

The Value of RDA for Policy Series

Advancing Community-Led Impact on Science Policies

Focusing on National PID Strategies, Journal Research

Data Policy Frameworks and Research Evaluation

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1. Executive Summary

The Research Data Alliance (RDA) contributes to shaping global science policy through its community-driven approach, uniting 15,500+ members across diverse disciplines and regions to facilitate consensus and transform fragmented efforts into coordinated action. Since 2013, the RDA community has produced over 150 recommendations and outputs that serve as technical and social infrastructure solutions for data sharing, exchange, and interoperability. These outputs have become foundational elements of science policy at institutional, national, and international levels, providing funders and policymakers with evidence-based frameworks for implementing Open Science initiatives.

To demonstrate the **value of the RDA for science policy**, the RDA Secretariat organised pilot workshops in May 2025 focusing on three key policy areas: **National Persistent Identifier (PID) Strategies**, **Journal Research Data Policy Frameworks**, and **Research Evaluation**. These areas form essential infrastructure for modern research by ensuring research outputs can be reliably tracked and cited, establishing consistent data sharing standards, and creating systems that reward responsible research practices.

National PID Strategies represent coordinated approaches that countries develop to systematically implement PIDs across their research ecosystems. The RDA's National PID Strategies Guide and Checklist has enabled countries, including Czech Republic, France, Ireland, and the United States, to develop tailored PID strategies that streamline implementation and increase FAIR research practices. These strategies deliver systemic benefits through coordinated infrastructure investment and international best practice alignment.

Journal Research Data Policy Frameworks address the critical need for consistent data sharing standards across academic publishing. The RDA's framework identifies key elements of effective journal data policies and provides standardised approaches that simplify implementation for publishers while clarifying expectations for researchers. Major publishers including PLoS and Springer Nature, and the publishing industry body the STM Association have adopted this framework, demonstrating measurable increases in journal data policies and data availability statements.

Research Evaluation reform recognises the urgent need to evolve beyond traditional bibliometric measures to embrace diverse research contributions including datasets, software, and collaborative efforts. The RDA Evaluation of Research Interest Group facilitates global discussions on assessment reform which are supported by practical examples from France's liaison with CoARA, the SHARC Interest Group's comprehensive stakeholder recommendations, and Open Science NL's €1.2M initiative to embed Open Science practices into career advancement criteria.

Workshop participants representing 29 countries demonstrated strong interest across all policy areas while acknowledging limited understanding of these specialised topics, highlighting both the importance and opportunity for continued community dialogue. The evidence demonstrates that RDA outputs serve as critical foundations for informed policy decision-making, offering community-endorsed strategies that enhance policy effectiveness. Moving forward, the RDA must continue leveraging its unique position as a neutral, international platform to drive policy transformation while developing mechanisms to track and demonstrate the real-world impact of its recommendations and outputs on global research practices.

2. Background and Context

Over the past decade, the Research Data Alliance (RDA)¹ has made valuable contributions to global science policy. While operating outside traditional policy structures, the RDA is uniquely positioned to fundamentally shape how scientific research operates on a global scale. With over 15,500 members, the strength of the RDA lies in its ability to unite diverse voices across the complex research data ecosystem, achieving consensus among multidisciplinary stakeholders and transforming fragmented efforts into coordinated action.

By facilitating dialogue between different countries and regions, the RDA helps align global approaches to scientific research practice. Such alignment and harmonisation is crucial for developing science policy that transcends geographical borders, which is of particular importance for international research collaboration. This multi-stakeholder engagement between researchers, data professionals, publishers, funders and policymakers facilitates the development of data sharing best practices, technical standards and practical frameworks, positioning the RDA as an influential force in shaping science policy through its grassroots, community-driven approach.

Since its inception in 2013, the volunteer RDA community has produced over 150 recommendations and outputs. These outputs are technical and social infrastructure solutions developed by RDA working groups or interest groups that facilitate data sharing, exchange, and interoperability. Such outputs include recommendations for data repositories, metadata standards, interoperability protocols and research evaluation that policymakers can reference when crafting implementation strategies for Open Science. Importantly, several RDA recommendations and outputs have become foundational elements of science policy at the institutional, national, and international level.

What are RDA 'Recommendations and Outputs'?

- Recommendations: The community's flagship outputs which are formal specifications, standards, or frameworks produced by RDA Working Groups that undergo rigorous review processes before receiving official RDA Council endorsement. They meet defined criteria, including public availability, usability, and demonstrated adoption potential.
- Supporting Outputs: Community-reviewed educational materials and guidelines from RDA
 Working Groups, Interest Groups, or Communities of Practice that inform and educate stakeholders.
- Other Outputs: Unendorsed resources published on the RDA website at the request of Working Groups, Interest Groups, or Communities of Practice, including workshop reports, articles, and survey results.

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¹ https://www.rd-alliance.org/

² https://www.rd-alliance.org/recommendations-and-outputs/outputs/

³ https://www.rd-alliance.org/group-directory/

Given the RDA's scale as a global community-driven organisation spanning diverse data-related topics, identifying and measuring its impact on policy remains challenging. Moving forward, we aim to understand, promote, and demonstrate the RDA's value by showcasing concrete examples of research data management best practices that policymakers can champion as essential catalysts for meaningful change. Demonstrating clear evidence of impact and policy relevance enhances the RDA's ability to continue fostering collaborative solutions across the global research data ecosystem.

With this in mind, the <u>RDA Secretariat</u>,⁴ in collaboration with <u>RDA Regional Assembly</u>⁵ members, organised pilot workshops to kick-start a community conversation on the '**Value of RDA for Policy**'. The workshops took advantage of the RDA's community-driven approach to collate evidence and best practices from the practical real-world adoption and implementation of RDA recommendations and outputs of value for defining and implementing science policies. This practical knowledge helps inform policy development with concrete examples of what works, lessons learned and what challenges need to be addressed.

Insights from the workshop presentations and discussions provide the research community, particularly funders and policymakers, with compelling evidence demonstrating how RDA outputs serve as critical foundations for informed decision-making across key policy areas. The RDA offers adoptable, community-endorsed strategies and frameworks that enhance policy effectiveness and implementation success.

What do we mean by 'Science Policy'?

Following <u>UNESCO guidance</u>, this white paper uses 'science policy' to refer to a set of guidelines, rules, regulations, laws, principles or directions to put Open Science values and principles into practice. In particular, Open Science policies foster a culture of Open Science and develop science, technology and innovation systems which contribute to making research more efficient, trusted, impactful, inclusive and responsive to societal needs.⁶

3. The Value of the RDA for Policy Workshops

Workshops on 'Value of the RDA for Policy: Advancing Community-Led Impact on Science Policies Through RDA', held on 15 and 20 May 2025, were organised for RDA's Regional Assembly, Organisational Assembly and Funders Forum members as valued RDA stakeholder groups that support and sustain RDA's vision and mission. These stakeholder groups also comprise individuals serving as or well connected with government officials, institutional leaders, advisory body members, policy development managers, funders, and consultants.

⁴ https://www.rd-alliance.org/governance/secretariat/

⁵ https://www.rd-alliance.org/membership/regional-membership/

⁶ https://doi.org/10.54677/VHNY8608

⁷ https://www.rd-alliance.org/groups/rda-regions/activity/

⁸ https://www.rd-alliance.org/membership/organisational-membership/

⁹ https://www.rd-alliance.org/governance/funders-forum/

¹⁰ https://www.rd-alliance.org/how-rda-works/

3.1. Aims and objectives

Targeted workshops enabled cross-community exchange and provided these RDA stakeholders with opportunities to:

- Learn more about the RDA's impact on key policy areas and understand how RDA outputs influence policy at the institutional, national and international level.
- Become educated, encouraged and inspired to implement RDA outputs to impact policy in their own organisational and regional context.
- Begin discussing successes, challenges, and lessons learned of adopting RDA outputs to impact policy.

The workshop focussed on showcasing and recognising the impact RDA has on the following key policy areas:

- 1. National Persistent Identifier (PID) Strategies
- 2. Journal Research Data Policy Frameworks
- 3. Research Evaluation

These three policy areas form essential infrastructure for modern research by ensuring research outputs can be reliably tracked and cited (PIDs), establishing consistent standards for data sharing and transparency (journal data policies), and creating systems that reward responsible research practices (research evaluation). The Research Data Alliance recognises these as important policy areas, with dedicated working and interest groups actively developing solutions and best practices in each area to support a more transparent, reproducible, and impactful research ecosystem.

3.2. Workshop Format and Invited Speakers

A one-hour workshop, offered twice to accommodate different time zones (Workshop 1 at 15:00 UTC for Europe/Africa/the Americas and Workshop 2 at 06:00 UTC for East Asia/Oceania), consisted of three 7-minute lightning talks, with one presentation covering each policy topic. Each talk presented a policy statement demonstrating the relevance and importance of that particular policy area supported by 'Adoption Stories' as evidence of practical applications of RDA recommendations and/or outputs. A short 'Question and Answer' session followed each talk allowing participant engagement with speakers.

What is an Adoption Story?

A detailed report that describes how an organisation has implemented an RDA recommendation or output and demonstrates the resulting benefits such as improved efficiency, enhanced impact, or streamlined processes.

□ Read all adoption stories

What do we mean by 'Adoption?'

In the context of the RDA, the term 'adoption' can be broadly defined as:

- **Direct Use**: The recommendation or output is created and implemented with no alterations required ('out of the box').
- Adaptation: The recommendation or output is altered to suit a specific context.
- **Influence**: The recommendation or output is used to inspire further work.

In March 2025, the workshop <u>organising committee</u> opened a call for 'Expressions of Interest' inviting RDA members to contribute adoption stories that showcase how RDA recommendations and/or outputs impact one of the key policy areas. Speakers were selected based on their understanding of the policy area, and active involvement in the creation and adoption of relevant RDA recommendations and outputs. Additional adoption stories, sent via the call for 'Expressions of Interest', are included in later sections of this document (National PID Strategies: <u>Section 4.4.3.</u>; Journal Research Data Policy Frameworks: <u>Section 5.4.3.</u>; and, Research Evaluation: <u>Section 6.4.3.</u>) as supporting evidence of RDA's impact on science policy.

3.2.1. Emma Crott, Australian Research Data Commons (ARDC), Australia



Dr Emma Crott is Chief of Staff and Company Secretary for the Australian Research Data Commons (ARDC). The ARDC is a sector-wide initiative enabled by the Australian Government to provide Australian researchers with competitive advantage through data. Emma has extensive knowledge of the Australian research sector both from the perspective as a former academic and grants writer, and now working within the digital research infrastructure ecosystem. She is co-chair of the RDA Evaluation of Research Interest Group.

3.2.2. Françoise Genova, Strasbourg Astronomical Observatory and RDA France, France



Françoise Genova is an Emerita researcher at Strasbourg Astronomical Observatory. She was the director of Strasbourg astronomical data centre for 20 years and strongly involved in the international discussion about standards for data sharing in astronomy. Françoise has been an active member of the RDA since its inception. She is currently co-chair of the Regional Advisory Board and Regional Assembly, RDA France (a position she has held since its start in 2018), and co-chair of the RDA Evaluation of Research Interest Group.

3.2.3. Hana Heringová, National Library of Technology, Czech Republic



Hana Heringová leads the National Centre for Persistent Identifiers, which has been operating under the Centre for Repositories and Metadata Management in the National Library of Technology of the Czech Republic since 2023. The Centre's mission is to support adoption of PIDs within the Czech R&D infrastructure. She is co-chair of the RDA National PIDs Strategy Interest Group and co-chair of the Engagement Expert Group for the EMEA region of DataCite.



3.2.4. Natasha Simons, Australian Research Data Commons (ARDC), Australia Natasha Simons is Director, National Coordination, for the Australian Research Data Commons (ARDC). Based in Brisbane, Australia, Natasha drives national-scale initiatives and projects that build world class data infrastructure for researchers. She collaborates internationally, particularly through the RDA, to solve common challenges and improve data infrastructure, policies, skills, and practices. Natasha is co-chair of the RDA Research Data Policy Interest Group and the RDA National PID Strategies IG.

3.2.5. Rebecca Taylor-Grant, Taylor & Francis, United Kingdom



Dr. Rebecca Taylor-Grant is Director of Open Science Strategy & Innovation at Taylor & Francis where she leads the implementation of Open Science policies and programmes. She has a background in data management for the humanities and social sciences, and is co-chair of the STM Association's Research Data Program Humanities Data Subgroup, as well as the RDA Research Data Policy Interest Group. She is a qualified Open Data trainer certified by the Open Data Institute and was previously a member of the Research Data Alliance's European Support Team.

3.3. Participant Profile

3.3.1. Registration and Participation

The workshops attracted 77 registrants representing 29 countries (**Figure 1A**). Workshop 1, scheduled for Europe, Africa and the Americas (15 May), welcomed 28 participants from 15 countries (62% attendance). Of these participants, ~68% of participants attended from Europe or Africa, and ~32% attended from the Americas (**Figure 1B**).

Workshop 2 (20 May) welcomed 16 participants from 9 countries (53% attendance rate; **Figure 1B**). Although the workshop was scheduled to accommodate participants from East Asia and Oceania, 75% of attendees were actually from Europe or Africa (**Figure 1B**).

These workshops were dedicated to the RDA's organisational and regional members, in addition to the Funders Forum, and aimed to foster deep and authentic engagement on policy areas of interest. Both workshops provided an open and inclusive space where committed participants could engage in dialogue, yielding rich insights about the RDA's impact on key policy areas regardless of attendance numbers.

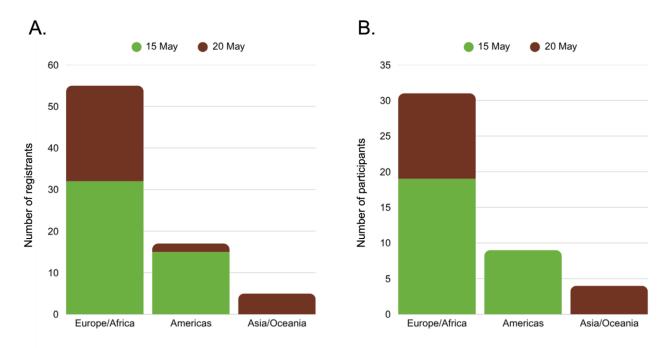


Figure 1. 'The Value of the RDA for Policy' workshop registration (A) and participation (B) by global region.

3.3.2. Interest and Understanding

As shown in **Figure 2**, the majority of participants (>70%) worked in high-level management roles, holding executive director, chief executive officer (CEO), coordinator, head of department, product lead, programme and project manager positions. The workshop also attracted researchers, students, librarians and those in advisory and/or consultancy roles.

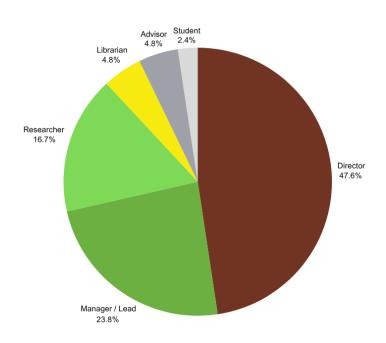


Figure 2. Professional job titles of workshop participants.

During the workshop introduction, participants were asked questions using interactive engagement platform, mentimeter,¹¹ to determine their interest in and understanding of the three key policy areas. When asked 'Which policy area(s) are you most interested in?' combined voting results (71 total votes) across both workshops revealed near equal interest in National PID Strategies (32%), Journal Research Data Policy Frameworks (34%) and Research Evaluation (34%; Figure 3).

¹¹ https://www.mentimeter.com/

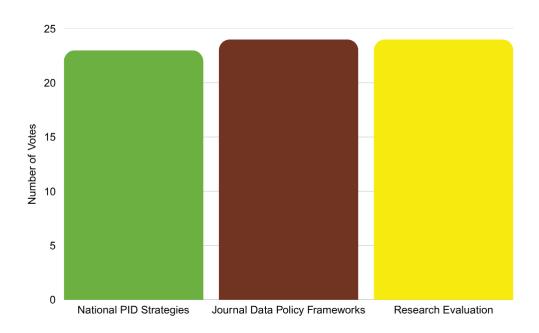
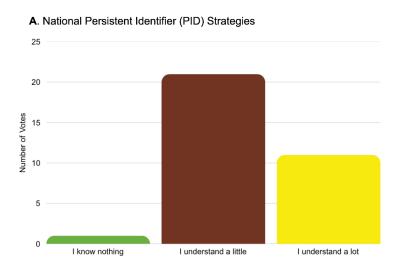


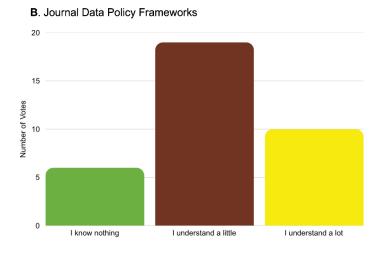
Figure 3. Combined voting results across both workshops showed near equal interest in the policy areas.

While Journal Research Data Policy Frameworks received the most votes (41%) in Workshop 2 (**Table 1**), this trend cannot be attributed to regional preferences since participants from Europe dominated attendance at both workshops (68% in Workshop 1 and 75% in Workshop 2), despite Workshop 2 being specifically scheduled for Asia and Oceania (**Figure 1**).

Table 1. Policy area interest by workshop. Participant voting results for "Which policy area(s) are you most interested in?" showing vote counts and percentages for each workshop.

	Workshop 1: Europe/Africa/the Americas (42 Total Votes)		n/Oceania s)
National PID Strategies	15 votes (36%)	National PID Strategies	8 votes (27%)
Journal Data Policy Frameworks	12 votes (28%)	Journal Data Policy Frameworks	12 votes (41%)
Research Evaluation	15 votes (36%)	Research Evaluation	9 votes (31%)





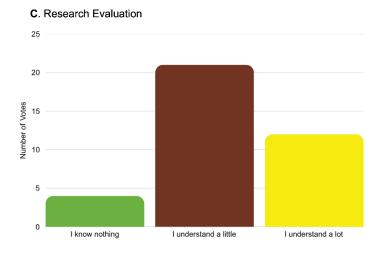


Figure 4. Combined voting results across both workshops show a similar knowledge distribution pattern for National Persistent Identifier (PID) Strategies (**A**), Journal Research Data Policy Frameworks (**B**) and Research Evaluation (**C**).

Figure 4 shows a consistent knowledge distribution pattern across all policy areas. Most participants report having 'a little understanding' of these topics, while fewer participants fall at either extreme, understanding 'nothing' or 'a lot' about the areas. This pattern reflects the specialised nature of these contemporary science policy areas. Since these represent important but relatively new areas of expertise, it is understandable that most participants have limited knowledge. The pattern also demonstrates the importance and value of engaging RDA stakeholders in discussions about these emerging policy areas, confirming these as appropriate topics for stakeholder dialogue.

3.3.3. Participant Feedback

Based on feedback from 10 participants (23% of attendees), the workshop received strong positive ratings across all measures using a 5-point scale where 1 indicates 'strongly disagree' and 5 indicates 'strongly agree'. Participants confirmed that the workshop met their expectations (4.3/5), with high scores for clear and well-defined aims and objectives (4.5/5). The workshop agenda and format were deemed suitable for achieving the stated goals (4.3/5), while the length and timing fit well within participants' schedules (4.5/5). Importantly, attendees reported gaining new knowledge during the session (4.2/5), demonstrating the workshop's educational value.

4. The Value of RDA for National Persistent Identifier (PID) Strategies

Co-chairs of the <u>RDA National PID Strategies Interest Group</u>, ¹² <u>Hana Heringová</u> ¹³ and <u>Natasha Simons</u>, ¹⁴ provided an overview of the value of the RDA for national persistent identifier (PID) strategies. They each provided a policy statement, explaining the importance of national PID strategies, and how the related <u>RDA National PID Strategies Working Group</u> recommendation, the National PID Strategy Guide and Checklist, has been successfully adapted and adopted by various countries and regions around the world.

4.1. What are National PID Strategies?

Persistent Identifiers (PIDs) are unique, long-lasting references to identify and connect digital entities¹⁵, such as researchers, organisations, funders, projects, grants, articles, datasets, software, instruments and samples,^{16,17} within the research ecosystem. Commonly used PIDs according to National PID Strategy Case Studies collected by the RDA Working Group are DOI¹⁸ (digital objects, grants), ORCID¹⁹ (people) and ROR²⁰

¹² https://www.rd-alliance.org/groups/national-pid-strategies-interest-group/activity/

¹³ https://www.rd-alliance.org/members/hana-heringova/

¹⁴ https://www.rd-alliance.org/members/natasha-simons/

¹⁵ https://www.jisc.ac.uk/innovation/projects/a-national-persistent-identifier-research-strategy

¹⁶ https://ardc.edu.au/project/australian-national-persistent-identifier-pid-strategy-and-roadmap/

¹⁷ https://doi.org/10.48813/x4vd-yj13

¹⁸ https://www.doi.org/

¹⁹ https://orcid.org/

²⁰ https://datacite.org/

(organisations). Others are rapidly gaining traction, such as RAiD²¹ (projects) and RRID²² (biological resources). There are many other types of PIDs for specific resources such as IGSN²³ (samples).

National PID strategies are coordinated approaches that countries develop to systematically implement and manage PIDs across their research ecosystems. These strategies aim to create connected, discoverable, and sustainable research infrastructure. In recent years, the development of national PID strategies has gained momentum with many countries in the early stages of transforming their national approach into a strategy.²⁴

4.2. Why Should You Care?

POLICY STATEMENT

National PID strategies represent a **unified vision** for PIDs, as **core enablers of FAIR research**, across all stakeholders (researchers, institutions, libraries, infrastructure providers, publishers, funders, policymakers) to **enhance efficiency** and **quality** of the research ecosystem, delivering systemic **time and cost savings** through policy pathways that **leverage national research infrastructure investment** and **align with international best practices** at a country or regional scale.

4.3. Benefits and Consequences

There are a multitude of systemic and network benefits of widespread and consistent PID adoption, and various stakeholders, including funders, government agencies, and national research communities have created PID consortia or policies (including mandates) in pursuit of these benefits.²⁵

4.3.1. Streamlining PID Implementation

A national PID strategy reflects the collective needs of the entire research community, taking into account the specific research infrastructure landscape and views of all stakeholder groups of that country. Adopting a national strategy raises awareness, provides clear direction, and improves widespread understanding about the role and benefits of PIDs, while avoiding inconsistent and fragmented PID implementation efforts. PIDs can only reach their full potential through coordinated and streamlined implementation at the national level.

4.3.2. Increasing FAIR Research

PIDs are a foundational component of modern infrastructure and innovation, enabling research that is <u>findable</u>, <u>accessible</u>, <u>interoperable</u> and <u>reusable</u> in accordance with the FAIR Guiding Principles.²⁷ The assignment of PIDs improves the discoverability and citation of research inputs (projects, grants, etc) and outputs (articles, data, software code, etc), increasing their visibility and making it easier to find digital objects. Their persistent

²¹ https://raid.org/

²² https://www.rrids.org/

²³ https://iasn.aithub.io/overview/

²⁴ https://doi.org/10.15497/RDA/00091

²⁵ https://doi.org/10.15497/RDA/00091

²⁶ https://www.rd-alliance.org/wp-content/uploads/2023/06/National-PID-strategies-white-paper.pdf

²⁷ https://doi.org/10.1038/sdata.2016.18

nature ensures citations remain accessible long-term, mitigating the problem of broken links.²⁸ Not being able to find and reuse research reduces citation, impact, collaboration, innovation and overall trust in the research ecosystem.

4.3.3. Solving Disambiguation Problems

PIDs ensure research entities can be referenced with no ambiguity. For example, assigning PIDs to researchers distinguishes between different individuals with the same name and addresses the problem of different names used by the same individual. In this case, the international adoption of ORCID provides a common solution²⁹ and facilitates appropriate and reliable recognition of researcher contributions (articles, peer-review activities, etc).

4.3.4. Saving Time and Money

Adopting a national PID strategy is administratively and financially beneficial. Since PIDs are associated with machine-readable metadata that describe digital entities they connect information in 'PID graphs' linking researchers to organisations, grants, projects, resources and outputs. PID graphs help to reduce the administrative burden on researchers by streamlining research workflows, thereby minimising time spent on routine tasks and allowing more time for conducting research. For instance, many grant or article submission platforms automatically harvest metadata from PIDs which reduces the amount of manual data entry.³⁰

4.3.5. Understanding Research Impact

National PID strategies provide comprehensive visibility into research quality, public benefit, and return on investment across entire countries. On the contrary, ad hoc implementation reduces the possibility to retrieve such insights on a national scale. National PID strategies are the foundation of providing robust data on research performance and funding effectiveness, enabling smarter resource allocation and stronger justification to research investors. National strategies transform research from isolated activities into a measurable national asset, providing intelligence to maximise impact and demonstrate public value.

"Most research investors want to see a benefit and national PID strategies help you to collate the information to demonstrate that benefit."

- Natasha Simons ARDC, Australia

4.3.6. Supporting Artificial Intelligence (AI) Readiness

PIDs play a vital role in supporting emerging technologies, such as Artificial Intelligence (AI). By contributing towards FAIR research (as described in Section 4.3.2.), PIDs provide enriched metadata, ensuring data is more easily discoverable by AI systems, irrespective of location changes. PIDs also serve as trust markers in an AI world. For example, a DOI from a research institution helps verify that a dataset is legitimate and credible. As PIDs facilitate data integration, interoperability and sharing across systems, they positively impact

²⁸ https://gut.pressbooks.pub/23scholarlycommunicationthings/chapter/copy-of-persistent-identifiers-pids/

²⁹ https://doi.org/10.1080/08989621.2024.2349115

³⁰ https://douglas.research.mcgill.ca/persistent-identifiers/

Al readiness and reproducibility.31

4.4. RDA's Impact

The RDA community drives the development of national PID strategies worldwide through a proven framework and real-world success stories.

4.4.1. National PID Strategies Working Group

The <u>RDA National PID Strategies Working Group</u>,³² endorsed in December 2021, explored how PIDs integrate into national policy and research infrastructure frameworks, identifying systemic benefits from their widespread adoption. Following on from the working group, an interest group was formed to continue discussion and build on the outputs of the working group. The <u>interest group</u> continues to facilitate information exchange and alignment between countries or regions implementing national PID strategies.

4.4.2. National PID Strategies Guide and Checklist

In June 2023, the working group produced the <u>National PID Strategies Guide and Checklist</u>³³ that can be used when developing a national PID strategy. This is supported by the nine case studies from countries at various stages of developing their PID strategy, including <u>Australia</u>,³⁴ <u>Canada</u>,³⁵ <u>Czech Republic</u>,³⁶ <u>Finland</u>,³⁷ <u>Germany</u>,³⁸ <u>South Korea</u>,³⁹ <u>New Zealand</u>,⁴⁰ <u>the Netherlands</u>⁴¹ and the <u>United Kingdom</u>.⁴² Each case study offers a comparison, including scope, drivers, strategy development, key features and priority PIDs.

The guide and checklist can be used as a starting point for developing a national PID strategy as well as developing a roadmap to visualise strategic goals, aligning with related international initiatives, facilitating stakeholder engagement, and connecting, communicating and collaborating with others developing national PID strategies. Importantly, it is designed to be used flexibly where users can select, adopt and adapt aspects of most relevance to their regional context. Not all points need to be considered in the order in which they are presented. The guide comprises four critical components to be included: 1) A **clear value proposition** with use cases; 2) A **group or organisation** that is responsible for driving strategy development; 3) An **open**, **inclusive**, **iterative process** that involves all stakeholders; and, 4) An **accompanying roadmap** that outlines practical steps for implementation.

"There's not one cookie cutter approach.

³¹ https://www.farr-rcn.org/post/ai-ready-data-navigating-the-dynamic-frontier-of-metadata-and-ontologies-a-workshop-summary

³² https://www.rd-alliance.org/groups/national-pid-strategies-wg/activity/

³³ https://doi.org/10.15497/RDA/00091

³⁴ https://ardc.edu.au/project/australian-national-persistent-identifier-pid-strategy-and-roadmap/

³⁵ https://www.crkn-rcdr.ca/en/persistent-identifiers

³⁶ https://www.rd-alliance.org/wp-content/uploads/2023/06/CZECH20REPUBLIC20Case20Study20-

²⁰National20PID20Strategies.pdf

³⁷ https://urn.fi/URN:NBN:fi-fe2024032512910

³⁸ https://www.rd-alliance.org/wp-content/uploads/2023/06/GERMANY20Case20Study20-20National20PID20Strategies.docx.pdf

³⁹ https://www.rd-alliance.org/wp-content/uploads/2023/06/KOREA20Case20Study20-20National20PID20Strategies.docx.pdf

⁴⁰ https://www.rd-alliance.org/wp-content/uploads/2023/06/NEW20ZEALAND20Case20Study20-

²⁰National20PID20Strategies.docx.pdf

⁴¹ https://www.rd-alliance.org/wp-content/uploads/2023/06/NETHERLANDS20Case20Study20-20National20PID20Strategies.pdf

⁴² https://www.jisc.ac.uk/innovation/projects/a-national-persistent-identifier-research-strategy

You can't just add flour and water and have a national PID strategy – Each national strategy has different elements and components."

- Natasha Simons ARDC, Australia

4.4.3. National PID Strategies in Practice

The National PID Strategies Guide and Checklist has been used by a number of countries in order to implement their national PID strategy. The adoption stories herein demonstrate the implementation of national PID strategies at different stages.

4.4.3.1. Czech Republic: Taking First Steps



"We had many questions and concerns about developing our national PID strategy, but being part of the RDA enabled us to discuss with others experiencing similar issues and challenges.

We didn't have to reinvent the wheel."

- Hana Heringová National Library of Technology, Czech Republic

The <u>National Center for Persistent Identifiers</u>⁴³ was established in 2023 with the goal of supporting the implementation of PIDs within the Czech Republic. Despite available funding, Czech institutions lacked coordinated understanding of Persistent Identifiers (PIDs) and implemented fragmented approaches. Individual champions struggled to convince institutional leadership about the value of PIDs, often working alone to advocate for implementation. Since PIDs are not a daily priority for most people, a coordinated national strategy proved essential.

As Lead of the National Library of Technology, Hana Heringová, joined the RDA National PID Strategy Working Group. Despite being at the very beginning of their planning process, the Czech team contributed their use case for inclusion by the Working Group. They learned from the best practices of others and gained insights into stakeholder engagement, institutional leadership approaches, and value demonstration techniques.

As the National PID Strategy Guide and Checklist clearly outlines essential factors and considerations needed for successful national PID strategy development, the Czech team quickly understood the requirements. They began developing a national PID strategy as a long-term project, incorporating 'A cost-benefit analysis for PID implementation in Czechia'44 to demonstrate the value of implementing a national PID strategy as the first step.

⁴³ https://www.techlib.cz/en/84733-national-centre-for-persistent-identifiers-issn-orcid-doi

⁴⁴ https://doi.org/10.48813/x4vd-vi13

4.4.3.2. France: Once and For All



"National PID strategies are important to simplify the life of researchers and research units."

- Françoise Genova Strasbourg Astronomical Observatory, France and RDA France

In 2017, the French government established an inter-ministerial directorate on public transformation focused on administrative simplification. The <u>Ministry of Higher Education and Research (MESR)</u>⁴⁵ identified that adopting national PIDs would improve research administration efficiency, reducing administrative burden on researchers while ensuring compliance with the 'Tell Us Once' principle.⁴⁶

The ministry expected the RDA National PID Guide and Checklist to support their PID adoption strategy. After analysing the case studies and assessing the checklist, they found the RDA working group's key messages aligned with their intended approach. They created a clear value proposition supported by short- and medium-term use cases benefiting researchers and research units. They also involved the relevant stakeholders responsible for driving strategy development via an open, iterative and inclusive consultation process, and designed an implementation roadmap outlining practical steps and expected benefits. The ministry established a Steering Committee to develop their strategy and roadmap, incorporating the RDA's recommendation details into their discussions.

"The RDA recommendation provides excellent guidance for structuring a national PID strategy.

The collection of diverse case studies proved valuable for defining the

French national strategy, accounting for its unique context and objectives,

while benefiting from international best practices."

- Françoise Genova Strasbourg Astronomical Observatory, France and RDA France

4.4.3.3. Ireland: A PID Path to 2030



"National PID strategies are important because they play a critical role in raising awareness of PIDs and related initiatives, building cross-sector relationships, establishing clear implementation timelines, and fostering broad, long-term commitment to their successful adoption."

- Michelle Doran, National Open Research Forum, Ireland

Ireland's National Action Plan for Open Research 2022-2030,⁴⁷ published in November 2022, identified the

⁴⁵ https://www.enseignementsup-recherche.gouv.fr/fr

⁴⁶ https://www.modernisation.gouv.fr/files/fileadmin-legacy/Book/Fiche3 5.pdf

⁴⁷ https://norf.ie/national-action-plan/

need for national PID infrastructure investment. Action 4.4 focuses on two elements: 1) strengthening the Irish ORCID consortium; and, 2) developing a national roadmap for key PIDs (including ORCID, DOIs, RAiDs, and RORs).

Ireland's strategy followed the four critical components identified by the RDA National PID Strategies Working Group (Section 4.4.2). They began by conducting a cost-benefit analysis evaluating time and money savings from widespread PID adoption in Irish research institutions. The national PID roadmap was prepared by the National Open Research Forum (NORF)⁴⁸ and the NORF PID Task Force, in consultation with the scholarly communications consultants MoreBrains cooperative. They undertook an inclusive process involving comprehensive consultation through surveys, focus groups, workshops, and communication campaigns, with validation at each stage and tailored briefing documents for institutional leads, policy makers, and researchers. The final step involved undertaking a strategic SWOT analysis (Strengths, Weaknesses, Opportunities and Threats) and creating a prioritised action list resulting in 15 key recommendations spanning until 2030.

The project produced three publications covering <u>recommendations</u>,⁴⁹ <u>cost-benefit analysis</u>,⁵⁰ and <u>survey results</u>.⁵¹ The National PID Strategies Guide and Checklist ensured alignment with international best practices while providing a practical, evidence-based framework without being overly prescriptive. Ireland's experience demonstrates the value of structured international guidance for national PID strategy development.

4.4.3.4. United States of America: Creating a Standard



"National PID strategies are important because they provide a structured yet adaptable framework for interoperable, community-aligned infrastructure that supports open science, improves research assessment, and reduces administrative burden."

– John Chodacki California Digital Library, USA

In collaboration with the Open Research Funders Group (ORFG),⁵² Higher Education Leadership Initiative for Open Scholarship (HELIOS Open)⁵³ and RDA-US,⁵⁴ the US National PID strategy⁵⁵ was published in 2024. The RDA National PID Strategies Guide and Checklist provided the foundational framework development of the US PID strategy, ensuring its alignment with international best practices while meeting the specific needs of the US research ecosystem.

Similar to the adoption stories detailed above, the USA leveraged the RDA recommendation by creating a

⁴⁸ https://dri.ie/norf/

⁴⁹ https://doi.org/10.7486/DRI.sn00gt29n

⁵⁰ https://doi.org/10.7486/DRI.nz80kt123

⁵¹ https://repository.dri.ie/catalog/z6044s91t

⁵² https://www.orfg.org/

⁵³ https://www.heliosopen.org/

⁵⁴ https://www.rd-alliance.org/groups/rda-us/activity/

⁵⁵ https://doi.org/10.5281/zenodo.10811008

value proposition involving key stakeholders, and designing an actionable roadmap to convene a diverse group of organisations and develop a shared vision. The strategy was intentionally framed as a flexible and community-owned effort, directly inspired by the non-prescriptive, globally-informed nature of the RDA guidance.

The US research ecosystem presents greater complexity than most national contexts, characterised by its decentralised and federated structure with multiple funders, institutions, and regulatory authorities. While this complexity initially hindered rapid development of a national PID strategy, it simultaneously highlighted the need for a national approach. Moving forward, a collaboration with the National Information Standards
Organisation (NISO)
56 aims to formalise key components of the US PID strategy into a standard. This standardisation initiative confronts the long-debated topic of defining the desirable characteristics of PIDs. 57

A formally recognised standard will offer organisations around the world, especially federal agencies, a mechanism to embed PID adoption in regulation and policy requirements in a way that is consistent, technology-neutral, and avoids favouring specific providers. The US team (lead by <u>John Chodacki</u>,⁵⁸ <u>Rachael Kotarski</u>⁵⁹ and <u>Todd Carpenter</u>⁶⁰) is determined to support the NISO standards process, while honouring the open, consultative spirit embodied by the RDA.

The RDA Guide enabled creation of a credible, actionable US national PID strategy that resonates across research sectors. It helped structure discussions, justify recommendations, and demonstrate international alignment. As the US strategy efforts transition to focus on NISO standardisation, RDA guidance ensures implementation-ready, widely recognised outputs. The RDA Checklist improved internal alignment and external stakeholder communication through clear but flexible structure. Key lessons from implementing the US PID strategy were that: 1) strategies must balance community practice with governance readiness; 2) successful infrastructure requires both social and technical elements; and, 3) national coordination requires trust and transparency.

"Given the fragmented nature of PIDs in the USA, we needed a shared reference point to bring the community together. The RDA provided that."

– John Chodacki California Digital Library, USA

4.5. Conclusions and Future Directions

The RDA National PID Strategies Guide and Checklist offers a practical, evidence-based framework for developing national PID strategies. It provides valuable guidance through case studies while maintaining flexibility rather than imposing rigid requirements, thereby allowing adaptability to local contexts.

The four critical components:

⁵⁶ https://www.niso.org/

⁵⁷ https://upstream.force11.org/desirable-characteristics-for-persistent-identifiers/

⁵⁸ https://www.rd-alliance.org/members/john-chodacki/

⁵⁹ https://www.rd-alliance.org/members/rachael-kotarski/

⁶⁰ https://www.rd-alliance.org/members/todd-carpenter/

- a clear value proposition;
- a responsible leading group or organisation;
- iterative stakeholder consultation; and,
- an implementation roadmap

detailed in the recommendation appear to be useful with most, if not all, of adoption use cases following the guidance to develop their national PID strategy.

While no universal template exists for national PID strategies, based on the adoption stories outlined above, common approaches and solutions have emerged across different countries, including technical infrastructure, social infrastructure, and practical guidance. The categorisation of national PID strategies to identify shared characteristics could prove valuable as countries progress to implementation. Additionally, a knowledge gap exists around failed or stalled national PID strategies. Sharing examples of strategies encountering challenges or not progressing as planned would provide crucial insights for future PID strategy development.

As demonstrated herein, the development of national PID strategies is a fast evolving topic with many countries at the beginning of their implementation journey. As the national PID strategy landscape rapidly evolves in a short time, it will be important to keep abreast of the changes. During the RDA's upcoming 25th Plenary meeting, 61 as part of International Data Week (IDW2025), the National PID Strategies Working Group will revise and collate case studies to assess how the landscape has changed since the Recommendations were published. A review will provide new examples and learnings. The scheduled working session 62 at IDW2025 will consider how to align work with PID providers and regional policies, such as the European Open Science Cloud (EOSC) PID Policy. 63

5. The Value of RDA for Journal Research Data Policy Frameworks

Rebecca Taylor-Grant, ⁶⁴ co-chair of the RDA Research Data Policy Interest Group ⁶⁵ (formerly the Data Policy Standardisation and Implementation Interest Group), provided an overview of the value of the RDA for journal research data policies. Rebecca provided a policy statement, explaining the importance of the RDA's 'Research Data Policy Framework for All Journals and Publishers' and how it has been adopted by various scholarly journals and publishers to simplify the implementation of journal data policies.

5.1. What is the Journal Research Data Policy Framework?

Journal research data policies require or recommend the publication of research data that underpins research articles as an important part of the shift toward transparent, FAIR, and reproducible research.⁶⁶ As the prevalence of journal data policies increases, there is potential to confuse researchers and support staff with numerous or inconsistent policy requirements. Due to the wide variation in content, discoverability, ease of

21

⁶¹ https://www.rd-alliance.org/news/call-for-sessions-rda-p25-as-part-of-international-data-week-2025/

⁶² https://www.rd-alliance.org/groups/national-pid-strategies-interest-group/plenary-participation/?application_id=187951

⁶³ https://op.europa.eu/en/publication-detail/-/publication/35c5ca10-1417-11eb-b57e-01aa75ed71a1/language-en

⁶⁴ https://www.rd-alliance.org/members/rebecca-taylor-grant/

⁶⁵ https://www.rd-alliance.org/groups/research-data-policy-ig/activity/

⁶⁶ https://doi.org/10.1629/uksg.463

interpretation, infrastructure integration and support for compliance of journal data policies, it is challenging for journal editors to develop and implement such policies consistently, difficult for researchers to understand the nuance of how they differ across journals, and complex for infrastructure providers and support staff to assist policy compliance.⁶⁷

In this context, a journal research data policy framework identifies the key elements of an effective journal data policy and provides a standardised approach to help journals and publishers create or enhance their own research data policy. The framework supports the development of consistent and comprehensive data sharing policies for all journals and publishers, simplifying data sharing practices for researchers, support staff and journals alike.

5.2. Why Should You Care?

POLICY STATEMENT

Journal research data policies are important because they **support or enforce consistent standards for data sharing**, while being flexible to **include discipline-specific guidance and terminology**. They are embedded in **key guidance (Instructions for Authors)** that must be followed during publishing, and align with **funder and institutional requirements for data sharing** at critical points in the research lifecycle.

5.3. Benefits and Consequences

The RDA's Journal Research Data Policy Framework delivers multifaceted benefits by clarifying data sharing expectations for researchers, extending and reinforcing established disciplinary practices across research communities, enhancing research impact through improved reproducibility and discoverability, and simplifying policy implementation through standardised frameworks that reduce complexity for publishers and journal editors.

5.3.1. Clarifying Data Sharing

Journal research data policies clearly stipulate what data sharing practice is expected when authors publish research articles using a particular journal. They clarify and enforce the process of data sharing for researchers, especially as journal data policies align with the requirement of funders and institutions that data is published no later than the point at which the research article is published. At the final stage of a research project, when an article is submitted to a journal, researchers are usually highly motivated to comply with data sharing policies and journal editors are able to confirm that authors have followed policy guidance.

⁶⁷ http://doi.org/10.5334/dsj-2020-005

"When journals do not adopt data policies a key opportunity is missed. Researchers in the process of publishing are highly motivated to address any mandatory editorial requirements which apply to them."

> Rebecca Taylor-Grant Taylor & Francis, UK

5.3.2. Extending Disciplinary Practices

Journal research data policies help to extend and enforce community standards around data sharing, offering the flexibility to incorporate discipline-specific guidance and terminology that resonates with researchers across different domains. This journal-by-journal implementation approach ensures policies remain relevant and practical for specific research communities.

Journal editors, as influential members of the research community with domain expertise, are well-positioned to identify and implement journal data policies that support emerging best practices within their fields. The success of data sharing in genomics and genetics exemplifies this approach as specialised repositories supported by their communities and by journal policies have created a network that enhances reproducibility and accelerates research progress, demonstrating how targeted, community-driven policies can transform research practices.⁶⁸

5.3.3. Enhancing Research Impact

Data sharing enhances research impact by facilitating the validation, replication, reanalysis, new analysis, reinterpretation or inclusion into meta-analyses, and reproducibility of research. It increases the value of the investment made in funding scientific research, and decreases the burden on authors of preserving and finding data, and managing data access requests. Citation of data in associated research articles enhances visibility, recognition and credit for authors, creating incentives for quality data sharing practice. ⁶⁹ Journal research data policies also provide quality assurance with some policies including peer review to ensure data quality and completeness.

5.3.4. Simplifying Policy Implementation

The RDA's Journal Research Data Policy Framework offers a standardised yet flexible approach that enables journals and publishers to adopt data policies tailored to their editorial model and community readiness. The framework simplifies the implementation process for journal data policies. It meets the specific needs of individual journals while maintaining consistency across the publishing ecosystem.

5.4. RDA's Impact

The RDA community empowers journals and publishers to create effective data policies through a proven framework and global success stories.

⁶⁸ https://doi.org/10.1177/1073110519840482

⁶⁹ https://journals.plos.org/plosone/s/data-availability

5.4.1. Research Data Policy Interest Group

The RDA Research Data Policy Interest Group, endorsed in 2017, acts as a centralised space for discussion on research data policy development and implementation. The group's aim is to support and standardise research data policy implementation, with the assumption that reducing complexity and improving consistency of research data policies of journals will benefit research, researchers, funders and institutions. By 2020, the group developed a comprehensive research data policy framework for journals and publishers. Since 2020, the group has expanded its focus to explore policy standardisation among funding agencies, promote policy implementation among publishers, and identify barriers to effective policies through workshops and collaborative efforts with external organisations.

5.4.2. A Research Data Policy Framework for All Journals and Publishers

In June 2020, the Interest Group produced the <u>Developing a Research Data Policy Framework for All Journals and Publishers</u>⁷⁰ to provide a consistent framework for the implementation of journal data policies. The framework defines and describes 14 features of journal research data policies and arranges these into a set of six standard policy types (tiers) which can be adopted by journals and publishers to promote data sharing in a way that encourages good practice and is appropriate for their authors' perceived needs. The policy features and types (tiers) were created by reviewing policies of multiple scholarly publishers, which collectively publish more than 10,000 journals, and through discussions and consensus building with multiple stakeholders associated with the interest group.

⁷⁰ https://www.rd-alliance.org/groups/research-data-policy-ig/outputs/?output=94545

	Policy 01	Policy 02	Policy 03	Policy 04	Policy 05	Policy 06
Definition of the research data	0	0	0	0	0	0
Exceptions to policy	0	0	0	0	•	•
Embargoes	0	0	0	•	•	•
Supplementary materials	0	0	0	•	•	•
Data repositories	0	0	0	•	•	•
Data citation	0	0	0	0	•	•
Data licensing	0	0	0	0	0	0
Researcher/ author support	•	•	•	•	•	•
Data availability statements		0	•	•	•	•
Data formats and standards				0	0	•
Mandatory data sharing (specific data types)				•	•	•
Mandatory data sharing (all papers)				0	•	•
Peer review of data				0	0	•
Data Management Plans (DMPs)				0	0	0
	Provide information The text for the policy feature will be included in the policy template but it is clear that the feature will not be enforced and checked as part of the publishing or peer review process		The text included applicab checked	information a of the policy for and makes cl le that the feat and enforced ang or peer-revi	eature is ear where ture will be in the	

Figure 5. Fourteen journal research data policy features arranged as 6 policy types (tiers)

<u>Hrynaszkiewicz, et al.</u> (2020)⁷¹

Each policy type becomes progressively more stringent, with 'Policy 01' being the least strict and 'Policy 06' requiring the most comprehensive data sharing requirements (**Figure 5**). Policy types '03' and above require data availability statements in research articles which are a recognised compliance monitoring and data-discovery tool. Policy features include topics such as data citation, data repositories, data availability

⁷¹ <u>http://doi.org/10.5334/dsj-2020-017</u>

statements, data standards and formats, and peer review of data. The framework also provides implementation guidelines and template policy texts which can be implemented by journals and publishers in their 'Instructions for Authors' and publishing workflows.

"When you look at a publisher's portfolio of journals, and consider disciplinary differences, there can be differences in the readiness of a journal to implement a stringent data policy. The RDA's Journal Data Policy Framework provides six policies that a journal can choose from to meet its needs."

> - Rebecca Taylor-Grant Taylor & Francis, UK

5.4.3. The Journal Research Data Policy Framework in Practice

The RDA's Journal Research Data Policy Framework is driving a significant and measurable increase in journal data policies and published papers featuring data availability statements. Since its peer-reviewed publication in the <u>Data Science Journal</u>,⁷² the framework has gained widespread recognition with over 50 citations and adoption by major publishers including <u>PLoS</u>,⁷³ <u>Springer Nature</u>,⁷⁴ Slovenian scientific journals, Earth Science and Biodiversity journals, and the <u>International Association of Scientific</u>, <u>Technical & Medical Publishers</u> (STM),⁷⁵ demonstrating its transformative impact across the global publishing ecosystem.

5.4.3.1. Slovenian Social Science Data Archives: National Policy Progress



"Journal data policies are important because they provide consistent, scalable guidance for journals to support FAIR and open research. In Slovenia, adopting the framework helps to align publishing practices with national and European open science mandates, enabling data sharing, citation, and repository use across disciplines."

– Maja Dolinar Slovenian Social Science Data Archives (ADP), Slovenia

In 2020, the Slovenian Social Science Data Archives (ADP) published <u>guidelines</u>,⁷⁶ based on the RDA's Journal Research Data Policy Framework, to help Slovenian scientific publishers and editors create journal data policies. The regional group, <u>RDA in Slovenia</u>,⁷⁷ began by translating and contextualising the framework, establishing policies for the provision of data availability statements, selection of appropriate data repositories, and adherence to proper data citation standards. This laid the foundation for national alignment with FAIR and Open Science principles.

⁷² https://datascience.codata.org/

⁷³ https://plos.org/

⁷⁴ https://www.springernature.com/gp/products/journals\

⁷⁵ https://stm-assoc.org/

⁷⁶ https://doi.org/10.5281/zenodo.4040672

⁷⁷ https://www.rd-alliance.org/groups/rda-slovenia/activity/

Initial implementation involved a national pilot programme with scientific editorial boards and stakeholders across disciplines. Several journals developed tailored journal data policies using the guidelines. While initial uptake was promising, full implementation stalled due to limited editorial capacity, lack of technical support, and absence of monitoring mechanisms.

This year, the <u>RDA in Slovenia</u>⁷⁸ regional group is restarting the process through a structured work plan involving national funder, the <u>Slovenian Research and Innovation Agency (ARIS)</u>, ⁷⁹ and major academic publishers. The approach includes forming working groups, supporting pilot journals with data editors, updating guidelines, and embedding policy elements into <u>FAIRsharing</u>, ⁸⁰ a <u>flagship RDA output and community-driven registry</u> ⁸¹ that catalogues data standards, databases, repositories, and policies to help researchers find and select appropriate resources for managing and sharing their data.

Key outcomes will include harmonised data sharing policies across publicly funded journals, clearer guidance for authors, and strengthened editorial practices aligned with European mandates. The RDA's Journal Research Data Policy Framework has provided Slovenian journals with internationally aligned, FAIR-compliant data policies, improving transparency and supporting national open science goals.

"The RDA Research Data Policy Framework provides a practical and flexible structure for implementing journal data policies. The framework remains central to our approach, providing a shared language for policy development and a tiered model suited to the diverse capacities of Slovenian journals."

- Maja Dolinar Slovenian Social Science Data Archives (ADP), Slovenia

5.4.3.2. STM Association: Policy for Scientific, Technical and Medical Publishers



"Many publishers provide data sharing guidance that is general. However, for certain subject areas this does not adequately guide researchers on how and what to share. For medical research especially, there should be clearer guidance available to ensure this valuable data has the best chance of reuse."

- Matthew Cannon Taylor & Francis, UK

Common data sharing concerns of pharmaceutical companies may differ from those of academic authors and institutions. Patient privacy, intellectual property and data ownership are consistently highlighted as important

⁷⁸ https://www.rd-alliance.org/groups/rda-slovenia/activity/

⁷⁹ https://www.arrs.si/en/

⁸⁰ https://fairsharing.org/

⁸¹ https://www.rd-alliance.org/groups/group-fairsharing-registry-connecting-data-policies-standards-databases-rda-wg/activity/

concerns by pharmaceutical companies. ⁸² A <u>recent survey</u> ⁸³ conducted by <u>Open Pharma</u> ⁸⁴ revealed that many pharmaceutical companies do not fully understand journal and publisher data sharing policies. Matthew Cannon, Head of Open Research at Taylor & Francis, proposed an <u>International Association of Scientific</u>, <u>Technical & Medical Publishers (STM Association)</u> ⁸⁵ project to clarify data sharing requirements for medical and health sciences researchers.

Workshops captured insights from both publishers and pharmaceutical companies to understand current challenges and identify a range of use cases for improvements in data sharing practices. To structure the necessary changes and develop a new guidance document for scientific, technical and medical publishers, the project team strategically adopted the structure and headings from the RDA's Journal Research Data Policy Framework. This proved beneficial since the team did not need to create an entirely new organisational framework. More importantly, following the RDA framework ensured that the guidance would automatically align with RDA-approved best practices for publisher data sharing policy guidance, lending credibility and international recognition to their work.

"The RDA's Journal Research Data Policy Framework provided the structured approach we needed to organise our findings and recommendations effectively to clarify data sharing requirements for medical and health sciences researchers."

- Matthew Cannon Taylor & Francis, UK

5.4.3.3. The BRIDGE project: Bridging French Research Units



"Journal data policies are important because they set the scene for the adoption of common rules by people and projects within a research entity, such as a Joint Research Unit, and potentially facilitate collaboration with other entities through policy alignment."

Françoise Genova
 Astronomical Observatory Strasbourg, France and RDA France

The <u>French National Research Institute for Sustainable Development (IRD)</u>,86 <u>National Research Institute for Agriculture, Food and Environment (INRAE)</u>87 and <u>French Agricultural Research Centre for International Development (CIRAD)</u>88 partnered on the <u>BRIDGE project</u>89 funded by the <u>French National Research</u>

⁸² https://www.openpharma.blog/blog/transparency/data-sharing/how-open-pharma-supports-responsible-sharing-of-patient-level-data-for-pharma-funded-research/

⁸³ https://www.openpharma.blog/wp-content/uploads/2024/05/Osorio-et-al ISMPP-Annual-2024 FINAL.pdf

⁸⁴ https://www.openpharma.blog/

⁸⁵ https://stm-assoc.org/

⁸⁶ https://en.ird.fr/

⁸⁷ https://www.inrae.fr/en

⁸⁸ https://www.cirad.fr/en

⁸⁹ https://bridge-science-ouverte.fr/

Agency⁹⁰ in 2019. The BRIDGE project focused on sharing research data within Joint Research Units (UMRs) where data is created as a collaborative effort between multiple organisations or stakeholders. Harmonisation of data management practices was required to enable open access to FAIR data across UMRs.

The project produced a roadmap for implementing FAIR principles in three partner data repositories using open source software, <u>Dataverse</u>. ⁹¹ The goal was to provide guidelines and harmonise research data policies and repository management in a reusable approach for other institutes or contexts, focusing on: 1) comparing and analysing data governance policies; 2) producing best practice data management guides supported by case studies; and, 3) developing joint technical functionalities and recommendations to ensure interoperability of data descriptions (metadata) and related datasets.

The RDA's Journal Research Data Policy Framework was used for the development of a <u>cross-institutional</u> <u>governance framework</u>⁹² that enabled the partner organisations to define and adopt common rules and data management plans. Other outputs of the BRIDGE project included overcoming practical challenges of making data FAIR (e.g. creating standards, defining sharing conditions and common rules for harvesting metadata) and aligning with common ontologies and controlled vocabularies (data type, disciplinary fields, etc.) available via the semantic web. How the RDA framework was used to support the BRIDGE project was demonstrated during a <u>webinar</u>⁹³ organised by the regional group, the RDA in France, ⁹⁴ in May 2023.

5.5. Conclusions and Future Directions

The RDA's 'Journal Research Data Policy Framework for All Journals and Publishers' is practical and pragmatic, enabling any journal to implement a research data policy compatible with its editorial model, procedures, and level of support for data sharing in its author and reader community. The framework offers value across diverse contexts, providing an established structure that eliminates the need to 'reinvent the wheel' and create new journal data policies. Adopting the RDA-approved framework ensures credibility and alignment with international best practices.

The framework's flexibility allows its successful implementation across different sectors (e.g. pharmaceutical, academic, multi-institutional) and national contexts (e.g. Slovenia, France, UK). The example of how it was used to inspire and influence the BRIDGE project (Section 5.4.3.3.) illustrates how RDA recommendations and outputs can be successfully adapted and applied to influence policy development in contexts beyond their original intended focus.

Collectively, the adoption stories demonstrate that data sharing challenges persist across different sectors, demanding tailored solutions while maintaining standardised frameworks. For instance, pharmaceutical companies encounter data sharing concerns pertaining to patient privacy, intellectual property and data ownership. Within industry, there is a general lack of understanding of journal and publisher data policies

⁹⁰ https://anr.fr/en/

⁹¹ https://dataverse.org/

⁹² https://doi.org/10.5281/zenodo.6652405

⁹³ https://www.rd-alliance.org/groups/rda-france/wikis/?wiki=136945

⁹⁴ https://www.rd-alliance.org/groups/rda-france/activity/

highlighting the need for clearer guidance. Furthermore, cross-institutional collaborations require harmonised approaches to surmount varying organisational policies and technical capabilities.

Going forward, the adoption of this framework by journals and publishers remains crucial to its success. Early adoption of the framework from project initiation, consultation of relevant stakeholders, securement of institutional and technical support, implementation of pilot programmes and policy monitoring mechanisms are important considerations. However, it should be acknowledged that adequate resources and capacity are required to achieve full implementation and adoption.

Long term success should be measured by increased levels of data sharing and reuse, which means enabling journals, editors and researchers to implement the policy types 03 and above. Policy implementation should be combined with ongoing evaluation of the impact (costs, as well as benefits) of journal data policies.⁹⁵

6. The Value of RDA for Research Evaluation

Co-chairs of the RDA <u>Evaluation of Research Interest Group</u>, ⁹⁶ <u>Françoise Genova</u> ⁹⁷ and <u>Emma Crott</u>, ⁹⁸ provided an overview of the value of the RDA for research evaluation. They presented a policy statement explaining the importance of research evaluation and how the interest group, alongside other relevant RDA groups, contribute to the necessary evolution of research evaluation.

6.1. What is Research Evaluation?

Research evaluation is the systematic assessment of researchers and their work for various purposes, including grant funding allocation, career advancement and institutional ranking.⁹⁹ Traditionally, research evaluation metrics have relied on journal article publications and citations,¹⁰⁰ such as citation count (number of times an article is cited), H-index (number of publications and their citation impact) and journal impact factor (citation performance of the journal where research is published).¹⁰¹ More modern evaluation approaches combine these traditional bibliometric measures with additional indicators, such as 'altmetrics' that track online engagement with publications (e.g. downloads, shares, mentions) and a researcher's institutional contributions, such as track record of grant funding securement and number of students supervised. There is also growing demand to measure the societal impact of research to demonstrate real-world value beyond academia.

Principally, no single metric is sufficient to effectively evaluate research. Responsible and reliable research evaluation should use multiple metrics together and consider the context in which research is conducted to provide a more complete and fair assessment of researcher contributions. The goal, therefore, is to move beyond quantifying article publications toward understanding the broader value and impact of research. Initiatives for research assessment reform, including Coalition for Advancing Research Assessment

⁹⁵ http://doi.org/10.5334/dsj-2020-005

⁹⁶ https://www.rd-alliance.org/groups/evaluation-research-ig/activity/

⁹⁷ https://www.rd-alliance.org/members/francoise-genova/

⁹⁸ https://www.rd-alliance.org/members/emma-crott/

⁹⁹ https://stories.springernature.com/state-of-research-assessment/current-status/

¹⁰⁰ https://pubmed.ncbi.nlm.nih.gov/8712583/

¹⁰¹ https://university.open.ac.uk/library-research-support/researcher-skills/types-bibliometrics

(CoARA), ¹⁰² Declaration on Research Assessment (DORA) ¹⁰³ and the Leiden Manifesto for Research Metrics ¹⁰⁴ advise using quantitative indicators only within the context of a larger qualitative narrative.

Although a newly emerging policy area, the necessary evolution of research evaluation is gaining significant momentum within the RDA community and beyond. The RDA's diverse, international network of researchers, data professionals, and institutions is uniquely positioned to support this transformation towards reforming evaluation approaches to recognise the full spectrum of modern research outputs, including datasets, software and collaborative contributions, that traditional bibliometrics overlook. As research evaluation evolves beyond publication-focused indices to embrace the breadth of contemporary scholarship, it will become an essential enabler of Open Science by ensuring all valuable research contributions are properly recognised and rewarded.

6.2. Why should you care?

POLICY STATEMENT

The evolution of research evaluation from being mostly bibliometric based is a key enabler of robust, equitable, inclusive and diverse open research practices. As stated in the first Core Commitment of the <u>Agreement on Reforming Research Assessment</u>, 105 it is necessary to 'recognise the diversity of contributions to, and careers in, research in accordance with the needs and nature of the research'. The evolution should be discussed and signed at the local, national and international level.

6.3. Benefits and Consequences

Transforming research evaluation beyond its current limitations delivers benefits spanning individual researchers to global research systems. The transformation requires visionary leadership and international coordination to drive the necessary culture change.

6.3.1. Promoting Open Science

Recognising diverse research contributions beyond traditional journal article publications incentivises and rewards various contributions to Open Science. Such contributions include datasets, software, models, methods, theories, algorithms, protocols, standards definition and maintenance, workflows, exhibition strategies, and policy contributions, as well as teaching excellence, mentoring, peer-review, public engagement activities, creative works, and more. 99 Currently, researchers who follow Open Science principles often do so at significant personal cost, risking their careers while bearing additional financial and administrative burdens.

¹⁰² https://coara.eu/

¹⁰³ https://sfdora.org/

¹⁰⁴ https://www.leidenmanifesto.org/

¹⁰⁵ https://coara.eu/app/uploads/2022/09/2022 07 19 rra agreement final.pdf

6.3.2. Recognising Individual Contributions

Modern research evaluation creates better alignment between evaluation criteria and the actual activities conducted by researchers. Considering disciplinary differences, research types, career stage, ⁹⁹ research environment, and available resources reduces bias against certain domains and career stages. This approach acknowledges diverse research roles, skills, and competencies, including those outside academia, as well as contributions to team science. ⁹⁹ Together, this comprehensive recognition of individual researcher contributions creates more equitable career advancement opportunities across different research contexts and career paths.

6.3.3. Enhancing Research Quality

Evaluating the full range of research outputs incentivises reproducible, transparent and ethical research practice through combined quantitative and qualitative metrics that prevent 'gaming' of traditional measures like citation counts, H-index and impact factors. ¹⁰⁶ It reduces the pressure to publish at the expense of research quality, thereby promoting long-term foundational research and reducing waste from duplicative or low-quality research driven by publication pressure. ¹⁰⁷ Modern research evaluation also encourages more innovative and collaborative research produced by team science over individual competition.

6.3.4. Improving Societal Impact

Recognising innovative research that has greater societal impact demonstrates the value of research in offering practical real-world applications and ensures scientific discoveries translate more effectively into evidence-based policies. In addition, rewards for science communication and public engagement increases transparency and accountability, building public trust in research.

6.3.5. Sustaining Research Infrastructures

Modern research evaluation helps demonstrate the value and impact of research infrastructure and services, justifying their continued investment, attracting further support and ensuring their sustainability. The reformation of current research evaluation practices will require investment in tools and platforms that support comprehensive evaluation approaches. An illustrative example is GraspOS, Tools a European-funded project that investigates responsible research assessment approaches and interventions that consider Open Science practices, and builds a federated infrastructure (open dataspace) offering data, indicators, tools, services and quidance to support and enable policy reform for research assessment.

6.4. The RDA's Impact

The RDA community provides a neutral, international platform uniting multidisciplinary voices to participate in the evolution and improvement of research evaluation practices.

6.4.1. Evaluation of Research Interest Group

The <u>RDA Evaluation of Research Interest Group</u>, endorsed in 2023, facilitates discussion and connects global reform efforts to redefine research evaluation. Its primary goal is to liaise with relevant RDA groups and

¹⁰⁶ https://doi.org/10.1371/journal.pone.0221212

¹⁰⁷ https://pmc.ncbi.nlm.nih.gov/articles/PMC3999612/

¹⁰⁸ https://www.esfri.eu/esfri-policy-brief-impact

¹⁰⁹ https://www.openaire.eu/graspos-project

external initiatives focused on research assessment reform in aim to advocate for the recognition of data and software as an integral part of research evaluation.

6.4.2. RDA Value for the Evaluation of Research

In its first year, the Interest Group produced a visionary supporting output that describes the 'RDA Value for The Evaluation of Research'. 110 The output reinforces how the RDA's diverse global network of data experts across all research domains uniquely positions it to champion worldwide discussions on research evaluation reform. This includes fostering strong collaborations with members of the RDA Organisational Assembly, primarily the Research Software Alliance (ReSA)111 and the Global Alliance for Genomics and Health (GA4GH),112 in addition to members of the RDA Funders Forum. The output also outlines how important liaisons are established with international initiatives on research assessment reform, particularly CoARA.

With over 100 groups and 90 endorsed recommendations and outputs, undoubtedly most, if not all, of the RDA community's work is in some way relevant to the evolution of research evaluation. The <u>RDA Value for The Evaluation of Research</u> output showcases many RDA groups that focus on metrics and criteria, stakeholder representation, and disciplinary data.

"The RDA's reach across the international community, including research organisations and funders, and the diverse profiles of its individual members, can help to facilitate and align a global discussion about research evaluation, drawing on data experts from a range of domains."

- Emma Crott ARDC, Australia

RDA groups such as the <u>Data Usage Metrics Working Group</u>¹¹³ and <u>Sharing Rewards and Credit (SHARC)</u> <u>Interest Group</u>¹¹⁴ recognise and reward contributions to Open Science. Others support a broad range of related data management practices, including the <u>Active Data Management Plans Interest Group</u>¹¹⁵, <u>Reproducibility Interest Group</u>, <u>National PID Strategies Interest Group</u>, <u>Vocabulary Services Interest Group</u>, and the <u>Virtual Research Environment Interest Group</u>, and the <u>Virtual Research Environment Interest Group</u>, <u>121</u>

¹¹⁰ https://www.rd-alliance.org/groups/evaluation-research-ig/outputs/?output=142666

¹¹¹ https://www.researchsoft.org/

¹¹² https://www.ga4gh.org/

¹¹³ https://www.rd-alliance.org/groups/data-usage-metrics-wg/activity/

¹¹⁴ https://www.rd-alliance.org/groups/sharing-rewards-and-credit-sharc-ig/activity/

¹¹⁵ https://www.rd-alliance.org/groups/active-data-management-plans/activity/

¹¹⁶ https://www.rd-alliance.org/groups/reproducibility-ig/activity/

¹¹⁷ https://www.rd-alliance.org/groups/national-pid-strategies-interest-group/activity/

¹¹⁸ https://www.rd-alliance.org/groups/vocabulary-services-interest-group/activity/

¹¹⁹ https://www.rd-alliance.org/groups/sensitive-data-interest-group/activity/

¹²⁰ https://www.rd-alliance.org/groups/fair-principles-research-hardware/activity/

¹²¹ https://www.rd-alliance.org/groups/vre-ig/activity/

The FAIR Data Maturity Model Working Group, 122 FAIR for Research Software Working Group, 123 RDA & ReSA: Policies in Research Organisations for Research Software Working Group 124 and the Software Source Code Interest Group 125 consider the inherent connection between data and software. The Physical Samples and Collections in the Research Data Ecosystem Interest Group 126 considers samples and collections as important assets for many research disciplines. Several groups focus specifically on disciplinary data management within Natural Sciences, Engineering and Technology, Agricultural and Veterinary Science, Medical and Health Sciences (including -omics) and Social Sciences.

The Artificial Intelligence & Data Visitation (AIDV) Working Group 127 and related CoARA Working Group on Ethics and Research Integrity Policy in Responsible Research Assessment for Data and Artificial Intelligence (ERIP) 128 examine the ethical, legal, and social challenges of using AI and data visitation technologies. The Uptake of Digital Research Infrastructure Interest Group 129 will consider the uptake of digital research infrastructure, which can play a role in supporting research evaluation. The Early Career and Engagement Interest Group 130 and the Research Data Policy Interest Group enables inclusion of perspectives of early career individuals and other key stakeholders within the research data ecosystem on the topic of reforming research evaluation.

In addition, several RDA groups focus on education, training and data support which are essential components for reforming research evaluation. These groups include the Engaging Researchers with Data Interest Group, 131 Education and <a href="Training on Handling of Research Data Interest Group, 132 CODATA/RDA Research <a href="Data Science Schools for Low and Middle Income Countries Interest Group, 133 Professionalising Data <a href="Stewardship Interest Group 134 and the Libraries for Research Data Interest Group. 135

6.4.3. Evolution of Research Evaluation in Practice

Given the RDA's emerging role in reforming research evaluation, the following section showcases work currently underway within the RDA community and beyond that shapes the future of how research impact is assessed and rewarded.

¹²² https://www.rd-alliance.org/groups/fair-data-maturity-model-wg/activity/

¹²³ https://www.rd-alliance.org/groups/fair-research-software-fair4rs-wg/activity/

¹²⁴ https://www.rd-alliance.org/groups/rda-resa-policies-research-organisations-research-software-pro4rs/activity/

¹²⁵ https://www.rd-alliance.org/groups/software-source-code-ig/activity/

¹²⁶ https://www.rd-alliance.org/groups/fair-principles-research-hardware/activity/

¹²⁷ https://www.rd-alliance.org/groups/artificial-intelligence-and-data-visitation-aidv-wg/activity/

¹²⁸ https://coara.eu/working-groups/working-groups/wg-erip/

¹²⁹ https://www.rd-alliance.org/groups/uptake-digital-research-infrastructure-ig/activity/

¹³⁰ https://www.rd-alliance.org/groups/early-career-and-engagement-ig/activity/

¹³¹ https://www.rd-alliance.org/groups/engaging-researchers-data-ig/activity/

¹³² https://www.rd-alliance.org/groups/codatarda-research-data-science-schools-low-and-middle-income-countries/activity/

¹³³ https://www.rd-alliance.org/groups/codatarda-research-data-science-schools-low-and-middle-income-countries/activity/

¹³⁴ https://www.rd-alliance.org/groups/professionalising-data-stewardship-ig/activity/

¹³⁵ https://www.rd-alliance.org/groups/libraries-research-data/activity/

6.4.3.1. RDA France: A Liaison with CoARA



"The evolution of research evaluation is indispensable to enable Open Science. In the same way that Open Science promotes the open sharing of FAIR data and other research outputs, evaluators must also value and consider these outputs as part of wider research evaluation."

- Françoise Genova Strasbourg Astronomical Observatory, France and RDA France

The <u>Coalition for Advancing Research Assessment (CoARA)</u> is a collective of over 800 research organisations, funders, assessment authorities, and professional societies committed to reforming research evaluation methods by recognising diverse outputs and emphasising qualitative judgment over bibliometrics. <u>CoARA National Chapters</u> are country-level facilitators that form hubs for coordinating actions and mutual learning among member organisations within specific countries, helping translate CoARA's research assessment reform principles into diverse geographical, regional, institutional, and disciplinary contexts.

Since the evolution of research evaluation is an important topic in France, a liaison was initiated between the regional group, <u>RDA in France</u>, and <u>French CoARA National Chapter</u>. ¹³⁷ The French National chapter (CoARA France), supported by numerous French organisations, aims to create an exchange platform for sharing best practices and coordinating research assessment reform efforts among universities, research organisations, funding agencies, and assessment authorities, facilitating collaboration in the French evaluation landscape.

Over the past year, there has been valuable information exchange between the two initiatives to strengthen the liaison. CoARA France actively contributed to the RDA discussions on research evaluation through participation in the 2024 RDA France Days¹³⁸ plenary session and the RDA 23rd Plenary Meeting session¹³⁹ on 'leveraging liaisons', while Françoise Genova presented on the evolution of research evaluation covering both CoARA and RDA contributions at the ANDOR2024 National Conference on Research Data¹⁴⁰ in Marseille. In September 2025, the RDA is organising a workshop in collaboration with CoARA for the research community in Asia and Oceania.

The strong liaison established between the RDA and CoARA at the French national level exemplifies how national presence, through <u>regional groups</u>, ¹⁴¹ can facilitate transformative policy change in areas central to the RDA's mission. This powerful model requires the RDA community to strategically identify high-impact topics with pan-national relevance, actively propose and champion corresponding RDA groups, and ensure RDA regional groups effectively engage directly with key national initiatives to amplify influence and accelerate adoption.

¹³⁶ https://coara.eu/working-groups/national-chapters/

¹³⁷ https://coara.eu/working-groups/national-chapters/coara-national-chapter-france/

¹³⁸ https://rdafrance2024.sciencesconf.org/resource/page/id/1

¹³⁹ https://www.rd-alliance.org/groups/evaluation-research-ig/plenary-participation/?application_id=171820

¹⁴⁰ https://andor2024.sciencesconf.org/

¹⁴¹ https://www.rd-alliance.org/group-directory/? group type=regional-group

"The liaison established between RDA in France and CoARA France provides additional visibility for the RDA. It enables the national and global RDA community to provide input to a strategic national policy evolution which transcends Open Science."

- Françoise Genova Strasbourg Astronomical Observatory, France and RDA France

6.4.3.2. SHARC: Rewarding Open Science



"The evolution of research evaluation is important because it impacts on the practice and integrity of research, shapes research careers and forms the basis of public trust in research."

Anne Cambon-Thomsen
 CNRS, Inserm and University of Toulouse, France

The RDA Sharing Rewards and Credit (SHARC) Interest Group, endorsed in 2017, developed Recommendations on Open Science Rewards and Incentives: Guidance for multiple stakeholders in Research. These comprehensive recommendations, also published in the Data Science Journal, target multiple stakeholders with specific actions. Institutions should provide digital infrastructure, training, and funding for data sharing; funders must establish open access policies with corresponding support; publishers should adopt open peer-review models and provide open access to articles, data, and software; and government policymakers should implement comprehensive Open Science strategies following UNESCO guidelines. The Central to these recommendations is the emphasis on integrating sharing activities into research evaluation schemes as an overarching mechanism to transform research culture toward Open Science, requiring collaborative efforts from individual researchers, institutions, funders, policymakers, and publishers throughout the research and innovation system.

Even before its completion, the work leading to the output was used to inspire and influence various national and international initiatives. It was used by the <u>French National Plan for Open Science</u>, ¹⁴⁵ <u>National Centre for Scientific Research (CNRS)</u>, ¹⁴⁶ <u>National Research Agency</u>, and the <u>High Council for the Evaluation of Research and Higher Education (Hcéres)</u>, ¹⁴⁷ to modify their evaluation criteria, incorporating part of the SHARC Interest Group's ongoing work before the final RDA approval. This was done by soliciting presentations of the SHARC work and outputs at various relevant national events and round tables.

Other related outputs of the group include '<u>FAIRness Literacy: The Achilles' Heel of Applying FAIR</u>

<u>Principles</u>', ¹⁴⁸ an article that reports on lessons learned about identifying processes required to prepare FAIR

¹⁴² https://www.rd-alliance.org/groups/sharing-rewards-and-credit-sharc-ig/outputs/?output=142427

¹⁴³ https://doi.org/10.5334/dsi-2025-015

¹⁴⁴ https://doi.org/10.54677/MNMH8546

¹⁴⁵ https://www.ouvrirlascience.fr/second-national-plan-for-open-science/

¹⁴⁶ https://www.cnrs.fr/en

¹⁴⁷ https://www.enga.eu/membership-database/hceres-high-council-for-the-evaluation-of-research-and-higher-education/

¹⁴⁸ http://doi.org/10.5334/dsi-2020-032

implementation in non-data-skilled communities, and the procedures and training that must be deployed and adapted to each practice and level of understanding. The group also produced <u>Templates for FAIRness</u> <u>evaluation criteria</u>¹⁴⁹ that show the criteria researchers can follow to demonstrate their FAIR practice, and published insights from an international survey on '<u>Gaps between Open Science activities and actual recognition systems</u>.'¹⁵⁰ Based on responses from 230 participants from 37 countries, the survey revealed that, while most organisations have formal Open Science policies, the majority lack specific credit or reward mechanisms for Open Science activities, with researchers identifying Open/FAIR data management and sharing as most deserving of recognition and preferring Open Science indicators in research evaluation processes.

6.4.3.3. Open Science NL: Open Science Career Evaluation



"The evolution of research evaluation is important because it shapes our understanding of what counts as 'excellent research' and influences the priorities, practices, and values of the academic community."

- Marta Teperek
Open Science NL/ Dutch Research Council (NWO), Netherlands

Open Science NL (OSNL), 151 the Dutch programme tasked with accelerating the transition to Open Science, has launched a €1.2M initiative that directly tackles lack of institutional recognition and reward as a core barrier to adoption of Open Science practices among researchers. The initiative was motivated by the understanding that Open Science practices will only become widespread when institutions formally recognise and reward them in their hiring and promotion decisions.

Through targeted funding of up to €50K per institution, this investment empowers every Dutch institution in the <u>National Recognition and Rewards Programme</u>¹⁵² to embed open science within their hiring and promotion policies for researchers and support staff. A further €150K was awarded to a national coordination project that will work with funded institutions to facilitate knowledge and practice exchange, and policy alignment. All projects are expected to start toward the end of 2025 and will last one year.

By embedding Open Science into career advancement criteria for both researchers and support staff, Open Science NL hopes to create systemic incentives to embrace Open Science practices. Early feedback confirms this as a cost-effective approach to drive institutional policy transformation, with the potential to change how academic careers are rewarded in the Netherlands.

"For Open Science practices to become mainstream, it is essential that they are recognised and rewarded within institutional hiring and promotion policies."

- Marta Teperek

¹⁴⁹ https://doi.org/10.5281/zenodo.11243918

¹⁵⁰ https://doi.org/10.1371/journal.pone.0315632

¹⁵¹ https://www.openscience.nl/

¹⁵² https://recognitionrewards.nl/

6.5. Conclusions and Future Directions

The RDA is well-positioned to drive the transformation of research evaluation. Its global, cross-disciplinary community and proven track record of developing widely-adopted data infrastructure solutions gives it unrivalled influence in contributing to how modern research is evaluated. The practical examples described above showcase effective models towards reforming research evaluation, each demonstrate different pathways to systematic change and represent replicable frameworks for other regions seeking to modernise their research evaluation systems.

The RDA France-CoARA liaison shows how international frameworks can be translated into national contexts through strategic partnerships. This model proves that cross-initiative collaboration amplifies impact and provides mutual reinforcement for policy evolution. The success of the SHARC Interest Group demonstrates the power of comprehensive, stakeholder-targeted recommendations. Even before formal completion, their work was referred to and influenced major French organisations (CNRS, Hcéres), demonstrating the value of the RDA for driving and fostering research evaluation policy adoption. Finally, OSNL's financial investment shows how strategic funding can engender systemic change by embedding new values into career advancement structures

Together, these cases illustrate that research evaluation transformation requires multiple simultaneous approaches. The convergence of these efforts across different countries suggests a global momentum toward valuing diverse research contributions, with data sharing and Open Science practices increasingly recognised as essential components of research excellence.

The research evaluation landscape is experiencing explosive growth with many new initiatives emerging at a rapid pace. This creates both unprecedented opportunity and strategic complexity. The surge in interest among the research community reflects the reformation of research evaluation as a defining issue of our era — one that touches every researcher, institution, and discipline worldwide while spanning the entire research data lifecycle. This universal relevance also creates a unique adoption challenge for the RDA. As the evolution of research evaluation involves many stakeholders and initiatives, each concerned with different aspects of the transformation, identifying and engaging the right adopters for RDA's recommendations and outputs requires careful and thoughtful coordination across this vast, interconnected ecosystem. Moreover, due to the fast-evolving research evaluation policy landscape, the RDA's recommendations and outputs require continual updates.

The <u>RDA Evaluation of Research Interest Group</u> will continue to provide contributions to the international landscape, building on the RDA community's diversity, knowledge, and international reach. The group's next steps are to create a registry of relevant initiatives and disciplinary aspects of data and software research outputs. The topic of research evaluation may be discussed at the Funder's Forum meeting at the upcoming <u>RDA 25th Plenary meeting as part of International Data Week</u>¹⁵³ in October 2025.

¹⁵³ https://www.rd-alliance.org/news/call-for-sessions-rda-p25-as-part-of-international-data-week-2025/

7. Reflections and Next Steps

Workshop participants demonstrated enthusiasm for enhanced engagement, requesting more time for structured discussion, feedback sessions, and comprehensive coverage of different RDA outputs and groups which could be delivered through follow-up workshops on the key policy areas. The workshop highlighted valuable opportunities to strengthen global representation through targeted regional consultation strategies, with additional outreach to Africa, Asia, Oceania and the Americas, thereby enriching our understanding of distinct regional policy priorities through focused follow-up surveys.

Future topics of interest encompass strategic policy areas and practical implementation needs, building on the strong foundation of participant engagement. Policy and strategy priorities include advancing in-depth discussions on national and regional PID strategies, and establishing funder PID policies. Workshop participants also expressed enthusiasm for furthering the TRUST Principles for data repositories (Transparency, Responsibility, User focus, Sustainability, and Technology)¹⁵⁴ and exploring the dynamic intersection of FAIR principles with AI,¹⁵⁵ encompassing both FAIR principles for AI and use of AI for FAIR data management. Notably, both priority areas align with existing RDA focus areas (RDA for TRUST Principles¹⁵⁶ and RDA for Artificial Intelligence¹⁵⁷), positioning the community to build on established foundations and expertise.

Future RDA events could explore these policy areas (revisiting national PID strategies, journal data policies, and research evaluation) with greater depth and practical focus. Rather than simply presenting RDA recommendations and outputs, these sessions will examine how they can be successfully implemented in real-world contexts, identifying the specific stakeholders responsible for adoption and the concrete steps needed for effective implementation. By allocating sufficient time for interactive Q&A discussions, these events will ensure community members not only understand the recommendations but feel equipped and motivated to put them into practice within their own organisations and workflows.

Measuring adoption and impact of RDA recommendations and outputs presents an opportunity for community growth and development, with participants calling for more detailed adoption stories, use cases, and real-world applications through specialised case study events. While the RDA has vast reach and produces important work, there is potential to better showcase and celebrate its impact. The primary opportunity lies in improving visibility, by encouraging active reporting of recommendation and output adoption to the RDA or relevant RDA groups, we can better track and recognise how RDA recommendations and outputs are being successfully implemented.

In the context of the value of RDA for policy, understanding adoption presents interesting challenges because policy development is complex and multifaceted. The diversity of stakeholders, each focusing on different aspects of recommendations and outputs, creates rich opportunities for varied implementation approaches. Measuring true impact requires recognising that organisations may not adopt RDA materials directly and

¹⁵⁴ https://www.rd-alliance.org/value_rda/rda-and-trust-principles/

¹⁵⁵ https://www.rd-alliance.org/value_rda/rda-and-artificial-intelligence/

¹⁵⁶ https://www.rd-alliance.org/value rda/rda-and-trust-principles/

¹⁵⁷ https://www.rd-alliance.org/value rda/rda-and-artificial-intelligence/

entirely. Instead, they are typically inspired, influenced, or stimulated by them to drive policy changes. There is interest in developing enhanced assessment capabilities, specifically tools and methodologies to monitor, measure, and evaluate the adoption and impact of RDA recommendations and outputs systematically.

The RDA could seek to evaluate success through 'usefulness' and 'influence' rather than strict 'adoption', recognising that adaptation and inspiration are often more valuable and realistic measures of impact than direct implementation. RDA-organised events bringing together diverse stakeholders to share experiences on output usefulness and adoption levels will enable valuable international dialogue based on common interests in specific RDA recommendations.

To support this enhanced visibility and impact measurement, community members are strongly encouraged to share their adoption experiences by <u>submitting an Adoption Story</u>¹⁵⁸ to the RDA. This collaborative approach to sharing adoption experiences helps to build a comprehensive picture of the RDA's global influence and create inspiring examples for future adopters.

Your story of how RDA recommendations and outputs have transformed your work, inspired new policies, or driven meaningful change in your organisation could be exactly what the global research data community needs to hear. We want to know about it.

8. Acknowledgements

8.1. Organising Committee

This 'Value of RDA for Policy' workshops and white paper owes its success to a number of teams. Deepest gratitude goes to the Organising Committee members, **Françoise Genova** (Strasbourg Astronomical Observatory and RDA France), **Beth Knazook** (Digital Repository of Ireland), and **Ryan O'Connor** (RDA Europe) whose vision and strategic leadership shaped the foundation and direction of the workshops.

8.2. The RDA Secretariat

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Author

¹⁵⁸ https://www.rd-alliance.org/adoption-stories/

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8.4. Tool usage

Workshop registration and sessions were facilitated using Zoom. Mentimeter was used to capture real-time feedback from workshop attendees. White paper charts and graphs were created using Canva. 160 In line with the RDA's Guidance on Al Tools Usage, 161 Claude Sonnet 4 (Pro) 162 was used for writing assistance throughout sections of this white paper. The generative model was used with a privacy-preserving configuration ensuring that input and output data is not used for model training. Al-generated texts have been reviewed, validated and edited as necessary by the workshop moderator and author for accuracy and completeness.

8.5. Disclaimer

This white paper is a collaborative effort between the <u>RDA Secretariat</u> and volunteer members of the global RDA community, who did not receive any compensation for their involvement. All quotes and statements attributed to speakers and participants have been directly verified using transcripts and video recordings. Attribution has been made only with explicit consent, and general discussion quotes, although anonymised, have also been validated against recordings. Attributed quotes were shared with their respective speakers for review and commentary prior to publication. Graphs included in this paper were generated by the author, while other graphics were provided by the speakers, all of which have been cleared for use. Any substantial claims presented in this paper are supported by expert speaker statements as well as footnote citations from referenced sources, all verified by the author.

9. About the RDA

The Research Data Alliance (RDA) was launched as a community-driven initiative in 2013 with the vision that researchers and innovators can openly share and re-use data across technologies, disciplines, and countries to address the grand challenges of society. The RDA's mission is to build the social and technical bridges that enable that vision, accomplished through the creation, adoption and use of the social, organisational, and technical infrastructure needed to reduce barriers to data sharing and exchange.

As of June 2025, the RDA comprises a 15,000+ member-strong community of researchers, data professionals, publishers, funders and policymakers, that collaborate in working groups, interest groups and communities of

¹⁵⁹ https://www.zoom.com/

¹⁶⁰ https://www.canva.com/

¹⁶¹ https://www.rd-alliance.org/rda-guidance-on-ai-tools-usage/

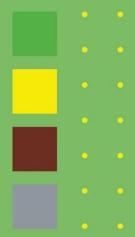
¹⁶² https://claude.ai/new

practice to create recommendations and outputs. <u>Individual membership</u>¹⁶³ is free of charge and open to all who share the RDA's Guiding Principles. To get involved at the organisational level, explore our <u>organisational</u> and <u>affiliate membership options</u>. ¹⁶⁴

¹⁶³ https://www.rd-alliance.org/register/

https://www.rd-alliance.org/membership/organisational-membership/





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