

Policy Enhancement Recommendations

Policies are a crucial component in the FAIR ecosystem. In addition to the open consultation, FAIRsFAIR carried out an analysis of 42 current data policies at various levels (national, funder, publisher, institutional) to identify policy elements that support or hinder FAIR data practice and to share examples of good practice. To support comparison across the data policies of different stakeholders, a standard set of [policy characterisation features](#) was developed to help us assess progress against the priority and supporting recommendations outlined in Turning FAIR into Reality. A selection of the main findings are provided below.

Policies are not currently structured for machine readability

To enable machine-actionable workflows to be carried out in a FAIR ecosystem, it will be crucial that the policies governing data sharing are comparable and can be interpreted unambiguously by both humans and machines. To this end, there is a need to agree on a set of common policy elements that will be consistently described using a structured markup schema.

Some stakeholders' policies are more influential on researchers' behaviour than others

Based on the results of the open consultation, the policies of funding bodies are the most influential on researchers' practices followed by those of publishers and journals. Community norms also have significant influence on researchers' practices as do the policies of Government or National Ministries. Policies at the Research Performing Organisation (RPO) and Research Infrastructure level have slightly less influence over researchers' practices and the least influential policies appear to be those of data repositories.

Policies should be aligned with FAIR either explicitly or implicitly

While many of the funding body and publisher/journal data policies we reviewed contain FAIR-related elements, less than half specifically refer to the FAIR principles explicitly. One of the publishers interviewed stated that they do not specifically reference the FAIR principles even though their policy aligns with them because they feel the term is confusing for researchers. While explicit reference to FAIR may not be necessary in all policies, related guidance and support should make clear how the policy aligns with FAIR implicitly.

FAIRsFAIR Policy Enhancement Recommendations

Based on the initial landscape assessment and the work of related initiatives, FAIRsFAIR has prepared a series of practical recommendations for policy enhancement to support the realisation of a FAIRer ecosystem. A key aim for FAIRsFAIR is to amplify existing policy recommendations wherever possible rather than to duplicate what has already been done. In this respect, the initial set of recommendations builds upon recommendations made by a number of initiatives including EOSC-hub, EOSCpilot, RDA Europe, OpenAIRE, and FREYA. The recommendations are presented under each of the three stages outlined by the Turning FAIR into Reality Report.



Define - concepts for FAIR Digital objects and the ecosystem

Recommendation n.1

Provide practical guidance to researchers and data stewards⁹ on how to implement FAIR within different domains – specifically on how to describe data using appropriate metadata standards, data tags¹⁰ and ontologies. Commitments are needed from all stakeholders to support and meet training needs relating to Open Science - for both researchers and data steward¹¹.

⁹ As outlined in recommendation 3 of Recommendations for Services in a FAIR data ecosystem
<https://zenodo.org/record/3585742#.Xkl5X3d2vIU>

¹¹ As suggested in Action 3.2, EOSCpilot D3.6 Final Policy Recommendations
<https://www.eosc-pilot.eu/content/d36-final-policy-recommendations>

Recommendation n.2

Cooperate with relevant initiatives to support funding bodies to characterise and, where needed, enhance policies to align with FAIR principles - either explicitly or implicitly

Recommendation n.3

Support policy makers to ensure that they include the dates of validity¹⁹ for their policies as well as any planned review dates.

¹⁹ As described in EOSCpilot Open Science Monitor diagram

<https://eosc-pilot.eu/news/3-major-updates-eosc-policy-supporting-services>

Recommendation n.4

Building on the work of other initiatives (FAIRsharing, EOSCpilot, RDA), agree on a common set of FAIR policy elements and work with stakeholders to employ them to describe their policies. The emphasis should be on describing those policy elements that may be considered ‘rules’ rather than simply suggested good practice to support machine-actionability.

Recommendation n.5

PIDs should be assigned to clearly versioned policies. These PIDs should be included in the metadata records in registries such as FAIRsharing.org or other policy registry services (such as those envisaged by EOSCpilot²⁴).

²⁴ EOSCpilot D3.4 Open Science Policy Registry

<https://eosc-pilot.eu/content/d34-open-science-policy-registry>

Recommendation n.6 - 7 - 8

(6) Working with research communities to define data outputs, policymakers should adopt standard descriptions to ensure that definitions provide clarity on the range of outputs that should be considered and what might be considered “FAIR enough”.

(7) Standardised exceptions for not sharing data should be developed and promoted in associated policy guidance.

(8) Standard exceptions should be added to metadata schemas used by repositories for consistency.

Recommendation n.9 - 10 - 11

(9) Working with relevant stakeholders, support adoption of rights and licensing documentation schemas for different types of research outputs as they are defined²⁵



- (10) Provide mechanisms to enable searching for data by license type in repositories.
- (11) Provide legal guidance on choosing appropriate licenses during active stage of research and for assessing the compatibility of different license types when reusing multiple data outputs ²⁶

²⁵ As recommended in Implementation Action 4.1 of EOSCpilot D3.6 Final Policy Recommendations <https://www.eoscpilot.eu/content/d36-final-policy-recommendations>

²⁶ As outlined in recommendations 6 & 7 of Recommendations for Services in a FAIR data ecosystem <https://zenodo.org/record/3585742#.Xkl5X3d2vIU>

Recommendation n.12 - 13

- (12) Working collaboratively, define and require standardised Data Accessibility Statements.
- (13) Provide support to repositories and data stewards to develop tombstone metadata records that are maintained - even when data is no longer available - and to ensure that these metadata records are referenced in Data Availability Statements

Implement - culture, technology and skills for FAIR practice

Recommendation n.14 - 15 - 16 - 17 - 18

- (14) Working with all stakeholders, ensure that data management planning is supported across the entire research lifecycle so that data can be “born FAIR” and kept “FAIR enough” over time. Require updating of DMPs over the research lifecycle leading to comprehensive, high-quality end stage DMPs that are included in end-stage reporting.
- (15) Policies and related guidance should emphasise that data management planning and sharing data supports research integrity goals, enhances data quality and contributes to reproducibility and transparency.
- (16) Support researchers to assess the potential risks, benefits and associated costs to enable the sharing of FAIR data as they draft their DMP.
- (17) RDM support should place an emphasis on selecting which data to make and keep FAIR as well as advising on where data should be deposited ³⁴.
- (18) Where resources allow, RPO’s should provide domain specific RDM support locally (research group, faculty/department). Where local support isn’t feasible, the development of shared domain-specific resources should be supported and maintained with resources provided by all stakeholders.

³⁴ As outlined in recommendation 7 of Recommendations for Services in a FAIR data ecosystem <https://zenodo.org/record/3585742#.Xkl5X3d2vIU>

Recommendation n.19

Building upon previous work on defining cost types³⁵ work with funding bodies and research performing organisations to implement these in new grant applications. RPOs should monitor and review RDM costings over the life of the project and beyond to assess the effectiveness of current cost models.

³⁵ As outlined in Implementing Action 3.3 of EOSCpilot D3.6 Final Policy Recommendations



https://www.eoscipilot.eu/sites/default/files/eoscipilot-d3.6-v2.7_0.pdf

Embed and Sustain - incentives, metrics and investment

Recommendation n.20

Provide guidance on how to cite a broader range of research outputs including data and software, as well as actors and enablers such as data managers, data stewards, funding bodies, research infrastructures and organisations.

Recommendation n.21

Working collaboratively on carefully scoped pilots, funding bodies, RPOs and repositories should assess and report on the costs of making and keeping data FAIR to build up a picture of how the costs might change over time and to leading to the development of sustainable funding models ³⁷.

³⁷ As outlined in recommendation 4 in *Recommendations for Services in a FAIR data ecosystem*
<https://zenodo.org/record/3585742#.Xkl5X3d2vIU>

Recommendation n.22

Support stakeholders to consider compliance monitoring across the FAIR ecosystem using identifiers and knowledge graphs. An emphasis should be placed on rewarding good practice but, where necessary, the introduction of penalties for non-compliance should be considered.

Get involved!

- Learn more about the [Open Call for policy enhancement support](#) run until January 22, 2021.
- Participate in one of our [upcoming Roadshows](#)

Documentation

- [D3.1 FAIR Policy Landscape Analysis](#) providing a snapshot of the policy landscape in November 2019.
- [D3.3 Policy Enhancement Recommendations](#) - report

