



NORF

FÓRAM NÁISIÚNTA NA HÉIREANN
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NATIONAL OPEN RESEARCH FORUM

ABOARD

RoAdmap to
EmBEding Open
ReseARch Practices
in IRELAND

Incentivising Open Research:

A System-Level Approach

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A System-Level Approach

1. Open research

a. What is Open Research?

In its Recommendation on Open Science (2021), the UNESCO defines the latter as follows:

an inclusive construct that combines various movements and practices aiming to make multilingual scientific knowledge *openly available, accessible and reusable for everyone, to increase scientific collaborations and sharing of information for the benefits of science and society, and to open the processes of scientific knowledge creation, evaluation and communication to societal actors beyond the traditional scientific community. It comprises all scientific disciplines and aspects of scholarly practices, including basic and applied sciences, natural and social sciences and the humanities, and it builds on the following key pillars: open scientific knowledge, open science infrastructures, science communication, open engagement of societal actors and open dialogue with other knowledge systems.*¹

Open Research (also known as Open Science or Open Scholarship) covers a diverse range of practices and processes all driven by a belief in the importance of research integrity, transparency, collaboration, and of science and scholarship for the greater good.

As a set of ethical practices, Open Research is fast becoming essential.

- 1) First, for its potential to be a crucial tool to counteract the growing mistrust in science: opening research to ‘societal actors beyond the traditional scientific community’ contributes to a better understanding by citizens of the nature of science and scholarship and familiarity with its actors and processes.
- 2) Secondly, as a vector of fairness and equity: removing barriers to access research data and outputs is essential for the equitable dissemination and production of new knowledge, including in a Global North-South context – e.g. when access to publications and datasets is not restricted behind a paywall profiting large publishing corporations, but free to anyone independently of their means.

b. Open Research – definitions in the EU and national policy contexts

The trend calling for Open Research has been growing nationally and internationally for the last two decades, together with the range of practices that the term encompasses.

¹ This definition was adopted by Ireland in the National Action Plan for Open Research 2022-2030 (p.4).

In **2018**, the European Commission articulated its understanding of Open Research around **5 themes**:²

- Open access to scientific publications,
- Management of research data, including open access,
- Preservation and re-use of scientific information,
- Infrastructures for open science,
- Skills and competences,
- Incentives and rewards.

Those were adopted by Ireland's National Open Research Forum (NORF) in 2019 and are still used by NORF.

In **2020**, the European Commission expanded its definition of Open Research to **8 Pillars**, following the publication of the final report from the European Open Science Policy Platform, 'Progress on open science: Towards a shared research knowledge system'.³ The 8 Pillars were as follows:

- Future of scholarly publishing,
- FAIR data,
- European Open Science Cloud (EOSC),
- Education and skills,
- Rewards and incentives,
- Next-generation metrics,
- Research integrity,
- Citizen science.

This was further superseded by the adoption in the [European Commission's Strategy of Research and Innovation 2020-2024](#) of the distinction between **Open Science Practices and Enablers**.

Open Science Practices

- Early and open sharing of research (Open Access, Pre-registration, pre-prints etc)
- Ensuring verifiability and reproducibility
- Open collaboration
- FAIR data management
- Public engagement, citizen science

Open Science Enablers

- Incentives and Rewards
- Legislative and regulatory environment
- Infrastructure, such as European Open Science Cloud (EOSC)
- Skills and capacity building

c. Open Research in EU and national research policy

In parallel to this broadening of the activities encompassed under the umbrella term of Open Research, Open Research has become increasingly central in the EU and national research policy agenda. Recent developments and policies worth noting include:

i. At EU level

- The European Commission's push for Open Research practices as part of the Horizon Europe Framework Programme (2021-2027), when compared to Horizon 2020 requirements. As detailed in OpenScience.eu's 2022 '[Summary of open science practices in Horizon 2020 and Horizon Europe](#)', many of the requirements pertaining to Open Research under H2020 were focused on Open Access, and/or part of a Open Research Data Open Pilot. A lot of those practices have now been made mandatory under the current FP and Open

² See COMMISSION RECOMMENDATION (EU) 2018/790 of 25 April 2018 on access to and preservation of scientific information, <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32018H0790>, last accessed 06.11.2024

³ <https://op.europa.eu/en/publication-detail/-/publication/d36f8071-99bd-11ea-aac4-01aa75ed71a1>

Research is at the core of the funding mechanism, as illustrated in the 2021 publication from the European Commission entitled '[Open Science Early Knowledge and Data Sharing, and Open Collaboration](#)';

- The centrality of Open Research in the European Research Area, notably via ERA Action 1 of the ERA Policy Agenda for 2022-2024, 'Enable Open Science, including through the European Open Science Cloud (EOSC)';

i. At national level

- The establishment of the [National Open Research Forum](#) (NORF) in 2017, as Government of Ireland initiative, funded by the Department of Further and Higher Education, Research, Innovation and Science, through the Higher Education Authority,
- The publication of the [National Framework on the Transition to an Open Research Environment](#) in 2019, which outlines 5 strategic areas: open access to research publications, enabling FAIR research data, infrastructures for access to and preservation of research, skills and competencies, and incentives and rewards,
- The publication of the National Action Plan for Open Research 2022-2030 in 2022, as a roadmap for meeting national objectives identified in the Framework, and organised around three themes: establishing a culture of open research, achieving 100% open access to research publications, and enabling FAIR research data and other outputs.

2. Incentivising Open Research

At present, traditional research assessment methods do not encourage nor incentivise the adoption of Open Research practices by researchers. As the Global Young Academy, InterAcademy Partnership, and the International Science Council explain in 'Snapshots of Reform: Research Evaluation within Science Organisations' (May 2024), the current system, focused largely on publications and citations, tends to promote a narrow vision of research success, defining it quantitatively, notably in relation to productivity levels and citation counts, and remains unsatisfactory:

Flawed measures of productivity, such as publication count, were replaced by metrics focused on citations or proxies such as Journal Impact Factor. However, these replacement metrics created new issues – including around what these metrics actually measure, and how they could be used fairly to compare researchers.⁴

As argued in the San Francisco Declaration on Research Assessment (2012), such assessment methods have notably led to:

- An over-reliance on markers of prestige that are not transparent and can be gamed,
- A bias for research fields where peer-reviewed multi-authored journal articles are the standard research outputs, to the detriment of disciplines valuing other modes of dissemination (e.g. monographs, datasets, policy recommendations) and single-authorship,
- A focus on quantity over quality, leading to the development of an unsustainable and toxic 'publish or perish' research culture.⁵

⁴ Global Young Academy, InterAcademy Partnership, International Science Council, 'Snapshots of Reform: Research Evaluation within Science Organisations' (May 2024), p.2.

⁵ See for instance the San Francisco Declaration on Research Assessment (2012), which provides substantiated evidence for those claims, including a short bibliography: <https://sfdora.org/read/>.

Current traditional research assessment methods also impoverish the research landscape and ‘(...) often (...) overlook valuable contributions including peer-review, committee participation, outreach, and the translation of research into impact within society’.⁶ At best, the traditional system does not attach any value to open research practices; at its worst, it could be argued that it does in fact hinder engagement with open research, in its exclusive focus on publications and ‘high-quality’ outlets.

Reform is therefore needed for a new research evaluation paradigm that aligns with the values promoted by the Open Research movement, and rewards researchers for adopting such practices. New assessment methods should acknowledge and value the diversity of research activities and research career paths,⁷ and they should focus on quality and impact of research. Such arguments are not new: **CoARA’s Agreement of Reforming Research Assessment (2022)** for instance places openness at the core of its guiding principles for assessment criteria and processes:

Quality implies that research is carried out through transparent research processes and methodologies and through research management allowing systematic re-use of previous results. Openness of research, and results that are verifiable and reproducible where applicable, strongly contribute to quality. Openness corresponds to early knowledge and data sharing, as well as open collaboration including societal engagement where appropriate.⁸

The Responsible Research Assessment movement is gaining traction internationally, suggesting a strong appetite for change. 796 organisations have now signed CoARA’s Agreement on Reforming Research Assessment,⁹ including 10 HEIs and 2 funding agencies in the Republic of Ireland (Science Foundation Ireland, now Táighde Eireann, and Health Research Board). **But implementation on the ground remains patchy,** with a disconnect between policies encouraging Open Research practices and the incentivisation and evaluation system faced by most researchers in their daily professional lives. Until both levels are aligned, we cannot expect researchers to adopt Open Research practices and change their behaviours.

2. The Need for Incentivisation at a System Level

One of the key obstacles to implementing the responsible research assessment reform remains the **lack of coherence among the key stakeholders in the research ecosystem, including sponsoring government department, research performing institutions, research funders, and researchers.** At present, the priorities of those stakeholders are not fully aligned.¹⁰ Moreover, and as pointed out in ‘Snapshots’, ‘the global nature of the research community means that any significant reform can generate a ‘first mover disadvantage’, where deviating from standard practice leaves an institution – or researchers – isolated from the wider system’.¹¹

6 Global Young Academy, InterAcademy Partnership, International Science Council, ‘Snapshots of Reform: Research Evaluation within Science Organisations’ (May 2024), p.2.

7 See for instance Room for Everyone’s Talent, Netherlands (2023).

8 CoARA, Agreement of Reforming Research Assessment (2022), https://coara.eu/app/uploads/2022/09/2022_07_19_rra_agreement_final.pdf, pp.3-4. Last accessed 1.11.2024

9 As of October 15th 2024. <https://coara.eu/agreement/signatories/>

10 See ‘Snapshots’ pp.8-9.

11 Ibid., p. 9.

As demonstrated in ‘System-level Incentivisation of Open Research Practices’ (NORF, 2021), **‘the key challenge, therefore, is to align incentives and rewards across the government-funding agency-HEI-researcher ecosystem so that researchers encounter one set of ‘meta-incentives’** encouraging them in one direction, without tension coming from the existence of opposing incentives.’¹² **Until an extensive, coherent incentivisation of Open Research practices is put in place at system level, the discrepancy between policy and behaviour will remain.**¹³

Several countries have adopted a system-level approach, from which Ireland can learn.

The following exemplars are borrowed from ‘System-level Incentivisation of Open Research Practices’ (NORF, 2021):

a. Finland

Finland recognises that ‘When researchers, research organisations and funders work together towards a common goal, their actions and efforts produce the best results’.¹⁴ To that end, it was one of the first countries to take a national approach to researcher evaluation. The publication of national recommendations from a group that consisted of both institutional representatives and research funders and which are explicitly directed at both groups of organisations; in addition, the Finnish Ministry of Education and Culture amended its funding model in a move towards qualitative criteria.

b. Norway

Universities Norway recently commissioned a working group to develop a national research assessment framework; the working group tasked with this included representation from the Research Council of Norway. The framework - NOR-CAM¹⁵ - explicitly delineates the role of all four major sets of relevant actors (government departments, funders, institutions and researchers).

c. Netherlands

In terms of system-level incentivisation of open research practices, the Dutch framework¹⁶ is widely acknowledged to be sector-leading. The well-known position paper *Room for everyone’s talent towards a new balance in the recognition and rewards of academics*⁸ recognised the criticality of a system-level approach – the authors write that ‘modernising the system of recognition and rewards requires ... a national and international coordination between all parties involved’ (VSNU et al., 2019, p. 3). Changes to the Dutch system were driven by a group of institutions and funders with the national research evaluation exercise was also a key factor.

12 Smith, S., Donovan, J., Hevari, B., & Loughran, R. (2021). System-level Incentivisation of Open Research Practices. National Open Research Forum, Ireland, p.5. <https://doi.org/10.7486/DRI.k069nz78d>

13 The NORF-funded TROPIC project (‘Training for Open Research in an Irish Context’) has identified a significant gap between high levels of awareness of Open Research practices among Ireland-based researchers and their willingness to engage in them on the one hand, and on the other, their actual engagement in open research practices. See the TROPIC Survey results, last accessed 06.11.24.

14 <https://www.aka.fi/en/about-us/whats-new/press-releases/20202/two-new-recommendations-issued-to-improve-responsible-researcher-evaluation/>

15 https://www.uhr.no/en/_f/p3/i86e9ec84-3b3d-48ce-8167-bbae0f507ce8/nor-cam-a-tool-box-for-assessment-and-rewards.pdf

16 Dutch Recognition and Rewards programme: <https://recognitionrewards.nl/about/about-the-programme/>;

see also Open Science: The very idea for an account of developments in the Netherlands

<https://doi.org/10.1007/978-94-024-2115-6>. See the 2023 ‘Room for Everyone’s Talent in Practice’ for an early evaluation of the programme.

d. France

The recently updated French National Plan for Open Science¹⁷ - published by the relevant government Ministry - contains numerous references to incentives and rewards. It refers specifically, for example, to the utilisation of responsible research metrics within funding call documents, to open research principles and practices within the national research evaluation body (Hcéres), the inclusion of Open Research competencies in the relevant national competency framework, and to the promotion of 'the use of narrative CVs to reduce the importance of quantitative assessments to the benefit of qualitative ones'. This national plan, therefore, recognises that all actors must work together in the areas of incentives and rewards in order to ensure the best chance of success.

e. UK

While the UK has not rolled out a national programme of researcher evaluation akin to those described above for the Nordics in particular, there is acknowledgement that system-level approaches to incentivising Open Research are desirable. The main area of relevance remains that of 'research impact' which is an important component of both funding applications to national funding councils (notwithstanding the recent removal of dedicated 'Pathways to Impact' sections) and also of national research assessment (the REF) – these have significantly incentivised UK

institutions to prioritise recruitment and retention of researchers who excel in these areas. In addition, UKRI is exploring a 'shared approach across the sector' to the use of narrative CVs¹⁸ (and also to 'modernis[ing] our research evaluation policy to reward openness and diversity in research'¹⁹ – but this does not explicitly mention a system-level approach). Overall, while the UK does not yet have a strong system-level framework to incentivise open research, there is a clear recognition of its desirability across at least some areas of this agenda.

f. America

System-level approaches to incentivisation in America seem, at the moment, to be limited. While many funders are mandating Open Research in various guises, it is not yet universal and many universities appear to devolve even to the level of the School or Department. Unsurprisingly, the most significant issue reported is the impact of Open Research on 'Recruitment, Retention and Tenure' – addressing the 'RRT' conundrum is the key to accelerating the transition to an Open Research Environment. There is evidence of nascent exploratory work being undertaken on system level incentivisation, indicating that its importance is recognised; the National Academies of Sciences, Engineering and Medicine, for example, held a Roundtable on Aligning Incentives for Open Science.²⁰ Overall, however, this agenda appears to be at an early stage in the US.

17 <https://www.ouvri.lascience.fr/second-national-plan-for-open-science/>

18 <https://www.ukri.org/what-we-do/supporting-healthy-research-and-innovation-culture/research-and-innovation-culture/>

19 <https://www.ukri.org/wp-content/uploads/2020/10/UKRI-091020-CorporatePlan2020-21.pdf> (see p. 19)

20 <https://www.nationalacademies.org/our-work/roundtable-on-aligning-incentives-for-open-science>

Conclusion

ABOARD's ultimate objective is to develop a detailed and concrete change process which will deliver coherent, system-level incentivising of Open Research, Responsible Research Assessment (RRA) and the use of Responsible Research Metrics (RRM) for Ireland. This is a major, national research culture initiative which will secure the firm commitment to key actions within specific timelines by all stakeholders in the Irish research landscape.

The project takes as its starting point four propositions:

- That effective incentivisation of Open Research practices requires basic alignment between all major actors within a system: sponsoring government department, research performing institutions, research funders and researchers. Any substantial misalignment between these actors risks fragmentation of researchers' 'lived experience' of their research practices;
- That the incentivisation of open research involves re-thinking research assessment practices and, as such, is fundamentally imbricated in the power relations of the academy and the broader research sector;
- That action-oriented conversations around incentivisation, rewards and research assessment requires, within the Irish context, a much stronger engagement with researchers than has occurred hitherto;
- That a dialogic and iterative consultation model is critical to reaching authentic and actionable agreement on a roadmap for the incentivisation of open research practices. Without such an approach this work risks becoming viewed by researchers as 'another compliance' matter rather than ultimately resulting in a bedrock shift in beliefs and behaviours.

Developing a system-level incentivisation of open research, ABOARD will ensure that the incentives that researchers encounter in all major fields of their activity are aligned. This will hugely increase engagement with Open Research among the research community, including cohorts whose work is not currently funded by national or international funders, many of whom do have Open Research practices in place.

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ABOARD

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