



## Indicators for open access to research data

According to its directive, the Swedish Research Council shall coordinate, follow up and promote collaboration in the work on open access to research data, and shall publish an annual report showing the overall mapping, analysis, and assessment of the national work.

Indicators for open access to research data have been developed with the aim of forming a joint framework to enable monitoring of the development and the effects of the work on transitioning to open access to research data, and identifying areas where extra initiatives are needed.

They will be used by the Swedish Research Council when carrying out the annual mapping, starting in 2023.

### Indicators

**1. There is a strategic focus for open access to research data that is based on good data management and where access is created according to the principle of “as open as possible and as limited as necessary”.**

(1) Fulfilled: There is a policy or corresponding documented strategic focus or steering document that includes that research data being made openly accessible:

- a) Are managed according to good data management, which means that
  - data management plans including information about accessibility are created and kept up to date
  - data are managed according to the FAIR principles.
- b) Are made accessible on the internet with metadata that make research data searchable.
- c) Are possible to re-use, through
  - research data being made accessible with information that clarifies how data may be used, for example with a right marking or information about applicable licenses
  - re-use being limited only when necessary, for example with regard to intellectual property rights or the organization’s preconditions
  - source code for software, necessary for using research data, being made openly accessible to the extent it is possible and suitable.

(2) Partly fulfilled: There is a strategic focus that includes the above-mentioned criteria but is not documented; alternatively, there is a policy or corresponding document that does not include all the above-mentioned criteria.

(3) Not fulfilled: there is no strategic focus.



## **2. The operation's working practices, procedures and processes include work on open access to research data.**

(1) Fulfilled: Working practices, procedures and processes include open access to research data, as follows:

- a) There is a description of how open access to research data is implemented in the operation's working practices (such as in the operational plan, with clear descriptions of responsibilities, roles, and tasks).
- b) There are personnel tasked with implementing the work, both strategically and practically. The time/resources allocated for this are fit for purpose.
- c) There is access to reliable and fit-for-purpose technical solutions that are relevant for the work on open access to research data.

(2) Partly fulfilled:

- a) There is a partial description of how open access to research data is implemented in the operation's working practices, and/or
- b) There are personnel tasked with implementing the work, strategically or practically, or alternatively both strategically and practically, but not to a sufficient extent (time/resources/roles allocated for the work are not fit for purpose), and/or
- c) There is access to reliable and fit-for-purpose technical solutions that are relevant for the work to some extent.

(3) Not fulfilled:

- a) There is no description of how open access to research data is implemented in the operation's working practices, and/or
- b) There are no personnel tasked with carrying out the work, and/or
- c) There is no access to reliable and fit-for-purpose technical solutions that are relevant for the work.

## **3. Knowledge-enhancing initiatives for open access to research data have been established.**

(1) Fulfilled: Actors involved arrange and take part in knowledge-enhancing initiatives (courses, information meetings, seminars, etc.) to increase knowledge about open access to research data. The initiatives include information about:

- a) Good data management as the basis
- b) Open access to research data
- c) Open access that promotes re-use
- d) Strategic focus on all relevant levels (such as nationally, organizationally, within a research field, or that relates to a specific group of actors).

(2) Partly fulfilled: Knowledge-enhancing initiatives are arranged, but do not include all the items mentioned above.



(3) Not fulfilled: There are no knowledge-enhancing initiatives.

**4. Research data are produced based on good data management and are made openly accessible according to the principle of “as open as possible and as limited as necessary”.**

The proportion of research data, including metadata, that is made accessible in accordance with the FAIR principles and applicable legislation.

(1) Entirely fulfilled to 100%

(2) Fulfilled to a great extent: 75-99%

(3) Partly fulfilled: 50-74%

(4) Fulfilled to a lesser extent: 25-49%

(5) Not fulfilled: Less than 25% of research data is managed according to the above criteria.

**5. Open access to research data is part of the incentive system.**

(1) Fulfilled: Agreement on Reforming Research Assessment has been signed, or corresponding undertakings have been made in relation to sections of relevance to open access<sup>1</sup>, and measures have been implemented so that open access is part of the incentive system.

(2) Partly fulfilled: Agreement on Reforming Research Assessment has been signed, or corresponding undertakings have been made in relation to sections of relevance to open access, but implementation has not yet occurred.

(3) Not fulfilled: Agreement on Reforming Research Assessment has not been signed/corresponding undertakings and measures have not been made.

## Definitions

Some common concepts and expressions are explained below.

**Data** refers to information in digital format, irrespective of the medium.

**Data Management Plan (DMP)** is a document where researchers describe how data collected and/or created will be managed during the course of the research, and how they will be dealt with afterwards.

**Research data** refers to data that are collected or produced within the framework for scientific research activities.

They may consist of digital texts, images, audiovisual material, 3D scans, observation data, results from experiments and other types of digital objects.

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<sup>1</sup> 1 Note that all undertakings according to the Agreement on Reforming Research Assessment are not relevant to open access to research data. The relevance may also vary depending on the actor referred to. The undertaking that most explicitly relates to open access to research data is 6.2 “CRITERIA FOR PROJECTS AND RESEARCHERS With the direct involvement of researchers at all career stages, review and develop criteria, tools and processes for the assessment of research projects, research teams and researchers that are adapted to their context of application”... “This includes recognition of early sharing of data and results, open collaboration, and teamwork.”



**FAIR research data** refers to research data that are managed according to FAIR principles that make them findable, accessible, interoperable, and reusable.

**Metadata** refers to data about data (in this case data about research data). Metadata can consist of descriptive or contextual information and/or information about the origin (provenance) of data.

**Open access to research data** means that research data are published freely available on the internet, to the extent it is possible with consideration for limitations in applicable legislation.

**Open source code** refers to source code that is publicly accessible and may be used and modified.<sup>2</sup>

## About the indicators

Indicators shall be possible to measure at different levels – nationally, organizationally, etc. When producing these indicators, the central starting points have been current initiatives within the framework for EOSC and the following criteria for indicators, developed within the framework for the Swedish Research Council's previous work on Government mandates relating to the follow-up of Swedish research<sup>3</sup>.

- Relevance – the indicator shall have clear links to the political goals set
- Clarity – the indicator shall be comprehensible, that is, easy to understand and interpret without much explanatory text
- Validity – the indicator shall measure what is referred to
- Reliability – the indicator is reliable; that is, based on an independent and reliable source
- Comparability – the indicator makes it possible to make comparisons, over time and if possible between countries, as well as against goals or threshold values
- Accessibility – the indicator is accessible over time and is used in existing analyses and reports
- Changeability – the indicator reacts to changes, which is a precondition for being able to monitor development and changes over time

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<sup>2</sup> [Rikstermbanken](#)

<sup>3</sup> [Redovisning av regeringsuppdrag att utveckla uppföljningen av svensk forskning](#)