COAR Confederation of Open Access Repositories

COAR NARRATIVE SERIES

The Role of Repositories in Supporting Responsible Research Assessment

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For many years, research assessment has relied on a very narrow set of indicators – Journal Impact Factors, the h-index, and publication and citation counts – as the main measures of research quality. This approach has well-documented flaws: it measures the number of publications rather than the quality of the research, and it uses journal name as a proxy for quality rather than assessing individual contributions on their own merits. The result is a system that incentivises researchers to salami-slice their findings into as many articles as possible, while privileging journal articles over other contributions such as datasets, software, and methods, omitting large parts of the research effort entirely (Hurrell, 2023; Trueblood et al., 2025).

As more stakeholders in the research ecosystem recognise these limitations, research assessment reform has become a priority, especially for universities, research-performing organisations, and funders. The San Francisco Declaration on Research Assessment (DORA), launched in 2012, has attracted more than 27,000 individual and organisational signatories across more than 170 countries (DORA, n.d.). This movement extends well beyond North America. The Forum for Research Assessment (FOLEC), organised by the Latin American Council of Social Sciences, has more than 270 institutional and individual signatories (Latin American Council of Social Sciences, n.d.). China, too, is shifting away from decades of reliance on international citation indexes toward a more diverse set of measures emphasising quality and societal impact (Shu et al., 2022; Zhao et al., 2026).

In Europe, momentum has also been growing since at least 2014 (European Commission, 2015). In 2022, the European Commission's Agreement on Reforming Research Assessment (ARRA) set out four core commitments: (1) recognise the diversity of research contributions; (2) base assessment primarily on qualitative evaluation; (3) abandon inappropriate uses of journal-based metrics; and (4) avoid the use of rankings (Arentoft et al., 2022). The Agreement has more than 900 signatories, over 800 of them formal members of the Coalition for Advancing Research Assessment (CoARA) (European Commission et al., 2026).

Together, these commitments shape "responsible research assessment". Responsible research assessment judges the full diversity of research contributions on their own merits, relies primarily on qualitative, peer-informed judgement rather than

journal-level proxies, and uses quantitative indicators responsibly and transparently rather than as a substitute for review (Curry et al., 2020).

New infrastructure requirements for responsible research assessment

Turning these commitments into practice requires infrastructure that can support the new practices – and the gap in infrastructure is now a recognised bottleneck. A meeting in Pisa in November 2025, convening representatives from 24 organisations across the communities working on publishing reform and research assessment reform, concluded that the field's continued dependence on bibliographic databases is itself a problem. These databases are selective, biased toward English-language outputs, and opaque about their indexing decisions, making it difficult to identify research beyond journal articles published in a narrow set of indexed journals (DORA et al., 2025; ASAPbio, 2026; International Science Council, 2026). Breakout discussions at Pisa identified the lack of robust metadata and other infrastructures for tracking diverse research contributions as one of the central obstacles to be overcome.

A June 2026 European Commission baseline study reached a similar conclusion. Analysing 263 ARRA action plans and interviewing fifteen signatories, it found that reliance on commercial platforms poses real risks to the transparency, resilience, and scalability of assessment reform, and concluded that meaningful reform depends on "sustainable, open research assessment infrastructures" (European Commission et al., 2026). Science Europe's April 2026 position statement reached the same conclusion, placing open, community-governed infrastructure at the centre of its recommendations (Saenen & Morris, 2026).

CoARA's OI4RRA Working Group (WG) has translated this consensus into a practical tool (CoARA, n.d.). Its December 2025 report, *Open Infrastructures for Responsible Research Assessment: Principles, Framework, and Checklist for Research Organisations* (v4), sets out a community-validated framework built around four core pillars: technical robustness, operational capacity, community-driven practices, and ethical and inclusive foundations (Manola et al., 2025). An accompanying Open Infrastructure Checklist (Tzouganatou & CoARA WG on OI4RRA, 2025) is already being piloted against real services at community workshops during 2025 and 2026 (GraspOS, n.d.; Tzouganatou, 2026).

Repositories contain the outputs responsible assessment seeks to recognise

Responsible research assessment frameworks aim to recognise publications, datasets, software, and other contributions based on their intrinsic value (Balboa et al., 2024). Repositories are well placed to facilitate this, as most are designed to preserve and provide access to a diverse range of research outputs along with descriptive metadata about them. An analysis of roughly half of the repositories listed in COAR's International Repository Directory (about 3,500 repositories) found that they contain close to 340 million records, including articles, datasets, code, and reports (COAR, n.d.-a). Most of these repositories are open infrastructure, built for interoperability, and represent viable alternatives to the proprietary databases on which most assessment systems currently depend. CoARA's OI4RRA WG considers repositories core components of the open infrastructure landscape and essential infrastructure on which other research assessment services are built (e.g., discovery systems, knowledge bases, and knowledge graphs).

However, the capability of repositories to support responsible research assessment has not yet been fully realised. Among DORA-signatory universities in the United Kingdom, non-traditional outputs constituted only a small proportion of repository holdings, despite their public commitment to broadening the criteria used in assessment (Hurrell, 2023). One obstacle is that open solutions, such as repositories, have not yet been sufficiently integrated into formal assessment frameworks because assessment workflows, indicators, and reporting tools have been built around commercial bibliographic databases for decades. Shifting to open alternatives means rebuilding those processes around these new sources of data and infrastructures (OECD, 2026).

That said, more repositories are taking an active role in institutional assessment strategies. A growing number of institutions are adopting policies that require research outputs to be deposited in their repository to be recognised for the purposes of research assessment. In the UK, for example, institutional repositories function as the formal gatekeeping mechanisms for the Research Excellence Framework (REF). Outputs must be deposited within three months of acceptance to remain REF-eligible, effectively making repository deposit a prerequisite for an output to be assessed (Research England, 2025).

Other repositories are adopting new functionalities to better support research assessment. HAL, France's national repository, has developed features and plugins for scientometrics and research evaluation and is increasingly incorporating standard identifiers such as DOIs and ORCIDs to support institutional monitoring of research output. This shift is driven directly by institutional demand for scientific assessment tools built on top of the repository itself (Schöpfel & Azeroual, 2020). In addition, many institutions have pursued deeper technical integration between repositories and their Current Research Information Systems (CRIS). DSpace-CRIS, which has more than 100 installations worldwide (LYRASIS, n.d.), enables publication metadata to flow automatically between the repository and the systems used for institutional reporting and evaluation, reducing duplicate data entry and strengthening the link between open deposit and formal assessment (de Castro et al., 2014).

How can repositories strengthen their contribution to responsible research assessment?

Metadata is the connective tissue linking research contributions to the frameworks meant to evaluate them (International Science Council, 2026). In an ideal scenario, repository metadata could be reused directly by evaluation systems such as CRIS. In practice, however, there is often a gap because repository metadata schemas were designed primarily for discoverability, not assessment. But this gap can be overcome. There are many options for repositories to expand their metadata to include the elements needed to support research assessment. What is typically missing is sufficient local staff capacity to curate the metadata (Shearer et al., 2023).

In some instances, repositories will not need to duplicate metadata held elsewhere since the COAR Notify protocol allows them to link to related records in other systems that already hold the relevant metadata (COAR, n.d.-b), while repositories manage and provide access to the object (full text, dataset, etc.). However, for repositories that want to enhance their role in the research assessment process, the OI4RRA Open Infrastructure Checklist acts as a self-assessment tool that repositories can use to benchmark their own metadata practices, governance, and interoperability against responsible research assessment principles (Tzouganatou & CoARA WG on OI4RRA, 2025). Though originally designed to help research-performing and funding organisations evaluate candidate infrastructures, its criteria – data integrity, openness,

traceability, and alignment with responsible research assessment commitments – are also relevant to repositories.

In particular, there are three areas of practice that will enable repositories to enhance their role in responsible research assessment:

1. Consistent use of persistent identifiers for diverse outputs – Reliable citation, linking, and counting of datasets, software, and similar contributions depend on persistent identifiers.
2. Metadata enrichment at deposit and after publication – At the point of deposit, repositories can collect information needed to support research assessment, such as output type, funding, version, and relations between outputs, using vocabularies already supported by their metadata profiles. For metadata generated later in the publishing process, repositories can harvest structured data from intermediary services such as Crossref, ORCID, and DataCite.
3. Maintaining a full and accurate record (and collection) of the research outputs of the research-performing organisation with which the repository is affiliated. This requires working with senior leadership and the local research communities to adopt policies that require this, as well as developing easy-to-use workflows for researchers to deposit their resources into their repositories.

None of these activities requires new technology or standards. The mechanisms, tools, and protocols already exist, but they do require extra resources and staff time.

Conclusion

Responsible research assessment reform has reached broad consensus. DORA's global reach, CoARA's institutional membership, and parallel movements in Latin America and China all point in the same direction – and the Pisa meeting, the European Commission's baseline study, and Science Europe's position statement converge on the same diagnosis from different angles: assessment built on commercial, proprietary databases is too narrow and too opaque to deliver genuine reform.

Repositories already hold the outputs this reform seeks to recognise, and they already operate, for the most part, as open infrastructure rather than proprietary services. What stands between repositories and a fuller role in assessment is not a lack of content, but

the community's continued reliance on commercial platforms that capture only a fraction of the research outputs. That gap is closing as funders and institutions shift toward community-based systems built to reflect the full scope of research impact. Repositories are ready to be that infrastructure; what remains is the will to use them.

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