Assessing and Enabling Open Research Data Practices in Swiss Higher Education Institutions: A Comprehensive Landscape Analysis

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Executive Summary

This report is the second deliverable of the swissuniversities project recORD, which examines how ORD (open research data) practices are integrated into assessment procedures across Swiss higher education institutions (HEIs). It considers three assessment situations: individual recruitment and career assessment, research proposals assessment, and research units assessment.

The report is divided into five parts. It begins with the role of the landscape analysis in the recORD project, followed by survey methodology, including design, target population, data collection, and analysis. The third section describes ORD policies, infrastructures, and support within HEIs. Section four elaborates on the current assessment of ORD practices within Swiss HEIs. Section 5 concludes the report providing an overview of findings and strategic insights.

The methodology involved a questionnaire developed in March 2024, based on literature review insights. The survey, containing 75 questions on respondent background and ORD-related practices, was conducted online and targeted individuals involved in research assessment and ORD policies at Swiss HEIs. Emails were sent to 57 institutions, with responses from 53 participants across 29 HEIs and the Swiss National Science Foundation. Data collected in April and May 2024 was analyzed using descriptive statistics with R, and the data and analysis code are shared via SWISSUbase and FORS replication service.

Section 3 details ORD policies, infrastructures, and support within Swiss HEIs, revealing that 60% have an ORD strategy or plan, often part of a broader open science strategy. Common practices include guidelines for sensitive data, data management plans, and FAIR data principles. A majority of HEIs provide (internal, external or combined) infrastructures for ORD-related practices such as data sharing. While specific funding to support ORD practices is less common, most HEIs propose data support services such as individual consultations and training sessions on research data management, FAIR data, and data sharing.

Section 4 addresses the assessment of ORD practices in Swiss HEIs for research personnel, research proposals, and research units. Few institutions already include ORD in their personnel recruitment and career assessments, proposal assessments, and unit assessments. However, this landscape should evolve rapidly since several institutions are currently developing their assessments to include ORD practices, especially for research personnel and units.

Section 5 concludes the report with a summary of the key findings, followed by a discussion of the results. This section further outlines the factors that support the implementation of ORD in the Swiss HEIs (i.e., international initiatives on reforming research assessment, local ORD training opportunities, and curated infrastructures), as well as inhibiting factors (i.e., financial, technical, social and epistemic barriers). Finally, nine recommendations aimed at advancing the recognition of ORD practices are presented.

Table of content

1 Introduction

1.1 The recORD project

This document is the second deliverable of the work package 2 of the project *recognise ORD* (recORD), funded by the Chamber of universities (swissuniversities). This project spans 2024 and involves 12 Swiss higher education institutions (HEIs), the Swiss National Science Foundation (SNSF), and the Swiss Centre of Expertise in the Social Sciences (FORS). The aim of recORD is to advance the understanding of how open research data (ORD) practices are currently recognised and valued in the Swiss Higher Education context in the assessment of research personnel during recruitment and career development, research proposals, and research institutions, and what plans exist to include ORD practices in evaluation processes in these three assessment situations.

Within this project, work package 2 provides three key deliverables: a *literature review* (deliverable 1) identifying content and key issues regarding the assessment of ORD practices nationally and internationally (Araujo, Bornatici, & Heers, 2024); a *landscape analysis* (deliverable 2; this document) offering insights into the current state of research assessment regarding ORD at Swiss HEIs; and a *synthesis* of the results from the literature review and landscape analysis (deliverable 3).

1.2 Objectives and scope of the landscape analysis

FORS has been tasked with conducting the landscape analysis, which aims to chart how ORD practices are facilitated and included in evaluations across Swiss HEIs. Its goal is to delineate the existing practices, policies and obstacles concerning the inclusion of ORD practices in assessments within Swiss HEIs, i.e., whether ORD practices are formally rewarded in evaluation processes. Specifically, it focuses on the three assessment situations: 1) individual researchers; 2) research proposals; and 3) research institutions, understood as research units in the context of this report, which can take various forms (e.g., institutes, faculties, departments) depending on the administrative structure of each HEI. Finally, the results of the landscape analysis will inform three recORD-workshops (work packages 3 to 5) dedicated to discussing avenues for assessing ORD practices at each assessment situation within the Swiss context.

Within this landscape analysis, we refer to ORD practices as practices facilitating access, use, and reuse of research data by anyone interested (Fecher & Friesike, 2014). Access and usage may be subject to specific agreements depending on the type of data. It is important to note that recORD and this landscape analysis focus solely on ORD practices, and other open science practices, such as sharing methodologies, software, and codes, are not addressed here.

2 Methodology

2.1 Survey design

An online survey was chosen to conduct the landscape analysis as the most efficient way to collect information from Swiss HEIs given the restricted time and personnel resources available. The survey questionnaire was developed in March 2024 based on insights from the literature review performed in parallel (Araujo, Bornatici, & Heers, 2024). Most of the questions were adapted from previous surveys identified during the literature review (Table 1). These surveys focus on open science policies and practices and on research assessment practices, and they generally target research performing organisations (RPOs). The data documentation available through SWISSUbase specifies the source for each question (see Bornatici et al., 2024).

The final questionnaire comprised 75 questions and consisted of four sections:

- Respondent background information
- Research assessment information, with a focus on assessment of ORD-related practices
    - Assessment of research personnel during recruitment and career development
    - Assessment of research proposals
    - Assessment of research units and institutions
- Information on ORD policies and available support
- Concluding remarks

The landscape analysis took the form of an online survey including both closed and open-ended questions. Respondents were allowed to skip questions; the only mandatory questions (8) were related to the respondents' background information or were used to direct respondents to the appropriate section of the survey (see the complete questionnaire in appendix).

Table 1. List of previous surveys on research assessment and ORD practices

Developed by	Survey title	Respondents	Focus
EOSC Observatory	Survey on National Contributions to EOSC 2023	National level	Open science
CoARA & EUA	Reforming Academic Career Assessment (ACA): A Survey from the CoARA Working Group on ACA	RPOs	Research assessment practices
EUA	2020-2021 EUA Open Science Survey	RPOs	Open science
EUA	EUA Research Assessment Survey 2019	RPOs	Research assessment practices
FAIReR	Survey for Academic Assessment Systems for Open Science & Research Data	RPOs	Research assessment practices
GraspOS	Landscape Survey on Reforming Research Assessment	RPOs and RFOs	Research assessment practices
GraspOS	The Landscape Questionnaire for Pilots	RPOs and RFOs	Research assessment practices
Knowledge Exchange	Openness Profile	Individuals (diverse profiles)	Open science
UNESCO	Monitoring Framework for the UNESCO Recommendation on Open Science: Reporting on the Provisions of the 2021 UNESCO Recommendation on Open Science	National level	Open science

2.2 Target population

The survey focused on formalised research assessment practices and ORD policies and support within Swiss HEIs, including universities, universities of applied sciences, and universities of teacher education (swissuniversities, 2024). We therefore invited individuals with a comprehensive understanding of their institution's research assessment criteria and processes, as well as those responsible for ORD practices to participate. This may include research management professionals, recruitment specialists, evaluators of research proposals, and institutional leaders.

Multiple respondents per institution were encouraged to participate, particularly if assessment processes are developed and implemented at the level of research units. This allowed us to get a comprehensive view of intra-institutional assessment procedures. Additionally, respondents may have expertise in specific types of assessment while lacking familiarity with ORD policies

and available support, and vice versa. These complementing views within institutions are taken into account in the below analysis (cf. section 2.5).

2.3 Data collection and participation

The data were collected through a *Google Form*. The survey was distributed via email to all Swiss universities, federal institutes of technology, universities of applied sciences, and universities of teacher education following the swissuniversities list (2024) – i.e., 57 HEIs in total. On March 28, we contacted the members of the recORD project and requested their assistance in disseminating the survey to relevant individuals within their institutions. On April 10, we extended the outreach to other Swiss HEIs. In the latter institutions, the contact persons may vary, typically serving as open science responsible, head of research and development, or through a general email address. Additionally, the survey was distributed via the Swiss Network of Data Stewards on April 11.

The initial deadline for the survey was April 19. We sent two reminders to recORD members and one reminder to the other HEIs, extending the deadline to May 14. All responses received by May 20 are included in the analysis. Overall, 57 Swiss HEIs and the SNSF were contacted for this survey, and we received 53 responses from 29 Swiss HEIs and the SNSF. Before starting to analyse the data, we cleaned them to some extent. After checking the responses, we deleted one, because the respondent did not provide any answer and indicated not being the right person to answer the questionnaire. Second, one participant answered three times and indicated that the first answers should be deleted because in their second and third answers, were filled together with dedicated specialists. They provided information on ORD policies and available support in their second answer, and on research assessment on their third answer. Their responses were thus merged into one answer.

Finally, we retained 50 responses from 29 Swiss HEIs and the SNSF (Table 2). For simplicity, we include the SNSF in the group of HEIs in the following text. The participants come from six types of institutions: universities (n=28; 56%), universities of applied sciences (n=4; 8%), universities of teacher education (n=14; 28%), federal institutes of technology (n=2; 4%), funding institutions (n=1; 2%), and other institutions (n=1; 2%). 45 participants (90%) answered the section of the survey related to ORD policies, infrastructures and support (section

3 of this report), while 30 (60%) responded to the section on the assessment of ORD practices (section 4 of this report).

Table 2. Number of individual answers by institution type and survey section

Institutions	Total	ORD policies, infrastructure, services	ORD in research assessment
Universities			
Università della Svizzera italiana (USI)	1	1	0
University of Basel (UNIBAS)	1	1	0
University of Bern (UNIBE)	4	4	1
University of Fribourg (UNIFR)	2	2	2
University of Geneva (UNIGE)	1	1	1
University of Lausanne (UNIL)	8	8	3
University of Lucerne (UNILU)	1	1	1
University of Neuchâtel (UNINE)	2	2	1
University of Zurich (UZH)	8	3	7
Federal institutes of technology			
Federal Institutes of Technology Lausanne (EPFL)	1	1	1
Federal Institutes of Technology Zürich (ETHZ)	1	1	1
Universities of applied sciences			
Bern University of Applied Sciences (BFH)	1	1	1
Lucerne University of Applied Sciences (HSLU)	1	1	0
University of Applied Sciences and Arts of Southern Switzerland (SUPSI)	1	1	1
Zurich University of Applied Sciences (ZHAW)	1	1	1
Universities of teacher education			
HEP BEJUNE	1	1	1
HEP Valais	1	1	0
HEP Vaud	1	1	1
HfH	1	1	0
PH Bern	2	2	1
PH Graubünden	1	1	1
PH Luzern	1	1	1
PH Schaffhausen	1	1	1
PH Schwyz	1	1	1
PH St. Gallen	1	1	0
PH Thurgau	1	1	1
PH Zug	1	1	0
PH Zurich	1	1	0
Funding institution			
Swiss National Science Foundation (SNSF)	1	1	1
Other institution			
Swiss Federal University for Vocational Education and Training (SFUVET)	1	1	0
Total of individual answers	50	45	30
Total of institutions	30	30	21

Note: We decided to retain the local names of the universities of teacher education and the Università della Svizzera italiana. The former are primarily known by their local names, while the latter uses its local name in English. For abbreviations, for all institutions we use their official abbreviation.

2.4 Data handling and sharing

Prior to answering the survey, the respondents were informed that the data would be analysed by FORS and synthesised into a comprehensive report that will be publicly accessible on Zenodo and the project's website. Additionally, they were notified that the data would be shared via SWISSUbase (Bornatici et al., 2024). Besides this report, the data are valuable for institutions to learn about themselves and compare their practices to those of other institutions. For confidentiality reasons, personal information (such as names) about the respondents have been pseudonymised or deleted. The R-code used for the analysis presented in this report is available through the FORS Replication Service (Araujo, Bornatici, Ochsner, et al., 2024).

2.5 Data analysis

The goal of this landscape analysis is to provide an overview of the current state of implementation of ORD within Swiss HEIs. This analysis relies on the assumption that if ORD-related activities and assessment are undertaken within an institution, their application likely varies across different units, except for potentially fully centralised institutions if there are any. Based on informal discussions and our prior experience in this area this assumption seems plausible. The collected responses do not capture all activities or variations within institutions. However, we used each answer as an indication of what is happening in an institution, whether at the higher institutional level (hereafter referred to institutional level) or at a smaller institutional level such as a faculty or unit (hereafter referred to unit level).

To analyse the data, we created two data files, one with all individual responses (hereafter referred to as the individual data file, n=50) and the second with aggregated responses at the HEI level (hereafter referred to as the aggregated data file, n=30).[1] To create the aggregated data file, we have merged information for institutions where several people responded to the questionnaire. As differences in responses can be observed[2], when merging information, we

[1] Both are available via SWISSUbase, see Bornatici, C., Araujo, P., Heers, M., Ochsner, M., & Ramseyer, N. (2024). *recORD - Landscape analysis of open research data assessment practices within Swiss higher education institutions* (Version 1.0) [Dataset]. FORS - Swiss Centre of Expertise in the Social Sciences. https://doi.org/10.48573/gv7c-ck37

[2] Differences in responses are observed between people working in general services at the institutional level and those linked to a specific unit. There are also differences in responses between people at the same level (institutional or unit), probably linked to differences in perceptions or information.

followed three rules in accordance with the intention to provide information on the most advanced activities within Swiss HEIs, whether at the institutional or unit level:

- **Rule 1:** When there is a missing or "I don't know" response alongside another informative response (e.g., "yes", "in development"), we chose the informative response.
- **Rule 2:** We used all non-mutually exclusive responses and created an encompassing response. For example, this was done for answers to question Q8: "Is your institution committed to the following assessment agreements, policies or recommendations (or relevant stakeholders)?" When one respondent answered CoARA and another answered DORA and the Leiden Manifesto, the aggregated response included all three agreements.
- **Rule 3:** In the case of mutually exclusive and contradictory responses (e.g., "yes", "in development", and "no"), we chose the most advanced response ("yes"). For example, this was done for answers to question Q17: "Does your unit/institution include ORD practices (sharing, citing, reusing, expertise, mentoring/training) in the academic recruitment and career assessment?".

This process contributes to alleviate the major limitation of this landscape analysis which is based on the subjective perceptions of the respondents who are working at different institutional levels. Thus, some respondents answered regarding a particular faculty while others answered regarding an institutional procedure. Not all respondents are aware of general practices at the institutional level, and specific practices at the unit level. Most respondents probably have a particular view on a restricted part of the institution. As assessment procedures are complex, disagreement even among experts about specific evaluation procedures are observed also elsewhere (e.g., Galleron et al., 2017). While this approach provides a general overview of the integration of ORD within the Swiss higher education landscape, it does not allow for a more detailed, micro-sociological understanding, such as the dynamics at the level of institutes, faculties, and departments within the various HEIs. Therefore, the presented results cannot be generalised and do not provide a complete picture of the practices at the institutions represented in the data.

The aggregated data file is used to give an overview of the situation in Swiss HEIs. These data were analysed with the software R, to calculate descriptive statistics and provide visualisations

of the results. The figures presented in the next sections show aggregate responses at the institutional level. We described these visualisations and supplemented them with additional information from other related questions, as well as excerpts from the open responses provided by the participants using the individual data file. These qualitative insights were also used to explore differences in perceptions within institutions. The aim of these analyses is to describe broader patterns related to ORD, rather than to focus on the analysis of single institutions. However, specific institutions are sometimes highlighted to illustrate particular practices. Interested readers can download the data and code themselves to carry out more nuanced analyses on their own institutions.

Before turning to the results, it is important to note that section 3 and the subsections of section 4 each are based on specific subsamples since not all the participants responded to all parts of the survey. Therefore, for clarity reasons, each section and each subsection begin with a presentation of the sample used for that particular analysis. When interpreting the results readers need to keep these different subsamples in mind.

3 ORD policies, support, and infrastructure within Swiss HEIs

In this section, we describe the currently available policies, funding mechanisms, support services, and infrastructures related to ORD in the scrutinised Swiss HEIs. The section is divided into three subsections: the *existing ORD policies* (3.1.), the *existing funding mechanisms for ORD-related practices* (3.2), and the *existing support and services infrastructures* (3.3).

Out of the 50 survey participants, 45 responded to the questions of these three subsections. Their profiles are described in Table 3. They represent 30 Swiss HEIs (including the SNSF).

Table 3. Sub-sample of respondents who answered the questions in the "ORD policies and support" section of the survey

		Represented institutions		Individual answers	
		n=30	%	n=45	%
Type of institution	University*	9	30%	23	51%
	Federal Institute of Technology	2	7%	2	4%
	University of applied sciences	4	13%	4	9%
	University of teacher education*	13	43%	14	31%
	Funding institution	1	3%	1	2%
	Other institution	1	3%	1	2%
Position	Institution level			34	76%
	Unit level			11	24%
Managing role	Yes			21	47%
	No			23	51%
	Unknown			1	2%

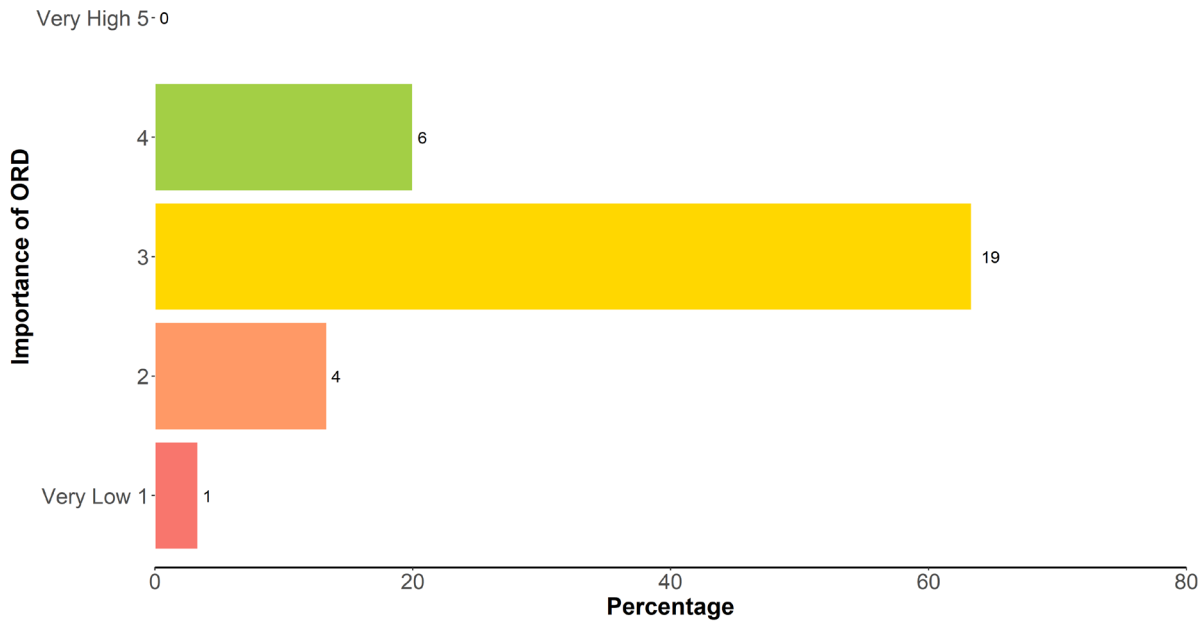
* In the following institutions, more than one respondent answered the survey: 8 answers from University of Lausanne; 4 from University of Bern; 3 from University of Zurich; 2 from University of Neuchâtel; 2 from PH Bern.

3.1 Existing ORD policies

In this section, we first provide an overview of the context in which ORD policies are developed in Swiss HEIs, highlighting their strategic priorities and the primary level of ORD policy development within these institutions. Next, we assess whether the institutional open science policy includes ORD aspects and whether a specific ORD strategy has been implemented. Finally, we examine the content of the strategy.

According to the respondents, the strategic priority attributed to ORD is high in 6 institutions (20%), that is, a 4 on a scale from 1 ("very low") to 5 ("very high"), while in most institutions surveyed it is considered to be medium (n=18, 63%, 3 on the scale from 1 to 5) (Question Q55, Figure 1). 5 institutions perceive ORD as a low or very low strategic priority (16%, 1 or 2 on the scale from 1 to 5). This perception aligns with the following results, indicating that the majority of institutions are broadly committed to developing ORD as a strategic focus. It is important to note that no institution chose "very high", which was one of the possible responses in the questionnaire.

Figure 1. Perception of the level of importance of ORD in terms of the strategic priority areas among Swiss HEIs (Q55, n=30)



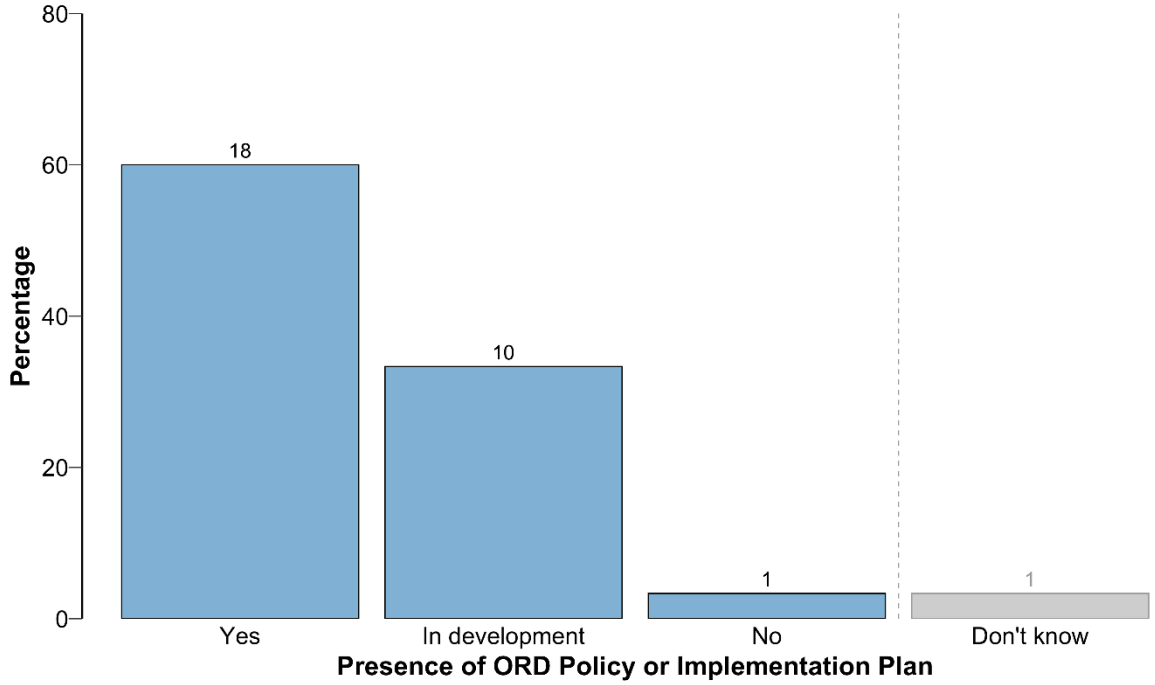
Source: recORD data (Bornatici et al., 2024), authors' computation.

Within the Swiss HEIs, policies and support services related to ORD are primarily developed at the institution level (n=24, or 80%), in some cases this is done at the unit level (n=3, 10%), or at both levels (n=3, 10%) (Q51).

We asked participants if their institution has a general open science policy that includes data-related elements such as provisions for data management plans, data protection, FAIR data, data sharing, long-term data preservation (Q56). According to their responses, 5 institutions (17%) have "mandatory elements" related to ORD, 19 institutions (63%) have "optional/encouragement elements" related to ORD, and 6 institutions (20%) do not have such elements.

We also asked participants if their institution has a specific roadmap, strategy, or implementation plan for ORD. In almost all institutions, such document already exists (n=18, 60%) or is under development (n=10, 33%) (Q53, Figure 2). When multiple participants participated in the survey, they sometimes provided contradictory responses (e.g., University of Bern, University of Zurich), which indicates differing perceptions of whether ORD policies are fully integrated or still in development. This is an interesting observation in itself.

Figure 2. Presence of an implementation plan, a strategy or a roadmap for implementation of ORD among Swiss HEIs (Q53, n=30)



Note: Numbers in the plots indicate the numbers of Swiss HEIs. Source: recORD data (Bornatici et al., 2024), authors' computation.

Some respondents mentioned that ORD is integrated as part of a broader open science strategy. This concerns some universities (Basel, Geneva, Lausanne, Neuchâtel), some universities of applied sciences (Lucerne, Zurich), and some universities of teacher education (HEP Valais, PH Bern, PH Luzern, PH Thurgau, PH Zug, PH Zurich, SFUVET, HfH). Some of these institutions are currently implementing ORD through projects financed by the swissuniversities programme "Open Science I: Phase B – ORD (action line B5.2)", which is part of the ORD action plan of swissuniversities (swissuniversities, 2021). For instance, the universities of teacher education in Bern, Lucerne, and Zurich are involved in these ongoing projects. In these projects, developing data stewardship is a key dimension, along with creating policies compatible with the FAIR principles.

Within the current HEIs' strategies, the principle "as open as possible, as restricted as necessary" is highlighted in some hyperlinks provided by the respondents. This principle reflects a general commitment among these HEIs to making data as accessible as possible while considering the disciplinary standards and specific conditions of a given research project.

Regarding the content of the current or future ORD strategy or policy developed within Swiss HEIs more specifically, the most mentioned action is the implementation of guidelines for open data and sensitive data (Q57, Table 4). This is followed by the promotion of the FAIR data principles, data protection and the introduction of a data management plan (DMP). Skills and training for ORD is less common, with respondents from half of the institutions reporting it. Similarly, data stewardship, long term preservation, and data citation are selected by less than half of institutions, while only 6 institutions offer incentives or rewards for the practical application of ORD.

Table 4. ORD practices included in the polices of Swiss HEIs (multiple responses possible, Q57, n=23)

ORD practices	Number of institutions	Percentage
Open data	20	87%
Sensitive data	19	83%
FAIR data	18	78%
Data management plan	17	74%
Data protection	17	74%
Data storage	16	70%
Data sharing	13	57%
Skills/training for ORD	12	52%
Data stewardship	11	48%
Long-term data preservation	11	48%
Data citation	10	43%
Incentives/rewards for ORD	6	26%

Source: recORD data (Bornatici et al., 2024), authors' computation.

Overall, among the 30 institutions analysed, 23 (77%) have either implemented or are in the process of implementing one or more of the 12 ORD aspects suggested in question 57. The number of implemented aspects ranges from 1 to all 12, with a mean of 7. One respondent who selected all 12 aspects noted that while these are not explicitly outlined in the policy, a dedicated institutional service provides support and infrastructure for all these aspects.

The fact that there is a large diversity in implemented ORD practices and policies and that especially "incentives/rewards" are the least present, indicates that ORD is currently rather perceived as a set of optional and recommended best-practices rather than a mandatory criterion for research assessment that should be assessed and rewarded.

3.2 Existing instruments for funding and promoting ORD practices

This section provides an overview of the funding available for ORD in Swiss HEIs and how ORD practices are promoted.

Currently, 13 institutions (43%) have specific funding to support ORD practices and in 1 institution (3%) this is under development (Q60). There is no specific funding in half of the HEIs (n=15), while 1 institution did not answer.

Funding schemes for ORD in Swiss HEIs vary widely (Q62). At Bern University of Applied Sciences, there is an "open science fund" that covers costs related to data storage in repositories, as well as a funding scheme being tested to cover costs related to preparing data for publication and developing good practices in ORD. PH Bern employs a dedicated research data management professional, particularly for data stewardship. The ETH Domain has invested a total of CHF 15 million in implementing an ORD programme (ETH board, 2020). At the University of Lausanne's faculty of biology and medicine, respondents noted minimal funding for data science and data stewardship across various services of the faculty. HEP Vaud has initiated an ongoing project focused on local data storage, tailored for each research project within the institution. Furthermore, the SNSF supports researchers in making data from their research projects accessible, offering up to CHF 10'000 for this purpose.

Regarding the promotion of ORD, almost all institutions either already propose awareness-raising activities on ORD (n=24, 80%) or are developing such activities (n=4, 13%) either at the unit or institutional level (Q71). Funding instruments promoting ORD, such as programmes, grants, research funds, fellowships, infrastructure grants, are less common but still available in half of the institutions (n=15) and are in development in 3 institutions (10%) (Q70).

Based on the open-ended question (Q73), respondents from ETHZ indicate that services of ETH Library and Scientific IT Services offer biannual research data management (RDM) workshop series. These workshops cover topics such as an introduction to RDM, DMPs, active RDM, data publication, reproducibility, and citizen science. Additionally, they provide an RDM summer school for early-stage researchers, focusing on specific aspects of RDM and FAIR data principles, as well as personalized courses for groups of five or more upon request.

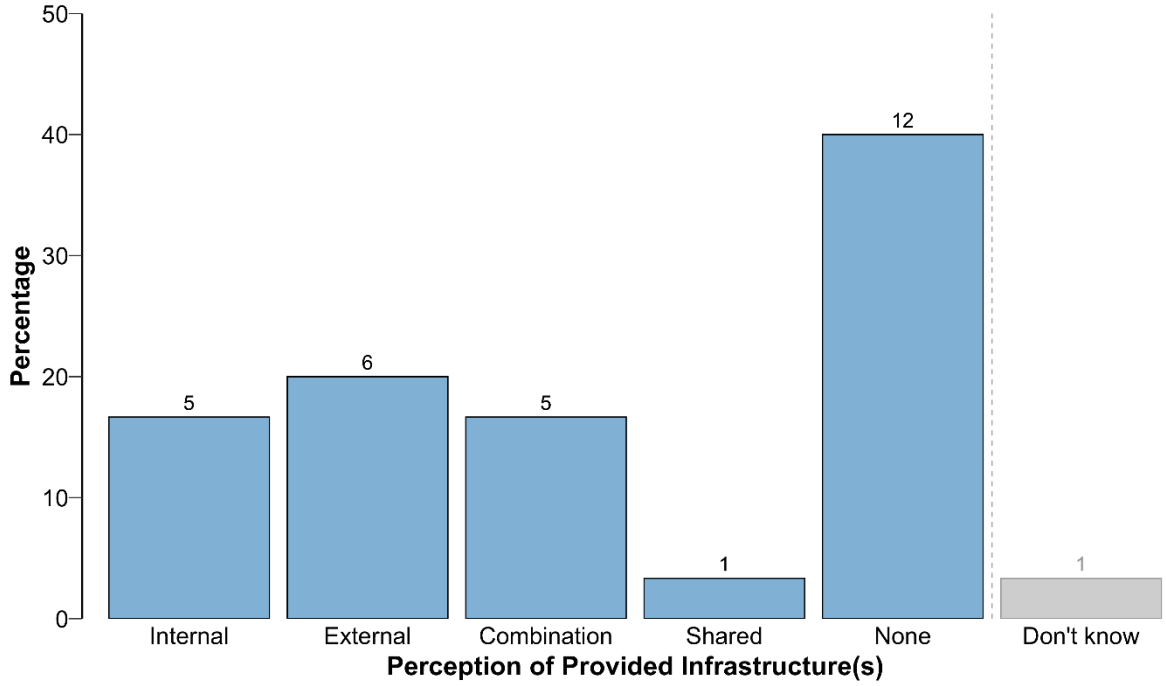
In other HEIs, workshops on RDM with an ORD dimension are the most mentioned type of ORD promotion (Q73). These offerings are typically optional courses. This highlights the generally optional nature of ORD skills, as evidenced by the fact that only 4 institutions (University of Zurich, EPFL, PH Luzern, PH Thurgau) indicated that these skills are officially incorporated into their research skills curricula (Q72).

3.3 Existing support services and infrastructure for ORD

Another critical factor in promoting ORD practices is the availability of data support services and infrastructures. Regarding data support services such as research data management, FAIR data, and data sharing (Q68), we find that most institutions (n=25, 83%) are offering such services to their research communities, or are developing them (n=1, 3%). The primary services mentioned by respondents were individual consultations, training sessions (notably on how to create DMPs), and support for data management. The recent addition of data stewards, directly employed by the institution, was also highlighted as a significant enhancement for supporting data management activities. Data stewards have been mentioned as specialists supporting research projects "from early on to foster ORD practices from the very beginning in the new projects". Conversely, respondents working in institutions that do not provide data support services cited a "lack of resources" as the main reason for the absence of such services.

Results on the availability of infrastructures, such as data repositories, supporting the sharing of research data suggest a varied and scattered landscape (Q63). 12 institutions (40%) do not have such infrastructures in place (Figure 3). This is typically the case for universities of teacher education and some universities of applied science, which are usually smaller entities. Among the 17 HEIs (57%) providing an infrastructure for ORD-related practices, respondents from 5 institutions (ETHZ, UNIBE, UNIFR, UNIGE, UNILU) report having internal infrastructures for ORD. Respondents from 6 institutions (BFH, PH Bern, PH Schwyz, PH Schaffhausen, UNIBAS, UNINE) indicate using external infrastructures. This seems a common solution among smaller institutions. 5 institutions use a combination of internal and external infrastructures (EPFL, HSLU, PH Luzern, PH Zug, UNIL). Finally, the University of Zurich stands out as the only institution using shared infrastructures, i.e., data repositories owned or managed by themselves together with other institutions.

Figure 3. Perception whether institution provides infrastructures to share research data among Swiss HEIs (Q63, n=30)



Note: Numbers in the plots indicate the numbers of Swiss HEIs. Source: recORD data (Bornatici et al., 2024), authors' computation.

Among institutions having ORD infrastructures in place (n=17), respondents from 12 institutions (71%) indicated that the infrastructures have a checking process to assess the FAIRness of the data (quality control, reusability control, documentation) before publication (Q66). The same respondents also indicated that the used infrastructures are certified for FAIR data sharing (Q65) While there currently is no formal FAIR certification, there are broader certifications (such as CoreTrustSeal) that do include parts on FAIR compliance. When reading these results, it is important to underline that they reflect individuals' perceptions.

Some respondents provided further details on the used infrastructures (Q67). Zenodo has been mentioned as an external infrastructure used to complement internal solutions. However, this solution does not control the quality of the data before publication. SWISSUbase has also been cited by several respondents as a FAIR-compliant infrastructure used within Swiss HEIs. Additionally, some institutions employ internal infrastructures. For instance, the University of Geneva uses Yareta, a data repository developed at a cantonal level for all research institutions within the canton. Finally, one respondent highlighted that certain disciplines have specific

needs for discipline-based data repositories. For example, biomedical sciences use a relatively extensive array of such external data repositories. These solutions are more adapted to types and volume of data needed by scholars within this field of studies.

4 Inclusion of ORD practices in current assessment procedures within Swiss HEIs

In this section, we present the current state of including ORD practices as an aspect in assessment procedures within Swiss HEIs, based on the responses from the 30 survey participants. The section is divided into three subsections, each addressing a specific dimension of ORD recognition: the *assessment of research personnel* (4.1), the *assessment of research proposals* (4.2), and the *assessment of research units* (4.3).

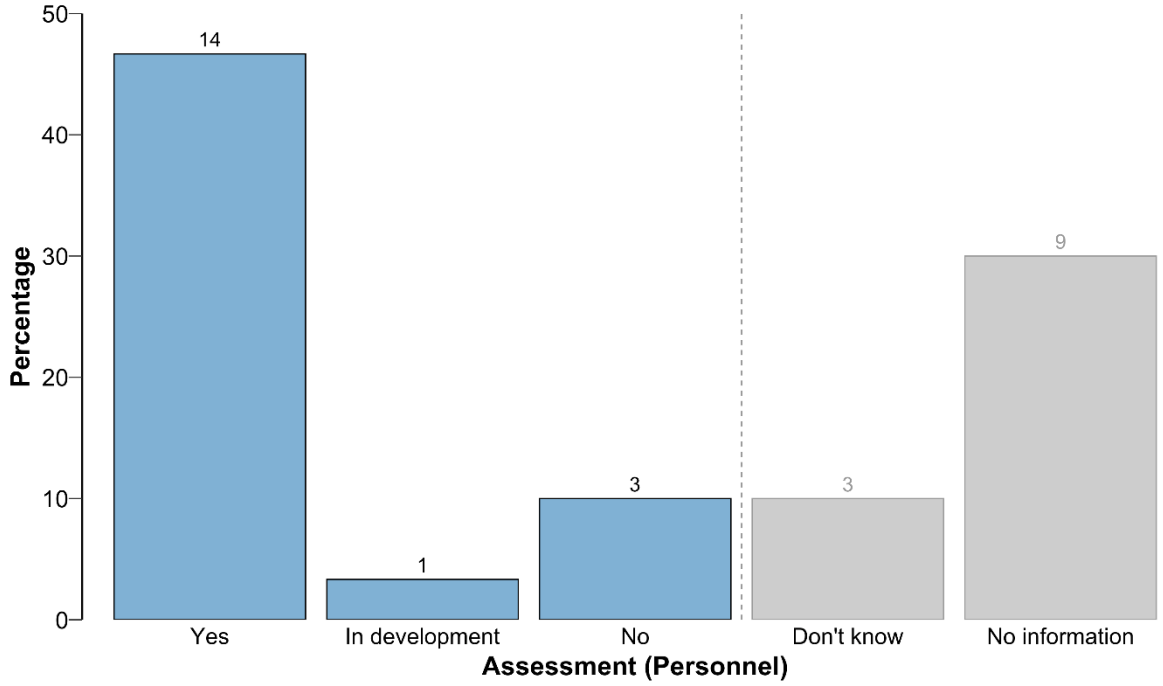
The participants vary for each subsection. Detailed descriptions of the respective sample are provided at the beginning of each subsection.

4.1 Assessment of research personnel during recruitment and career development

30 respondents from 21 institutions participated in the first question of this section, which asked whether their institution was conducting academic recruitment and career assessments for performance evaluation and career progression of academic staff (Q12, Figure 4). Respondents from 14 institutions confirmed that their institution was conducting such assessments (EPFL, ETHZ, HEP Vaud, PH Bern, PH Graubünden, PH Luzern, PH Schaffhausen, PH Schwyz, SUPSI, UNIGE, UNIL, UNINE, UZH, ZHAW). At the University of Fribourg such assessments are under development. In 3 institutions (PH Thurgau, SNSF. UNILU), such assessments are not conducted, and respondents from 3 other institutions did not know (BFH, HEP BEJUNE, UNIBE). Respondents from the remaining 9 institutions did not respond to this section of the survey.

The following questions on the organisation of researchers' assessments were asked only to the respondents who answered "yes" or "in development" to the above question (Q12, Figure 4). This includes 22 respondents, representing 15 HEIs. These respondents form the sub-sample analysed in this section. Their profiles are described in Table 5.

Figure 4. Existence of academic recruitment and career assessment procedure (for performance evaluation and career progression of academic staff) in each HEI (Q12, n=30)



Note: Numbers in the plots indicate the numbers of Swiss HEIs. Source: recORD data (Bornatici et al., 2024), authors' computation.

Table 5. Sub-sample of respondents who answered the questions regarding researchers' assessment

		Represented institutions		**Individual answers**	
		n=15	%	n=22	%
Type of institution	University*	5	33%	12	55%
	Federal Institute of Technology	2	13%	2	9%
	University of applied sciences	2	13%	2	9%
	University of teacher education	6	40%	6	27%
	Funding institution	0	0%	0	0%
	Other institution	0	0%	0	0%
Position	Institution level			17	77%
	Unit level			5	23%
Managing role	Yes			13	59%
	No			9	41%

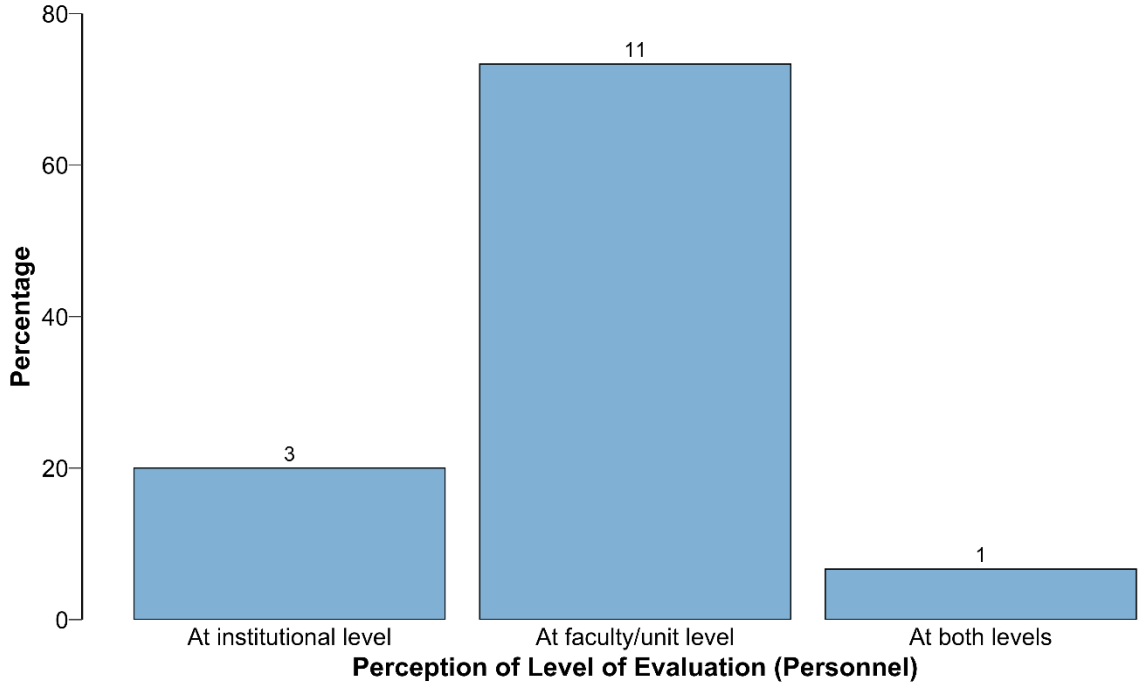
* In the following institutions, more than one respondent answered this section of the survey: 6 respondents from the University of Zurich and 3 respondents from the University of Lausanne.

4.1.1 Level of assessment of researchers

This section focuses on the level at which research personnel are assessed, i.e., whether at the institution level or the unit level (i.e., department, faculty, or lower administrative levels). Additionally, it distinguishes between those conducting the assessments and those developing the assessment criteria.

According to respondents, the academic recruitment and career assessment is primarily performed at the unit level in 11 Swiss HEIs (73% out of 15 institutions) (Q13, Figure 5). Respondents of 3 HEIs (20%) answered that assessment of researchers is primarily conducted at the institution level (PH Graubünden, PH Schaffhausen, UNINE). This might be explained by the small size of the institutions. At the EPFL (7%), such assessments are performed at both levels.

Figure 5. Perceived level of academic recruitment and career assessment in each HEI (Q13, n=15)

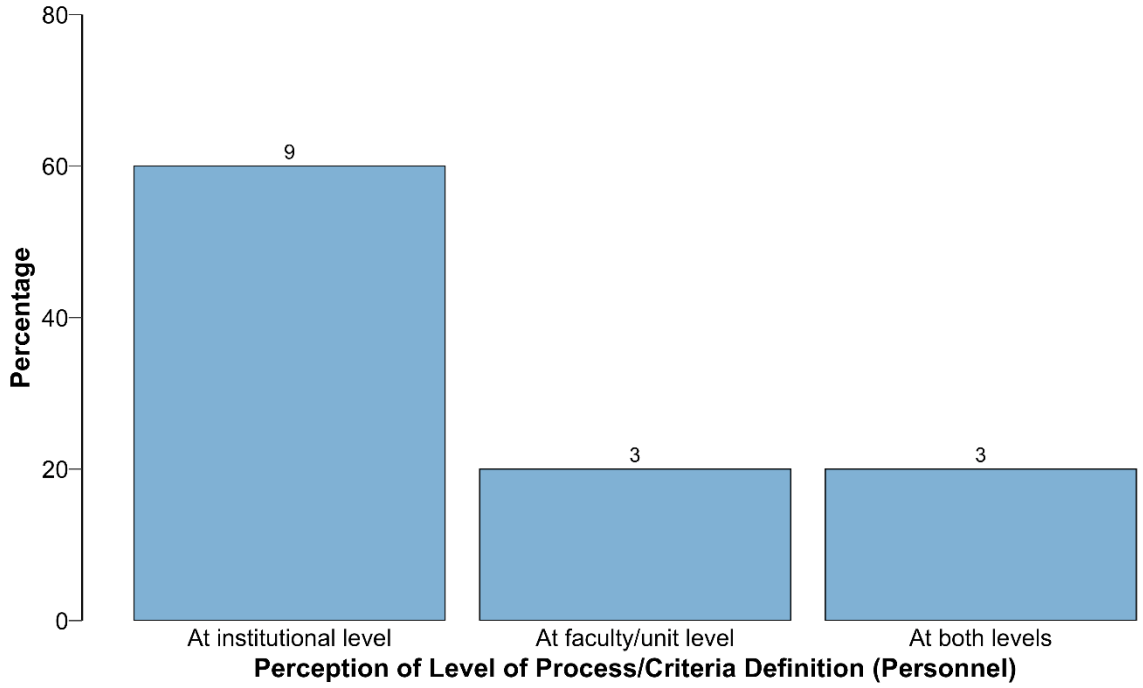


Note: Numbers in the plots indicate the numbers of Swiss HEIs. Source: recORD data (Bornatici et al., 2024), authors' computation.

Regarding at which level the assessment processes, requirements and criteria are primarily developed or defined (Q14), among the 15 institutions observed, 9 institutions (60%) do this at

the institutional level (Figure 6). In 3 institutions (20%), HEP Vaud, UNIFR, UNIL, these processes are developed at the unit level. Whereas in the remaining 3 institutions (20%), EPFL, UNIGE, UZH, they are developed at both levels. One respondent from this last group of institutions noted that while faculties have a degree of autonomy in recruitment, they must adhere to an institutional framework designed to ensure "*standards of excellence in research, teaching, HR management, administration, and integration within the local landscape*".

Figure 6. Perceived level of development of processes, requirements or criteria for academic recruitment and career assessment (Q14, n=15)



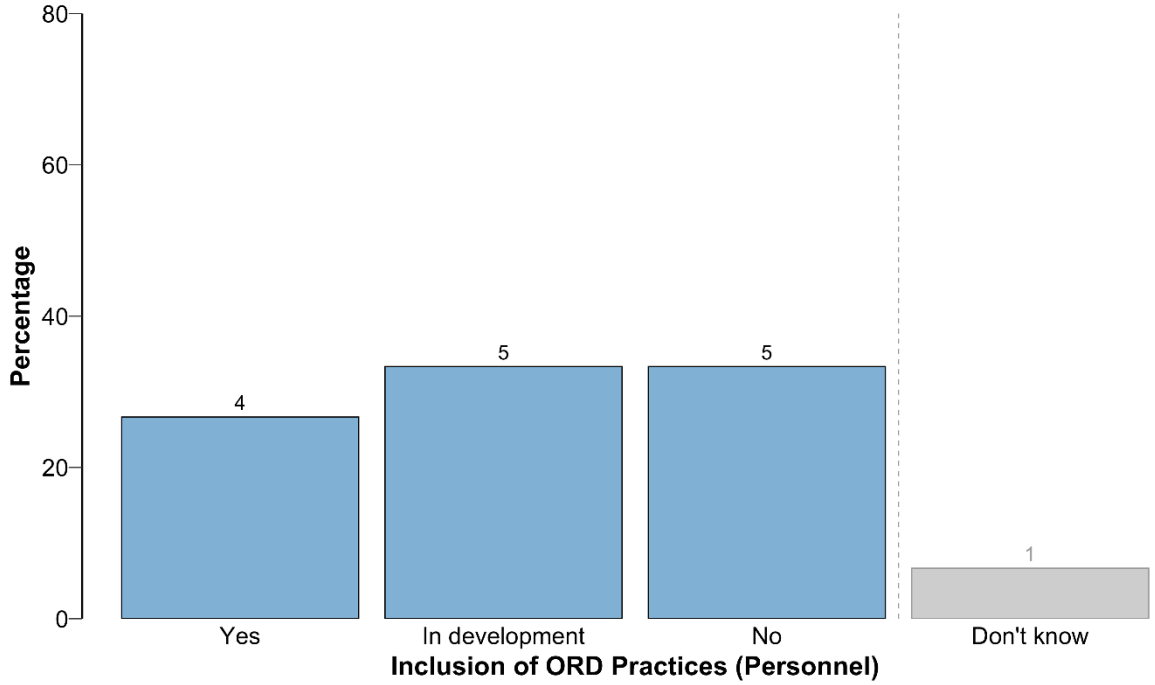
Note: Numbers in the plots indicate the numbers of Swiss HEIs. Source: recORD data (Bornatici et al., 2024), authors' computation.

4.1.2 Inclusion of ORD practices in academic recruitment and career assessment

This section examines whether and how HEIs are including ORD practices into the assessment of researchers. Among the 15 institutions analysed, only 4 institutions (27%), namely PH Bern, PH Schaffhausen, and the universities of Neuchâtel and Zurich, currently include ORD-practices in their academic recruitment and career assessment (Q17, Figure 7). However, this situation may change rapidly as 5 institutions (33%) are currently developing their research personnel assessments to include ORD practices. These institutions are HEP Vaud, PH Schwyz,

the universities of Geneva and Lausanne, and ZHAW. In the remaining 6 institutions, either there are no plans to integrate ORD into the assessment of research personnel (5 institutions, 33%) or there is no knowledge about the situation (1 institution, 7%).

Figure 7. Inclusion of ORD practices in academic recruitment and career assessment (Q17, n=15)



Note: Numbers in the plots indicate the numbers of Swiss HEIs (n=15). Source: recORD data (Bornatici et al., 2024), authors' computation.

Participants from institutions currently developing ORD assessment in academic recruitment and career assessment provided insights into their reforms (Q18). At ZHAW, the recent adherence to CoARA has led the institution to implement a reform in the assessment of researchers. One respondent mentioned several ORD dimensions that should be assessed in the future: "*quality of data & metadata, appropriate publication location (community standard repository?), documented re-use of data (including also quantitative indicators on re-use), service to the community in general through the data".* In the same way, while EPFL does not yet include ORD in the assessment of researchers, the institution is currently reflecting on a potential integration following its adhesion to CoARA.

At the University of Geneva, while ORD is not explicitly implemented yet in their researchers' assessments, there are changes going in that direction: "*Two faculties (the Faculty of Medicine,*

and the Geneva School for Social Sciences) use a narrative CV in which researchers are invited to describe their activities for promoting open science. The Faculty of Science also initiated discussions and reflections about multidimensionality in research careers which includes the promotion of open science and ORD practices".

At the University of Zurich, respondents had mixed answers on this question: some indicated "yes", others "in development" or "no", and some did not know (the aggregate answer was thus "yes", see rule 3 in section 2.5 Data analysis). The respondent who indicated in development mentioned that a current reform in career assessment is considering the integration of ORD. They stated that: "*In the current draft* [of a guideline for the annual career interviews for all scientific functions]*, ORD practices are included as part of the evaluation of the work product: 'Research data collected, datasets created; research data processed and published according to FAIR principles; tools, software, code developed & openly shared; negative research results shared and published [authors' translation]' "*[3]. The implementation of this new guideline is expected to be effective in 2024.

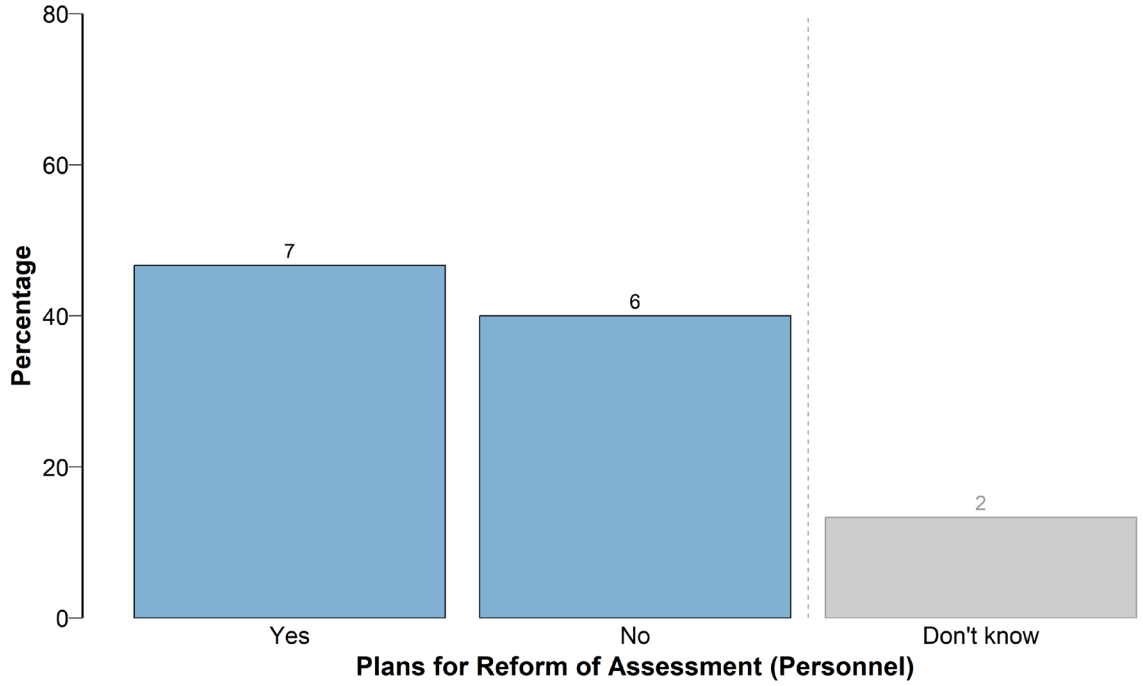
These examples indicate a recent growing interest in integrating ORD into researchers' assessments. However, while evaluation committees can, and in some cases might, consider ORD contributions, there is usually no formal or mandatory process in place yet. In that sense, with the exception of PH Graubünden, all the representatives of the institutions covered in our survey stressed that they do not currently request researchers to include their ORD practices in their CV (Q23).

4.1.3 Plan to reform the academic recruitment and career assessment of researchers

We also examined ongoing reforms regarding the assessment of researchers with Swiss HEIs. Among the 15 HEIs under revision, 7 institutions (47%) are currently engaged in general reforms regarding the assessment of researchers, whether or not they include ORD recognition (Q31, Figure 8). Respondents from 6 institutions (40%) report no ongoing reforms, while 2 institutions (13%) do not know whether such reforms will occur within their institution.

[3] Original text in German: "*Forschungsdaten erhoben, Datensätze erstellt; Forschungsdaten nach FAIR-Prinzipien aufbereitet und publiziert; Tools, Software, Code erarbeitet & offen geteilt; negative Forschungsergebnisse geteilt und veröffentlicht".*

Figure 8. Plans for (or implementations of) reform of academic recruitment and career assessment (Q31, n=15)



Note: Numbers in the plots indicate the numbers of Swiss HEIs. Source: recORD (Bornatici et al., 2024), authors' computation.

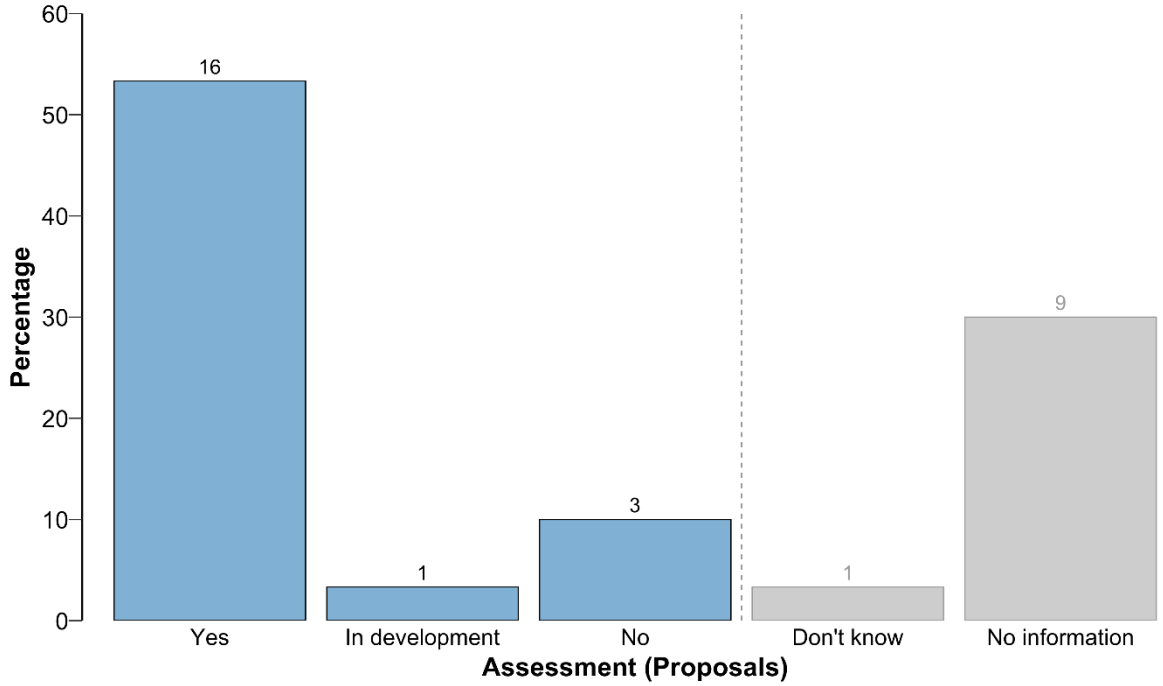
Comparing answers with the question about the inclusion of ORD practices into researchers' assessments (section 4.1.2, Q17), we find that among the 7 institutions planning to reform their researchers' assessments, 5 institutions do not yet account for ORD practices (2 answered "no" and 3 "in development" to Q17).

4.2 Assessment of research proposals

30 respondents from 21 institutions participated in the first question of this section, which asked whether their institution was conducting assessment for allocation of research project funding (Q33, Figure 9). Respondents from 16 institutions confirmed that their institution was conducting such assessments (BFH, EPFL, ETHZ, HEP BEJUNE, HEP Vaud, PH Bern, PH Graubünden, PH Luzern, PH Thurgau, SUPSI, UNIFR, UNIL, UNILU, UNINE, UZH, ZHAW). At the PH Schaffhausen such assessments are under development. In 3 institutions (PH Schwyz, SNSF, UNIGE), this is not the case, and the respondent from the University of

Bern did not know. Respondents from the remaining 9 institutions did not took part in this section of the survey.

Figure 9. Existence of assessment for allocation of research project funding in each HEI (Q33, n=30)



Note: Numbers in the plots indicate the numbers of Swiss HEIs. Source: recORD data (Bornatici et al., 2024), authors' computation.

The next questions on the organisation of research proposal assessments were then asked only to the respondents who answered "yes" or "in development" to the above question (Q33). This includes 20 respondents, representing 17 HEIs. These respondents form the sub-sample analysed in this section. Their profiles are described in Table 6.

Table 6. Sub-sample of respondents who answered the questions regarding the assessment of research proposals

		Represented institutions		Individual answers	
		n=17	%	n=20	%
Type of institution	University*	5	33%	8	40%
	Federal Institute of Technology	2	11%	2	10%
	University of applied sciences	3	17%	3	15%
	University of teacher education	7	39%	7	35%
	Funding institution	0	0%	0	0%
	Other institution	0	0%	0	0%
Position	Institution level			17	85%
	Unit level			3	15%
Managing role	Yes			13	65%
	No			7	35%

* At the University of Zurich, 4 respondents answered this section of the survey.

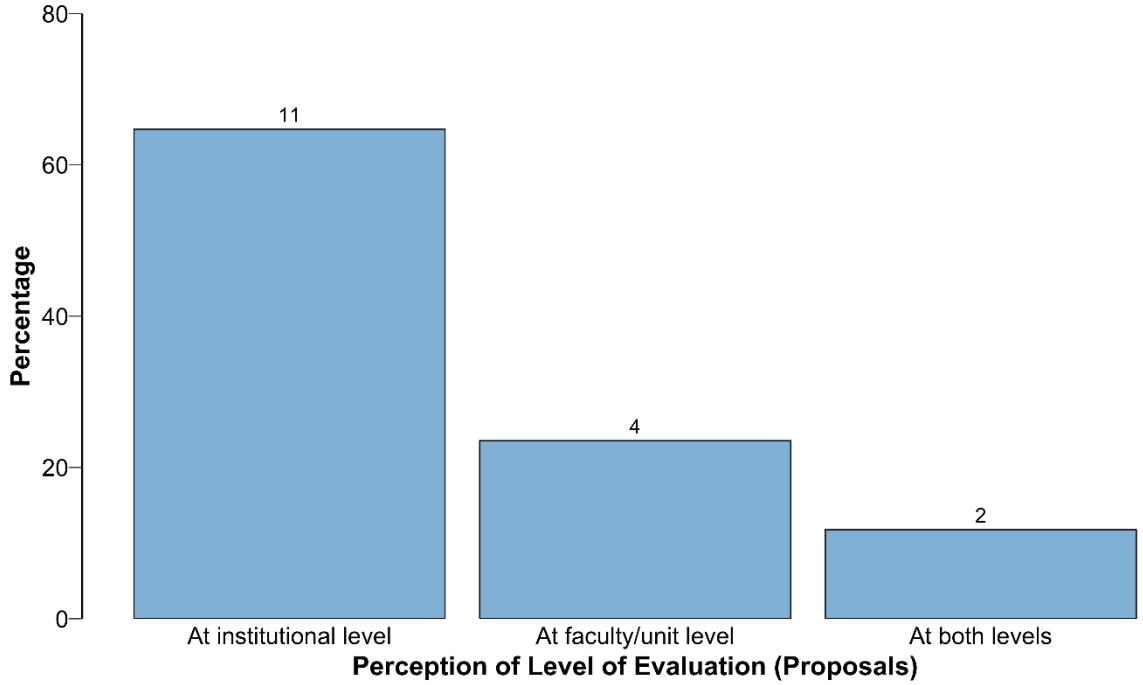
4.2.1 Level of assessment of research proposals

This section focuses on the level at which research proposals are assessed, i.e., whether at the institution level or the unit level (i.e., department, faculty, or lower administrative levels). Additionally, it distinguishes between those conducting the assessments and those developing the assessment criteria.

Among the 17 Swiss HEIs analysed in this section, in 11 institutions (65%) the assessment of research proposals is primarily performed at the institutional level (Q34, Figure 10). In 4 institutions (24%) this is primarily done at the unit level, and in 2 institutions (12%) this is done at both levels. In the later cases, respondents mentioned that the assessment of research proposals is organised at the institutional level but executed in a decentralised way.

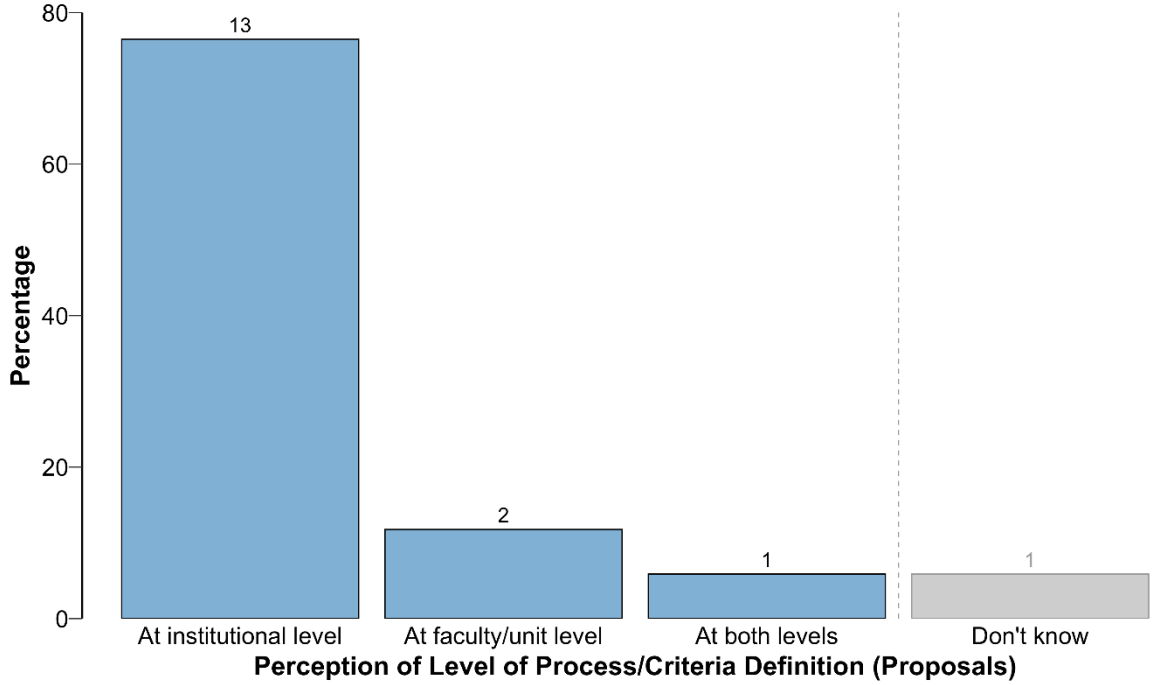
13 institutions (76%) develop processes, requirements, or criteria for research proposal assessment at the institutional level, 2 at the faculty level (12%), and in 1 case the level depends on the instrument funding the research ("both levels") (Q35, Figure 11).

Figure 10. Perceived level of research project funding assessment in each HEI (Q34, n=17)



Note: Numbers in the plots indicate the numbers of Swiss HEIs. Source: recORD data (Bornatici et al., 2024), authors' computation.

Figure 11. Perceived level of development of processes, requirements or criteria for research project funding assessment in each HEI (Q35, n=17)

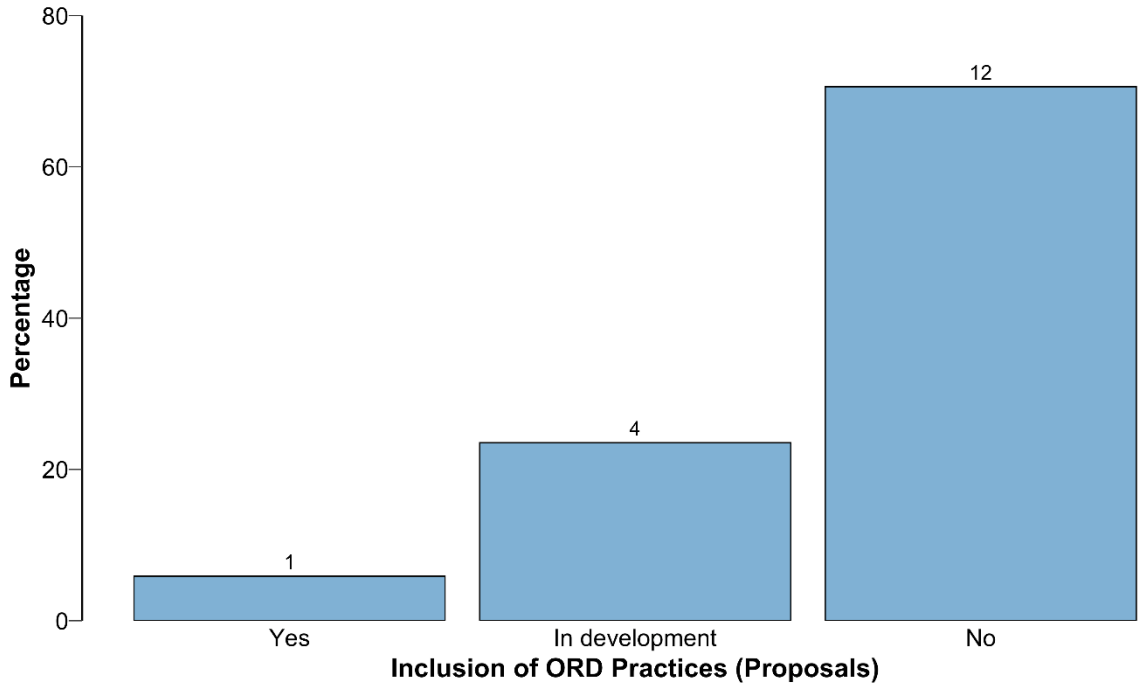


Note: Numbers in the plots indicate the numbers of Swiss HEIs. Source: recORD data (Bornatici et al., 2024), authors' computation.

4.2.2 Inclusion of ORD practices in the assessment of research proposals

This section examines whether and how HEIs are including ORD practices into the assessment of research proposals. Among the 17 institutions analysed, only 1 institution (6%), the University of Zurich, declared assessing ORD for research project funding (Q38, Figure 12). A respondent provided further details on how ORD is considered: "*Depending on the funding line, applicants must explain how they comply with the Open Science Policy of UZH. This is mainly the case for larger research networks and consortia, not for individual project grants for early career researchers.*"

Figure 12. Inclusion of ORD practices in allocation of research project funding (Q38, n=17)



Note: Numbers in the plots indicate the numbers of Swiss HEIs. Source: recORD (Bornatici et al., 2024), authors' computation.

ORD is therefore not yet a criterion for research project funding in most institutions. However, 4 institutions (24%) are currently developing criteria for its assessment. This is the case for BFH, PH Graubünden, PH Schaffhausen, and ZHAW. For the case of BFH, one respondent added that *"first steps have been taken to include ORD among the categories of scientific output tracked and considered for ex-post funding"*.

Based on the open question Q39, the main reasons for not assessing ORD in research project funding are a lack of internal structure or strategic interest, with discussions on open science

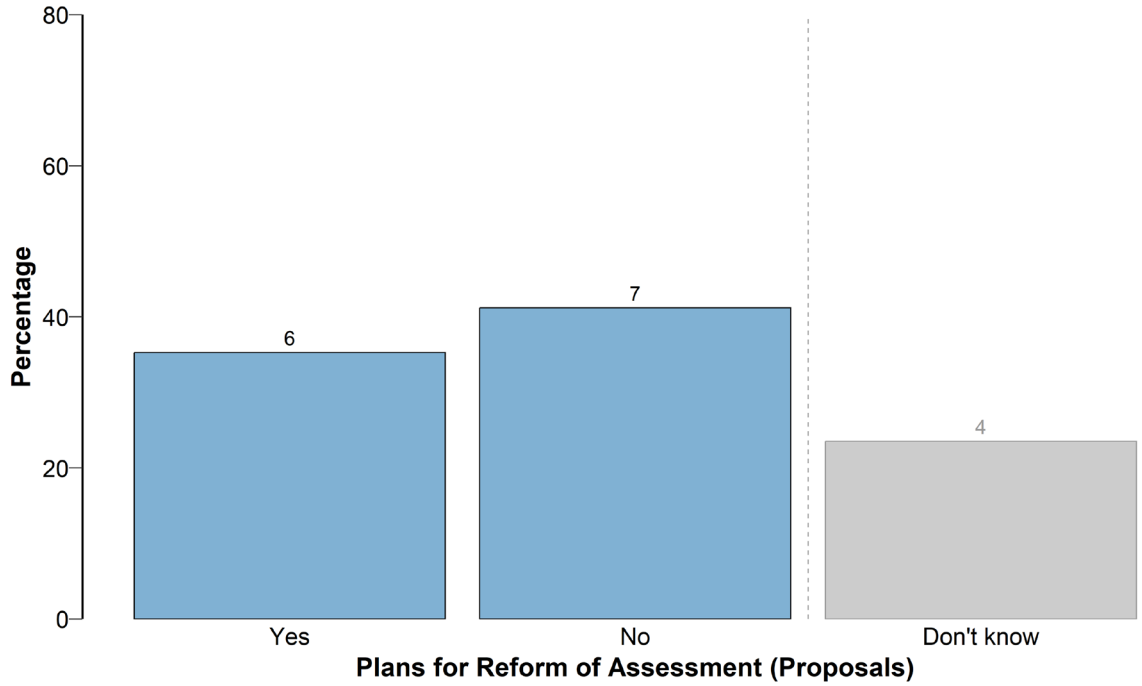
focussing on open access to publications or occurring only sporadically rather than in a strategic institutional manner. Additionally, ORD practices are still in development in some disciplines. A respondent from a university of teacher education mentioned that "*ORD is not (yet) standard in the field of education research*". This was confirmed by a second respondent from the same type of institution. However, this situation might change, as suggested by a respondent from PH Bern: *"We are currently in the process of training researchers in this area and developing how this can be included in future applications for internally funded projects".*

4.2.3 Plan to reform the assessment of research proposals

We also examined ongoing reforms regarding the assessment of research proposals within Swiss HEIs. While only 1 institution is assessing ORD for allocation of research project funding (Q38), 6 institutions (35%) are currently engaged in general reforms regarding the assessment of research proposals, whether or not they include ORD recognition (Q40, Figure 13). Respondents from 7 institutions (41%) report no ongoing reforms, while respondents from 4 institutions (24%) do not know if such reforms will occur within their institution.

Among the 6 institutions initiating reforms of research proposal assessment, in 1 institution the ongoing reform does not take ORD-related issues into consideration, while in the 5 other institutions respondents mentioned that ORD is being considered (Q41). At ZHAW, ORD is part of an action plan aimed at integrating ORD contributions into the institutional research and development policy. A respondent from the University of Zurich mentioned that UZH is "*constantly adapting [its] assessment framework to international standards…*" and is *"currently examining how to meaningfully integrate ORD into [their] assessment framework"*. As a signatory of the CoARA agreement, UZH is also developing a broader CoARA action plan. Unlike UZH, some HEIs are still in a phase of reflection on whether to engage in a reform of research project funding allocation to include ORD. In this sense, one respondent specified: "*We first want to gain experience and observe what other universities are doing (at home and abroad) and how FAIR is organising itself in the funding landscape*".

Figure 13. Plans for (or implementations of) reform of research project funding assessment (Q40, n=17)

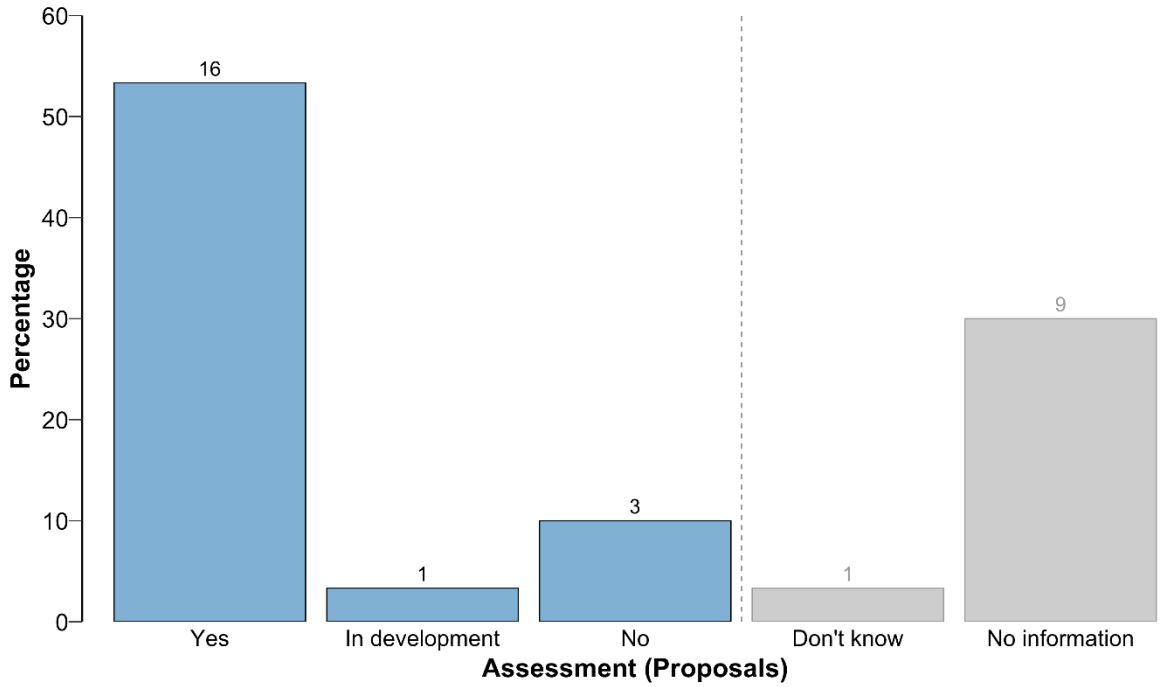


Note: Numbers in the plots indicate the numbers of Swiss HEIs. Source: recORD data (Bornatici et al., 2024), authors' computation.

4.3 Assessment of research units

30 respondents from 21 institutions participated in the first question of this section, which asked whether their institution was conducting research assessment for performance evaluation of research units (Q42, Figure 14). Respondents from 16 institutions confirmed that their institution was conducting such assessments (BFH, EPFL, ETHZ, HEP BEJUNE, PH Bern, PH Graubünden, PH Luzern, PH Thurgau, SUPSI, SNSF, UNIFR, UNIL, UNILU, UNINE, UZH, ZHAW). At the University of Geneva such assessments are under development. In 3 institutions (HEP Vaud, PH Schaffhausen, PH Schwyz), this is not the case, and the respondent from the University of Bern did not know. Respondents from the remaining 9 institutions did not took part in this section of the survey.

Figure 14. Existence of research assessment for performance evaluation of research units in each HEI (Q42, n=30)



Note: Numbers in the plots indicate the numbers of Swiss HEIs. Source: recORD data (Bornatici et al., 2024), authors' computation.

The next questions on the organisation of assessments of research units were then asked only to the respondents who answered "yes" or "in development" to the above question (Q42). This includes 21 respondents, representing 17 HEIs. These respondents are the sub-sample analysed in this section. Their profiles are described in Table 7.

Table 7. Sub-sample of respondents who answered the questions regarding the assessment of research units and institutions

		Represented institutions		**Individual answers**	
		n=17	%	n=21	%
Type of institution	University*	7	35%	10	48%
	Federal Institute of Technology	2	12%	2	10%
	University of applied sciences	3	18%	3	14%
	University of teacher education	5	29%	5	24%
	Funding institution	1	6%	1	5%
	Other institution	0	0%	0	0%
Position	Institution level			18	86%
	Unit level			3	14%
Managing role	Yes			12	57%
	No			8	38%
	Unknown			1	5%

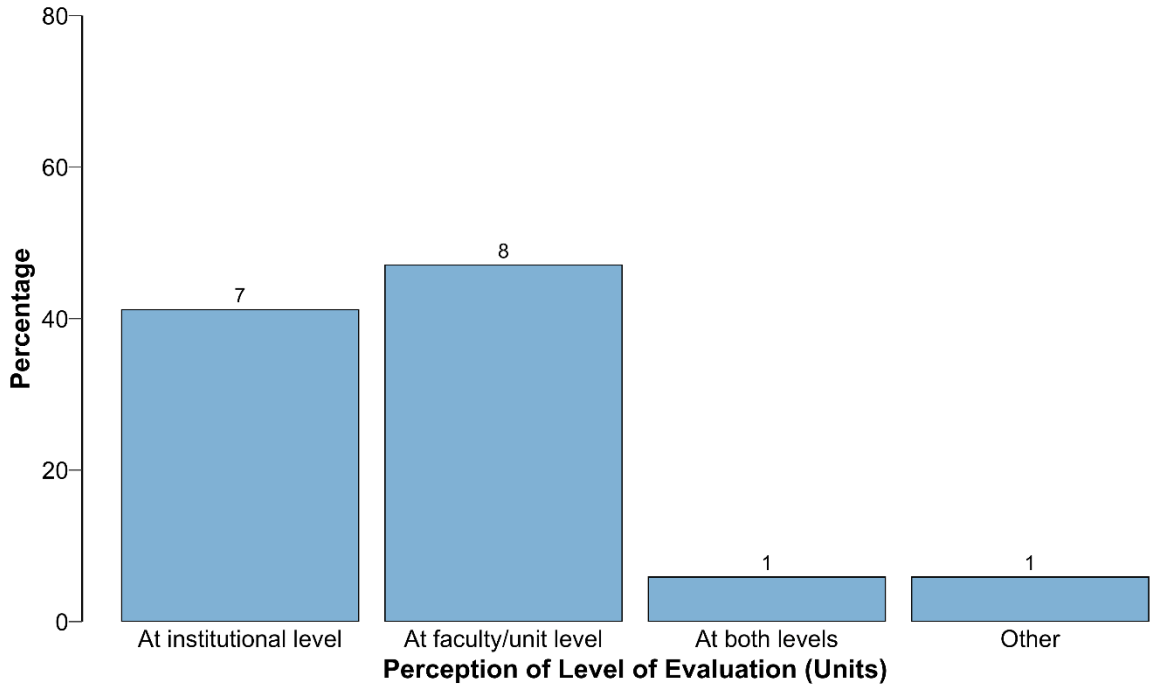
* At the University of Zurich, 5 respondents answered this section of the survey.

4.3.1 Level of assessment of research units

This section focuses on the level at which research units are assessed, i.e., whether at the institution level or the unit level (i.e., department, faculty, or lower administrative levels). Additionally, it distinguishes between those conducting the assessments and those developing the assessment criteria.

Among the 17 institutions analysed in this section, 8 institutions (47%) indicate that the evaluation of research units is primarily performed at the institution level, 7 institutions (41%) indicate that this is primarily performed at the unit level, and 1 institution at both levels (Q43, Figure 15). The SNSF chose the write-in category "Other" and indicated that the evaluation of NCCRs and infrastructures such as longitudinal surveys could be considered unit-level research assessment.

Figure 15. Perceived level of the assessment of research units in each HEI (Q43, n=17)



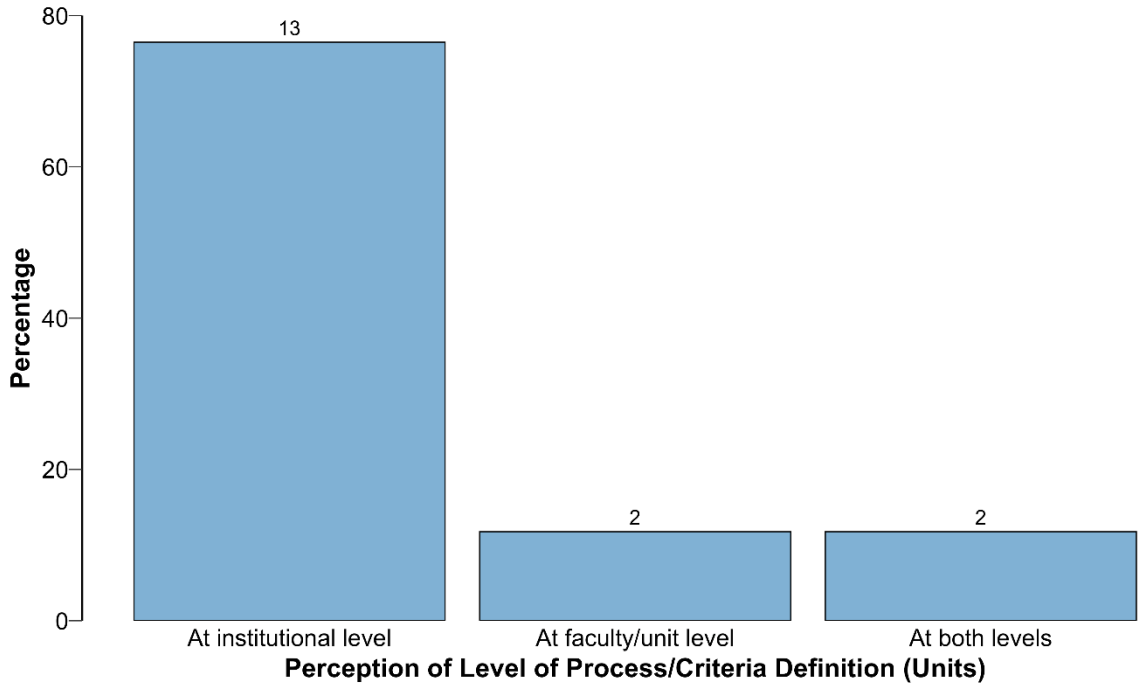
Note: Numbers in the plots indicate the numbers of Swiss HEIs. Source: recORD data (Bornatici et al., 2024), authors' computation.

One respondent from the "unit level" group explained that evaluations occur at the unit level, with departments assessing their own research units. Subsequently, key performance indicators enable cross-department comparisons at the institutional level. Since the respondents from the University of Zurich indicated different levels in their answers, the institution was categorised

into the "both levels" group. Interestingly, the institutional-level evaluation office representative stated that assessment takes place at the unit level, while a faculty-level representative indicated that it occurs at the institutional level, indicating that an institutional assessment procedure is in place that allows for unit-level adaptations.

While assessment of research units is performed at both unit and institutional levels, the development of criteria for the evaluation of research units is defined to a large degree at the institutional level (Q44, Figure 16). 13 institutions (76%) apply criteria and procedures defined at the institutional level whereas only 2 institutions (12%) report developing criteria and procedures at the unit level, and 2 institutions at both levels. In one case, criteria and procedures for institutional-level evaluations, which are primarily informative, are developed at the institutional level. For unit-level evaluations, the units themselves set the requirements. In the other case (UZH), there is again a tension between respondents, each stating that the other level is primarily responsible for developing assessment criteria and processes.

Figure 16. Perceived level of development of research units' assessment in each HEI (Q44, n=17)

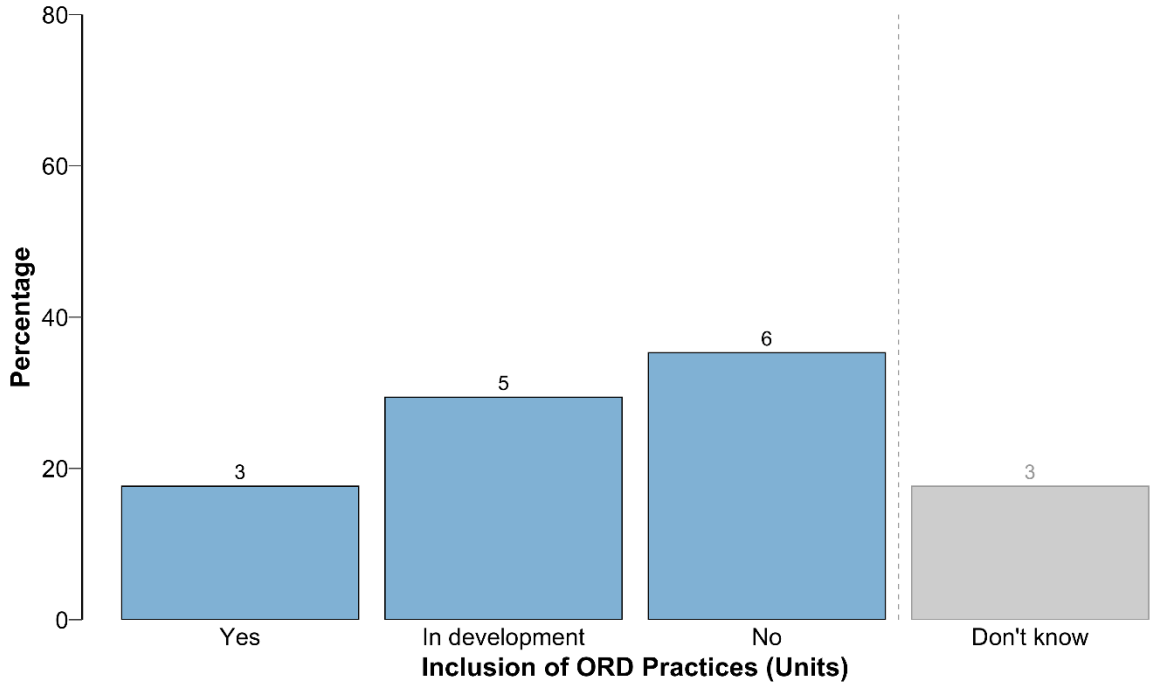


Note: Numbers in the plots indicate the numbers of Swiss HEIs. Source: recORD data (Bornatici et al., 2024), authors' computation.

4.3.2 Inclusion of ORD practices in the assessment of research units

This section examines whether and how HEIs are including ORD practices into the assessment of research units. Only the SNSF and two HEIs (18%), namely the University of Zurich and the University of Neuchâtel, include aspects of ORD in their evaluation of research units (Q47, Figure 17). 5 more HEIs (29%) are in the process of implementing ORD in their research units assessments. 6 institutions (35%) do not take ORD practices into account, while for 3 HEIs (18%), the respondents did not know whether ORD is included in the assessment practices.

Figure 17. Inclusion of ORD practices in the assessment of research units? (Q47, n=17)



Note: Numbers in the plots indicate the numbers of Swiss HEIs. Source: recORD data (Bornatici et al., 2024), authors' computation.

These results indicate that ORD practices are not a relevant and visible factor in research assessment for research units as of yet, but that there are some developments to include ORD practices (Q48). For example, in one institution internal discussions have not yet progressed to the extent of including ORD in the assessment of research units, but "*there are signs of a development in this direction*". Another respondent mentioned strong opposition within their institution, mainly from researchers in humanities: "*We do provide the faculties with data on their open access performance, however, and they are free to include this in their commentary*

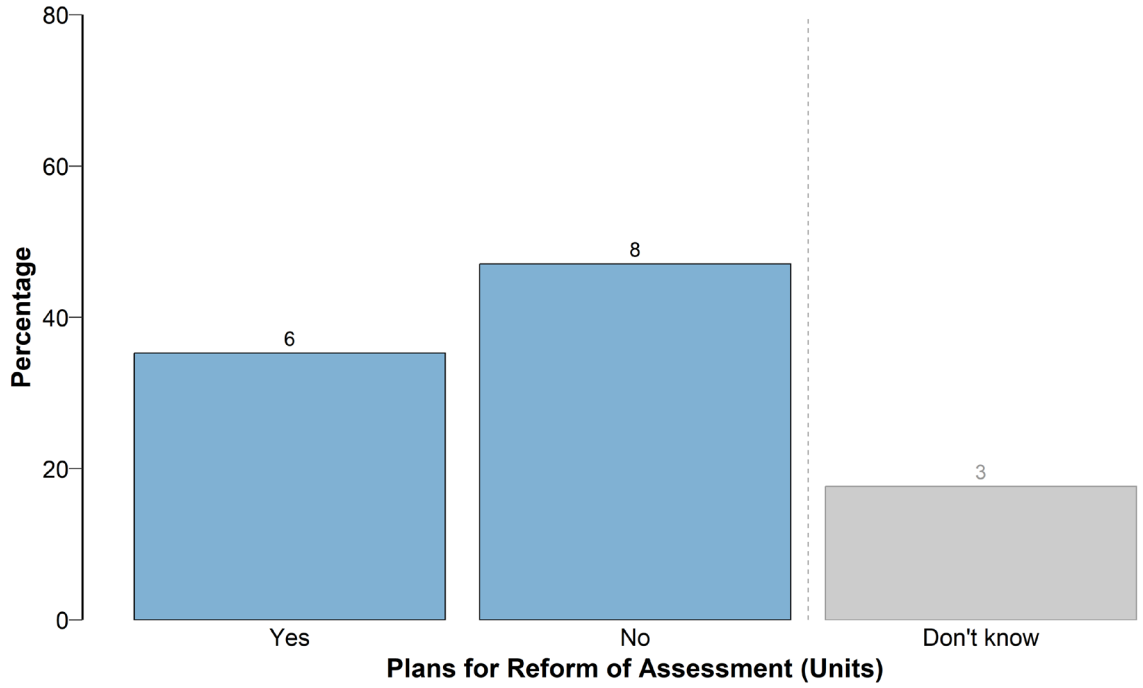
on to their section about publications in the research assessment report. Most faculties do not wish to include the information so far."

For institutions already accounting for ORD practices, the approaches vary. A respondent from the University of Zurich noted that ORD are included in reports on publication activities. The SNSF has integrated open science into its structure-related areas for NCCRs: "*each NCCR has a data officer and reports annually on their contribution/initiatives towards open science. An ORD lighthouse prize is newly awarded for NCCRs".*

4.3.3 Plan to reform the assessment of research units

Regarding reforms of research assessment (Q49, Figure 18), 6 institutions report planning to reform their assessment of research units (35%), while 8 institutions (47%) do not plan such a reform. Representatives of 3 institutions did not know whether a reform is planned.

Figure 18. Plans for (or implementations of) reform of assessment of research units (Q49, n=17)



Note: Numbers in the plots indicate the numbers of Swiss HEIs. Source: recORD data (Bornatici et al., 2024), authors' computation.

The answers to the open question (Q50) indicate that reforms can be initiated by different administrative units. For example, at some institutions, the open science office reform drives

reforms in research assessment to incorporate ORD practices. At other institutions, assessment reforms originate within the units concerned with evaluations.

Furthermore, in the comments on reform of research assessment and inclusion of ORD practices in assessments, 2 institutions point towards CoARA and their respective action plans, while 3 institutions state that the timing is not yet right. They note a lack of specialists in research evaluation and insufficient awareness among researchers and managers regarding the importance of both ORD and research assessment reforms.

5 Conclusion

This report presents a comprehensive landscape analysis on how ORD practices are included in assessment procedures across Swiss Higher Education Institutions (HEIs) and what measures facilitating ORD practices are implemented or currently developed. Three different assessment situations are considered, namely, research personnel assessment, project assessment, and unit assessment.

Methodologically (section 2), the landscape analysis is based on a questionnaire developed in March 2024 based on insights from the literature review performed in parallel (Araujo, Bornatici, & Heers, 2024). The 75-question survey, adapted from previous instruments, focused on ORD practices and policies and the integration of ORD practices into assessment procedures for research personnel, research projects and research units. Conducted online with both closed and open questions, it targeted individuals working in formalised research assessment practices and ORD policies and support at Swiss HEIs. Distributed to 57 institutions, 53 responses were received from 29 HEIs and the SNSF.

In the following, we will present the major findings and trends that we distilled from the survey responses. We will then point out factors that enable the inclusion of ORD practices in assessments and factors that might hinder them. We will end this section with some recommendations drawn from the results.

5.1 Findings and trends

The results from section 3 give an overview on how ORD practices are supported and implemented in Swiss HEIs. Generally, the Swiss HEIs are broadly committed to implementing

ORD practices. In a large majority of the HEIs, it is of medium or high strategic priority, while no institution assigned it a very high priority. ORD practices are often included in broader open science strategies and all but one of the participating HEIs have an implementation plan in place or in development. In doing so, institutions often mentioned the principle "as open as possible, as restricted as necessary" to account for the fact that there are different disciplinary practices and different types of data constraining possibilities to make data fully open (e.g., legal, technical, ethical issues).

Regarding supporting measures for the uptake of ORD practices in the disciplines, only half of the institution provide financial support for ORD practices or are in development for such funding opportunities. Almost all HEIs, however, provide awareness-raising activities on ORD practices, such as workshops, trainings etc. However, typically, such courses, trainings are optional for researchers.

Many institutions offer technical infrastructures to support ORD practices, but almost half of the HEIs (40%) do not provide such an infrastructure. These are typically smaller institutions, like universities of teacher education and they mention a lack of resources as a major reason for not being able to provide such an infrastructure.

Regarding research assessment procedures (section 4), we observe that, institutional research assessments are organised differently based on the type of assessment procedures. Academic recruitment and career assessment procedures are in most institutions organised at a unit level, whereas research project funding is predominantly organised at the institutional level. However, some institutions have funding schemes organised at both levels. Assessment of research units is equally organised at the institutional and the unit level, with one institution evaluating research units at both levels from different perspectives. Despite these differences, the criteria and procedures of the assessment process for all three assessment situations are developed predominantly at the institutional level (60% for academic recruitment and career assessment, 80% for research project funding and research unit assessment). This indicates that if ORD practices are to be included in assessment procedures, efforts should be made at the institutional level to develop appropriate procedures allowing to include aspects of ORD in assessments. However, the inclusion of ORD in these three assessment situations is currently limited. Less than a third of Swiss HEIs do include aspects of ORD practices in their assessment procedures, while around a third are in the phase of developing policies to do so. This suggests

that in the near future, between half and two-thirds of Swiss HEIs will include ORD aspects in assessment procedures. Interestingly, the inclusion of ORD is lowest in research project funding. Finally, nearly half of the institutions plan to implement a reform of their assessment procedures, with all three assessment situations equally subject to reform. Responses to open questions indicate that reforms can be initiated and implemented at different levels. Furthermore, two institutions mention CoARA as an opportunity to reform assessment procedures. The open questions also reveal that most, but not all, institutions planning to reform assessment procedures intend to include ORD aspects. Institutions not planning to reform their assessment procedure mention reasons such as timing not being right (yet) and a lack of specialists in research assessment.

5.2 Interpretation of the findings

The results of this survey on the inclusion of ORD aspects in assessment practices highlight that the assessment of research is a complex endeavour. Consequently, integrating ORD practices into research assessment requires careful consideration of this complexity.

The findings show first that most respondents are only familiar with certain parts of research assessments at their institutions (e.g., parts of institutional level and/or parts of specific unit levels). Additionally, we observe that those knowledgeable about ORD policies at their institutions are not necessarily the same individuals involved in research assessment procedures. This means that there needs to be built a "bridge" between units and individuals concerned with ORD and units and individuals concerned with research assessment. Furthermore, it is not uncommon for respondents from the same institution to disagree on how research is evaluated at their institution, and whether or how ORD practices are included in the assessments. This is consistent with previous research on evaluation procedures on national levels that also showed that even experts disagree on how research is evaluated in their country, given the diversity of assessment practices (Ochsner et al., 2021, p. 102). Thus, the survey results should be interpreted with this background in mind. In such circumstances, incorporating ORD practices into assessment procedures presents challenges, particularly in how information circulates and dialogue is established across different roles and implementation levels.

Similarly, ORD practices differ across disciplines and subdisciplines (Heyde, 2019; Late & Ochsner, 2024), making ORD practices relatively common in some disciplines without necessarily being formally included in institutional research assessment policies. However, in this report, we focussed on formal inclusion of ORD practices in assessment policies and thus we might not capture all ORD aspects in assessments. As the results show, assessment criteria and procedures are predominantly developed at the institutional level, which will facilitate the formal inclusion of ORD practices in assessment procedures, also in (sub)disciplines without such habits (see also Araujo, Bornatici, & Heers, 2024). The current institutional policies regarding ORD practices are designed to promote certain values – specifically, transparency, replicability and reusability of research data and analyses, even in disciplines where such practices are not yet part of the epistemic practice. However, we know from research on effects of evaluation procedures that top-down approaches often fail to account for disciplinary specificities (e.g., Nederhof, 2006). Such approaches lead to a range of negative steering effects (Rijcke et al., 2016), including epistemic injustice (Ma, 2022), especially when the evaluation is not taking into account epistemic differences across (sub)disciplines. This might de-favour specific types of discoveries – most often so-called breakthrough or frontier research that needs a certain autonomy and serendipity to be successful (Fochler & Sigl, 2018; Laudel & Gläser, 2014). To this, issues of maintaining disciplinary specificities in data management are added as an additional challenge when it comes to inclusion of ORD practices (Araujo, Bornatici, & Heers, 2024). Responsible research assessment thus asks for diversity in such procedures and a link to disciplinary research practices, as much as it also asks for a wide range of criteria used in assessment procedures (CoARA, 2022; Ochsner et al., 2020).

This call for a wide range of criteria in assessment procedures presents an opportunity to include ORD practices in assessments as an additional criterion. As we can see from the results in the survey, almost all institutions support the idea of ORD and have respective policies in place or in development. However, support for the actual practice of ORD is less developed, typically limited to voluntary workshop participation, with financial support for such practices being less common and ORD-related work rarely rewarded in assessment procedures. Without incentives, however, the time-consuming task of making data accessible – on top of all other tasks a researcher has to fulfil – is unlikely to become standard practice (e.g., Heyde, 2019; Soeharjono & Roche, 2021; Strømme et al., 2022; Wolkovich et al., 2012), as researchers do

(and have to) react on rewards in assessments (Fochler & Sigl, 2018; Müller & Rijcke, 2017; Rijcke et al., 2016).

The inclusion of ORD practices therefore comes with opportunities and risks and is a delicate task for research policy makers and research administrators. We therefore highlight a few enabling and inhibiting factors for the successful support of ORD practices through rewards in assessment procedures.

5.3 Enabling factors

The movement to reform research assessment, while long discussed among evaluation specialists (e.g., DORA, 2012; ENRESSH, 2017; Hicks et al., 2015), has gained traction through the **Coalition for Advancing Research Assessment** (CoARA, 2022). Since 2022, over 700 institutions have signed the Agreement on Reforming Research Assessment. Signatories of this agreement are required to develop Action Plans on how they will reform research assessment at their institutions. Several respondents pointed to such Action Plans at their institutions, in the frame of which they see opportunities to include ORD practices in the assessment of research.

Respondents also point out that while the formal inclusion of ORD practices in assessment procedures is yet to be worked out, institutions already aim at facilitating ORD practices through several measures, such as training, information and the provision of infrastructures. Such **ORD trainings** are indeed relevant for the uptake of ORD practices among researchers in fields not yet accustomed to these practices. In surveys on barriers to ORD practice, researchers mention lack of knowledge, insufficient knowledge but also the fact that collaborators do not yet agree to ORD practices, which are all barriers that can be addressed with such low-cost measures (e.g., Soeharjono & Roche, 2021; Strømme et al., 2022).

Many institutions already provide infrastructures for ORD practices, which is key to enable and facilitate work related to making data available to others. It is important that such infrastructures are interoperable and that researchers do not need to upload the same data at several places. Some disciplines have their specialised international infrastructure. These must be considered in assessments including aspects of ORD. However, it is also important to provide a **curated infrastructure** for researchers from disciplines without such disciplinary infrastructures. The curation is relevant to reduce fear (and actual occurrence) of scooping,

misuse, false interpretation and other issues mentioned in surveys on barriers to ORD practice (Heyde, 2019; Strømme et al., 2022; Wolkovich et al., 2012), and also to facilitate reuse as the reuse is a main reason why to make data open but is constrained by several issues linked to insufficient curation and quality assurance (e.g., Curty, 2016; Yoon, 2016).

5.4 Barriers and challenges

The results show that there are also several barriers to ORD practices in Swiss HEIs. While many institutions provide low-stake support in the form of normative (and sometimes policy) support, workshops and teachings, only very few provide additional funding. Rewarding ORD is also rare, incentives were mentioned as a measure by only a few institutions. Infrastructure is also named as an issue. While this can be of technical nature, it has also a financial side to it. Furthermore, disciplinary differences also play a role. ORD is rarely included in evaluations, which also means that ORD practices are not rewarded.

These issues are also known from the literature. ORD practice comes with an additional workload and is time-consuming. We group barriers mentioned in the literature into three categories: financial, technical and social barriers (see Heyde, 2019; Reichman et al., 2011; Soeharjono & Roche, 2021; Strømme et al., 2022; Wolkovich et al., 2012). In our survey, we also find evidence for epistemic barriers, an issue that is known from the research evaluation literature (see e.g., Ma, 2022).

Financial barriers occur because ORD practices are time-consuming and involve many steps. Institutions support ORD with policies, workshops and trainings. However, they rarely reward it in evaluations or with other incentives and rewards. However, when funding is missing, change of behaviour is unlikely. Researchers are already under pressure, especially early career researchers (Fochler et al., 2016), which are also those who report most negative effects of ORD practices (Soeharjono & Roche, 2021). Practicing ORD thus comes at the cost of not doing something else (usually, publishing other research outputs), also because it takes so many resources to adequately prepare and document data that without extra funding, doing new research instead is preferred under current funding and reward systems (Strømme et al., 2022).

Technical barriers relate to data complexity, which precludes a one-size-fits-all approach. The heterogeneity of data is a challenge for providing infrastructures for ORD (Reichman et al., 2011). Infrastructures, especially when used in evaluations, do not only support research and

make sharing possible, but they also "enact and distribute a particular conception of what research is" (Sīle & Rijcke, 2023, p. 101). Thus, ORD infrastructures and their particular implementation define by their parameters what ORD is. When used in evaluations, such infrastructures impact the way research is conducted and what is seen as research. Especially indicators regarding ORD practices implemented in infrastructures can be (and, according to some respondents to our survey are planned to be) used in evaluations and thus can have adverse effects on researchers who start to do checkbox exercises instead of pursuing what is relevant for research, choose research topics that are easily compliant with indicator requitements (for example, data sets are more or less used not only because of their quality but mainly conditional on how many researchers work on the topic), and contribute to the quantity instead of quality of research outputs, which comes with high societal costs (see e.g., Rijcke et al., 2016). The challenge is to first define clearly what ORD looks like and what an infrastructure shall provide rather than to simply start where it is simple – it is useful to also consider the function of the infrastructure, what Sīle and Rijcke (2023) call "New Public Management" or "Enlightenment" infrastructures.

Social barriers are among the predominantly named obstacles in surveys on ORD practices among researchers. Researchers state that ORD practice is time-consuming, that they fear scooping, that credit is not awarded for data stewardship, that data is not cited properly, data is misinterpreted and that rewards are missing (Beno et al., 2017; Heyde, 2019; Strømme et al., 2022; Wolkovich et al., 2012). Wolkovich et al. (2012) argue that those fears are unwarranted as there are solutions to prevent such negative effects. However, in some disciplines, ORD practice indeed comes with some costs (e.g., journals not allowing data citation but only in-test mentions). Certainly, to avoid those barriers, professional data curation of data infrastructure is needed.

Epistemic barriers relate to disciplinary specificities how research and data is produced. Depending on the type, form and quantity of data, ORD practices do make more or less sense and/or come with legal or financial constraints. Some disciplines are supported through institutional measures, while others struggle more as their specificities are not acknowledged. For example, there is less research on ORD practices in the social sciences and humanities (SSH) (Arthur & Hearn, 2021; Heyde, 2019). SSH are diverse in data use and some disciplines have a long tradition of ORD practices while others have legal constraints (for an overview, see Late & Ochsner, 2024). Given their experience in research evaluation where their epistemic

specificities have not been taken into account, they are also more reluctant to adopt ORD practices if only STEM-practices are researched and supported. Specifically, privacy, intellectual property and high volumes of data limit ORD practices across the disciplinary spectrum, as well as opportunity costs given its time-consuming nature (Heyde, 2019; Strømme et al., 2022; Wolkovich et al., 2012). An additional issue lies within how and what form of data is used in the disciplines to generate knowledge. It can be that not all information needed for a correct interpretation can be stored (e.g., anthropological observational data that is only interpretable when one knows the local context), which is why some researchers fear misinterpretation of their data (Beno et al., 2017). When it comes to the inclusion of ORD in assessment procedures, it is also important to keep in mind the most often cited reason why researchers do not practise ORD is that they do not produce data (Heyde, 2019). Making ORD a mandatory criterion in evaluation would strongly affect subdisciplines that do not use data (e.g., theories, conceptual subdisciplines, or mathematics).

5.5 Recommendations and future directions

Based on the findings of this research, the literature mentioned in this conclusion and our experience with ORD, data management, and research on evaluation, we suggest the following nine recommendations:

- **Mix top-down and bottom-up approaches**
  Evaluation procedures designed at the institutional level must be linked to epistemic practices and therefore need to be adapted at the unit level and implemented according to disciplinary specificities.
- **Embrace diversity**
  Data and the use of data differs across disciplines. Such disciplinary specificities need to be acknowledged in both infrastructure design as well as ORD policies. They are of particular importance when ORD practices are included in assessment procedures.

- **Reward ORD in assessments**
  ORD practices are time-consuming and not yet rewarded. In many cases, they have an important societal function. Rewarding the work that goes into documenting and archiving data is necessary to promote ORD practices.

- **Avoid adding indicators on data use**

  Do not add ORD to the plate of researchers' tasks by adding indicators. This will most likely lead to similar negative steering effects as the use of bibliometric indicators. Data use is not related to the quality of the ORD practices but to other factors, such as how many researchers work on a specific topic. There is the risk of box-ticking exercises instead of pursuing research objectives.

- **Financial support and policy addressing trade-offs**

  If ORD is required as a normative principle, ORD practice needs to be financed. There is a trade-off involved as ORD practices come with a cost and are time-consuming. Therefore, science policy needs to reflect upon the optimal proportion between making data available and the opportunity costs such as less research that can be funded and conducted.

- **Quality infrastructure**

  Support curated data infrastructures that give researchers enough control over the processes so that they trust it and that misuse is minimised. Opt for "enlightenment" type of infrastructures that are open and flexible regarding their use to acknowledge different (and as of yet unknown) approaches to data.

- **Ethical considerations**

  Reflect on the right to forget, especially for sensitive data. There is no need for all data to be stored infinitely.

- **Support research on ORD practices**

  Research on ORD is not available for all disciplines. Epistemic differences ask for specific research on how data is used and challenges involved to make data open or at least available to other researchers.

- **Invest in evaluation specialists**

  Research assessments are a complex endeavour with far reaching consequences. Institutions mentioned the lack of specialists in evaluation.

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7. Appendix: Online questionnaire

Survey objectives and structure

This survey is part of the **recORD** project funded by swissuniversities, aimed at advancing our understanding of how open research data (ORD) practices should be recognised and valued in research assessment.

This survey aims to map the current practices, needs, and challenges related to ORD in research assessment at Swiss higher education institutions (HEIs). With ORD we refer to practices facilitating access, use, and reuse of research data by anyone interested. Access and usage may be subject to specific agreements depending on the type of data.

For each participating institution, the survey will gather data on how ORD practices are supported and assessed. Additionally, it will capture ongoing discussions, resource needs, and prevalent challenges regarding research assessment.

The survey includes the following main sections:

1. Respondent background information
2. Research assessment information, with a focus on assessment of ORD-related practices:
    2.1 Assessment of research personnel during recruitment and career development
    2.2. Assessment of research proposals
    2.3. Assessment of research units and institutions
3. Information on ORD policies and available support
4. Concluding remarks

Participants

We invite individuals with a comprehensive understanding of their institution's research assessment criteria and processes, as well as those responsible for ORD practices to participate. This may include research management professionals, recruitment specialists, evaluators of research proposals, and institutional leaders.

Multiple respondents per institution are encouraged to participate, particularly if assessment processes are developed and implemented at the level of research units or faculties. Additionally, respondents may have expertise in specific types of assessment while lacking familiarity with ORD policies and available support. The only mandatory questions are those that sort respondents into the appropriate survey part. Respondents have the flexibility to navigate freely between different sections of the survey so that they can leave out questions that are not relevant for them.

Data collection and use

The data is collected through a Google Form. When filling out the form *using a Google account*, the progress is automatically saved and respondents can continue later. More information can be found here.

The data generated by this survey will be analysed by FORS - Swiss Centre of Expertise in the Social Sciences and synthesised into a comprehensive landscape analysis report. The results will be shared with project members, participants, and be made publicly accessible on Zenodo and the project's website. Information regarding the assessment processes and the ORD policies and support within each institution (i.e., parts 2 and 3) will remain non-anonymized. The data will be shared via SWISSUbase.

We collect your email address for potential follow-up communication to ensure accuracy. Your personal information will be kept confidential.

* Indicates required question

1. Email *

Part 1 - Respondent background information

2. Name *

3. Institutional affiliation *

4. What are your professional responsibilities related to research assessment * at your institution?

5. For which disciplines do you perform or develop assessments?

Check all that apply.

- [ ] Biology and medicine
- [ ] Mathematics, natural- and engineering sciences
- [ ] Human and social sciences
- [ ] Not applicable
- [ ] Other: _____

6. Please provide more information on your role as relevant.

7. Which aspect of the survey are you participating in? *

Mark only one oval.

- ◯ Research assessment *Skip to question 8*
- ◯ ORD policies and support *Skip to question 51*
- ◯ Both *Skip to question 8*

Part 2 - Research assessment information (I)

8. Is your institution committed to the following assessment agreements, policies or recommendations (or relevant stakeholders)?

Check all that apply.

- [ ] Coalition for Advancing Research Assessment (CoARA)
- [ ] European Charter for Researchers and the Code of Conduct for the Recruitment of Researcher
- [ ] Helsinki Initiative on Multilingualism in scholarly communication
- [ ] INORMS SCOPE framework
- [ ] San Francisco Declaration on Research Assessment (DORA)
- [ ] The Hong Kong Principles for assessing researchers: Fostering research integrity
- [ ] The Leiden Manifesto
- [ ] The Metric tide
- [ ] National recommendation/policy/agreement
- [ ] Institutional recommendation/policy/agreement
- [ ] I don't know
- [ ] Not applicable
- [ ] Other: _____

9. If you selected national or institutional recommendations, policies, or agreements, please provide their titles and links

_____

_____

_____

_____

_____

10. What were the main reasons why your institution decided to commit or not to these agreements?

_____

_____

_____

_____

_____

11. At which level are research assessments performed at your institution?

Check all that apply.

- [ ] Individual researchers are assessed
- [ ] Applications for funding are assessed
- [ ] Research projects are assessed
- [ ] Research groups, units or departments are assessed
- [ ] Assessments of the institution as a whole are performed
- [ ] I do not know which types of assessments are performed
- [ ] Other: _____

12. Is your institution performing academic recruitment and career assessment (for the purposes of performance evaluation and career progression of academic staff)? *

Mark only one oval.

- ◯ Yes *Skip to question 13*
- ◯ No, but this is being developed *Skip to question 13*
- ◯ No *Skip to question 33*
- ◯ I don't know *Skip to question 33*

Part 2.1 - Academic recruitment and career assessment

13. In your institution, at which level is academic recruitment and career assessment primarily performed?

    Mark only one oval.

    - ◯ At the level of the institution
    - ◯ At faculty/institute/unit level
    - ◯ I don't know
    - ◯ Other: _____

14. In your institution, at which level are the processes, requirements or criteria for academic recruitment and career assessment primarily developed?

    Mark only one oval.

    - ◯ At the level of the institution
    - ◯ At faculty/institute/unit level
    - ◯ I don't know
    - ◯ Other: _____

15. ***If it is NOT done at the institutional level,*** can you provide the name of the faculty/institute/unit for which you perform or develop recruitment and career assessments?

    _____

16. Who is involved in developing academic recruitment and career assessment procedures in your unit/institution?

Check all that apply.

- [ ] Academic leadership
- [ ] Academic researchers
- [ ] Library staff
- [ ] Research department staff
- [ ] I don't know
- [ ] Other: _____

17. Does your unit/institution include ORD practices (sharing, citing, reusing, expertise, mentoring/training) in the academic recruitment and career assessment?

Mark only one oval.

- ◯ Yes
- ◯ No, but this is being developed
- ◯ No
- ◯ I don't know

18. ***If yes,*** please go to the next question.

If under development, please provide more information on the objectives and ORD practices included in the assessment, the proposed assessment methods, and the timeline for implementation.

If no, please briefly explain the reason and the difficulties and obstacles in this area and indicate if there are plans to do so.

19. What ORD practices are taken into account in academic recruitment and career assessment at your unit/institution at the moment?

Check all that apply.

- [ ] Acting as a data steward or manager
- [ ] Practice regarding data management plans
- [ ] Practice regarding data collection
- [ ] Depositing data in a repository
- [ ] Open and FAIR data sharing
- [ ] Code sharing
- [ ] Long-term data preservation
- [ ] Citing datasets formally
- [ ] Reusing data
- [ ] Peer-reviewing data
- [ ] Developing trainings in ORD
- [ ] Attending trainings in ORD
- [ ] Mentoring regarding ORD
- [ ] Expertise in FAIR data management and sharing
- [ ] Expertise in ORD-related practices (sensitive data, data anonymisation, data protection, ethical issues)
- [ ] I don't know
- [ ] Not applicable
- [ ] Other: _____

20. Do you consider the degree of compliance of research data with FAIR principles (i.e., their level of FAIRness) in the research recruitment and career assessment?

Mark only one oval.

- ◯ Yes
- ◯ Somewhat
- ◯ No
- ◯ I don't know
- ◯ Not applicable

21. ***If you answered yes or somewhat to the previous question,*** please explain how these levels of FAIRness are determined and measured and provide hyperlinks as relevant.

22. Please expand further on the ORD-related assessment criteria and procedures your unit/institution has in place regarding academic recruitment and career assessment if relevant. As far as possible, please describe how your unit/institution makes use of specific qualitative (e.g. peer-review) and quantitative (e.g. metrics) methods.

23. Do you request researchers to include their ORD practices in their CV?

Mark only one oval.

- ◯ Yes
- ◯ No
- ◯ I don't know
- ◯ Other: _____

24. What practices contributing to the diversity of research are considered in academic recruitment and career assessment at your unit/institution at the moment?

Check all that apply.

- [ ] Diverse outputs irrespective of the language in which they are communicated
- [ ] EDI dimension (racial or ethnic origin, sexual orientation, socio-economic status, disability)
- [ ] Gender balance and gender dimension
- [ ] Research career stages (e.g. early career researchers vs. senior researchers)
- [ ] Respect the variety of scientific disciplines
- [ ] Respect the variety of research types (e.g. basic and frontier research vs. applied research) and methodological designs
- [ ] I don't know
- [ ] Not applicable
- [ ] Other: _____

25. Please provide more information regarding diversity and hyperlinks as relevant.

_____

_____

_____

_____

_____

26. Regarding transparency, information on the methods used in your unit/institution's assessment procedures for recruitments and careers in research is:

Mark only one oval.

- ◯ Publicly available (either in whole or in part)
- ◯ Internally available
- ◯ Not available
- ◯ I don't know

27. Are the assessment criteria for recruitment and career assessment clearly communicated to those being assessed?

Mark only one oval.

- ◯ Yes
- ◯ No
- ◯ I don't know

28. Please provide more information regarding transparency and hyperlinks as relevant.

29. Are the results of the assessment process discussed with those being assessed? Do they have the opportunity to think about it and express their opinion on the outcome?

Mark only one oval.

- ◯ Yes
- ◯ No
- ◯ I don't know

30. Please provide more information and hyperlinks as relevant.

31. Is your unit/institution planning, initiating or implementing a reform process on academic recruitement and career assessment?

Mark only one oval.

- Yes
- No
- I don't know

32. Please provide comments for your answer, including how ORD-related assessment will change either at the unit level or the institutional level.

_____

_____

_____

_____

_____

Skip to question 33

Part 2 - Research assessment information (II)

33. Is your institution performing assessment for allocation of research project funding within the institution ? *

Mark only one oval.

- Yes *Skip to question 34*
- No, but this is being developed *Skip to question 34*
- No *Skip to question 42*
-

Part 2.2 - Assessment of research proposals

34. In your institution, at which level is research project funding assessment primarily performed?

Mark only one oval.

- ◯ At the level of the institution
- ◯ At faculty/institute/unit level
- ◯ I don't know
- ◯ Other: _____

35. In your institution, at which level are the processes, requirements or criteria for research project funding assessment primarily developed?

Mark only one oval.

- ◯ At the level of the institution
- ◯ At faculty/institute/unit level
- ◯ I don't know
- ◯ Other: _____

36. ***If it is NOT done at the institutional level,*** can you provide the name of the faculty/institute/unit for which you perform or develop assessment of research proposals?

_____

37. Who is involved in developing research project funding assessment procedures in your unit/institution?

Check all that apply.

- [ ] Academic leadership
- [ ] Academic researchers
- [ ] Library staff
- [ ] Research department staff
- [ ] I don't know
- [ ] Other: _____

38. Does your unit/institution assess ORD practices for allocation of research project funding?

Mark only one oval.

- ◯ Yes
- ◯ No, but this is being developed
- ◯ No

39. ***If yes,*** please expand further on the ORD-related assessment criteria and procedures your unit/institution has in place regarding research project funding allocation within the institution. As far as possible, please describe how your unit/institution makes use of specific qualitative (e.g. peer-review) and quantitative (e.g. metrics) methods to assess ORD practices.

    If under development, please provide more information on the objectives and ORD practices included in the assessment, the proposed assessment methods, and the timeline for implementation.

    If no, please briefly explain the reason and the difficulties and obstacles in this area and indicate if there are plans to do so.

40. Is your unit/institution planning, initiating or implementing a reform process on allocation of research project funding assessment?

    Mark only one oval.

    - ◯ Yes
    - ◯ No
    - ◯ I don't know

41. Please provide comments for your answer, including how ORD-related assessment will change either at unit level or institutional level.

Part 2 - Research assessment information (III)

42. Is your institution performing research assessment for performance evaluation of research units? *

Mark only one oval.

- ◯ Yes *Skip to question 43*
- ◯ No, but this is being developed *Skip to question 43*
- ◯ No *Skip to question 51*
- ◯ I don't know *Skip to question 51*

Part 2.3 - Assessment of research units

43. In your institution, at which level is research units assessment primarily performed?

Mark only one oval.

- ◯ At the level of the institution
- ◯ At faculty/institute/unit level
- ◯ I don't know
- ◯

44. In your institution, at which level are the processes, requirements or criteria for research units assessment primarily developed?

Mark only one oval.

- ◯ At the level of the institution
- ◯ At faculty/institute/unit level
- ◯ I don't know
- ◯ Other: _____

45. ***If it is NOT done at the institutional level,*** can you provide the name of the faculty/institute/unit for which you perform or develop assessment of research units?

_____

46. Who is involved in developing research units assessment procedures in your unit/institution?

Check all that apply.

- [ ] Academic leadership
- [ ] Academic researchers
- [ ] Library staff
- [ ] Research department staff
- [ ] I don't know
- [ ] Other: _____

47. Does your unit/institution include ORD practices in the assessment for performance evaluation of research units?

Mark only one oval.

- ◯ Yes
- ◯ No, but this is being developed
- ◯ No
- ◯ I don't know

48. ***If yes,*** please expand further on the ORD-related assessment criteria and procedures your unit/institution has in place regarding the performance of research units. As far as possible, please describe how your unit/institution makes use of specific qualitative (e.g. peer-review) and quantitative (e.g. metrics) methods.

    If under development, please provide more information on the objectives and ORD practices included in the assessment, the proposed assessment methods, and the timeline for implementation.

    If no, please briefly explain the reason and the difficulties and obstacles in this area and indicate if there are plans to do so.

49. Is your unit/institution planning, initiating or implementing a reform process on performance of research units assessment?

    Mark only one oval.

    - ◯ Yes
    - ◯ No
    - ◯ I don't know

50. Please provide comments for your answer, including how ORD-related assessment will change either at unit level or institutional level.

Part 3 - ORD policies and support

This section covers questions regarding the unit/institution's strategy, policy, funding, infrastructure, tools, support services, promotion, and capacity building related to ORD.

51. In your institution, at which level are policies and support services related to ORD primarily developed?

Mark only one oval.

- ◯ At the level of the institution
- ◯ At faculty/institute/unit level
- ◯ I don't know
- ◯ Other: _____

52. ***If it is NOT done at the institutional level,*** please specify the name of the faculty/institute/unit for which you will answer.

_____

53. In your unit/institution, is there an implementation plan, a **strategy** or a roadmap for implementation of ORD?

Mark only one oval.

- ◯ Yes
- ◯ No, but this is being developed
- ◯ No
- ◯ I don't know

54. ***If yes,*** please provide more information on the **ORD strategy** and hyperlinks as relevant.

If under development, please provide more information on the upcoming ORD strategy and the timeline for implementation.

If no, please briefly explain the reason and the difficulties and obstacles in this area and indicate if there are plans to do so.

55. In your unit/institution, what is the level of importance of ORD in terms of the **strategic** priority areas?

Mark only one oval.

	1	2	3	4	5	
Very	◯	◯	◯	◯	◯	Very high

56. Does your unit/institution have an open science **policy** including data-related elements (such as provisions for data management plans, data protection, FAIR data, data sharing, long-term data preservation)?

Mark only one oval.

- ◯ Yes, mandatory policy
- ◯ Yes, optional/encouragement element
- ◯ No, not included
- ◯ I don't know

57. ***If yes,*** which of these ORD aspects are included in the **policy**?

Check all that apply.

- [ ] data management plans
- [ ] sensitive data
- [ ] data protection
- [ ] data storage
- [ ] data sharing
- [ ] FAIR data
- [ ] open data
- [ ] data citation
- [ ] long-term data preservation
- [ ] data stewardship
- [ ] skills/training for ORD
- [ ] incentives/rewards for ORD
- [ ] I don't know
- [ ] Not applicable
- [ ] Other: _____

58. Has the **ORD policy** been promoted and shared with researchers in your unit/institution?

Mark only one oval.

- ◯ Yes
- ◯ No
- ◯ I don't know
- ◯ Not applicable

59. ***If yes,*** please provide more information regarding the **ORD policy** and hyperlinks as relevant.

If no, please briefly explain the reason and the difficulties and obstacles in this area and indicate if there are plans to do so.

60. In your unit/institution, are there specific **funding mechanisms** for ORD-related practices?

Mark only one oval.

- ◯ Yes
- ◯ No, but this is being developed
- ◯ No
- ◯ I don't know

61. ***If yes,*** does your unit/institution **fund** activities related to:

Check all that apply.

- [ ] data management plans
- [ ] sensitive data
- [ ] data protection
- [ ] data storage
- [ ] data sharing
- [ ] FAIR data
- [ ] open data
- [ ] data citation
- [ ] long-term data preservation
- [ ] data stewardship
- [ ] skills/training for ORD
- [ ] incentives/rewards for ORD
- [ ] I don't know
- [ ] Not applicable
- [ ] Other: _____

62. If relevant, please describe any of your responses on **funding** further and provide hyperlinks.

_____

_____

_____

_____

_____

63. Does your unit/institution provide an **infrastructure** (such as data repository) to share research data?

Mark only one oval.

- Yes, internal infrastructure
- Yes, external infrastructure
- Yes, shared infrastructure
- Yes, combination of internal and external infrastructure
- No
- I don't know

64. ***If yes,*** does this **infrastructure** involve a checking process of the FAIRness (quality control, reusability control, documentation) of the data submitted before their publication?

Mark only one oval.

- Yes
- No, but this is being developed
- No
- I don't know

65. Is this **infrastructure** certfied for FAIR data sharing?

Mark only one oval.

- Yes
- No, but this is being developed
- No
- I don't know

66. Does your unit/institution provide **tools** (e.g., DMP tool) to facilitate ORD practices?

Mark only one oval.

- ◯ Yes, internal infrastructure
- ◯ Yes, external infrastructure
- ◯ Yes, shared infrastructure
- ◯ Yes, combination of internal and external infrastructure
- ◯ No
- ◯ I don't know

67. If relevant, please describe any of your responses on **infrastructure and tools** further and provide hyperlinks.

_____

_____

_____

_____

_____

68. In your unit/institution, are there dedicated research data **support services** (e.g., for research data management, FAIR data and data sharing)?

Mark only one oval.

- ◯ Yes
- ◯ No, but this is being developed
- ◯ No
- ◯ I don't know

69. ***If yes,*** please provide more information regarding **ORD support services** and hyperlinks as relevant.

If no, please briefly explain the reason and the difficulties and obstacles in this area and indicate if there are plans to do so.

70. In your unit/institution are there instruments (programmes, grants, research funds, fellowships, infrastructure grants) that aim **to promote ORD**?

Mark only one oval.

- ◯ Yes
- ◯ No, but this is being developed
- ◯ No
- ◯ I don't know

71. Have there been **awareness raising activities** on ORD, associated benefits and challenges, organised in your unit/institution?

Mark only one oval.

- ◯ Yes
- ◯ No, but this is being developed
- ◯ No
- ◯ I don't know

72. Has a framework of ORD competencies been incorporated into **research skills curricula** in your unit/institution?

Mark only one oval.

- Yes
- No, but this is being developed
- No
- I don't know

73. If relevant, please describe any of your responses on **promotion of ORD and capacity building** further and provide hyperlinks.

Part 4 - Concluding remarks

74. Do you have anything else that you would like to add?

75. Would you like to receive updates on the results of the landscape analysis and further developments in the project?

Mark only one oval.

- Yes
- No

Thank you for taking the time to complete our survey. Your participation is very valuable in helping us gather essential insights into research assessment practices and ORD policies within higher education institutions.

Should you have any further questions, comments, or wish to provide additional documentation related to your institution's practices, please feel free to contact us at christina.bornatici@fors.unil.ch, pedro.araujo@fors.unil.ch, or marieke.heers@fors.unil.ch. We welcome any further input you may have.

Once again, we sincerely appreciate your contribution to this important endeavor.

Best regards,
Christina Bornatici, Pedro Araujo, Marieke Heers
FORS - Swiss Centre of Expertise in the Social Sciences
recORD project