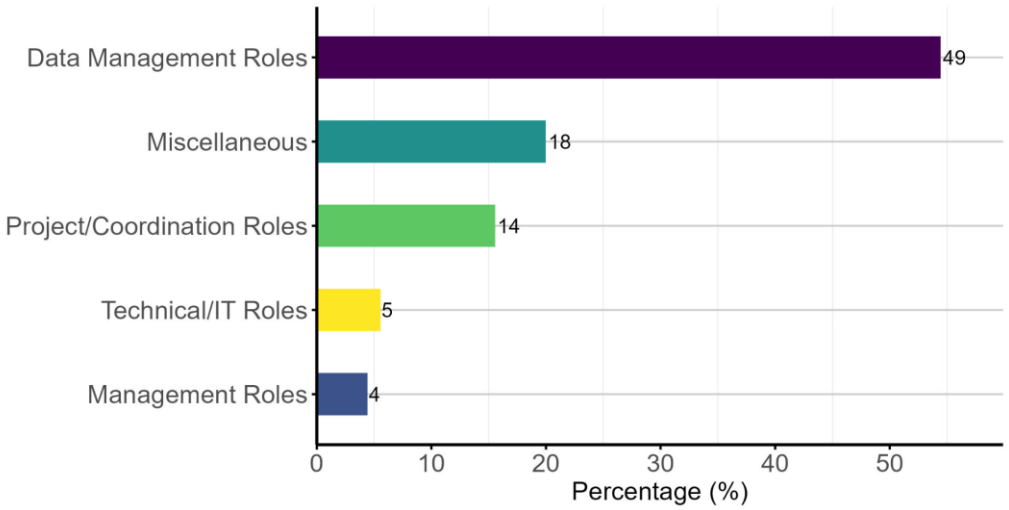


Fig. 2: Current function of survey respondents. The numbers next to the bars indicate the count of answers.[67]

[67] The categories shown in the plot are aggregations of the roles that could be selected in the survey: Data Management Roles (Data Manager, Data Steward, Data consultant/data steward, Data Specialist / Head of Team, Data Librarian, Data Archivist, Data Curator, Archivist, Librarian,

Implementation of ORD programs

Respondents were asked to characterize the ORD support model implemented at their institution as either “centralized” (e.g., ORD support is located centrally in a library or a vice-rectorate), “decentralized” (e.g. within departments or faculties), or “hybrid" (a mixture of both). Hybrid and centralized models were selected most frequently, with decentralized models reported only by a slightly smaller number of participants:

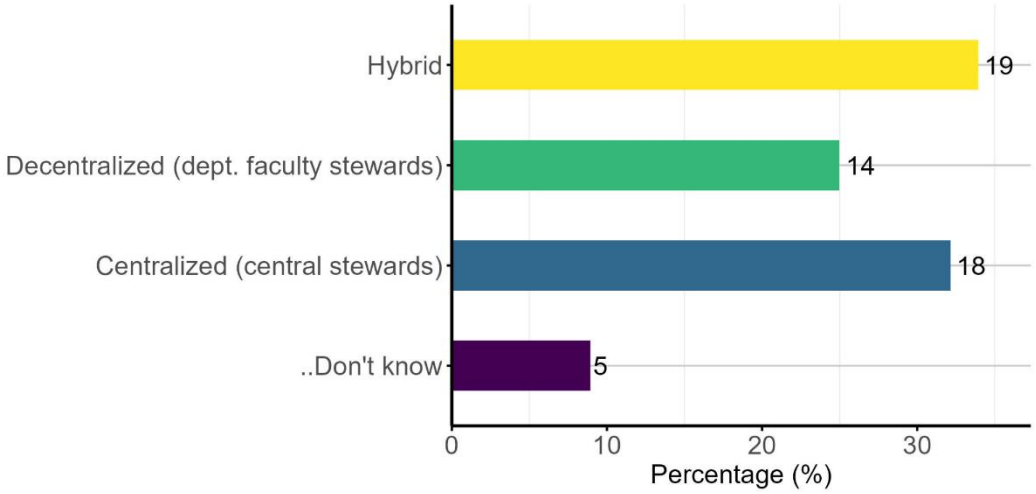


Fig. 3: ORD models implemented at Swiss HEIs. The numbers next to the bars indicate the count of answers.

As to the degree that these models are currently implemented, most respondents selected “partially implemented” (Fig. 4). According to the participants’ assessment, ORD is implemented to a certain degree in many places with about two thirds of participants stating that implementation is underway but further work is needed:

RDM Specialist, Research data management specialist, Research Management); Project/Coordination Roles (Project Manager, Responsible for the Data Stewardship action plan, Professor of Data Management, Project coordinator, Data Stewardship Coordinator, national coordinator of Swiss node of an european digital research infrastructure); Technical/IT Roles (IT specialist/expert); Management roles (Open science manager, Head of Open Science, Head of ORD). The category “miscellaneous” aggregates all other roles that were less frequently selected or added as free-text comment.

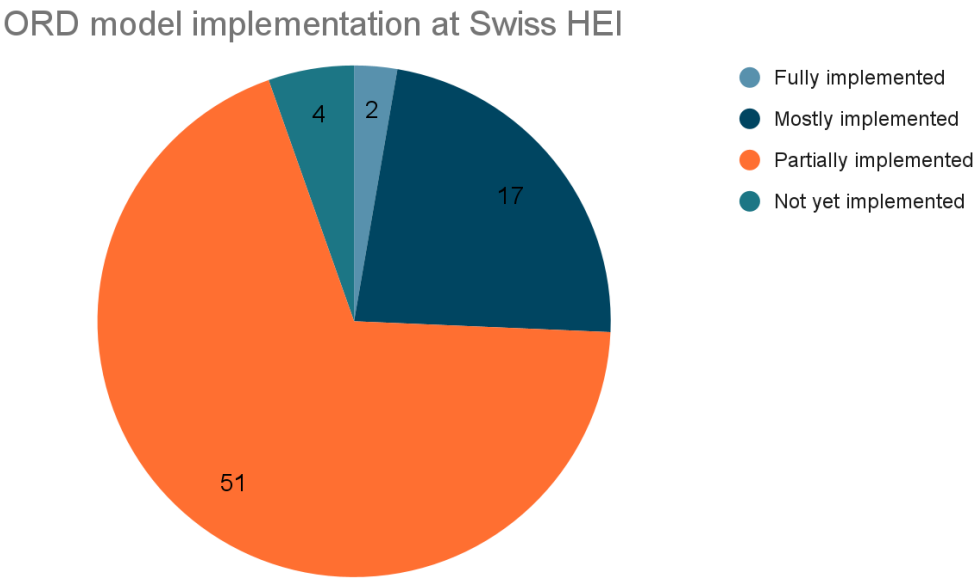


Fig. 4: Participant's assessment of the degree of ORD model implementation at Swiss HEIs

From the average implementation level by institution type, as assessed by the participants, we can clearly see that it is still overall at an initial stage (Fig. 5):

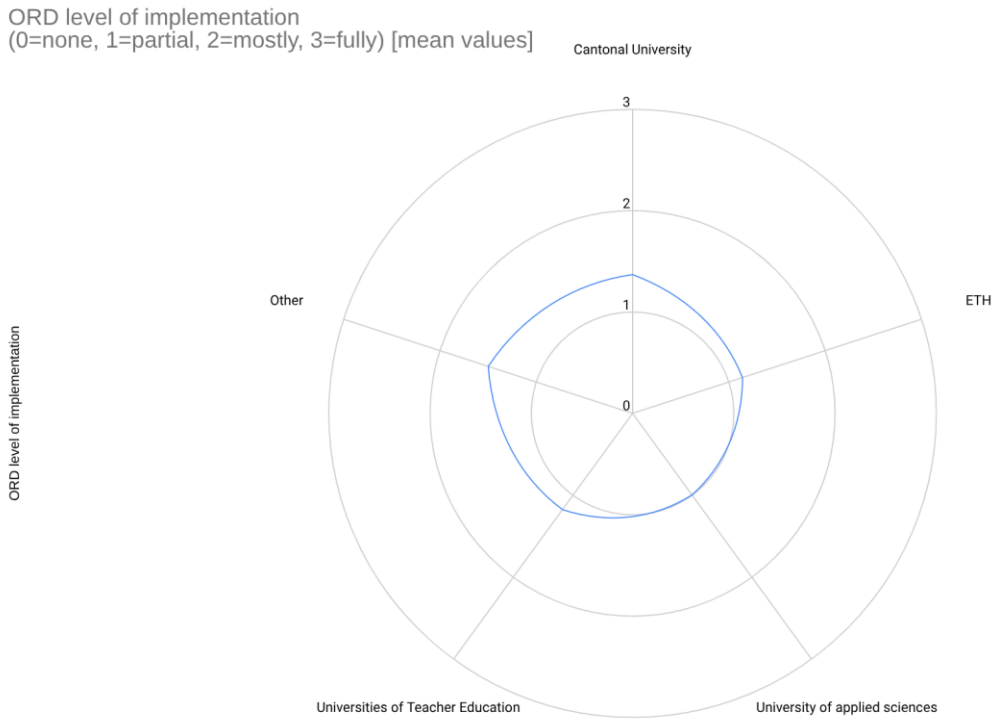


Fig. 5: Participant's average assessment of the degree of ORD model implementation by institution type

The free-text comments often reflected this mixed picture and included further details. It was frequently mentioned that many institutions have services in place (e.g., support staff, repositories, and sometimes policies), but these were not always well known or widely used by researchers. For example, one respondent noted “There is a well-established program for RDM support and Data Stewardship in place at my [institution]. However, in practice most scientists don't know or don't care about RDM or ORD.“ Two participants noted that the degree of uptake varies a lot between departments.

Among the factors that have contributed to the respective level of implementation, staff dedicated to ORD support, and institutional support were most frequently mentioned (Fig. 6). Both factors seem interrelated because dedicated staff can only be acquired if the institutional leadership commits to promoting ORD implementation:

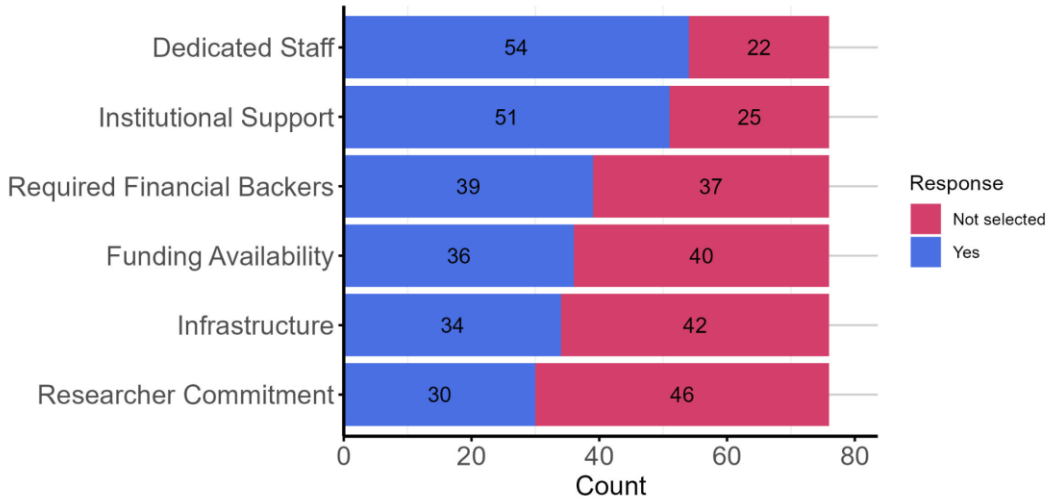


Fig. 6: Primary factors that have contributed to level of implementation (overall)

This shows that institutional support is recognized as important by the ORD support community, while other survey results suggest that increased backing by institutions is needed (cf. below, Challenges and desired improvements).

A breakdown of results by HEI type (Fig. 7) adds some nuance to the overall picture. The values for cantonal unis are largely in line with the overall results, according to which institutional support and dedicated staff are the most important factors. The results from the ETH domain show an interesting pattern because in addition to attributing much importance to dedicated staff, they highlight the importance of researcher commitment and financial backers.

For UTE, the low importance attributed to dedicated staff may be due to ORD models where existing staff (in administration and/or research) take over ORD support roles with smaller FTE amounts. Such an assumption could explain why institutional support, the availability of funding, and infrastructure were attributed more significance, because these factors are important to enable existing staff to take over additional roles in ORD support.

It is notable that for UAS, no single factor or group of factors stands out in the assessment of the respondents. The most frequently mentioned factor was

dedicated staff, but it was still assigned significantly less importance than with the other institution types.

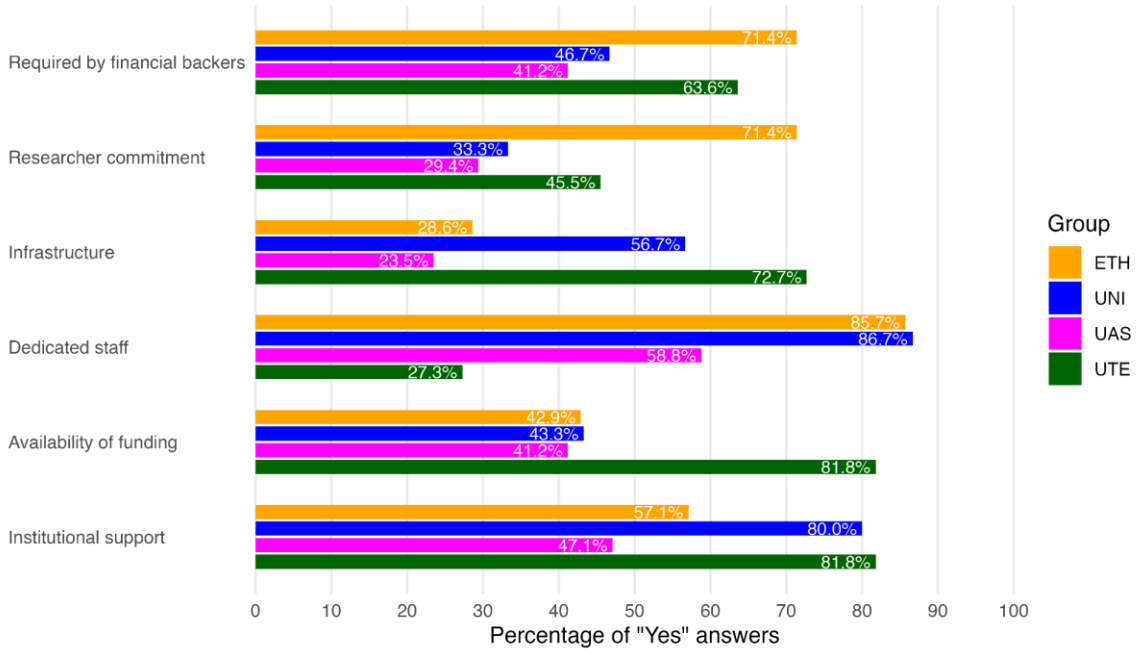


Fig. 7: Primary factors that have contributed to level of implementation (by HEI type)

Respondents were asked to select the outreach and engagement activities they considered most effective in promoting ORD practices at their institutions.
The overall response shows a clear preference for training courses and events (Fig. 8).

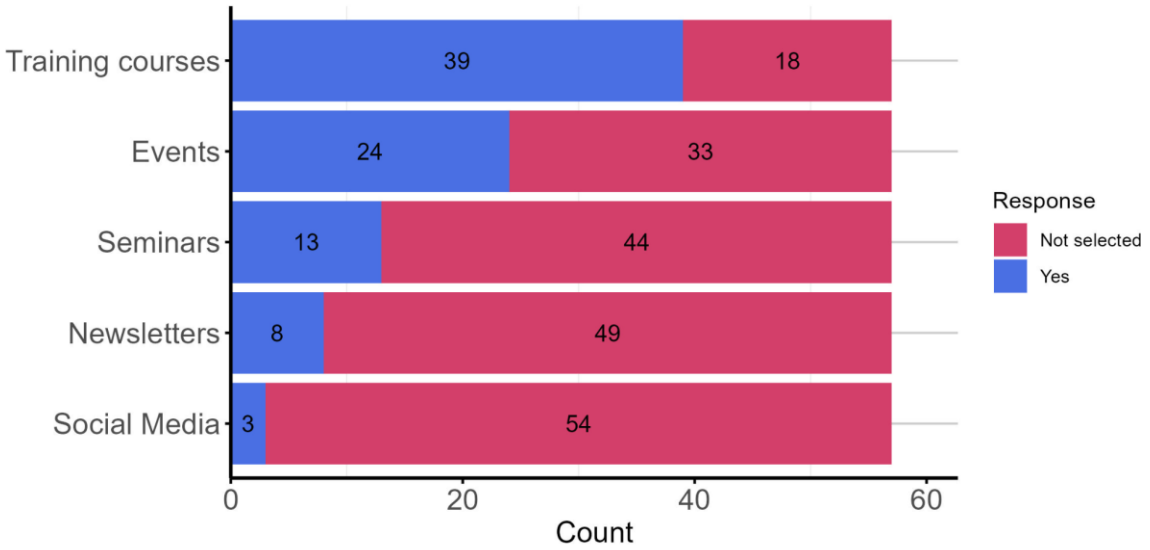


Fig. 8: Most efficient outreach and engagement activities (overall)

Judging by the comments provided, the first three categories (seminars, training courses, and events) were understood more or less synonymously, underlining the perceived importance of synchronous instructions and interactive formats. Examples included coffee or lunch-time lectures, one-off courses (e.g. on general ORD topics, tools such as DMPs or repositories, and programming languages), as well as multi-day PhD courses.

The low impact assigned to newsletters and social media coincides with the fact that enhanced communication strategies were seen as one of the most important areas of improvement (see below, Challenges and desired improvements). Among other outreach activities, one-on-one support was mentioned several times, highlighting the importance of personal contact in promoting ORD practices.

Categorized by HEI type (Fig. 9), these results show that at UAS, the impact of the outreach and engagement activities is overall perceived as relatively low. The reasons for this are not immediately clear and certainly merit further investigation. At the other institution types, and especially at ETH universities, training courses and events (again understood as largely synonymous) were deemed very effective. In line with the overall findings, the impact of newsletters and social media was assessed as being low across all institution types:

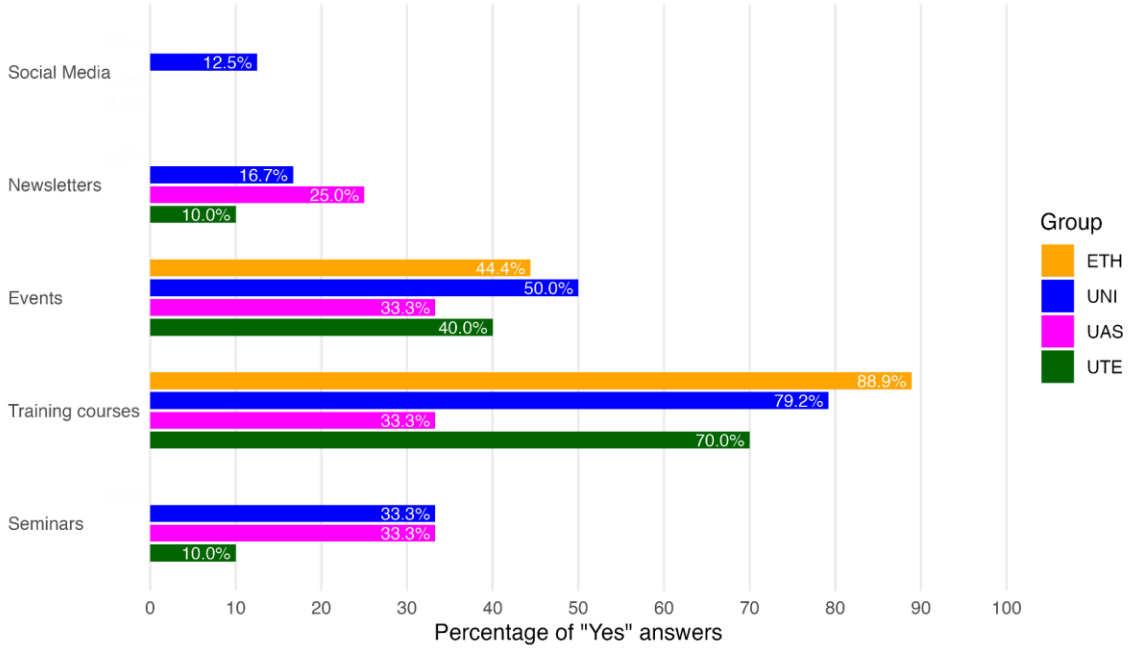


Fig. 9: Most efficient outreach and engagement activities (by HEI type)

Challenges and desired improvements

To investigate further challenges and potential areas for improvement, the survey participants were asked to name the top one or two challenges they believe their institution faces in RDM and ORD best practices (free-text question). A total of 59 responses were received. The most frequently mentioned challenges were a lack of resources, as well as insufficient interest and awareness among

researchers. The third most frequently cited issue was a lack of institutional commitment.

Lack of resources

A clear majority of responses highlighted the lack of sustainable / long-term funding for ORD support, particularly for data stewards as the primary challenge. Other reported missing resources referred to infrastructure, often mentioning both staffing and infrastructures in the same context.

Lack of interest and awareness among researchers

Many responses indicated that researchers don't perceive the benefits of ORD clearly enough to invest additional time, or that ORD practices conflict with the culture of their specific research fields. Other related issues included a lack of incentives and recognition for ORD practices, a lack of relatable use cases for data sharing, challenges related to data management (especially for personal/sensitive data and large datasets), and limited ORD competencies.

Lack of institutional commitment

This was the third most commonly mentioned challenge, though at a notable distance from the first two. Respondents noted that leadership at HEI, departmental, or institute level lacks interest or ambition regarding ORD. They observed that ORD is not integrated into the institutions' strategy, and that support for ORD is largely rhetorical rather than substantive. One respondent suggested that "stronger top-down commitment could foster greater engagement". Others pointed to the connection between limited institutional commitment and the lack of sustainable funding for ORD support. A closely related issue was the absence of clear ORD policies, which was perceived as indicating institutions' reluctance to implement ORD in practice.

Given these challenges, respondents were asked to identify which additional resources or improvements they believed were necessary to strengthen ORD support at their institutions. In line with the above-mentioned issues, increased funding and more dedicated time for ORD support were among the most frequently selected needs (Fig. 10). The third most frequently mentioned point above, "lack of institutional commitment", although not a selectable option, was brought up several times in the comments. The importance of this point is further emphasized by the fact that institutional commitment is a prerequisite of increased funding and additional dedicated time.

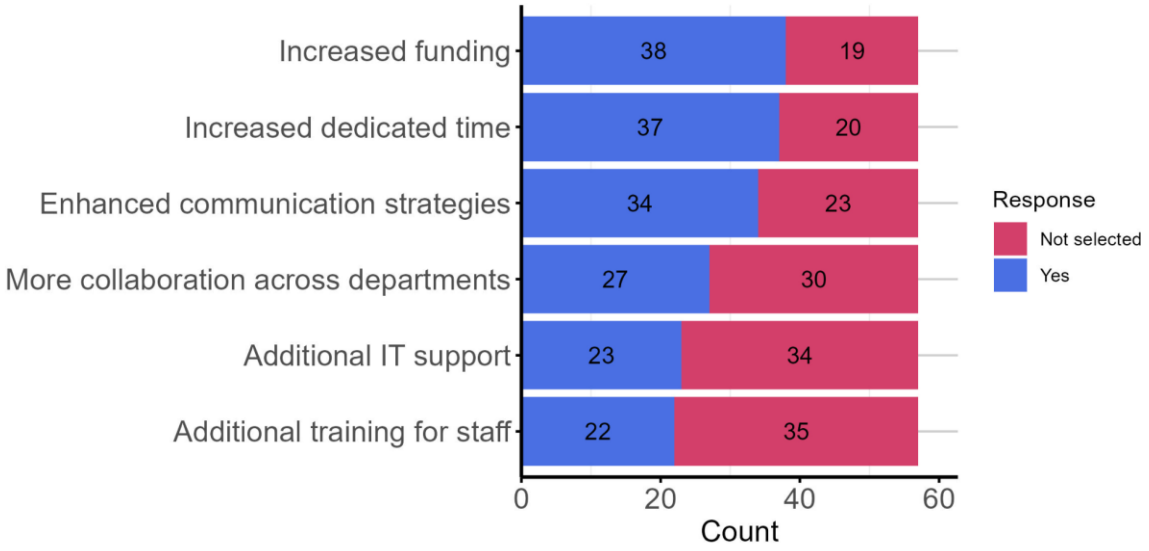


Fig. 10: Additional resources or improvements required to enhance ORD support at Swiss HEIs (overall)

A point that that got many responses in this section was “enhanced communication strategies”. It was noted earlier that outreach activities such as newsletters and social media were seen as having limited impact on the implementation of the overall ORD strategy. At the same time, the previously noted lack of awareness among researchers — seen as a major challenge — may in part be attributed to ineffective outreach strategies.

When results were broken down by HEI type (Fig. 11), the need for additional resources (funding as well as dedicated time) was perceived as lowest at UTE and highest at UAS. This seems to indicate that ORD support staff at UTE see ORD at their institutions well underway, while UAS still have significant needs. The overall identified third major challenge, improved communication strategies, was marked as a priority by all HEI types except for the ETH Domain, possibly indicating that efficient communication strategies are already in place there.

An additional finding yielded by this analysis was a difference in interdepartmental collaboration between the ETH domain and UAS on the one hand, and cantonal universities and UTE on the other. The increased demand for internal collaboration with the former group may be due to decentralized structures, while for the ETH domain, sheer size may play an additional role. In contrast, UTE are generally smaller in size and therefore may benefit from shorter internal communication paths between ORD stakeholders (e.g., ORD support, IT services, researchers, and management). Cantonal universities, which are often relatively large and heterogeneous institutions too, seem to have found ways of tackling these challenges. This may be a starting point for future attempts to identify best practices in organizing ORD support.

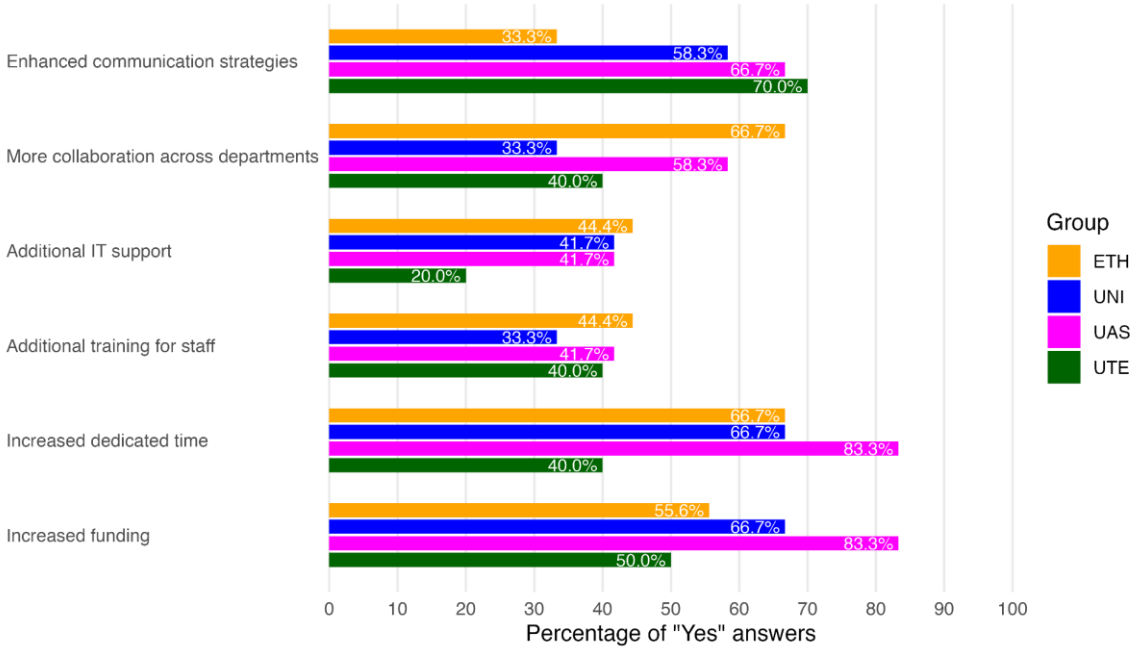


Fig. 11: Additional resources or improvements required to enhance ORD support at Swiss HEIs (by HEI type)

Conclusions

Overall, the survey reflects a complex picture of how ORD is currently implemented at Swiss Higher Education Institutions. This is likely due both to the relatively early stage of ORD implementation in Switzerland, and to the fact that the survey responses reflect the perspective of ORD support staff — whose role naturally involves identifying gaps and challenges. Future work should certainly also include the perspectives from institutional leadership and researchers themselves. Nonetheless, the survey findings are all the more valuable as they provide detailed insights from ORD professionals with first-hand experience on the “front-lines” of ORD support.

On the face of it, the survey results offer grounds for optimism. A clear majority of respondents indicated that ORD has been at least partially implemented, with 17 participants reporting that ORD is mostly implemented at their institutions. Institutional backing and, as a result, financial support were identified as key enablers of this progress. It is likely that this development is to a large degree a result of the swissuniversities’ call for institutional action plans for implementing data stewardship (Action Line B5.2). Almost all Swiss HEIs submitted a plan, and the subsequent funding appears to have contributed significantly to the strengthening of ORD support, particularly at HEIs that didn’t have such support in place before. According to the survey, the most effective measures for initiating or advancing ORD practices were training courses, seminars, and similar events, as well as direct engagement between ORD support staff and researchers.

However, the high number of “partially implemented” ORD programs also points to ongoing limitations in ORD implementation at Swiss HEIs. While resources dedicated to ORD support were generally appreciated, respondents emphasized

the need for more resources, especially in the long term. Current shortcomings appear at several interconnected levels: more sustainably funded positions (FTEs) for ORD support; low awareness and engagement among researchers; and insufficient institutional commitment, which could be addressed through clear ORD policies, incentives for adoption, and long-term funding. A fourth, more operational issue is the need for improved communication and outreach strategies.

Notable differences between HEI types emerged in certain areas. The respondents from UTE showed a high perceived impact of institutional support, availability of funding, and infrastructure on ORD implementation, with relatively low additional demands. This could suggest that these institutions benefited particularly from swissuniversities-funded data stewardship programmes. UAS responses, by contrast, indicated a relatively medium impact of the implementation factors that were examined in the survey, but relatively high demands in additional resources.

An interesting pattern emerged with regard to collaboration across departments as a factor for improving ORD implementation. Here, the responses of UAS and ETH institutions seem to reflect the challenges of heterogeneous institutional structures. However, cantonal universities, that often face similar challenges, did not note this as an area of improvement. The low significance that UTE respondents attributed to this factor may be due to their smaller size and to shorter internal communication paths.

Focus Group Discussions

Methodology

Two key topics[68] from the survey results stood out as especially relevant for further exploration. First, the high perceived importance of training events for the implementation of ORD best practices. Second, the role of inter-departmental collaboration which showed notable differences across HEI types. To explore these issues further, and to complement the quantitative data collected through the online survey, qualitative insights were collected through focus group discussions.

A total of 26 survey respondents agreed to participate in the focus groups; for scheduling reasons, the number of actual participants was limited to 15. Participants were divided into three groups of five people designed for maximum heterogeneity, including a mix of institutional types (cantonal universities, ETH Domain, UTE, UAS), sizes, and locations. Institutions represented included UniGE, HEP Vaud, ETH Zurich, ZHAW, FHGR, UniBas, EPFL, PH Luzern, Lib4RI, UniL, and PH Zug. This diversity was intended to capture a broad range of perspectives and identify both shared challenges and differing approaches.

All participants received an informed consent form prepared by the University of Basel and amended for this specific purpose by the project leads. The form explained the purpose of the focus groups, the procedures to be followed, and the data protection measures in place. It was sent one week prior to the session, and participants were asked to confirm their consent via email.

The focus groups were conducted via Zoom, hosted by the University of Bern. Three breakout rooms were created, with interviewers rotating between groups. Each session lasted 35 minutes, with a 10-minute break between the sessions. In mandate B5.1, two team members moderated the discussion, while a third took notes, managed recordings, and ensured a smooth process. The discussion guideline used by the moderators can be found in Annex 4.

In total, nine interview sessions were conducted, three for each group. All sessions were recorded locally by each mandate and then uploaded to a password-protected folder on Switch drive, with access restricted to project team members.

For the analysis, responses were grouped along two dimensions: institutional size and HEI type, to highlight patterns across different institutional contexts. The choice of these two dimensions was particularly guided by swissuniversities' mandate, which suggests focussing on differences between HEI types, as well as by indicators gathered from the discussions that institutional size is also a dimension that merits closer investigation.

Institutions were categorised as either smaller (fewer than 10,000 students) or larger (more than 10,000),[69] and grouped into three HEI types: Universities, UAS, and UTE.

[68] This section was adapted from the corresponding chapter of the final report of mandate C2.3, with kind permission of the project group.

[69] Unlike for the number of students per HEI, no official statistical data on the number of researchers per HEI exist for Switzerland. Therefore, the number of students was taken as a proxy for classifying

The groupings used were:

- Smaller institutions: HEP Vaud, FHGR, PHLU, PHZG
- Larger institutions: ETH Zurich, UniGE, UniL, EPFL, UniBas, ZHAW
- Universities: ETH Zurich, EPFL, UniGE, UniL, UniBas
- UAS: ZHAW, FHGR
- UTE: HEP Vaud, PHLU, PHZG

Focus Group Analysis: Overview

The following analysis presents the results of the focus group discussions, structured around two key themes identified through the survey: (1) training in Open Research Data, and (2) collaboration in ORD support. The findings are analysed by institutional size and HEI type, to highlight common patterns as well as context-specific challenges and practices.

ORD Training Practices Across Institutions

Training at Smaller vs. Larger Institutions

While all institutions recognised the importance of ORD training, participants described significant differences in how it is implemented — shaped mainly by institutional size, staffing capacity, and organisational structures.

Smaller institutions (with fewer than 10’000 students) often operate with minimal dedicated staff for ORD support. Cases were reported where a single person is responsible for delivering training, offering legal or technical guidance, and coordinating with other institutional services. As a result, training offerings are often modest in scope and scale, with a focus on informal, hands-on, and tailored formats. Participants from smaller institutions described short, informal formats, such as lunchtime sessions, and one-on-one consultations as the most effective approaches, particularly when tied to real-world cases or immediate research needs. While these formats allow for personalised engagement, they are difficult to scale or offer regularly, and limited time and capacity also affect the ability to create or adapt reusable materials.

Smaller institutions also face specific challenges related to language and disciplinary diversity. One participant highlighted that even when high-quality materials exist elsewhere, reuse is not always possible due to differences in institutional culture or terminology. Despite these limitations, some participants noted the growing relevance of asynchronous learning formats, such as video-based modules, to extend reach and offer more flexibility. However, due to limited time and capacity, such resources are rarely developed in-house and often depend on external input.

Larger institutions (with more than 10’000 students), by contrast, generally have the capacity to offer more structured and institutionalized training programs. These may include workshops for PhD students, department-specific training

HEI as either “smaller” or “larger”. Cf. data by the federal statistical office on size of Swiss HEI by number of students, as of March 2024, available at https://www.bfs.admin.ch/bfs/en/home/statistics/education-science/pupils-students/tertiary-higher-education-institutions.assetdetail.30725032.html (accessed March 25, 2025).

series, and multi-day summer schools. In some cases, training is supported by interdisciplinary teams involving RDM professionals, legal experts, IT specialists, and researchers with domain-specific expertise. This allows for a more comprehensive and interactive learning experience, sometimes with incentives such as ECTS credits that attract early-career researchers.

However, the availability of resources does not automatically resolve all challenges. Participants described common struggles, such as audience segmentation, ensuring relevance across diverse disciplines, and involving senior researchers. Even where structured training exists, long-term impact and behavioral change can be hard to measure. Several participants emphasized the need for better integration into research workflows and for follow-up mechanisms to support ongoing practice.

In both settings, participants agreed that timing is a key success factor — offering training when researchers are most likely to apply the knowledge is most effective. While smaller institutions may rely more on personal engagement and flexibility, and larger institutions on infrastructure and planning, both groups recognized the value of practical, well-timed and discipline-sensitive training.

Training Across HEI Types

Training approaches vary not only by size but also by institutional type, reflecting the different missions and research cultures of universities, UAS and UTE.

Cantonal and federal universities — such as ETH Zurich, EPFL, UniGE, UniL, and UniBas — are generally well-positioned to offer comprehensive and structured training. With larger support teams and more formalised graduate programmes, they can integrate ORD-related content directly into PhD curricula or organise dedicated training events such as summer schools and multi-day workshops. Participants highlighted interdisciplinary teaching teams that include specialists in research data, law, and IT as well as the option to offer ECTS credits or collaborate with Graduate Schools, which helps to encourage participation, especially among early-career researchers. While the scope, audience targeting, and course design are often more advanced, challenges remain — especially in engaging senior researchers and ensuring long-term behavioural change. Several participants noted that despite well-established training infrastructures, participation often depends on individual motivation rather than institutional requirements.

UAS, including ZHAW and FHGR, take a more pragmatic approach, in line with their institutional mission focused on applied research and societal impact. Training infrastructure is generally less formalised and efforts are often well aligned with researchers' daily workflows and departmental priorities. Hands-on, short, practical training sessions, sometimes embedded in departmental routines or supported by domain specific experts, were seen as most effective. Participants noted, however, that institutional incentives for ORD training are weaker, given the lower emphasis on data sharing and academic publishing. One participant noted that researchers working with industry partners often see little relevance in ORD because their data is not intended for sharing, suggesting that broader RDM practices may serve as a more inclusive entry point. As a result,

successful training efforts often rely on motivated individuals and are offered more on a demand-driven or project-aligned basis than through recurring programmes. One participant mentioned asynchronous resources and video-based formats as promising alternatives, particularly for extending reach and reducing the need for repeated live sessions.

UTE, such as HEP Vaud, PHLU, and PHZG, typically operate with limited dedicated RDM staff, their training tends to be small-scale and highly personalised. ORD topics are often covered as part of broader methodological or digital literacy courses, particularly at bachelor and master levels. Participants emphasised personalised formats, such as short presentations, small workshops or individual consultations, as more effective than formal courses. These formats are adapted to the institutional and linguistic context, which makes them more effective locally but harder to standardise or share across institutions. While there is high awareness of the value of ORD, it is often not possible to release data publicly because they often stem from educational contexts and are sensitive in nature. Participants stressed that training efforts are heavily dependent on a small number of staff and remain modest in scale.

In summary, participants highlighted the importance of aligning training with researchers' needs, career stages, and disciplinary expectations. Universities benefit from more formalized structures, while UAS and UTE rely on more agile, user-oriented, and resource-conscious approaches. All types agree on the importance of hands-on methods and context relevance, but the ability to implement recurring, broad-reaching training programs varies widely.

Institutional and Cross-Institutional Collaboration

Collaboration at Smaller vs. Larger Institutions

Viewing the participants' responses based on the institutional size, responses reflected differences in organisational setup, staffing, and institutional priorities.

Smaller institutions often operate without formal departments or dedicated ORD teams, which can make internal collaboration unnecessary or informal by default. Where collaboration does take place, it is usually based on personal relationships rather than structured processes. While this can make institutions more agile, it also creates risks around continuity and expertise, particularly when ORD responsibilities fall to just a few individuals. One participant described the risk of losing momentum and the creation of significant gaps in continuity if a single staff member leaves or shifts focus.

External collaboration was seen as particularly valuable in smaller institutions, especially through partnerships with institutions of similar size or type. However, such collaborations are harder to sustain due to constraints around time, staffing, language, and alignment of priorities. Several participants expressed interest in shared resources or centralised platforms that could reduce duplication and broaden access to training, tools and support. At the same time, smaller institutions often lack the resources to initiate or maintain such partnerships, pointing to a need for national coordination mechanisms to support smaller institutions in developing ORD infrastructure collectively.

Larger institutions, by contrast, are generally better positioned to build structured internal collaboration. Participants described structured approaches such as data steward networks, cross-functional working groups, and interdepartmental sprints as effective ways to share knowledge, streamline services, and co-develop resources. These efforts help mitigate the risk of siloed services, which several participants identified as a persistent issue even in well-resourced environments. Gaps in communication between libraries, IT, ethics offices, and legal departments were said to complicate support for researchers. One participant mentioned that researchers are sometimes passed between services without coordination or follow-up, leaving support staff unaware whether the issue was resolved — highlighting the need for better inter-service collaboration and communication.

In terms of external collaboration, larger institutions are more often involved in national or domain-specific networks. These arrangements offer opportunities for knowledge exchange and shared problem-solving, particularly when tailored to common regulatory frameworks or infrastructure needs. Several participants highlighted emerging efforts such as the SRDSN, which provides a more formal framework for coordination and knowledge exchange. While still in early stages, SRDSN was seen as a promising development, particularly for linking institutions of varying sizes and needs. Nevertheless, many existing collaborations remain only lightly formalised and depend heavily on the personal commitment of individuals. Some participants expressed mixed feelings about formalisation: while coordination is important, over-structuring was seen as potentially limiting the open exchange many find valuable.

While both smaller and larger institutions acknowledge the importance of collaboration, they operate within very different constraints and opportunities. Smaller institutions often rely on personal initiative and would benefit from more external support and coordination. Larger institutions have more capacity to formalise collaboration, but still face challenges in internal integration. For ORD support to be effective across the full range of institutions, future strategies will need to accommodate both models and offer scalable solutions that reflect each institution’s context.

Collaboration Across HEI Types

When considering internal and external collaboration from the different perspectives of HEIs, the focus group data revealed that the degree of formalisation was shaped by the missions, structures, and resources of their respective HEI types.

Universities tend to have more established internal support structures and the capacity to formalise collaboration. Participants described structures such as data steward networks, cross-departmental working groups, and co-creation initiatives as effective ways to share expertise and streamline support, particularly around complex legal, ethical, or technical topics. However, internal silos remain a challenge, especially in large institutions where services may not be fully aware of each other’s roles. As one participant noted, researchers are often referred from one office to another without clarity, leading to frustration and

disengagement. Some institutions have responded by appointing dedicated coordinators or creating central points of contact, helping to improve both service integration and user experience. External collaboration, especially within institutional networks like the ETH Domain, is developing, but still often informal or loosely coordinated.

UAS tend to approach collaboration more pragmatically and flexibly. Internal collaboration is often facilitated through informal exchange or emerging communities of practice. In some cases, departments have appointed local data stewards who connect with a central ORD unit, enabling better horizontal knowledge flow across the institution. However, participants noted mixed results: not all departments are equally invested in ORD, and in applied research, particularly involving private-sector partners, data sharing is often not an option. As a result, ORD can feel less relevant in these settings, and collaboration tends to be more successful when it focuses on shared practical needs and topics like RDM practices. External collaboration with other UAS institutions appears to be limited, though participants expressed openness to shared frameworks or resources that could be adapted to local contexts.

UTE face different challenges. Due to their smaller size, internal collaboration often happens naturally. However, this also means that few formal systems are in place to support cross-functional ORD initiatives. Participants explained that one person may cover multiple functions, with individual staff often responsible for RDM, legal advice, and training, leaving little capacity to engage in structured collaboration. External collaboration, (e.g., among different UTE), was seen as valuable but remains underdeveloped. Language barriers, resource constraints, and lack of dedicated time were cited as obstacles. Nonetheless, there was a strong interest in building shared resources or participating in centralized initiatives that could ease the burden on individual institutions.

In conclusion, while all HEI types recognize the importance of collaboration, they each face different opportunities and constraints. Universities have the infrastructure to formalize collaboration but still struggle with internal coordination. UAS institutions balance flexibility with selective engagement, often focusing on project-specific or departmental efforts. UTE, though structurally limited, express strong interest in collaboration but require external facilitation or national-level support to fully participate. Across all types, informal networks, personal relationships, and strategic partnerships remain the primary vehicles for successful ORD collaboration.

Conclusions: Strategic Considerations for Advancing ORD Training and Collaboration Across Swiss HEIs

Across all focus group discussions, there was broad agreement on the core elements of effective ORD support: context-sensitive training, opportunities for peer exchange, and collaboration that is embedded in existing institutional structures. However, how these elements are implemented, and the constraints they face, varies widely across institutions.

Three overarching tensions emerged from the analysis:

First, while training is widely recognised as essential, institutions differ in their ability to deliver it in a consistent and scalable manner. Smaller institutions tend to offer flexible, personalised formats with limited reach. Larger institutions have the resources to provide more formalised programmes but often struggle with reaching diverse audiences and ensuring long-term impact. Similarly, the function and framing of training differs across HEI types: where universities tend to embed it into academic career pathways, UAS and UTE take a more applied, teaching-oriented approach. These differences point to a need for support strategies that are both scalable and adaptable to different local needs.

Second, collaboration is valued across the board but is not equally embedded in practice. Larger institutions are beginning to formalise internal collaboration through networks and working groups, while smaller institutions often rely on informal relationships. External collaboration, meanwhile, remains underdeveloped across all types — often due to a lack of incentives, time, or structural support. Recent developments such as the SRDSN represent a promising step toward national coordination, though participation and integration are still evolving. Institutions with fewer resources are especially reliant on cross-institutional cooperation, yet they are also least equipped to initiate and sustain it without central coordination. This highlights a structural gap that could be addressed through national or cantonal-level frameworks that facilitate shared development and knowledge exchange.

Third, there is a persistent challenge around embedding ORD support into institutional workflows and priorities. Whether through training or collaboration, many efforts still operate on the margins, driven by individuals, short-term projects, or optional participation. Without clearer incentives, recognition, or alignment with institutional goals, ORD risks being treated as an add-on rather than a core part of research culture. Several participants voiced the need for stronger alignment between ORD efforts and institutional policies, leadership priorities, and research evaluation frameworks.

To apply best practices meaningfully across Switzerland's higher education landscape, it is important to recognise how institutional size and HEI type influence implementation. Smaller institutions need flexible, resource-aware approaches; larger ones need better coordination and engagement. Likewise, research focus — whether academic, applied, or pedagogical — shapes how ORD is understood and prioritised. These differences do not call for separate frameworks, but for shared principles that can be adapted to local contexts. Recognising these dimensions strengthens the relevance of ORD efforts and supports a coordinated but context-sensitive national approach.

Advancing ORD support across Swiss HEIs will require clear, coherent strategies: ones that reflect institutional diversity, invest in shared expertise, and support both cultural and structural change. The foundations are in place — what is needed now is sustained coordination, strategic alignment, and long-term investment.

International expert interviews

Aim and Methodology

To contextualize the insights from the Swiss ORD support community, interviews with international ORD support experts were arranged. Due to restraints on time and availabilities, we were able to conduct interviews with the following experts:
Expert 1 works at a small private university in Germany with a focus on health sciences (institution 1); the position of expert 1 is at the department for medical research, where they are the only staff member dedicated to RDM support.
Expert 2 was from a large university in Germany (institution 2) that also hosts a so-called “Landesinitiative”, a state-funded initiative to promote RDM practices on the level of the respective federal state. Expert 2 is the coordinator of this initiative and is also involved in RDM support at this university.
Expert 3 was from a large university in Belgium (institution 3) where they are part of the institution-wide RDM competence center that coordinates RDM support and implementation. Expert 3 is also in a leading role in the Flemish Research Data Network (FRDN), a state-funded regional data-stewardship network. Expert 3 was also able to incidentally share some insights from the UK, where they had worked for more than ten years in a leading data center.
The guideline used by the interviewers can be found in Annex 5. The interviews were conducted via Zoom in early April 2025. The interview recordings were stored locally at University of Konstanz where one interviewer was located. The interviews were transcribed using a local NoScribe installation at University of Konstanz. Finally, recordings and transcripts were uploaded to a password-protected Switch server hosted in Switzerland. The experts kindly gave their consent to this procedure.

Results

Recognizing and Implementing Good Practices in ORD

Across the interviews, a consensus emerged around what constitutes “good practice” in RDM and ORD: adherence to the FAIR principles, clear institutional policies, specific implementation guidelines, and support services. However, how these are implemented varies significantly across institutions, shaped by size, resources, and organizational structure.
The experts stressed the importance of clear policies, guidelines, and support. Expert 3 highlighted the importance of interconnected ORD policies from institutions, funders, and publishers. They also noted, with reference to examples from the United Kingdom and Flanders, beneficial effects of agenda setting and proactive action from political and institutional actors. At the same time, as expert 2 noted, policies can help communicate the importance of ORD to researchers, but in themselves, they are not sufficient to implement ORD good practices. Targeted guidelines for specific groups that explain policies, highlight available support and tools are also needed, encouraging and facilitating policy compliance.

Training and events were also mentioned as effective for raising awareness of good ORD practices. Expert 2 mentioned coffee lectures and an Open Science Slam as examples for successful measures promoting the institutional ORD policy. Here too, however, it was noted that direct personal contact is key, especially at smaller institutions where less formalized structures exist. Expert 1 stressed the value of bringing researchers together for mutual exchange on shared issues. In addition, they emphasized the importance of relatable examples and use-cases for ORD for the dissemination and uptake of good practices, as well as engagement through data champions, understood as researchers with a track record in ORD practices who can act as instigators and paragons for their colleagues.

Whereas smaller institutions are likely to have fewer ORD support staff, and rely largely on informal, personalized settings for ORD implementation, larger institutions have the resources at their disposal to implement comprehensive governance structures, and ORD experts can use existing institutional structures to promote their goals, as will be explained in the following section.

Collaboration as a Cornerstone

The topic of collaboration clearly confirmed the observation from Switzerland with respect to differences between smaller and larger Institutions. While all experts highlighted the importance of collaboration in general and are active in networking with other institutions and initiatives, internal collaboration is often informal at smaller institutions, even though administrative inertia and entrenched practices can make the implementation of ORD practices difficult. With regard to external collaboration, smaller institutions can benefit from resources and structures established elsewhere. Expert 1 mentioned helpdesks of the German National Research Data Infrastructure (Nationale Forschungsdateninfrastruktur, NFDI), “Landesinitiativen”, and regionally mandated consortia. These networks, usually state-funded, provide essential services such as training and data storage that are not available locally. Expert 1 also noted that for coordinating local institutional networks, permanent positions are indispensable to ensure sustainability.

Larger institutions, by contrast, can rely on existing institutional structures for internal collaboration, or they have the resources to build new ones. At institution 2, contacts to subject librarians are valuable for reaching out to researchers, whereas at institution 3, a detailed governance was developed, consisting of an RDM steering committee that determines strategic directions, while an RDM competence centre coordinates the rollout of RDM-related tools and services, and an RDM support network provides guidance and advice to researchers. These bodies are composed of researchers, administrative staff, and leadership. The same structural advantage comes to bear with regard to external collaborations, where larger institutions can secure political mandates and resources to build formalized structures, such as “Landesinitiativen” in Germany or regional networks like the Flemish Research Data Network. Heterogeneity of target groups can be a challenge as it makes it more difficult to reach all stakeholders, find the right exchange formats, and create a good dynamic within

groups. Experts 2 and 3 noted that the role of the network coordinator is key. Important tasks mentioned were administrative and organizational tasks, but also regularly checking with the community members for their ideas and needs, thus steering the community in the right direction.

Developing and Sustaining ORD Competencies

When it comes to developing ORD competencies, the interviews revealed a spectrum of approaches – from informal, peer-led learning to structured professional training. Data stewards, in particular, often learn "on the job," drawing on ad-hoc resources, community events, and peer exchange.
In this context, an important topic in the interviews was how knowledge that has been acquired can be collected and stored in a way that makes it easily accessible for future use and re-use by fellow ORD experts. The need for documentation of activities was most clearly advocated by Expert 1 who stressed the value of good documentation in quickly changing working environments. However, they acknowledged that institutional settings often differ a lot from each other, so that it is often not feasible to generate blueprints that serve to implement ORD practices at diverse institutions. Maybe for the same reason, the approach of the experts from larger institutions who have experience with managing big inter-institutional networks seemed to be less strict. Expert 2 pointed to various initiatives like EduTrain[70] (as part of the German NFDI), Daila[71], or the German Train-the-trainer concept on Research Data Management (Biernacka et al., 2023) that provide teaching material and concepts that can be used when planning training events. Experts 2 and 3 said they don't have formal knowledge bases in their networks, but there are shared repositories where material from community events (presentation slides, videos, etc.) are collected and can be accessed by network members. Expert 1 mentioned as a desirable model a living website where information can be collected, shared and updated.[72] In addition to online platforms where materials can be collected, expert 2 highlighted the importance of open events where experts can exchange and newcomers can be introduced to the community and professional field.
Thus, while good knowledge management was agreed to be an important asset in the implementation of ORD best practices across diverse institutions, structured knowledge bases are useful but may be harder to implement in larger networks. Next to this, it emerged that the opportunity to exchange in personal settings is crucial for the success of expert networks.

Conclusion

Across all interviews, a shared theme emerged: while the vision of FAIR and OS is clear, the path to get there depends on institutional contexts, available resources, and individual commitment. Leadership commitment and policy

[70] https://www.nfdi.de/section-edutrain/?lang=en, 2 May 2025.
[71] https://dalia.education/en 2 May 2025.
[72] One can think of examples like www.forschungsdaten.info or www.forschungsdaten.org (both websites last accessed on 20 June, 2025), two platforms hosted in Germany but reflecting other German-speaking regions in Europe to various degrees.

support are essential, but they must be matched with tailored guidance, accessible support tools, and incentives that recognize the effort to comply with ORD best practices. Collaboration — whether within institutions or across regional networks — is a crucial factor to ensure that support services are robust and have relevance for their target audience. However, intentional effort, coordination, and funding are necessary to keep it alive.

While the interviews backed up several insights from the Swiss data we collected, they also added nuance. Key points on ORD implementation were confirmed, such as the importance of the FAIR data principles for ORD good practices, the importance of training events, and the diverging needs and possibilities of small and large institutions. The international experts also confirmed views regarding the importance of clear policy for ORD implementation. According to the data from Switzerland, ORD support is widely in place, but the opinion of the international experts underlined that these can only be successful if they are complemented by clear policies and guidance on various levels.

In addition, the international interviews provided valuable insights on the organization and maintenance of ORD expert communities and their role for the implementation of ORD best practices. The interviews mainly stressed the character of such networks as hubs for formal and informal exchange with an emphasis on the role of the network management. Such networks should be complemented by knowledge management facilities that can help to secure and keep available knowledge pertaining best practices in ORD implementation. Smaller institutions in particular can benefit from such an approach because it enables them to re-use existing best practices that they cannot develop from scratch due to lack of resources.

Summary of Findings and Recommendations

This report offers an exploration of ORD implementation in Switzerland, outlining emerging best practices, identifying opportunities and constraints across different types of HEIs, and highlighting the most urgent challenges in the current ORD landscape. This section provides an overview of the most important findings from the underlying study. It also outlines several important aspects that deserve further attention in future research, before providing the key conclusions and recommendations for further ORD implementation in the Swiss HE sector.

Towards a Swiss ORD Landscape

In the Swiss HE sector, the framework for developing and implementing ORD best practices is defined by the ORD governance structure established in 2021 through the national ORD Strategy and Action Plan. These documents outline general principles that set the strategic direction, and they establish governance bodies — most notably the ORD StraCo — responsible for guiding and overseeing the practical implementation of these principles and their associated action lines.

However, the principles articulated in the ORD Strategy do not constitute a policy in the strict sense; that is, they do not set clear requirements for institutions, researchers, or other stakeholders, nor are they accompanied by guidance on how such requirements should be implemented. Other actors within the Swiss HEI landscape had already introduced ORD-related policies or policy-like frameworks before the national strategy was adopted. Notably, the SNSF introduced ORD-related requirements for funded researchers as early as 2017. Practically all major stakeholders in the Swiss HE landscape — including Innosuisse, the Academies, and many HEIs — have since issued their own policies or position statements expressing support for ORD best practices.

At the operational level, a wide range of ORD-related support structures are in place to assist researchers in meeting ORD requirements and adopting best practices. Infrastructure providers such as FORS, DaSCH, and SIB offer domain-specific support for managing and publishing research data, along with guidance and support services. Almost all HEIs, including cantonal and federal universities as well as UTE and UAS, maintain dedicated ORD support units that support researchers in fulfilling funder requirements and in managing their data in accordance with the FAIR principles and ORD best practices. Some institutions even provide technical infrastructure such as institutional data repositories. These trends are broadly mirrored in research institutions within the ETH domain.

In the international ORD policy and support landscape, Switzerland is overall positioned in the middle range. With regard to ORD strategies and policies, as well as to integration with international infrastructures, Switzerland is broadly aligned with relevant standards and integrated with key initiatives mainly from the EU area. However, commitment on several levels seems not as strong as with other leading research nations, for example with regard to contributions to FAIRsharing and the early implementation of DMP requirements.

Our findings demonstrate the significant influence of policy and funding. The introduction of the SNSF's ORD policy in 2017 was a key catalyst, marking the beginning of structured ORD efforts in Switzerland. For several years, it remained the only mandatory ORD framework in the country. The requirement to submit DMPs alongside grant applications proved to be a strong incentive for researchers to engage with data management and sharing. In parallel, federal funding — primarily distributed through swissuniversities under the various action lines of the national ORD Action Plan — has played a crucial role in advancing ORD implementation and support at individual institutions. While large HEIs, infrastructure providers, and major research institutions had already begun developing ORD services before the national strategy, many smaller institutions have only been able to establish and promote ORD practices with the help of this funding. Moreover, thanks to federal funding, the formalization of the SRDSN has significantly enhanced collaboration and knowledge exchange across cantonal and linguistic boundaries.

Despite these positive developments, there is evidence that the actual uptake of and compliance with ORD best practices remains moderate. The recORD study evaluated for this report found that ORD is not among the top strategic priorities at Swiss HEIs, as reflected in their OS policies. A 2023 SNSF review of compliance with its ORD policy revealed that only 23% of funded projects had reported publishing datasets. Findings from this report further confirm this picture: ORD support staff report low levels of awareness and engagement among researchers. These observations suggest that, despite nearly a decade of ORD policy development and substantial implementation efforts in recent years, Switzerland is still in the early stages of fully realizing the potential of ORD best practices across its HE landscape.

ORD Implementation at Swiss HEIs: Status and Outlook

The conclusions from the landscape analysis were deepened in a survey and in focus group discussions in the Swiss ORD support community in SRDSN. According to ORD support staff, ORD programmes have been at least partially implemented at most Swiss HEIs, with institutional backing and financial support acting as key enablers of this progress. ORD training has emerged as a particularly effective measure to promote the adoption of ORD practices among researchers. In the data collected for this study, several key parameters for successful training events can be identified. These will be briefly outlined below as a first concrete result of the study that can inform future aligned best practices at Swiss HEIs.

However, the study also revealed a number of persistent challenges at Swiss HEIs that are hindering the full implementation of ORD programmes and policies. Well-established solutions to these challenges have yet to emerge. Nonetheless, they provide a basis for future activities aimed at developing and promoting ORD best practices, and they point to areas where targeted action is most urgently needed.

Emerging Best Practices?

The data collected for this report highlights the central role that training and events play in promoting the implementation of ORD practices at HEIs. Support staff regard these activities as particularly effective in equipping researchers with the knowledge and skills necessary to manage and share data in line with ORD best practices. Beyond skill development, training sessions also provide space for discussing practical examples, exploring real-life use cases, and fostering peer-to-peer learning and networking among participants.

Several key features contribute to the success of such training initiatives. Events should be clearly labelled and purposefully designed, with transparent objectives — whether to introduce the concept of ORD, demonstrate its relevance and benefits for individual researchers, or present specific tools and resources for integrating ORD into research workflows. Training efforts should primarily target early-career researchers, as they are more likely to adopt new practices and embed them into workflows that are still evolving.

Interactive teaching methods are particularly valuable, offering participants opportunities to actively engage with the material and with each other. The inclusion of real-world examples and discussion of participants' own experiences enhances relevance and understanding. Ideally, training should draw on a diverse range of expertise, with contributions from ORD specialists, legal advisors, and IT professionals to provide a well-rounded perspective.

In addition to live sessions, asynchronous resources — such as guidelines, online courses, and recorded lectures — should be made available to accommodate researchers' varied schedules and media preferences. Collaboration with academic units, such as Graduate Schools, can further strengthen training programs by increasing their visibility, improving attendance, and allowing them to be integrated into formal curricula, including the possibility of awarding ECTS credits. Where feasible, follow-up support should be offered to address individual questions and provide tailored advice.

While training is a key component of ORD implementation, the following sections will show that it must be complemented by broader institutional strategies to achieve lasting change.

Obstacles to ORD Implementation

Next to emerging best practices, the data analyzed for this report provides valuable insight into the challenges that hinder the broader implementation of ORD practices across the Swiss HE landscape. While the following overview outlines obstacles that apply across institutions, irrespective of type or size, subsequent sections will explore how these issues manifest differently depending on institutional characteristics.

A number of the core barriers to ORD implementation emerge at the strategic level, where long-term planning, prioritization, and resource allocation are crucial. One of the most significant challenges is the lack of sustainably funded resources, particularly in terms of staff time (FTE) dedicated to ORD support. As noted above, the federal funding released by swissuniversities has had an

important seminal impact, but these beginnings now need to be continued and efforts sustained, which, some ORD support staff fear, may not be the case everywhere.

Closely linked to this is a persistent low level of awareness and perceived relevance of ORD among researchers. Many seem to see ORD practices as a peripheral concern rather than an integral part of the research process. This is certainly also linked to a lack of recognition of ORD practices in hiring and recognition practices on the institutional and general disciplinary level, as explored by the recORD project.

Leadership commitment – or the lack thereof – emerges as another pivotal factor. In many cases, institutional leadership at the HEI, faculty, or departmental level is perceived as insufficiently engaged with ORD. This limited commitment has knock-on effects across other strategic areas. Without leadership endorsement, resources for ORD are less likely to be allocated, and institutional culture is unlikely to shift toward greater awareness and acceptance. Leadership also plays a key role in setting priorities and expectations, both in terms of funding decisions and in influencing attitudes among researchers and administrative staff.

In addition to these strategic issues, operational challenges also play a considerable role, often intersecting with the broader structural concerns mentioned above. Communication and outreach represent a persistent difficulty. One contributing factor is the sheer number of communication channels in use — ranging from email newsletters and intranet posts to faculty-specific announcements — many of which fail to reach or resonate with their target audiences. In addition, with little general interest in and awareness of the importance of ORD, communications tend to be ignored by their target audiences. Without clear and effective communication pathways, even well-developed ORD support services risk remaining underutilized.

Another area of concern is the limited cooperation and information flow within institutional administrations. Researchers seeking guidance on ORD-related issues often find themselves redirected from one support unit to another without any backchannel coordination between these units. As a result, no single office has a full view of a researcher’s needs or previous interactions. The lack of feedback mechanisms between administrative units hampers efforts to provide streamlined and coordinated support.

While some institutions report successful cross-departmental cooperation, the risk of siloed services remains widespread. It must be assumed that this fragmentation is not always due to an unwillingness to collaborate. It might also stem from a lack of both awareness or competence among non-specialist staff and empowerment by their supervisors to engage meaningfully in ORD support. At the same time, if leadership does not clearly convey the importance of ORD internally, administrative units are unlikely to prioritize or coordinate efforts around it.

Opportunities and Limitations for Swiss HEIs

The implementation of ORD practices across HEIs presents both opportunities and challenges that vary significantly depending on institutional characteristics. While the primary distinction lies in institutional size, specific roles and missions also shape how ORD is approached. This section outlines the unique opportunities and constraints faced by smaller vs. larger institutions, and different HEI types including UTE, UAS, and cantonal and federal universities.

Smaller Institutions

Smaller institutions benefit from relative organizational simplicity and closer interpersonal connections. Their often less heterogeneous structures facilitate shorter distances between stakeholders, making direct communication and hands-on support more feasible. These settings allow for more agile decision-making and quicker adaptation to new practices, including ORD. While their agility offers distinct advantages, these benefits are such that they are not easily replicated in larger, more complex organizations.

At the same time, these advantages are tempered by significant limitations. Smaller HEIs frequently operate with minimal staffing, limiting their ability to scale up support for ORD. Often, a single individual or a small team is responsible for ORD support, making continuity and knowledge retention vulnerable to staff turnover. In many cases, ORD-related skills and competencies are concentrated among a few key personnel, with limited diffusion across the broader institution. Furthermore, smaller institutions sometimes depend on services and infrastructures provided by larger HEIs.

Larger Institutions

Larger institutions are typically better resourced, providing them with a stronger foundation for developing comprehensive ORD strategies. With larger staff pools and specialized units, they are better positioned to establish structured internal collaboration involving experts from units such as IT, legal departments, and ethics offices. Graduate schools and research support units often play a crucial role in fostering awareness and building capacity for ORD. Additionally, large HEIs are frequently involved in national and international collaborations, which allows them to take leadership roles in shaping broader ORD frameworks — such as the development of the SRDSN.

Yet, institutional complexity also comes with issues. Fragmentation across faculties and administrative units can make it difficult to implement consistent and coherent ORD policies. Siloed structures may lead to duplicated or even competing support services, creating confusion rather than clarity for researchers. Communication gaps are particularly problematic: support services tend to operate independently, and researchers may be passed from one unit to another without an adequate exchange of information between those providing assistance. This lack of integration hinders effective support and can result in frustration or disengagement from ORD practices.

Beyond size, institutional scope also influences ORD implementation. Although many of the challenges correlate with size, some differences emerge from the specific missions and research environments of different HEI types.

Universities of Teacher Education

According to the data analyzed for this report, UTE often emphasize personalized teaching and support, which extends to ORD-related assistance. However, these institutions typically have very limited staff dedicated specifically to research data management. At the same time, the nature of their research – often involving sensitive personal data related to educational settings – means that data sharing is frequently not a viable option.

Universities of Applied Sciences

UAS usually take a pragmatic approach to training and support, consistent with their applied research orientation and mission for societal engagement. The culture of applied research, often conducted in partnership with industry, does not always prioritize public data sharing. Researchers may view ORD practices as irrelevant or burdensome, especially when working with proprietary or confidential data in industry collaborations.

Cantonal and Federal Universities

Cantonal and federal universities, by virtue of their size and academic orientation, embody many of the traits associated with large institutions. They host a wide range of disciplinary cultures, data types, and RDM practices. This adds layers of complexity to ORD implementation. Support models must accommodate vastly different needs across faculties and departments. Although less frequently engaged in industry collaborations compared to UAS, universities still face challenges in managing sensitive data – particularly in areas such as the medical and social sciences, where personal and ethical considerations are paramount.

Insights from the international ORD support landscape

Switzerland’s progress in ORD implementation is broadly aligned with international developments, even though the insights from international experts highlighted areas of improvement.

Switzerland is largely in line with the international landscape in the recognition of the FAIR principles, and other best practices for RDM. Both large and small institutions face similar challenges and opportunities, though their approaches differ due to available resources and local conditions. Smaller institutions often rely on informal, personalized structures for ORD implementation and tend to have fewer dedicated ORD support staff. In contrast, larger institutions are

typically better equipped, either establishing dedicated governance structures or leveraging existing ones to advance ORD goals through expert involvement.

Likewise, in Switzerland and abroad, communities play a vital role in fostering coordination and alignment across institutions. Here, the international experts highlighted the importance of active community management to maintaining momentum and ensuring long-term viability. This confirms the path that the SRDSN has taken so far. A best practice that should be considered by this network is a knowledge management approach that can support consistent implementation of best practices across diverse institutional settings. Smaller institutions benefit greatly from access to shared knowledge and resources, while larger institutions also gain by participating in cooperative efforts and exchanging experiences.

The international experts confirmed that training and expert support are essential pillars of effective ORD implementation. However, they highlighted that clear policies on the institutional level and beyond are equally important. When such policies are underpinned by strong institutional commitment, they help communicate the importance of ORD to researchers and provide a rationale for integrating ORD practices into everyday research workflows. Switzerland possesses several foundational elements of successful ORD implementation — most notably, dedicated support structures and, in certain institutions, formal RDM policies. Nevertheless, previous research and experiences from the Swiss ORD support community indicate that both institutional commitment to these frameworks and researchers' perception of their relevance remain limited. The feedback from international experts suggests that these should be key areas for future initiatives, advocating for stronger policy endorsement and for better foundations for awareness-raising efforts.

Open Questions

One area requiring deeper investigation concerns the differences in ORD implementation between HEI types. Although this report outlines some initial distinctions between cantonal and federal universities, UTE, and UAS, a more fine-grained analysis would be beneficial to get an even more detailed picture of challenges and potential best practices. Future studies could employ both quantitative methods and in-depth qualitative case studies to examine institutional variation in greater detail and identify context-specific success factors.

A second aspect that is crucial for a comprehensive understanding of ORD implementation is the variation of best practices across academic disciplines and research domains. As explained in the introduction, this aspect was intentionally left aside in this report, which focuses on the implementation of ORD support in HEIs. However, since ORD practices are closely tied to the nature of data and disciplinary workflows, future research should explore how these differences shape implementation needs and strategies. The goal should be to identify discipline-specific challenges and tailored approaches to ORD that support researchers working with diverse data types and methodologies.

Additionally, this report draws primarily on input from national and international ORD support professionals. While this perspective is essential, a more holistic understanding of ORD implementation will require the inclusion of other stakeholder groups. These include support staff in adjacent roles — such as IT services, data protection officers, and legal experts — whose work intersects with ORD support. Equally important is the direct inclusion of researchers themselves to assess not only the practical application of ORD in their work but also their awareness, attitudes, and support needs.

Finally, future efforts should continue to benchmark the Swiss ORD landscape against international developments. Comparative analysis with other countries and engagement with initiatives such as EOSC can provide valuable orientation and help align Swiss strategies with broader trends shaping the future of RDM and ORD practices.

Key Conclusions and Recommendations

The most important conclusions drawn from the data collected in this report can be summarized as follows:

First, at the level of HEIs, the commitment to ORD needs to be clearly articulated and reinforced. While many institutions already have support structures and infrastructure in place, these in themselves are not sufficient to drive ORD implementation in a meaningful way. For ORD to be effectively implemented, institutions must clearly define and communicate their expectations to researchers. Another issue arises from the fact that existing support services that can help researchers comply with institutional expectations are not always sustainably funded. For ORD policies to be implemented effectively, support staff and, where necessary, infrastructure such as data storage and sharing facilities must receive permanent funding. Furthermore, strong institutional commitment to ORD best practices is essential, not only in policy documents but also in concrete actions such as the recognition of ORD practices in hiring and promotion procedures.

Second, within HEIs — particularly within management and administrative structures — ORD-related support needs to be better coordinated and more effectively communicated. Staff who are not ORD specialists, including those in IT, legal departments, or grants offices, must understand the relevance of ORD to institutional strategy in order to collaborate more effectively with ORD experts. These forms of collaboration must be explicitly supported and mandated by institutional leadership. Furthermore, all stakeholders involved in ORD support — such as data stewards, legal advisors, and research managers — should be in regular exchange to better understand researchers' ORD-related needs and to coordinate their services more effectively. Improved internal documentation can also help streamline support processes and facilitate ORD implementation across the institution.

In response to these findings, we propose a set of recommendations. Next to general recommendations to all stakeholders in the Swiss HE system, we direct recommendations at key actors in the Swiss HE system. These begin with actions for swissuniversities and specifically for the DelOS as the body responsible for observing, anticipating, and coordinating the developments within the domains of OS and scientific information. Then we move on to HEI, and finally address the broader ORD support community, particularly in organized networks such as the SRDSN. We propose that swissuniversities and the DelOS take a lead in promoting these activities with the respective addressees.

General Recommendations to Stakeholders in the Swiss Higher Education System

1. The development of ORD policy and support initiated under the national ORD Strategy should be continued. Swissuniversities should maintain its role in coordination and funding. This is crucial to ensure that progress in Switzerland remains aligned both nationally and internationally, and that integration with international infrastructures and data quality standards continue.
2. We recommend that national initiatives and stakeholders coordinate future developments, especially if new policies are introduced or existing ones revised. Community-wide soundings and consultations may be an appropriate way to achieve a consolidated, broadly supported evolution of the Swiss ORD community.

Recommendations to swissuniversities and the Delegation Open Science

We recommend that swissuniversities and specifically the DelOS further clarify and strengthen their commitment to ORD best practices. While the current Strategy and Action Plan underscore the importance of ORD and outline high-level principles, they remain largely focused on establishing a nationwide governance framework. The high-level principles in the strategy should be specified to inform a national policy with a clear commitment to ORD principles, taking into account the FAIR and CARE principles (and other relevant principles and guidelines) which provide useful frameworks to guide responsible ORD practices, respecting legal and ethical constraints.
This policy should be complemented by guidance that clarifies expectations regarding ORD practices on multiple levels in the Swiss HE sector.

- First, it would be beneficial if DelOS would encourage stronger commitment to ORD among other key actors in Swiss HE policy, including SERI, the Swiss Academies, the SNSF, and swissuniversities. Since SERI sets the broader strategic framework for the Swiss HE sector, integrating ORD best practices into its priorities would enhance legitimacy and coherence across the sector. Although the Swiss Academies, the SNSF and swissuniversities already show engagement with ORD, DelOS should encourage and support them to deepen their involvement, ensuring that momentum is not lost and earlier achievements are not diluted.

- Second, we recommend that DelOS should include in its guidance specific recommendations regarding ORD implementation at the individual HEIs to better support them in developing and clarifying their respective ORD commitments.

We further recommend that the DelOS strengthens the role of the ORD support community – especially as represented in networks such as SRDSN – in the shaping of the future national ORD landscape. Their practical experience and expertise are crucial for developing guidance that reflects institutional realities and aligns with international best practices. Involving this community will also be a valuable addition to the contributions of other stakeholders (like infrastructure providers, funders, and researchers) who are already represented in the national ORD governance.

These activities should be informed by and based on a continued monitoring of ORD implementation and best practices in Switzerland and internationally. The present report represents only an initial exploration of these issues. Ongoing monitoring will allow DelOS to examine emerging challenges in greater depth and align future activities accordingly.[73]

Suggestions for Implementation

1. Development of a national ORD policy and accompanying guidance on the basis of the existing ORD strategy as detailed above, including clear expectations and implementation regulations for various stakeholders (SERI, Academies, SNSF; swissuniversities, HEIs; researchers).
2. In the policy development process, all stakeholders in the national HE landscape should be engaged in a structured consultation process to collect their input. Sufficient time (1-2 years) should be allowed for this process to ensure broad sounding and support.
3. A national mechanism should be established to monitor the development and implementation of ORD best practices at Swiss HEIs, with the aim to inform the national ORD policy and its future revisions. To achieve this, the survey conducted for this report can be refined and repeated regularly (e.g. every two years), informing updated landscape analyses of ORD best practice development and implementation at Swiss HEIs. This should be complemented by regular updates of the international landscape analysis. In continuation of the present report, this could be delegated to a node of the SRDSN that focuses on best practices of ORD implementation, as proposed below.
4. DelOS should ensure that HEIs are supported in the implementation of the national ORD policy. The most important measures include:
    a. DelOS should promote the establishment of full-time ORD support positions at HEIs.

[73] Such a landscape analysis would not overlap with the action line B3.1 of the national ORD Action Plan, entitled “regular monitoring of the national and international ORD landscape”. Measure B3, to which action line B3.1 belongs, relates to infrastructures and services of national importance, and it specifically aims at providing long-term funding for such infrastructures and services (swissuniversities, 2021b, pp. 22–23). By contrast, the ongoing analysis of the national and international ORD support landscapes proposed here ultimately aims at ORD implementation at Swiss HEIs and at further professionalising ORD support. These activities usually are funded by the individual HEIs, are delivered locally, and are not considered as being of “national importance”.

b. DelOS should issue recommendations regarding the inclusion of ORD indicators in research evaluation as well as in hiring and promotion procedures.
c. DelOS should facilitate peer exchange (e.g. collaborative projects) between leading and less advanced institutions.

5. With regard to the ORD support community as represented in the SRDSN, DelOS should
   a. leverage the expertise of this community in the policy process suggested above;
   b. promote the inclusion of the SRDSN into the national ORD governance, e.g. as part of the Sounding Board service providers, in order to anchor this community in the national ORD governance;
   c. advocate to ensure the long-term sustainability of the SRDSN through the establishment of a permanently funded position charged with the organisation and coordination of the network.

Recommendations to Higher Education Institutions

At the institutional level, HEIs should define clear and binding expectations regarding ORD practices. This includes formalizing institutional ORD strategies and policies. As with national-level recommendations, we advocate a nuanced and context-sensitive approach to data sharing, guided by the FAIR and CARE principles. Not all data can or should be shared, but institutional strategies must address how openness is interpreted and applied within different disciplines. In addition, ORD considerations should be integrated into research evaluation, promotion criteria, and internal funding decisions. These measures must be accompanied by sufficient and permanently funded resources to ensure sustainable implementation.

Raising awareness of the importance of ORD practices should include researchers as well as administrative staff. With regard to the latter, institutions should invest in building both content-related and organizational capacity around ORD, through internal training, clear communication of strategic priorities, and mandates for non-specialists to participate meaningfully in ORD-related activities, where appropriate. Internal coordination should be fostered through regular exchange between all ORD-relevant actors (including non-ORD experts such as IT, legal services, ethics offices, and grants offices). Sustainable funding mechanisms must be established to ensure long-term support for ORD-related roles and services. Without continuity and institutional backing, ORD efforts risk remaining fragmented and unsustainable.

Suggestions for Implementation

1. Based on the national strategy (cf. above), develop institutional ORD strategies or policies, or align existing ones with the national strategy. Complement policies with clear guidance detailing implementation regulations, and where appropriate, accepted solutions for compliance (e.g., institutional storage for sensitive data, recommended repositories for data sharing).

2. Ensure clear communication of institutional ORD policy, corresponding strategic priorities, and expectations to researchers. A resolute approach to the following two recommendations will be helpful to achieve this.
3. Based on institutional strategies, integrate ORD practices into researcher training, research evaluation, promotion criteria, and internal funding decisions, according to the recommendations of the recORD project.
4. Track internal ORD progress through self-assessment tools, periodic reporting, or similar measures, as a basis for development and adjustment of ORD policy and implementation regulations.
5. Ensure clear communication of strategic priorities regarding ORD within institutional administration and foster internal coordination through regular exchange between all ORD-relevant actors (including non-ORD experts such as IT, legal services, grants offices). Where appropriate, ORD coordination units or committees, or ORD officers can be assigned to facilitate this. These tasks can also be assigned to already existing staff, e.g. at vice rectorates or ORD support units. However, it is crucial that these units or individuals have clear mandates and strong backing by institutional leadership.
6. Ensure sustainable funding for ORD support, both regarding infrastructures and staff. With regard to staff, the establishment of full-time positions is recommended, either by increasing existing positions or by creating new ones.
7. Where appropriate, enable non-ORD experts as defined above to deliver ORD support collaboratively with ORD experts. This includes providing clear mandates for non-ORD experts, as well as allocating necessary resources and internal training.

Recommendations to the ORD Support Community

The ORD support community — especially in networks like the SRDSN — should take an active role in collecting and sharing experiences and best practices. The analysis presented in this report highlights how beneficial such exchange can be. This is true for smaller institutions that may sometimes rely on adapting models developed by others, but also for larger institutions who can benefit from sharing best practices on tackling some of the challenges presented by their size and structure. Developing a shared knowledge base will be instrumental in capturing this collective expertise, allowing practices to be reused and transferred across institutional contexts where appropriate. Ongoing, structured exchange within the ORD support community will foster mutual learning and improve consistency across the HE landscape.

We also recommend further networking and collaboration with adjacent stakeholders in the Swiss HEI sector, such as IT and legal professionals. In addition, links should be established and strengthened to relevant international initiatives such as the Research Data Alliance (RDA) or EOSC. Swiss national efforts to connect to the EOSC should be taken into account, as should developments in the field of ORD expertise at European level.[74] Such links will

[74] At the time of writing, an exemple is provided by the Horizon Europe call HORIZON-INFRA-2025-01-EOSC-04, which focuses on “Data stewards, skills and training for Open Science and FAIR practices” (archived at https://web.archive.org/web/20250527093422/https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-infra-2025-01-eosc-04 [27 May 2025]).

create further opportunities for international involvement and networking, ultimately increasing the community's ability to contribute to the development of ORD best practices.
Finally, we recommend that the ORD support community should contribute their accumulated knowledge to the above-mentioned processes to develop national and institutional recommendations, especially in areas related to policy development and governance.

Suggestions for Implementation

1. Establish a node within the SRDSN that is tasked with initiating and/or carrying out the following activities:
2. Create and maintain a shared knowledge platform (where community members can contribute, access guidance materials and templates, etc.).
3. Facilitate structured exchange of best practices, e.g., through regular meetings, webinars, or nodes (thematic working groups).
4. Develop and/or share reusable resources (e.g. training modules, policy templates and toolkits), that institutions can adapt to their specific contexts.
5. Engage with national networks and initiatives (e.g. NICT[75], EnhanceR[76], DPOs[77]) to strengthen ties with communities of experts adjacent to ORD support and implementation. Promote and facilitate collaboration across roles and disciplines (including IT, legal, ethics experts) in community activities.
6. Engage with international networks and initiatives relevant to ORD support and implementation (e.g. RDA, EOSC) to align with emerging international standards and bring insights into the Swiss context
7. Contribute to strategic policy processes on the national level, as outlined above in the recommendations to swissuniversities/DeIOS.

[75] https://www.swissuniversities.ch/en/organisation/bodies/networks-and-agencies/network-ict-services-for-swiss-higher-education (27 May 2025)
[76] https://www.enhancer.ch/ (27 May 2025)
[77] Where available, partner networks should be identified, such as the DPO network mandated with ORD Action Line D2.3, cf. information available at https://www.swissuniversities.ch/en/topics/open-science/open-science-programme/ord-projects (27 May 2025).

Abbreviations

This list explains abbreviations used more than once in this report. The other abbreviations are defined where they are used. For Swiss HEIs, we used the abbreviations on swissuniversities' website.[78]

CARE	Collective Benefit, Authority to Control, Responsibility, Ethics
DelOS	Delegation Open Science
DMP	Data Management Plan
DaSCH	Data and Service Center for the Humanities
DPO	Data Protection Officer
EOSC	European Open Science Cloud
EU	European Union
ETH	Swiss Federal Institute of Technology
FAIR	Findable, Accessible, Interoperable, Reusable
FTE	Full time equivalent
HE	Higher Education
HEI	Higher Education Institution
NFDI	Nationale Forschungsdateninfrastruktur
NICT	Network ICT Services for Swiss Higher Education
ORD	Open Research Data
OS	Open Science
RDA	Research Data Alliance
RDM	Research Data Management
SERI	State Secretariat for Education, Research and Innovation
SIB	Swiss Insitute of Bioinformatics
SNSF	Swiss National Science Foundation
SRDSN	Swiss Research Data Support Network
StraCo	Strategy Council
SwissRN	Swiss Reproducibility Network
UAS	University/Universities of Arts and Applied Sciences
UK	United Kingdom
UTE	University/Universities of Teacher Education

[78] https://www.swissuniversities.ch/en/organisation/members, 26 June 2025.

Annexes

Annex 1: ORD Support at Swiss HEIs

Swiss Academies of Arts and Sciences (A+)

A+ Organization	ORD Activities
Schweizerische Akademie der Naturwissenschaften (SCNAT)	SCNAT welcomes efforts to make scientific data publicly accessible and supports initiatives to promote open and transparent science. Open data is one of the engagements, with a dedicated page displaying information on workshops (from 2018), recent news and surveys. (Source).
Schweizerische Akademie der Geistes- und Sozialwissenschaften (SAGW)	Open science is one of the topics under the research culture theme. The SAGW is committed to open and free access to scientific publications and data in the humanities and social sciences. The commitment extends to ensuring that research infrastructures funded by the network make their data FAIR and open. (Source).
Schweizerische Akademie der Medizinischen Wissenschaften (SAMW)	Builds bridges between medical sciences and society. One of the projects related to Open Science is the Cochrane library. (Source).
Schweizerische Akademie der Technischen Wissenschaften (SATW)	Network of experts to enhance engineering sciences in Switzerland. A goal is to help ensuring that scientific findings result in technologies and innovations that benefit economy and society. An example of ORD activity is a webinar on secure data exchange. (Source).
Swiss Young Academy (SYA)	The young voice of the Swiss Academies. It promotes inter and transdisciplinary exchange and innovation. It does not have an explicit section on Open Science but some of its projects deal with best practices. (e.g., Source).
Stiftung Science et Cité	Promotes public engagement with science through events and workshops. Some of the content is related to Open Science (e.g., workshops on Wikipedia)
Stiftung für Technologiefolgen-Abschätzung (TA-SWISS)	It examines opportunities and risks of new technologies. Transparency and open data are important aspects in many of the topics covered: biotechnology and medicine, digitalisation and society, energy and environment. (e.g., project on health data)

Organization	ORD activities
École Polytechnique Fédérale de Lausanne (EPFL)	Structured collection of online resources on FAIR research data management aimed at researchers, maintained by the EPFL Library. It includes six schematic "Fast Guides". The Library offers a detailed web page on active data management, organizes courses, and promotes the EPFL "Data Champions" data stewardship community. Data storage and dissemination rely on a collection of proprietary and public tools. (Source).
Eidgenössische Technische Hochschule Zürich (ETHZ)	The ETH Library provides concise information on their website and an extensive Wiki. The Library offers training, consulting, and coordinates the ETH Data Stewardship Network. ETH also maintains the Research Collection, the institutional repository for publications and research data. The Scientific IT Services offer openBIS and the associated openRDM.swiss, which combine data management platforms with electronic lab notebooks. (Source).
Universität Basel (UniBas)	UniBas hosts a Research Data Management Network since 2017, coordinating FAIR data management activities among various stakeholders. The university's website details policies and best practices, supplemented by a Zenodo community for materials on research data management. Since 2021, UniBas has run a data stewardship program. (Source).
Universität Bern (UniBE)	UNIBE Library offers general information on FAIR research data management online and various research data workshops. The Library also maintains a group of data stewards and hosts the BORIS Portal, a FAIR-oriented data repository and project information system. The RDM support services are also networked with the Data Science Lab, a unit that provides support in data science, machine learning, artificial intelligence and research IT related matters (Source).
Université de Fribourg (Unifr)	Research Promotion Service (SPR) coordinates Research Data Management. Training activities and individual DMP support are offered. Unifr is a founding member of the OLOS data management portal, aiding researchers in data deposit with Library staff assistance. (Source).
Université de Genève (UNIGE)	UNIGE's research data management resources are accessible via a dedicated website, integrating information from various sources. The Library and graduate schools offer training, although no formal data stewardship network is currently set. The DataFORUM platform is available for exchange on research data management. UNIGE participates in Yareta, a data storage and publishing platform adhering to FAIR principles. (Source).
Université de Lausanne (UNIL)	UNIL's Open Science web page provides essential information on FAIR research data management and outlines an Open Science Team involving the Research Support unit and the UNIL Information and Archives Service. A data stewardship network was established in 2020. (Source).
Universität Luzern (Unilu)	Unilu collaborates with the Central and University Library of Lucerne (ZHB Luzern) for research data management support. ZHB offers consultancy and support through two specialists, and facilitates data dissemination via the Zenodo-based Lucerne Open Repository (LORY). (Source).
Université de	Established in 2023, UniNE's research data management infrastructure

Neuchâtel (UniNE)	includes a Library-maintained web page and a full-time data steward. Data storage and dissemination are encouraged via the SWISSUbase platform. (Source).
Universität St. Gallen (UniSG)	UniSG's research data management is supported by the university Library. Online resources describing FAIR data principles are available. The support framework relies on individual contacts between researchers and librarians. FAIR data storage and dissemination recommendations include the OLOS platform. (Source).
Università della Svizzera italiana (USI)	USI's Research and Transfer Service supports researchers with information on FAIR data management. The Library has a dedicated Research Data Manager. Recommendations for data repositories are provided. (Source).
Universität Zürich (UZH)	UZH's Open Science Committee, established in 2019, oversees research data management activities. All activities are summarized on a dedicated website, with information on research data management. The University Library offers online resources and workshops. Technical support is provided by UZH Science IT. Data dissemination support and a data stewardship network are managed by the Library. (Source).

Swiss Universities of Applied Sciences

Organization	ORD activities
Scuola universitaria professionale della Svizzera italiana (SUPSI)	SUPSI has defined Open Science Guidelines in line with the B5.2 action plan on data stewardship and has established a data stewardship committee. During 2023-2024 the committee will define and implement an activity plan with 4 goals: understand, apply, incorporate and promote ORD in the scientific community. The guidelines include how to prepare DMP and how to make FAIR data. (cf. overview, detailed information).
Haute École spécialisée de Suisse occidentale (HES-SO)	The page on open research data at HES-SO offers guidelines for creating a DMP, protecting data (ethical and legal issues), archiving and sharing. The section ORD support and tools offer additional templates, recordings from ORD related webinars and links to other resources. There is a data stewardship group with 5 field-specific data stewards, a data project manager and an open science project manager. (Source).
Berner Fachhochschule (BFH)	RDM support activities at Bern University of Applied Sciences are coordinated at the vice-rectorate for research, including, since 2022, a network of data stewards. Data stewardship is an additional role that is performed by active researchers at the various sub-schools of BFH. BFH provides its researchers access to OLOS. (source)
Hochschule Luzern (HSLU)	The research data management webpage has guidelines for DMP preparation and links to other resources like the Renku platform (developed by SDSC). data stewardship takes the form of a specialist librarian responsible for RDM service development and coordination between central services (IT, Grants Office, legal and data protection services) while also serving as a central point of contact for researchers for RDM support. (Source).
Zürcher Hochschule für	The university library of the ZHAW offers advice, training and direct support on RDM. The services include reviews of DMPs, help with REDcap, Git version control, data reviews, programming, legal aspects,

Angewandte Wissenschaften (ZHAW)	checklist for archiving and templates. (Source).
Fachhochschule Nordwestschweiz (FHNW)	The 'researching and publishing' page of the FHNW library offers general information on ORD as well as external links to resources related to RDM, DMPs, and FAIR data (Source).
University of Applied Sciences of the Grisons (FHGR)	They have an open access page with guidelines and links to resources. They have several blog posts about FAIR principles (e.g here).
Kalaidos University of Applied Sciences Switzerland (Kalaidos)	They have a research portal, which is currently being updated on an ongoing basis. It currently only shows some of the publications and projects. The research database supports and makes available open access publications where possible.
Eastern Switzerland University of Applied Sciences (OST)	They have a dedicated page with tips and tools for making publications open access.

Swiss Universities of Teacher Education

Organization	Activities
Bern University of Teacher Education (PHBern)	PHBern supports the Swiss ORD strategy and encourages FAIR data practices (links).Their center for research support is the first point of access for ORD support.
Schwyz University of Teacher Education (PHSZ)	Research and Development at PHSZ aligns with national Open Access and ORD strategies.
St.Gallen University of Teacher Education (PHSG)	Open Science at PHSG promotes open research practices and supports ORD implementation, including data stewardship.
Teacher Training University Schaffhausen (PHSH)	The Open Access Policy of research at PHSH, formulates corresponding measures in line with the Open Access Strategy of swissuniversities and the Open Access Guidelines of the SNSF.
Thurgau University of Teacher Education (PHTG)	PHTG Has an institutional ORD policy promoting data accessibility and transparency.(Source).
University of Applied Sciences in Special Needs Education (HfH)	Open Science at HfH outlines an internal ORD strategy and participates in national ORD initiatives. (Source).

Bern University of Teacher Education NMS (NMS Bern)	PHBern hosts REPO PHBern, an institutional repository that includes various types of scientific materials, such as working drafts, submitted versions, accepted versions, published versions, and research data. Items are tagged with their peer-review and publication status. (Source).
Swiss Federal University for Vocational Education and Training (SFUVET)	SFUVET provides resources and advice on ORD. (Source).
University of Teacher Education Berne, Jura, Neuchâtel (HEP-BEJUNE)	HEP-BEJUNE hosts an institutional repository, ROAR, for open access publications and transparent data handling in support of Open Research Data and Open Access (Source).
University of Teacher Education Fribourg (HEP Fribourg)	HEP Fribourg collaborates with the University of Fribourg in maintaining FOLIA, an institutional repository that provides free access to the publications of researchers from both institutions. (Source).
University of Teacher Education in the Canton of Valais (HEP-VS)	EP VS maintains a dedicated page on open science and utilizes the FREDI platform to openly disseminate scientific outputs. (Source).
University of Teacher Education Lucerne (PH Luzern)	PH Luzern is advancing its data stewardship by developing guidelines for data management plans and implementing FAIR principles to promote open science. The project aims to embed sustainable research data management practices aligned with Swiss national ORD strategy by the end of 2024. (Source).
University of Teacher Education of Grisons (PHGR)	Although some of the courses, such as the CAS on Education and Digitalisation, may touch upon related topics tangentially, there is no explicit information found on Open Research Data activities. (Source).
University of Teacher Education Zug (PH Zug)	PH Zug provides comprehensive Open Research Data support through policies, dedicated teams, and resources for data management plans, licensing, and data publication, fostering a strong open science culture within the institution. (Source).
University of Teacher Education, State of Vaud (HEP Vaud)	The institution encourages researchers to share data when possible, aligning with the Swiss National Science Foundation's FAIR principles. Additionally, HEP Vaud operates ORFEE, an institutional repository for open access educational publications. (Source).
Zurich University of Teacher Education (PHZH)	PHZH is implementing Open Research Data practices as part of a national strategy, focusing on developing a data policy, establishing a central support unit, and enhancing data literacy among its community. The initiative aims to align with Swiss ORD standards and promote transparency in research data management. (Source).

Swiss Federal Research Institutes (ETH Domain)

Organization	ORD activities
Eidg. Forschungsanstalt für Wald, Schnee und Landschaft (WSL)	WSL's data repository, EnviDat, was developed and is maintained by a number of WSL researchers involved in the Geo-Information Science research group. The WSL also offers a course for its staff on data science, research reproducibility, and research data management.
Paul Scherrer Institut (PSI)	PSI is the Federal institute for natural and engineering sciences. The Science IT Infrastructure and Services department of the PSI comprises a Data Curation Group, which is responsible for FAIR research data management support. The foundation of this support model is the SciCat data repository, developed in collaboration with a number of other European research institutions. Participates in the PREMISE consortium together with EMPA and ETH Zurich
Swiss Federal Institute of Aquatic Science and Technology (Eawag)	The Research Data Management Project (2015-2018), a collaboration between IT services and departmental data managers resulted in the ERIC open data repository. Eawag is committed to storing all of its open research data on ERIC/open, including data published on other platforms prior to the setup of the institutional repository.
Swiss Federal Laboratories for Materials Science and Technology (Empa)	Scientific IT and Research Data Management teams offer online advice as well as consultancy services on FAIR data management. The institute is actively developing further open research data practices. Participates in the PREMISE consortium together with PSI and ETH Zurich aimed at integrating different research data management platforms to create a single platform for experimental and simulation data. Empa does not maintain a research data repository, but advises its researchers to use the best-suited discipline-specific existing repositories.

Swiss Research Infrastructures

With the exception of FORS, SDSC, LaRS and DASCH, all other infrastructures were listed on the official website the SERI (*source*), and are funded under Art. 15.

Organization	ORD activities
Swiss Centre of Expertise in the Social Sciences (FORS)	Large-scale national and international surveys, data and research information services to researchers and academic institutions, and conducts methodological and thematic research. (Source).
Swiss Data Science Center (SDSC)	Accelerates the use of data science techniques and FAIR data management in the Swiss scientific community. Of special interest for ORD are the domain digital administration, Renku platform for reproducibility and Data Custodian to facilitate digital data. (Source).

Language Repository of Switzerland (LaRS)	Since 2022, LaRS is a national platform for publishing linguistic data. Initiative of the UZH. It is the language focused extension of SWISSUbase: a national provider of a free and FAIR-compliant platform for archiving, publishing and sharing data (with focus on social sc. and language data). (Source).
Swiss National Data and Service Center for the Humanities Development (DASCH)	Provide expertise on data management and long-term data preservation. (Source).
The Swiss 3R Competence Centre (3RCC)	Develops ORD standards for 3R principles (Replace, Reduce, Refine) in animal research. (Source).
Archiv für Agrargeschichte (AfA)	Digitization and open access to historical agricultural archives. (Source).
Fondation Eurotube (EuroTube)	Open data sharing on hyperloop technology and infrastructure research. (Source).
Fondation Gosteli (Gosteli)	Online archival repository for Swiss women's history. (Source).
Istituto Ricerche Solari Locarno (IRSOL)	Open solar physics data and real-time observational data sharing. (Source).
Schweizerische Arbeitsgemeinschaft für Klinische Krebsforschung (SAKK) & Schweizerische Pädiatrische Onkologie Gruppe (SPOG)	Open-access clinical trial data for oncology research. https://www.sakk.ch, https://www.spog.ch
Swiss Centre for Applied Human Toxicology (SCAHT)	Open databases for toxicological research and regulatory science. (Source).
Swiss Clinical Trial Organisation (SCTO)	Research on research FAIR clinical trial data initiatives. (Source).
Swiss Institute of Bioinformatics (SIB)	Open-access bioinformatics databases and computational tools. (Source).
Schweizerisches Institut für Kunstwissenschaft (SIK-ISEA)	Open digital collections and databases on Swiss art research. (Source).
Swiss GO Trial Group (Swiss GO)	Open-access gynecologic oncology clinical trial data. (Source).
Swiss Polar Institute (SPI)	Open data from polar and climate research expeditions and links to guidelines for publishing polar data. (Source).
Schweizerisches Sozialarchiv (SSA)	Open-access digital archives on Swiss social history. (Source). No explicit mention to ORD was found.
Service scientifique auxiliaire en géoscience (SSAG)	Hosted by JURASSICA, a natural history museum, a botanical garden and field discovery satellites. (Source). No explicit mention to ORD was found.

Vitrocentre Romont (VCR)	Open-access catalogues on glass and stained-glass heritage conservation.(Source). No explicit mention to ORD was found.
Versuchsstollen Hagerbach (VSH)	Together with other partners contributes to building a Digital Test Gallery and other digital resources. (Sources). No explicit mention to ORD was found.

Annex 2: International initiatives supporting ORD

There are a number of organisations, initiatives and platforms that provide guidelines, training, infrastructure and networks for research data. Their target audiences include data stewards, data managers, institutional policy makers, data scientists and/or researchers. Below we list those entities and activities that have an international reach, a focus on the general domain, and that we consider most relevant to the topic of best ORD practices:

- EU Collaborative data infrastructure (EUDAT CDI). European infrastructure of integrated data services and resources supporting research
- Datacite community: supports creation and management of DOIs and metadata records.
- The European Open Science Cloud (EOSC) Task Force: Data Stewardship, Curricula and Career Paths.
- forschungsdaten.info RDM information portal for the region of Austria, Germany and Switzerland.
- Ligue des Bibliothèques Européennes de Recherche (LIBER) RDM working group
- Open Access Infrastructure for Research in Europe (OpenAIRE): Guidelines, Train-the-Trainer bootcamp.
- Research Data Alliance (RDA) Interest Group: Professionalising Data Stewardship
- Registry of research data repositories (Re3data).
- The Turing Way community and their handbook to reproducible, ethical and collaborative data science.
- UNESCO Global open science partnership: Open science toolkit
- Center For Open science (COS). US organization to start, scale and sustain ORD practices.

Besides these international entities, there are a number of national or regional entities with similar goals and scope. These are some examples:

- Digital Curation Center, center of expertise in digital information curation, United Kingdom.
- National Research Infrastructure (NFDI), Germany. The NFDI consortia cover different disciplines. The NFDI will also be linked to European Open Science Cloud (EOSC) and participate in its development.
- Germany, RDM Working Group of TU9 (alliance of German Universities of Technology). : Data Stewardship goes Germany

- Continuing education program - Data Steward, Universität Wien, Austria. The program links the latest findings on RDM, open science and ORD with the tasks of data stewards.
- National Coordination Point Research Data Management (LCRDM.nl), the Netherlands. Part of the Research Data Alliance (RDA). National network of experts in RDM.
- Australian Research Data Commons, Australia. Digital research infrastructure for researchers.
- Flemish Research Data Network: enables Flemish researchers to exchange and reuse (FAIR) research (meta)data.

Annex 3: Survey Questions

Background information

1. Institution: *

If you choose 'Other (please specify):' please also specify your choice in the accompanying text field.

Please choose only one of the following:

- Ecole polytechnique fédérale de Lausanne EPFL
- Eidgenössische Technische Hochschule Zürich ETH
- Universität Basel
- Universität Bern UniBE
- Université de Fribourg Unifr
- Université de Genève UNIGE
- Université de Lausanne UNIL
- Universität Luzern Unilu
- Université de Neuchâtel UniNE
- Universität St. Gallen HSG
- Università della Svizzera italiana USI
- Universität Zürich UZH
- Berner Fachhochschule BFH
- FHGR Fachhochschule Graubünden
- Fachhochschule Nordwestschweiz FHNW
- HES-SO
- Hochschule Luzern HSLU
- Kalaidos Fachhochschule
- Ostschweizer Fachhochschule OST
- SUPSI
- ZHdK Zürcher Hochschule der Künste
- ZHAW
- Haute école pédagogique des cantons de Berne, du Jura et de Neuchâtel HEP-BEJUNE
- Haute école pédagogique du canton de Vaud HEP Vaud
- Haute école pédagogique du Valais | Pädagogische Hochschule Wallis HEP-VS | PH-VS
- Haute éc
- Haute école pédagogique Fribourg | Pädagogische Hochschule Freiburg HEP | PH FR

- Hochschulinstitut IVP NMS
- Interkantonale Hochschule für Heilpädagogik Zürich HfH
- Pädagogische Hochschule GraubündenPHGR
- Pädagogische Hochschule Bern PHBern
- Pädagogische Hochschule Luzern PH Luzern
- Pädagogische Hochschule Nordwestschweiz PH FHNW
- Pädagogische Hochschule St. Gallen PHSG
- Pädagogische Hochschule Schaffhausen PHSH
- Pädagogische Hochschule Schwyz PHSZ
- Pädagogische Hochschule Thurgau PHTG
- Pädagogische Hochschule Zürich PH Zürich
- Pädagogische Hochschule Zug PH Zug
- Schweizer Hochschule für Logopädie Rorschach SHLR
- SUPSI - Dipartimento formazione e apprendimento SUPSI-DFA
- Swiss Federal University for Vocational Education and Training SFUVET
- Other

2. Job title / current function *

If you choose 'Other (please specify):' please also specify your choice in the accompanying text field.

Please choose only one of the following:

- Data Steward
- Data Scientist
- Data Manager
- Data Curator
- Data Archivist
- Data Librarian
- Data Champion
- Data Stewardship Coordinator
- IT specialist/expert
- Database manager
- Infrastructure collaborator
- Infrastructure provider
- Scientific Collaborator
- Librarian
- Archivist
- Other

3. What field of study or area of education have you specialized in? *

Please choose all that apply:

- Theology, religious sciences
- Law, economic sciences
- Medicine, health, sport

- Social sciences
- Languages and literature, communication, information
- Historical and civilization sciences
- Art, music, design
- Digital Humanities
- Mathematics, computer sciences
- Natural and environmental sciences
- Technical sciences
- Teaching, pedagogical profession
- Other:

4. What is your highest level of education? *

Please choose all that apply:

- Secondary schooling (e.g. baccalaureate schools, upper-secondary specialised schools)
- Basic vocational education and training
- Bachelor's degree (University, Federal Institute of Technology, Universities of Teacher Education, Universities of Applied sciences)
- Master's degree (University, Federal Institute of Technology, Universities of Teacher Education, Universities of Applied sciences)
- PhD/doctorate (University, Federal Institute of Technology)
- Advanced Federal Diploma of Higher Education or Federal Diploma of Higher Education (Federal Examinations)
- Advanced Federal Diploma of Higher Education (Colleges of Higher Education)
- Other:

Implementation of ORD at your HEI

5. How would you rate the level of ORD implementation at your institution? *

Please choose only one of the following:

- Fully implemented
- Mostly implemented
- Partially implemented
- Not yet implemented

Make a comment on your choice here:

6. What are the primary factors that have contributed to this level of implementation?
(several answers are possible) *

Please choose all that apply:

- Institutional support
- Availability of funding
- Dedicated staff
- Infrastructure
- Researcher commitment
- Required y financial backers (as the SNF)
- Other:

7. What are the top 1 or 2 challenges your institution faces in implementing RDM and ORD best practices?
Please focus on the most significant challenges. *

Please write your answer here:

Structure of ORD Stewardship at your HEI

8. What type of ORD model does your institution have? *

Please choose only one of the following:

- Centralized (central stewards)
- Decentralized (dept. faculty stewards)
- Hybrid
- ..Don't know
- Other

9. Does your institution have an established ORD community? *

Please choose only one of the following:

- Yes
- No
- Don't know

10. How many FTEs does your institution dedicate to ORD?
Please levae empty if not known.

Support for ORD at your HEI

11. Please evaluate the time that ORD dedicated staff devote to different types of support at your institution. For each category, select how much time ORD staff spend on that type of support. *

Please choose the appropriate response for each item:

	Most Time	Significant Time	Moderate Time	Low Time	Modest Time	Least Time
Researcher support (e.g., training, consultations)						
Institutional support (e.g., policy development, compliance)						
IT support (e.g., data storage, technical infrastructure)						
Legal and ethical guidance (e.g., data privacy, ethics compliance)						
Security (e.g., data protection protocols)						

12. Based on your experience, can you rank the types of support ORD professionals provide in order of relevance for ORD implementation at your institution?

Double-click or drag-and-drop items in the left list to move them to the right - your highest ranking item should be on the top right, moving through to your lowest ranking item. *

Please select at most 5 answers

Please number each box in order of preference from 1 to 5

- Researcher support (e.g., training, consultations)
- Institutional support (e.g., policy development, compliance)
- IT support (e.g., data storage, technical infrastructure)
- Legal and ethical guidance (e.g., data privacy, ethics compliance)
- Security (e.g., data protection protocols)

Actions for ORD at your HEI

13. What engagement actions have been most effective at your institution in promoting ORD practices? For each implemented action, please provide a short description or provide a link, and indicate the target audience (desc or link + audience). *

Please choose all that apply and provide a comment:

- Seminars
- Training courses
- Events
- Newsletters
- Social Media
- Other:

14. What additional resources or improvements do you believe are necessary to enhance ORD support at your institution? *

Please choose all that apply:

- Increased funding
- Increased dedicated time
- Additional training for staff
- Additional IT support
- More collaboration across departments
- Enhanced communication strategies
- Other:

Annex 4: Focus Group Questions

The following was used as a guideline for the moderators of the focus group discussions. The question lists were not always strictly followed. While thematic areas 1 and 2 were addressed, individual points were explored in more or less depth depending on the situation. Area 3 wasn't addressed in detail.

We wanted to dig a bit deeper into measures that support implementation of ORD expertise at Higher Education Institutions.

1) The survey results indicate that training courses and events are considered as the most effective measures to enhance ORD implementation at an institution.

- In your view, what defines a successful or effective training session? What key factors should be in place for it to have a real impact?

- Which training sessions have been successful at your institution? What made them stand out?
- How often have effective training sessions in this sense actually taken place? Are they recurring events or one-time efforts?
- What advertising measures were used to reach the target audience? What are particularly effective measures, what worked less well?
- Who typically attended those training sessions? Did you reach your intended target audience, or did you also reach people outside of it?
- At your institution, what challenges or limiting factors have you encountered that hinder successful training measures?
- Why do you think the survey shows that we still lack awareness/interest in the community despite the (effective) training courses?

2) Among the “additional resources necessary to enhance ORD support”, more collaboration across departments was one of the most frequently named items for federal and cantonal universities, whereas for Universities of Applied Sciences (UAS) and Universities of Teacher Education (UTE), it was below the average.[79]

- What would increased collaboration across departments look like for enhancing ORD expertise and best practices at your institution? How would it work in practice, and what benefits could it bring to ORD best practices?
- How could more external collaboration, particularly with other HEIs, improve ORD expertise and best practices at your institution? What would that look like?
- What are positive examples for collaboration - either across departments or externally - that have worked well at your institution? What did you do, and why do you think it was successful?
- On the flip side, what are some examples where collaboration didn't work as expected? What were the challenges, and what could have been done differently?

3) [Fallback question if there is time left:] Regarding incorporation of ORD in teaching (as part of Bachelor, Masters, or PhD curriculums, with ECTS).

- Are there examples of integration of ORD best practices / expertise in teaching at your institution? Can you describe them?
- Which arrangements had to be made? Who had to be won over? Who/what was a contributing or limiting factor?
- In terms of teaching, what worked, what didn’t? Successful / unsuccessful approaches? Which resources were useful, which weren’t?

[79] This statement is based on an error in the initial exploration of the survey data that misrepresented the values of the UAS. In the focus groups, however, this information was used solely to prompt the participants to share their own views and experiences with collaboration in their professional contexts. Therefore, we believe that the error reflected in this statement does not diminish the pertinence of the data that was collected during the focus groups.

Annex 5: Questions for International Experts

The following was used as a guideline for the interviewers. The question lists were not always strictly followed. While all thematic areas were addressed, individual points were explored in more or less depth depending on the situation.

1) In our previous research (a survey and focus group discussions), we have gathered some insights about how good practices in RDM are being implemented in Higher Education Institutions in Switzerland. By "good practices" we mean generally ORD practices that are accepted as proven solutions for ORD issues, and more specifically principles like FAIR and ORD, as well as corresponding support and guidelines for researchers.

- Referring to your institution, what would you regard as "good practices" in this sense?
- Lessons learned: Which measures have been effective in implementing these practices? For example, have training events or other support offerings been particularly helpful, or the adoption of a RDM policy? Or are there other measures that have contributed?
- Are there guidelines on ORD initiatives / how to promote ORD good practices in your community?
- Political incentives for ORD best practices - on national level, level of funders (EU) - policies on institutional levels: Do you think they help implementation / adoption of good practices? If yes, how? If no, why not?

2) Among other measures necessary to enhance ORD support, more collaboration across departments was one of the most frequently named items for most of the larger institutions, whereas for most of the smaller ones, it was below the average.[80]

- Based on your experience, would you agree that collaboration across departments is an important measure for the implementation of ORD support and best practices?
- What are positive examples for collaboration - either across departments or externally? What measures were taken, and why do you think they were successful?
- Do you think that collaboration – either internally or externally – could be increased even more? How would it work in practice, and what benefits could it bring to ORD best practices?
- On the flip side, what are some examples where collaboration didn't work as expected? What were the challenges, and what could have been done differently?

[80] As in the focus group guideline, this statement is based on an error in the initial exploration of the survey data that misrepresented the values of the UAS. In the interviews, however, this information was used solely to prompt the interviewees to share their own views and experiences with collaboration in their professional contexts. Therefore, we believe that the error reflected in this statement does not diminish the pertinence of the data that was collected during the expert interviews.

3) In Switzerland, a national network of data stewards (= staff working in ORD support) has been created that aims to bring data stewards together and to foster professionalization of ORD support.
(The main areas of activity include surveying the research and RDM landscape for new topics and needs; organizing training and support for data stewards; creating guidelines and recommendations on good ORD practices; ensuring networking and exchange with stakeholders (e.g. research funders, Swiss Academies of Arts and Sciences, infrastructure providers).)

- How does networking of experts (data stewards / ORD support staff / stakeholders) take place in your country / state / region, etc.?
- How are they structured? Are these networks mandated and if yes, by whom?
- How can such networks be kept alive? What are measures/activities that ensure ongoing attractivity of those networks to data stewards (and similar personnel)? (Knowledge community vs. association structure; networking with other networks)

4) Sustain and Develop ORD Competencies

- How is professional expertise transferred, updated, developed on an ongoing basis (i.e., beyond the level of formal professional education)?
- Are there knowledge bases, regular trainings etc. that are continually maintained and updated?
- Do you think that these initiative is a success, and what are factors for success? What are limiting factors or pitfalls of such initiatives?

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