Case study of Norway’s National strategy on access to and sharing of research data

- English summary of the strategy: https://www.regjeringen.no/en/dokumenter/national-strategy-on-access-to-and-sharing-of-research-data/id2582412/
- Full text version in Norwegian only: https://www.regjeringen.no/no/dokumenter/nasjonal-strategi-for-tilgjengeliggjoring-og-deling-av-forskningsdata/id2582412/

Rationale, motives and key drivers

The aim of increased access to publicly funded research data had previously been stated in government white papers on research policy in 2009 and 2013 (St.meld. nr. 30 (2008–2009) and Meld. St. 18 (2012–2013)). The 2009 white paper explicitly expressed the government’s commitment to the OECD principles and guidelines for access to research data from public funding. The white papers described that there was large variations among researchers in the awareness of issues related to data access and management, and expressed the intention of the government to facilitate increased access to public research data. The 2009 white paper included a measure that storage and accessibility would be included in the conditions for funding from the Research Council of Norway (RCN), but otherwise no specific actions were described.

The RCN established its first policy on open access to research data in 2014. The policy adheres to an open-as-default principle for RCN-funded research data, and contains guidelines for proper data management and sharing. The general terms and conditions for RCN grants require that data generated through the projects be made publicly available by the end of the project unless there are particular reasons to the contrary, and that the data should be stored securely in a digital archive for minimum ten years after the project.

The main underlying motive for the strategy was a perceived low level of publicly funded research data being made publicly accessible, significantly lower than would be expected by the accepted exceptions to the open-as-default principle, and a low degree of adherence to best-practice principles for data management that facilitates re-use. Several barriers were identified that contribute to this situation, inter alia.: lack of awareness, data sharing culture and incentives, skills and knowledge (regarding both technical, administrative and legal issues ), technical platforms, standards and sustainable funding models.

Governance and process

The 2016 white paper Digital agenda for Norway (Meld. St. 27 (2015–2016)) presented the government’s intention of developing strategies for increased accessibility to public data within five areas: culture, geodata, public expenditure, transport and research.

The strategy on access to research data was developed by the Ministry of Education and Research (MER) as the lead ministry, involving a working group that included representatives from six other ministries (Climate and Environment; Finance; Health and Cares Services; Labour and Social Affairs; Local Government and Modernisation; Trade, Industry and Fisheries).

The pre-existing evidence base of the strategy process included several international reports relevant to access to research data. A survey of the sharing and storage of publicly funded research data in
Norway had been performed for the RCN in 2014\(^1\). Several universities had also conducted reviews mapping the status of research data management and sharing, e.g. the University of Oslo.

In 2016 MER tasked the RCN with drawing up a report to support the strategy work, which describes the RCN’s funding of infrastructures that support open data, available data archives and services, business models in use, perceived barriers to better data access and re-use in the scientific community, and contains the RCN’s advice for the national strategy.\(^2\) The RCN conducted around 30 interviews and organised workshops with stakeholders to inform the report.

The ministry working group developing the strategy also had several meetings with stakeholders before and during the drafting of the document, including both researchers and administrators from research institutes and universities, research data archives and library services, Statistics Norway the Data Protection Authority, various government agencies and business associations. A few key stakeholders also provided comments to a draft document.

**Adoption and implementation of the initiative**

The strategy covers both access to publicly funded research data and access to public data for research. Research data is considered to be publicly funded when underpinning publications resulting from publicly funded research, or generated for use in or as a result of such research. The main actions in the strategy are specific tasks given to relevant public agencies (RCN and UNIT – Directorate for ICT and Joint Services in Higher Education and Research), and expressions of the government’s expectations to the scientific community.

The strategy sets out three basic principles of the government’s policy for access to research data. The first is the principle of publicly funded research data being made ‘as open as possible, as closed as necessary’. The description of the principle emphasise that the openness of research data is not an either-or question. For the significant volume of research data that cannot be made fully openly available, the principle entails that more limited sharing must be considered (in secure environments, for trusted users/applications, etc.), as well as data transformations that reduce the need for confidentiality while maintaining its relevance for re-use, and that plans should foresee the lifting of barriers to access when the need for confidentiality ceases.

The second principle requires that the data should be managed and curated to take full advantage of their potential, and relates to best-practice principles for data management (data quality, the FAIR guiding principles, etc.).

The third principle states that the decisions on data management (and the concrete application of the two first principles) must be made within the scientific community. On the one hand it is a form of ‘subsidiarity principle’, which recognises that the government as a funder or regulator cannot define requirements that can be applied in particular cases to delimit specifically what data that must be made accessible and how, as these decisions require precise information of the specific data. Although the strategy does not define any quantitative targets for the amount of research data being shared openly, it is made clear that the current status cannot be explained by defensible exemptions as recognised by the principle ‘as closed as necessary’, and that the volume of research data being made fully openly available must increase. The principle also stresses that while specific decisions on data management to a large degree will be made by individuals, they must be made within a framework developed and supported by communities, in the form of shared norms, policies, standards, platforms, techniques, etc. The principle also recognises that there may be a significant cost involved in making data sets

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\(^1\) DAMVAD (2014) ‘Sharing and archiving of publicly funded research data: Report to the Research Council of Norway’. DAMVAD.

genuinely re-usable, and that efforts to increase re-usability therefore must weigh these costs against the potential benefit from re-use. A minimum requirement is the sharing of data ‘as is’ as it was used for the particular research project, but potentially highly valuable data should receive further curation to realise its potential. The researchers themselves are in the best position to make these judgements, but must also take into consideration benefits outside the scientific community.

The strategy only explicitly applies to research data (including metadata), but the application of the principles etc. to software is also encouraged.

The most concrete expected results of the strategy are related to the specific actions that will be taken by the government and the relevant agencies. These include improved information services both about relevant requirements for data management (including open access, IPR, privacy, etc.), resources and archives for data sharing, and advice about business models for data archives. Public research institutions will be asked to develop research data policies. Another group of expected results is related to increased awareness by researchers and research institutions of the government’s expectations. Among these are an expectation for institutions to develop procedures for approving or deciding on the data management plans of their research projects, to improve the skills of their personnel (including researchers, data stewards, administrators) and co-ordinate the development of new educational programmes, and for institutions and researchers to contribute in the development of relevant standards etc. As it is recognised that a positive development in these areas is partly on-going and also driven by the development in the international research communities and organisations, it has not been attempted to describe the potential impact of the strategy itself, but it is expected that the clear formulation of these expectations will have some impact, particularly at the management level of research institutions.

Some initiatives of the strategy are not ready for implementation, but require further investigation. This includes the implementation of a national repository, which is currently being investigated by UNIT (primarily related to depositing of , and a new funding model for access to register data for research obtained through Statistics Norway.

**International aspects**

The international dimension had a significant influence on the design of the strategy. Norwegian research is highly international, and national policies must be in line with the policies of international research funders, requirements from publishers, collaborating institutions and enterprises etc. Many of the most important conditions for the data culture that the strategy describes, are developed in the international research community and are more discipline-specific than country-specific. These include the development of discipline-specific standards, archives and other resources, and the incentives for data-related work through the recognition in the research-internal merit systems. In many of these areas, a national strategy may only encourage the national actors to participate and contribute in the relevant international communities, applying relevant internationally recognised standards etc.

A descriptive section of the strategy describes some relevant requirements, guidelines, and infrastructures internationally, including the 2006 Council recommendation of the OECD and the European Open Science Cloud. Some specific actions in the strategy involving the international dimension are related to the use of international identifiers (ORCID) and the co-ordination of solutions for data management plans with international practices.

**Monitoring and evaluation**

The strategy does not set specific targets for key performance indicators, but among the measures is giving UNIT a task of developing relevant statistics on the generation and sharing of research data,
and together with data archive services facilitating the crediting of data-related work, which also can be used to construct indicators.

**Lessons and Challenges ahead**

As the strategy was published quite recently, and many actions have not yet been implemented, it is too soon to describe the degree of attainment of the strategy’s objectives. It is recognised that many of the challenges described in the strategy will remain for some time, even if all the strategy’s actions are implemented successfully. Challenges related to the data sharing culture, merit systems and skills are slow to change, and will probably be influenced more by generational changes than through effects of policies on ingrained behaviours.

A possible pitfall that the strategy has avoided, is becoming irrelevant because of unrealistic expectations. On the one hand the strategy clearly recognises the many legitimate reasons for confidentiality of research data, but does not accept a superficial disregard of open access obligations whenever such issues are raised, and expects a real judgement of how data can be made ‘as open as possible’ within those constraints. While the strategy aims for increased efficiency in research through increased sharing etc., the significant costs for developing infrastructures and in data curation for genuine re-usability are clearly recognised, and there is a stated need for continued investigations into sustainable business models. Data management plans are perceived as an important instrument in strengthening the emphasis of data considerations early enough in the project cycle, but requirements are balanced against the administrative burden on researchers and the need for flexibility for different types of research.