

Chapter 1

Plan

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Introduction



This introductory chapter features a brief introduction to research data management and data management planning.

Before we get you started on making your own Data Management Plan (DMP), we will guide you through the basic concepts that you will need to understand beforehand. Research data, social science data, and FAIR data are some of the concepts you will discover.

Main take-aways

After completing this chapter you should be:

- » Familiar with concepts such as (sensitive) personal data and FAIR principles;
- » Aware of what data management and a data management plan (DMP) are and why they are important;
- » Familiar with the content elements that make up a DMP;
- » Able to answer the DMP questions which are listed at the end of this chapter and adapt them to your own DMP.

1.1 Benefits of Data management

Research data management refers to how you handle, organise, and structure your research data throughout the research process. Data management:

- » Begins with your initial considerations regarding what will be necessary for using or collecting your particular type of data;
- » Includes measures for maintaining the integrity of the data, making sure that they are not lost due to technical mishaps, and that the right people can access the data at the appropriate time;
- » Looks forward to the future, making it clear that you should provide detailed and structured documentation to be able to share your data with other colleagues and prepare them for long-term availability.



To make your research as time-efficient, reproducible and safe as possible, it is important that your data management is well thought through, structured, and documented.

A good data management strategy takes into account technical, organisational, structural, legal, ethical and sustainability aspects. The time invested in setting up a good data management strategy pays off when the time comes to reproduce your analysis and results.

You will be able to easily find and understand your data, increase your data's reuse potential and comply with funder mandates at the same time.

Data Management Plan

Data Management Plans (DMPs) are a key element of good data management | European Commission, 2016.

Information regarding your data management needs to be easily found and understood, not least if you are working on a project that runs over several years and involves a large team of people. In order to simplify data management, a Data Management Plan (DMP) can be created early in the research process.

A DMP is a formal document that provides a framework for how to handle the data material during and after the research project. The way a DMP will look once it is finished is not universal. It is a "living" document that changes together with the needs of a project and its participants. It is updated throughout the project to make sure that it tracks such changes over time and that it reflects the current state of your project.

A lot of diversity exists in DMPs because they are always built around the particular needs of the data collected within your project. Sometimes there are particular requirements from stakeholders that have to be answered in the DMP from stakeholders such as:

Your funders

Funders may require a Data Management Plan (sometimes called Data Publication Plan (DPP)) to get information on what data you intend to collect and whether (and how) you will make those data accessible to others. In this case you provide the funding agency with whatever information they require, to the extent that they specify. Depending on the nature of the call, such plans may include not only details on the kind and volume of data to be produced but also how the datasets will be documented and shared (along with other research outputs of the project, such as publications, program code, and educational resources). They may specify the length of the DMP or may expect you to include it in the page count of the scientific plan.

A DMP written for the funder is not always the same type of comprehensive DMP which is described in the list of questions to this guide (CESSDA, 2018a). However, the list can be used as a support when writing the DMP/DPP that the funder(s) require(s). See also the editable version (CESSDA, 2018b). Note that some funders might require that an updated DMP/DPP to be submitted as a deliverable within a specific time period. See 'Diversity in funder requirements' for more information.

Your institution

Your institution may have its own policy regarding data management, including what information should be gathered and archived together with research data and publications. It's possible that your institution can support you with writing a DMP, e.g. by providing expertise or (referring to) safe storage services.

The added value of a Data Management Plan

Several researchers who I have been talking to and have looked at the Data Management Planning checklist of the Swedish National Data Service (SND) have said that doing so made them start thinking of data security, data ownership, file formats etc. before the start of their project. By doing so they avoided some possible problems that would otherwise appear later on | Ulf Jakobson, Data manager humanities, SND.

A Data Management Plan (DMP) offers added value in the following ways:

Benefit 1. Useful tool to think ahead

Taking the time to plan ahead can save you a great deal of headache once the project is up and running.

Overall, a DMP helps you plan for the resources, tools, and expertise that are required to store, handle, and manage the given types and volumes of data that are expected to be collected. A DMP serves as a tool to pay careful attention to all aspects of data management. It makes you aware of possible problems at an early stage so that you can work around them. E.g. it reminds you to gain consent for future reuse and sharing from research participants.

By thinking early about various aspects of data management, you can ensure that the material is well-managed already during the data collection period. Structured and well-documented data enable others to understand the materials more easily. This, in turn, facilitates the preparation of the material for archiving, and enables further research after the end of the project.

Benefit 2. Allows for easy project management

An important function of a DMP is to work as a one-stop shop to find project-related information. Research becomes so much easier if all of your questions surrounding managing your data are being gathered in one place and project-related details are readily available rather than just vaguely remembered or simply forgotten.

A DMP is an efficient way for the researcher and his/her team to gain control over research data collection and management when the research project is up and running. Regardless of the size of the team there will be a need for easily found data-related information regarding file locations, naming conventions, standards, project description, project roles, backup regimes, versioning and so on. By writing a DMP, the researcher can ensure that the material is well-managed during the research period, which also facilitates the preparation of the material for archiving, and thus enables further research after the research project has ended. Also, it is usually easier to document research material if this is done in close proximity to the steps in the research process that create or change the material.

Project management becomes easier if you also include administrative information such as the names and ORCIDs of the Principal Investigator(s) and project members, information on which institution owns the data, registration numbers for funding and ethics board approvals. Furthermore, a lot of relevant information is kept in log books, code lists, technical reports and other documents. These documents can be referred to in the DMP together with their location information. Keeping all relevant information regarding your project in one place makes future reference a lot easier, whether that future reference is for your own thesis in three years, for an audit in five years or a historical study in fifty years.

Benefit 3. Clarifies needed budget

Data management is not free. You do not want to find yourself running out of funding before the end of the project because you have ignored or underestimated the cost of structured, detailed, and safe data management. Therefore, an important aspect of a DMP is its use in calculating how much money will be required for managing your research data during your research project.

A DMP can be useful in the process of applying for funding. Grant applications should not only include time and resources for collecting, analysing, and publishing on data in their budget, time and resources for careful documentation as well as server space, backup solutions, and documentation software need to be included as well. A DMP is also useful once funding is granted to plan and manage your expenses. Many research funders require a DMP as part of the application and decision-making process. The arguments for making data available are several, the most popular being that the data produced by public funds should be used to the greatest extent possible and available to the public. Unless there are legal, ethical or commercial barriers, data should also be openly available so that research results can be verified, replicated and reused.

Examples of Data Management cost assessments are given by the University of Utrecht (n.d.) and the Dutch Landelijk Coördinatiepunt Research Data Management (LCRDM, n.d.) inspired by the 'Data management costing tool' by UK Data Service, 2013.

Benefit 4. Makes data FAIRer

- » A DMP allows you to think through beforehand how to provide a dataset to a data repository which is as FAIR as possible. A DMP:
- » Makes structuring and documenting of your datasets simpler, thus making it easier for others as well as your future self to find and understand the material;
- » Encourages you to think about the data format which is best suited for reuse;
- » Allows you to think about the reuse license you would want to apply to your data;
- » Etc.

Benefit 5: Shows accountability

If you draw up a DMP, you are showing your affiliated institution, funders and project partners a serious approach to research data management, that includes a responsible approach towards research funds and research participants.

1.2 Research data

This expert tour guide focuses on research data management. But what is research data?

From a general perspective, research data can be described as the evidence used to inform or support research conclusions (University of Sheffield n.d.). The tangible forms this 'material' may take are e.g. "facts, observations, interviews, recordings, measurements, experiments, simulations, and software; numerical, descriptive and visual; raw, cleaned up and processed" (Van Berchum & Grootveld, 2017).

This definition combines type, form and research phase from the perspective that all manifestations of research data need to be actively managed to achieve high-quality data that have the potential to be reused. And this is exactly the perspective this tour guide adheres to.

The list below - which is based on the work of the University of Southampton (2016) - illustrates the four ways of looking at research data which are also reflected in the definition above.

Type of data

Research data can be described in many different ways. For example, they can be divided by source or by physical format. The sources of data can, for example, be registers (e.g. administrative, historical, voting results, medical, etc.), existing research data, population group(s) and communications. Physical formats of data include numerical, textual, still image, geospatial, audio, video and software. Regardless of the source and physical format of the data, data is often defined by as how they are created/captured. Examples of this includes electronic text documents, spreadsheets, laboratory notebooks, field notebooks and diaries, questionnaires, transcripts and codebooks, audiotapes and videotapes, photographs and films, examination results, specimens, samples, artefacts, slides, database schemas, database contents, models, algorithms and scripts, workflows, standard operating procedures and protocols, experimental results, metadata and other data files like e.g. literature review records and email archives.

When we speak about "new data", we mean the data that has emerged quite recently. Such data are sometimes referred to as Big Data, but both terms do not have agreed definitions.

The scholarly literature usually describes Big Data by their attributes. All of these attributes start with the letter "V" and they are Volume, Velocity and Variety (Couper, 2013).

- » Volume means that Big Data are very large and that processing them demands great computational power.
- » Velocity stands for the fact that Big Data are produced successively and new data emerge every moment.
- » Variety reminds us that Big Data are unstructured and messy and thus not ready for immediate analysis.

Some authors add two more Vs, Veracity and Value (e.g., Wamba et al, 2015):

- » Veracity tells us that Big Data must be carefully examined from the perspective of their trustworthiness. In other words, researchers should be careful about the quality of Big Data.
- » Value means that Big Data potentially generate valuable insights that are important for decision-makers, policy-makers, researchers and various organizations.

Depending on their source, the OECD defines six categories of Big Data:

A: Data stemming from the transactions of government, for example, tax and social security systems.

B: Data describing official registration or licensing requirements.

C: Commercial transactions made by individuals and organisations.

D: Internet data, deriving from search and social networking activities.

E: Tracking data, monitoring the movement of individuals or physical objects subject to movement by humans.

F: Image data, particularly aerial and satellite images but including land-based video images.

Social media data (category D - see chapter 7) are the data from platforms like Facebook, Twitter, Instagram or YouTube. These data are created by the users of such platforms. Researchers can access these data in three main ways: 1) Direct cooperation with the companies/platforms, 2) Buying from data resellers, 3) Via APIs (one might add web scraping to the list but most platforms/companies discourage its use).

Formats

Another way to think about research data is the format in which data types (textual, numerical, multimedia, structured, software code etc.) are stored. E.g. statistical data may be stored as SPSS (*.sav) or STATA file formats, movies as *.mpg or *.avi, structured data as *.xml or in a relational MySQL database and textual files as *.docx, *.pdf or *.rtf.

Size & Complexity

The size of the files matters and so does the complexity. Managing a relatively small and simple dataset presents different challenges from managing large, complex data files.

Research phase

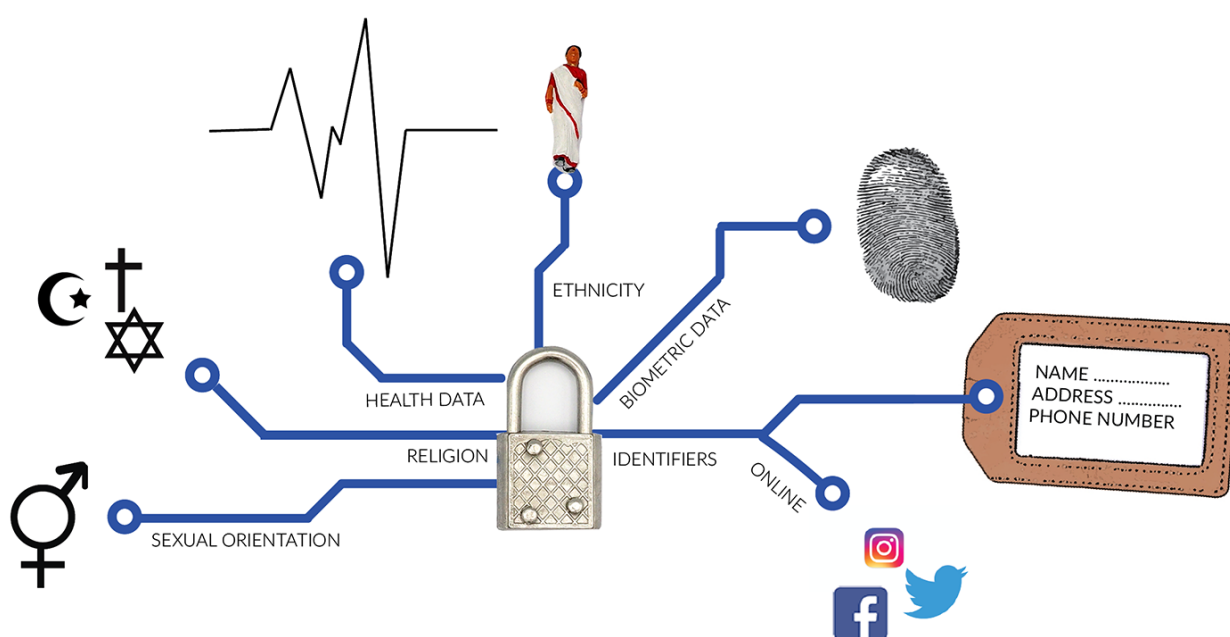
The different stages that your data travels through (raw, cleaned up, processed, analysed data) involve their own data management challenges.

1.3 Data in the social sciences

In this guide, we focus on data generated in social sciences research, both quantitative and qualitative. Notably, within the field of social sciences, you will often work with data originating from human participants. This can mean that you are handling (sensitive) personal data, which deserve special attention.

In the sections below a definition of personal data is given and our concept of quantitative and qualitative data is introduced.

Personal data



If you collect research data that enables you to identify a person, then this is classified as personal data. Within the General Data Protection Regulation (GDPR, European Union, 2016) personal data are defined as any information relating to an identified or identifiable natural person known as 'a data subject'. It is further specified that an identifiable natural person is someone who can be identified, either directly or indirectly, by reference to an identifier such as a name, an identification number, location data, an online identifier or to one or more factors specific to the physical, physiological, genetic, mental, economic, cultural or social identity of that natural person. Personal data can include a variety of information, such as names, addresses, phone numbers and IP addresses.

The GDPR applies only to the data of living persons. Data which do not count as personal data do not fall under data protection legislation, though there might still be ethical reasons for protecting this information.

Sensitive personal data

Certain personal data are considered particularly sensitive and thus require specific protection when they reveal information that may create important risks for the fundamental rights and freedoms of the involved individual. Examples of sensitive personal data include data revealing religion affiliation, sexual orientation, or racial or ethnic origin. Within the GDPR the following categories are defined as 'special categories of personal data':



- » Racial or ethnic origin;
- » Political opinions;
- » Religious or philosophical beliefs;
- » Trade union membership;
- » Genetic data;
- » Biometric data;
- » Data concerning health;
- » Data concerning a natural person's sex life or sexual orientation.

There are other data which may contain sensitive information that which does not fall under the special categories of personal data but should still be treated like as such, including, for example, confidential business data and confidential state security data.

Quantitative and qualitative data

Like with research data in general, social sciences data cover a broad range of materials, from structured numerical datasets to interviews, field notes, and documents collected for ethnographic studies, for instance. In this guide, we look at quantitative and qualitative data separately, though both can, of course, be collected during the same study.

In the table below the main attributes of both types of data are shown. Even though an attribute is described in one of the columns it does not imply that it cannot exist in the other.

Type	Quantitative data	Qualitative data
		
General description	<p>In quantitative research, the gathered information is in numerical form. Quantitative research is used to quantify behaviour, attitudes or opinions. The goal of quantitative research is often to test ideas stated at the start of the research, to formulate facts and uncover patterns.</p>	<p>Qualitative research is primarily exploratory research. It gathers information that is not in numerical form. The goal of qualitative research is often to develop (new) ideas and a deeper understanding not achievable by numerical scores.</p>
Data attributes	<p>Data are expressed in numbers that can be assessed using statistical analyses.</p>	<p>Data are expressed in natural language, often textual or visual.</p>
Data collection methods	<p>Quantitative data collection methods include various forms of surveys – online surveys, paper surveys, mobile surveys and kiosk surveys, face-to-face interviews, telephone interviews, website interceptors, online polls, experiments and systematic observations. In most cases it generalizes results from a larger sample population.</p>	<p>Qualitative data collection methods include photography, audio recordings, video, unstructured interviews, semi-structured interviews, open-ended questionnaires, diary accounts, focus groups (group discussions), individual interviews and unstructured observations. The sample size is typically smaller than quantitative samples.</p>
Example dataset	<p>Description: Study on migrations patterns in the Summer Olympics between 1948 and 2012. The dataset covers approximately 40,000 athletes and contains information on the country they represented as well as their country of birth (open access, in English).</p> <p>Reference: Jansen, J. (Erasmus University Rotterdam) (2017): Foreign-born Olympic athletes 1948 - 2012. DANS. https://doi.org/10.17026/dans-2xf-pyqp</p>	<p>Description: Interview with a survivor of the second world war extermination camp Sobibor (open access, in English).</p> <p>Reference: Leydesdorff (copyright on the interview), prof. dr. S. (Universiteit van Amsterdam - dep. of Arts, Religion and Culture); Huffener (project manager), M. (Stichting Sobibor) (2012): Project 'Long shadow of Sobibor' Survivors: Interview 01 Thomas Blatt. DANS. https://doi.org/10.17026/dans-x8h-fwjg</p>

(Sensitive) personal data and the guide

Tips for handling (sensitive) personal data are present throughout this guide. In particular, we would like to point out the following:

- » In chapter 4, you will find measures to protect (sensitive) personal data from unauthorised access with strong passwords and encryption.
- » In chapter 5, you will learn how a combination of gaining consent, anonymising data, gaining clarity over who owns the copyright of your data and controlling access to data can enable the ethical and legal sharing of (sensitive) personal data.

1.4 FAIR data

The attention of researchers is increasingly directed to the phases of the research lifecycle in which data are published, shared, discovered and reused. One of the perceived ways to achieve optimal reuse is to make data FAIR (**F**indable, **A**ccessible, **I**nteroperable and **R**eusable) (Force 11, 2014; Wilkinson, et al., 2016).

The FAIR guiding principles consist of 15 facets (Dutch Techcentre for Life Sciences, 2016) which describe a continuum of increasing reusability. Importantly, data should not only be FAIR for humans but also for machines, allowing, for instance, automated search and access to data. Funders like the European Commission have drafted Guidelines on FAIR Data Management for the H2020 programme (European Commission, 2016). Good data management is one way to support the FAIR principles.



Findable

To aid automatic discovery of relevant datasets, (meta)data should be easy to find by both humans and machines and be assigned a persistent identifier.

Accessible

Limitations on the use of data, and protocols for querying or copying data are made explicit for both humans and machines.

Interoperable

(Meta)data should use standardised terms (controlled vocabularies), have references to other (meta)data and be machine actionable.

Reusable

(Meta)data are sufficiently well described for both humans and computers to be able to understand them and have a clear and accessible data usage license.

Steps toward FAIRer data

In this guide, we treat the FAIR principles as guidelines to a clear higher goal: the aim is to prepare your research data for optimal (re-)use from the beginning and take appropriate measures that are most likely to be successful. To achieve FAIRness, data objects should at least have:

» **A persistent identifier (PID) for the data object as a whole**

Persistent identifiers like DOIs prevent link rot. Link rot is the process by which hyperlinks stop referring to the original source through time because they are moved or deleted. Without a PID, the data object simply will not be findable let alone reusable in the long-run (see 'Data citation')

» **A sufficient set of metadata**

A sufficient and standardised set of metadata (elements which describe the data) will enhance findability, interoperability, and reusability. The quality of the descriptive information regarding the data has a profound impact on their reusability. So the more documentation of the data's context, the better. As a minimum, there should be sufficient amount of metadata to make the data findable but also understandable and reusable by other researchers (see 'Documentation and metadata').

» **A clear licence**

Researchers (and computers) who find a dataset should immediately know what they are allowed to do with it. Stating clear re-use rights is like having a warm 'Welcome' on the doormat of your dataset. The motto is: 'open if possible, restricted if necessary' (see 'Data licensing').

One of the ways to make sure your data will not become useless in the long-run is to choose a (trusted) data repository which has these attributes built into its infrastructure for dataset submission. It is the interest of FAIR data that researchers deposit their data, along with all the documentation needed for their understanding and re-use, in a (trusted) research data archive that has an explicit goal of data preservation and the necessary expertise to store data sustainably and maintain their usability (Van Berchum & Grootveld, 2017).

Making data FAIR is a joint responsibility of researchers and data repositories. In a comprehensive document, the Swiss National Science Foundation explains (SNF, n.d.) how the responsibilities of both are distinct.

In the chapter on archiving and publishing data, we will guide you in making the FAIRest choice for entrusting your data.

Expert tip



How FAIR are your data?

Want to know how FAIR your data are? Have a look at the checklist by Jones and Grootveld (2017).



EU

Funding institution	DMP requirements	DMP template?
Horizon 2020	<p>At grant submission</p> <p>Projects that take part in the Horizon 2020 Open Research Data Pilot (default all H2020 projects) are required to produce a DMP as a deliverable within six months of the start of the project.</p> <p>The DMP should include information on:</p> <ul style="list-style-type: none"> » the handling of research data during and after the end of the project » what data will be collected, processed and/or generated » which methodology and standards will be applied » whether data will be shared/made open access and » how data will be curated and preserved (including after the end of the project). <p>During the project</p> <p>The plan must be updated whenever significant changes arise, for instance (but not only) when there are:</p> <ul style="list-style-type: none"> » new data » changes in consortium policies (e.g. new innovation potential, decision to file for a patent) » changes in consortium composition and external factors (e.g. new consortium members joining or old members leaving). <p>See 'Guidelines on FAIR data management' (European Commission, 2016).</p>	Yes, via DMPOnline (Digital Curation Centre, 2017)
European Science Foundation	No	No
European Research Council	<p>No</p> <p>See 'Guidelines on the Implementation of Open Access to Scientific Publications and Research Data in projects supported by the European Research Council under Horizon 2020' (European Research Council, 2017).</p>	Template (European Research Council, n.d.)

Belgium

Funding institution	DMP requirements	DMP template?
Fonds voor Wetenschappelijk Onderzoek	Yes	Yes, applicants should provide detailed information following the requirements described here.
Federal State – Belgian Federal Science Policy Office (BELSPO)	Pending	Pending
Fédération Wallonie-Bruxelles – Fonds de la Recherche scientifique (F.R.S.-FNRS)/Federation Wallonia-Brussels – Fund for Scientific Research	No	No
Fédération Wallonie-Bruxelles – Direction générale de l'Enseignement supérieur, de l'Enseignement tout au long de la vie et de la Recherche scientifique (DGESVR)/Federation Wallonia-Brussels– Directorate General of Higher Education, Lifelong Education, and Scientific Research	No	No
Vlaamse Overheid – Departement Economie, Wetenschap & Innovatie (EWI)/Government of Flanders – Department of Economy, Science, and Innovation	No	No

Croatia

Funding institution	DMP requirements	DMP template?
Croatian Science Foundation	No	No

Czech Republic

Funding institution	DMP requirements	DMP template?
Czech Science Foundation	No	No
Technology Agency of the Czech Republic	No	No
Ministry of Education Youth and Sports - R&D support programmes	No	No
Operational Programme Research, Development and Education (EU Funds, managed at the Ministry of Education, Youth and Sports)	No	No
Ministry of Culture - Applied research programmes	No	No

Finland

Funding institution	DMP requirements	DMP template?
The Academy of Finland	Highly recommended. The Academy of Finland requires that the data management plan is made using the DMP tool DMPTuuli.	Yes, via DMPTuuli (2017)
Business Finland	Highly recommended.	Yes, via DMPTuuli (2017)
The Finnish Foundation for Alcohol Studies	Highly recommended.	Recommends a DMP based on the requirements of the Finnish Academy. See 'best practices' (Academy of Finland, 2017)
Kone Foundation	Highly recommended.	No, but see more information: Koneen Säätiö (n.d)
The Finnish Work Environment Fund	Highly recommended.	No

Germany

Funding institution	DMP requirements	DMP template?
Deutsche Forschungsgemeinschaft (DFG)	There is a general recommendation, but not a requirement. Requirements may be (and are) made on an individual program level. See DFG Guidelines on the Handling of Research Data (n.d.).	No
Bundesministerium für Bildung und Forschung (BMBF)	There are no general requirements. Requirements are made on a “per call” basis (some calls have requirements, others don’t). See Bundesministerium für Bildung und Forschung (n.d.).	No
Volkswagen Stiftung	No	No
Fritz-Thyssen-Stiftung	No	No
Hans-Böckler-Stiftung	No	No

The Netherlands

Funding institution	DMP requirements	DMP template?
NWO	Yes, both at grant submission and when the grant has been awarded.	Yes, see Netherlands Organisation for Scientific Research (2016)
KNAW	Yes, both at grant submission and when the grant has been awarded.	No, but for more information see Koninklijke Nederlandse Akademie van Wetenschappen (n.d.)
ZonMw	At grant submission information on whether data will be reused or collected needs to be provided. Also, a final DMP is required when the grant has been awarded.	Yes, see ZonMw (n.d.)

Also, you may want to have a look at the overview of DMP templates used by Dutch universities (Landelijk Coördinatiepunt Research Data Management (2017)).

North Macedonia

Funding institution	DMP requirements	DMP template?
Ministry of education and science of North Macedonia	No	No

Norway

Funding institution	DMP requirements	DMP template?
Research council of Norway	Starting in 2018, all Research Council-funded projects that generate data will as a general rule need to have a data management plan (DMP).	Yes
SkatteFUNN	Yes, during the project	No

The Research Council of Norway published their revised policy in December 2017, announcing that DMP requirements will be incorporated into calls for proposals starting in 2018. The main rule is that all Research Council-funded research projects that generate data must have a DMP. The DMP should be a living document that is updated throughout the project period, and should cover: which data are to be generated, how the data are to be described, where the data will be stored and whether and how they may be shared. The plan should be made public. The DMPs must be in place when projects submit their revised grant applications, but they will not be part of the Research Council's application review process.

The institutions are responsible for determining how they will provide access to the data. Under certain circumstances, the Research Council will require storage of the data in specific national or international archives (e.g. at NSD - Norwegian Centre for Research Data).

Serbia

Funding institution	DMP requirements	DMP template?
Ministarstvo prosvete, nauke i tehnološkog razvoja Republike Srbije (Ministry of Education, Science and Technological Development of the Republic of Serbia), Fond za nauku Republike Srbije (Science Fund of the Republic of Serbia)	No	No

Slovenia

Funding institution	DMP requirements	DMP template?
Slovenian Research Agency	No	No

Sweden

Funding institution	DMP requirements	DMP template?
Formas	No	No
Riksbankens Jubileumsfond (RJ)	No	No
Forte	No	No
Vetenskapsrådet (VR)	No	No
Knut and Alice Wallenberg Foundation	No	No
Marianne and Marcus Wallenberg Foundation	No	No
Marcus and Amalia Wallenberg Foundation	No	No
Stint	No	No

In Sweden, good data management is considered a key component for open access to research data, as well as a foundation for FAIR data. For the Swedish Research Council (Vetenskapsrådet, VR), a data management plan is a requirement for an approved application for funding, for all applications as of 2019. Other national public research funding bodies also require data management plans in new calls for applications. This applies to Formas, Forte, and Riksbankens Jubileumsfond, which require a DMP to be set up when funding is granted.

VR has appointed a national reference group, consisting of researchers, representatives for universities, archives, libraries, and research funding bodies, to collaborate on the work on data management plans. The national reference group has four working groups. These groups address concepts and definitions, stakeholders, DMP users, and specifications for a national tool for data management plans. Work is already in progress for a national DMP tool, and the plan is to implement a first "light" version of the tool in December 2019.

The Swedish National Data Service provides a guide and a template for a data management plan.

Some universities across Sweden have, on their websites, recommendations on using SND's checklist or other organisations' DMP tools.

Switzerland

Funding institution	DMP requirements	DMP template?
The Swiss National Science Foundation	Yes, as of October (2017), data management plans are an integral part of project funding applications submitted to the SNSF. The data management plans do not need to be finalised by the submission deadline. The submitted DMP is considered a notice of intention. It is a requirement for any transfer of funding. Researchers are encouraged to adapt its contents as the project evolves. A final version must be made available at the end of the grant and will then be made available on the SNSF's P3 database. See the Guidelines for researchers (SNF, 2017).	Yes, see Data Management Plan (SNF, 2017)

UK

Funding institution	DMP requirements	DMP template?
Wellcome Trust	<p>Yes, at grant submission:</p> <p>A DMP should be provided for grant applications for projects that aim to create a database resource or will generate significant datasets that could be shared. For such an application, you need to include:</p> <ul style="list-style-type: none"> » The data outputs your research will generate » When you intend to share your data » Where your data will be made available » How your data will be accessible to others » Whether limits to data sharing are required » How key datasets will be preserved » Resources required <p>See 'Developing an outputs management plan' (Wellcome (n.d.))</p>	Yes, via DMP Online (Digital Curation Centre, 2017)
Economic and Social Research Council	Yes, at grant submission. See the ESRC Research Data Policy (ESRC, n.d.)	Yes, via DMP Online (Digital Curation Centre, 2017)
Cancer Research UK	Yes, at grant submission	Yes (Cancer Research (n.d.))
Department for International Development	Yes, at grant submission	Yes (Department of International Development (2013))

Open Data and Open Science policies in Europe

For a snapshot of various Open Data and Open Science policies, as they currently stand throughout Europe, you can have a look at this living report (SPARCEurope & Digital Curation Centre, 2017).

1.6 Adapt your DMP: Part 1



The Data Management Plan (DMP) is an important tool to structure the research data management of your project. After working on each chapter you should be able to answer part of the questions which make up a DMP.

This is the first of seven 'Adapt your DMP' sections in this tour guide. When you have finished the chapter on data management planning, you can start filling in the 'Overview of your research project' section. Below you can see what elements and corresponding questions are generally included in that section. You can select appropriate questions and answer them to adapt your own DMP.

For easy reference, we have put together a list of DMP-questions for all chapters in this tour guide. You can view and download the checklist as pdf (CESSDA, 2018a) or editable form (CESSDA, 2018b), and keep them as a reference while you are studying the contents of this guide.

Alternatively, an online DMP solution developed by NSD is available. To access login with EduGain or google account is necessary. Currently, two templates (H2020 and a general one) are offered.

DMP Questions

Title of the project / study

What is the title of your project? Give a short description.

Date and version of this plan

- » What is the date of this DMP version?
- » How do you discern between versions of your DMP?

Description of the project

- » What is the nature of the project?
- » What is the research question?
- » What is the project timeline?

Origin of the data

- » What kind of data will be used during the project?
- » If you are reusing existing data: What is the scope, volume and format? How are different data sources integrated?
- » If you are collecting new data can you clarify why this is necessary?

Principal and collaborating researchers

Principal researchers

- » Who are the main researchers involved?
- » What are their contact details?

Collaborating researchers (if applicable)

- » What are their contact details and their roles in the project?

Funder (if applicable)

If funding is granted, what is the reference number of the funding granted?

Data producer

Which organisation has the administrative responsibility for the data?

Project data contact

Who can be contacted about the project after it has finished?

Data owner(s)

- » Which organisation(s) own(s) the data?
- » If several organisations are involved, which organisation owns what data?

Roles

- » Who is responsible for updating the DMP and making sure that it's followed?
- » Do project participants have any specific roles?
- » What is the project time line?

Costs

- » Are there costs you need to consider to buy specific software or hardware?
- » Are there costs you need to consider for storage and backup?
- » Are potential expenses for (preparing the data for) archiving covered?

Examples of DMP questions and answers

For inspiration of filled in DMPs look at some example DMPs we have prepared. Both DMPs are based on a fictional research project with a basis in reality. For each topic of the DMP, there are example questions and answers where applicable. The examples are not country specific. Some of the information is generic.



Qualitative data

During this project, in-depth interviews with teachers in primary school will be held. The project has just started.

[Download examples](#)



Quantitative data

The project concerns a survey which is conducted in order to identify how the evolution of society affects attitudes and behaviour. The project is still running.

[Download examples](#)

Sources and further reading

Please see the online version of this guide.