A Guide for Creating a Data Management Plan

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Purpose and Usage of this Template

This guide serves as a basis for creating a data management plan (DMP). In a DMP, project-related information on the research process is written down in a structured form in order to ease the handling of research data. The structure chosen in this template is meant as a proposal and does not claim to cover all possible aspects. In each of the following six chapters, a short paragraph outlining the focus of its respective content precedes a list of related questions. These questions may help you decide on possible concepts and procedural steps. If you intend to create a policy for handling research data, please check out our manual "Creating Project- and Institute-Internal FDM Policies"[1].

When creating a DMP for your project, keep in mind that not all chapters are necessarily relevant to you at all times. Outlining your research process already during the planning stage of a research project will help you organize the handling of research data and provide an overview of the requirements that need to be met. As the project progresses, the level of detail in your plan increases, and adjustments can be made at any time.

You may create your DMP in form of a text file or using a software tool. There are several online DMP tools that can be used free of charge.[2] Some tools provide questionnaires adapted to the programmes of research funding organisations. The use of online tools also eases the collaborative editing of DMPs.

If you have further questions or seek help creating a DMP, you are welcome to contact the Team Research Data Management[3] at Leibniz University Hannover.

Contents of a Data Management Plan

- Administrative information
- Data collection and methodological principles
- Backup and data security
- Archiving
- Data sharing and publishing
- Resources and responsibilities

Administrative Information

In this section, you list relevant administrative information about the project, such as the project name and time frame, as well as other contextual information (such as type of funding or relation to a PhD thesis). Including this sort of essential information into the plan simplifies the understanding of the

[1] https://www.fdm.uni-hannover.de/de/materialien
[2] For a list of DMP-Tools, see: https://forschungsdaten.info/themen/informieren-und-planen/datenmanagementplan/
[3] Our team: https://www.fdm.uni-hannover.de/en/team

respective project. For this purpose, you may also describe the research objective or differentiate between project stages (planning, application phase, implementation phase, finalisation).

Relevant information may include:

- Project name
- Project participants
- Project description
- Affiliation, e.g. with a PhD thesis or a "parent project" (e.g. a CRC)
- Time frame
- Version number of the DMP

Data collection and methodological principles

In this section, you outline the research design, describing the methods used to generate and process data. Of particular interest are the volumes as well as the types and formats of the data to be generated, collected or processed. If third-party data is used, indicate the source. Also list the employed equipment, instruments, hardware and software, as this information is relevant to judge the sustainability and re-usability of the data. Estimating the amount of generated data will help to approximate necessary resources and possible excesses of funds. In certain circumstances, it is possible to include these costs in a funding application. Outline the basic principles of your data organisation as well as the documentation of the research process and the data (metadata).

Relevant questions may include:

- Will data be newly generated or existing data be re-used?
- Which types and formats of data are generated/processed?
- What is the overall data volume?
- Which equipment (instruments, hardware, software etc.) is used?
- How is the data organised (file and folder structure, versioning)?
- How are the research process and the data documented?
- Which (subject-specific) standards (metadata, classification) are applied when describing/documenting?
- How are descriptive metadata etc. created (e.g. automatically, by default, manually, according to own ideas)?

Backup and Data Security

In this section, you summarize measures applied to ensure the long-term availability of the research data. Backup strategies should be introduced and tested from time to time. If you work with sensitive data, also outline the access restriction measures (e.g., encryption, file or folder level rights management). Should you expect large amounts of data, please consult with Leibniz University IT Services (LUIS) staff early in the process. If applicable, also mention procedures to protect personal data through anonymization.

Relevant questions may include:

- Which data is stored where?
- What storage capacities are required?
- At what intervals is the data backed up?
- Are measures to protect sensitive data necessary?
- Do third parties need access to data during the project?

Archiving

Outline measures ensuring the long-term availability of research results. Your main task is to select those data that need to be archived for at least ten years, in compliance with good research practice. Contextual information on the data (documentation, metadata) needs to be archived as well. If possible, use formats known to be suitable for long-term preservation (e.g. PDF/A, XML). LUIS or the Technical Information Library (TIB) may carry out the task of data archiving for you. Please consult with the staff of the respective services at an early stage so that they can inform you about possible requirements in advance. Please note that the guidelines for handling research data at Leibniz University Hannover[4] and the rules of good research practice also demand data archiving[5].

Relevant questions may include:

- Which data should be archived?
- Where should the data be archived?
- Do certain requirements of the infrastructure operators have to be taken into account?
- What metadata have to be provided so that the archived data can be found?
- What kind of additional contextual information is necessary?
- For how long should the data be archived?
- Do legal issues need to be clarified for data archiving?
- What costs are incurred for which service?

Data Sharing and Publishing

In this section, you outline how you will make your data available to others. This includes sharing with a selected group of users (e.g., colleagues) as well as publishing data, e.g., in a research data repository or data journal. Contact repository operators early on to clarify data publication issues and potential costs. Note that for data publication you may need the consent of all relevant project members. For the project-internal exchange of research data, a “Projektablage” includes suitable services (e.g. Projekt-Seafile, WebDAV), which are available to all members of Leibniz University and can also be used by project partners from outside the university.

[4] https://www.uni-hannover.de/de/universitaet/profil/ziele-strategien/open-science/umgang-forschungsdaten
[5] https://www.uni-hannover.de/de/universitaet/profil/leitbild-und-leitlinien/gute-wissenschaftliche-praxis

Relevant questions may include:

- Will data be shared with third parties during the project?
- Which systems/infrastructures can be used for data sharing?
- What kind of accompanying metadata and documentation is required to ensure data re-usability for third parties?
- Where (e.g., data repository, data journal) and how (e.g., open access, embargo, restricted access) will the data be published?
- What are the license conditions the published data will be subject to?

Resources and responsibilities

In this section, you summarize the resources required in your project in order to put into practice the data strategy described in the DMP. You should also define the responsibilities for the task areas listed above. Name all individuals/departments/entities responsible for different areas of data management. Responsibilities may be shared among several people. Also, take into account the amount of work hours that project members will spend managing data. On these grounds, you can roughly estimate the required resources (funds, personnel).

Relevant questions may include:

- How is the distribution of responsibilities within the project regulated?
- Who is responsible for which aspects of data management (processes, IT, regulations, formats, monitoring, etc.)?
- What human resources are required for a successful implementation of the measures?
- What costs are incurred for the implementation of the measures in the individual subareas during and, if applicable, after the end of the project?
- What additional infrastructural resources are needed and will they incur costs?

Examples of Data Management Plans

HU Berlin employees have created exemplary plans tailored to the requirements of various research funders. You can find them at the bottom of the page https://www.cms.hu-berlin.de/de/dl/dataman/arbeiten/dmp_erstellen .

Public data management plans created with the tool DMPonline provided by the Digital Curation Center can be found here: https://dmponline.dcc.ac.uk/public_plans

Contact the Team Research Data Management of Leibniz University

For more information on research data management, please visit our website: https://www.fdm.uni-hannover.de/en/

If you have any questions or suggestions, please feel free to email us to: forschungsdaten@uni-hannover.de