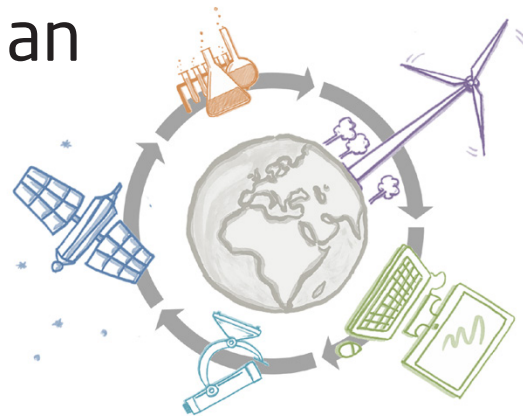# Data Management Plan

Do these situations seem familiar?

☐ Have you ever tried to look at data that you produced a while ago and could not make any sense of it anymore?

☐ Have you ever lost several days of work because your data had not been backed up properly?

☐ Did you ever have to extract numbers from a graph in some poorly made paper by hand?

☐ Have you ever completely failed to understand a data set that someone else gave you?

☐ Did you ever download a data set from the internet just to find out that it was completely different from what you expected?

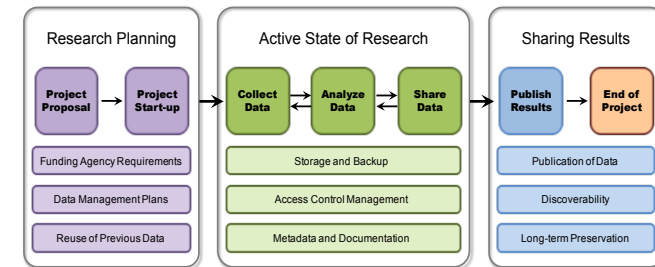☐ Have you ever found your own data to be inconsistent, incomplete or simply unreadable?

A Data Management Plan will help you to

✓ Structure and organize your research data in the best way so that you will always be able to find what you need.

✓ Avoid data loss and duplicate work.

✓ Promote your work by making your data FAIR: Findable, Accessible, Interoperable and Reusable.

✓ Increase the scientific impact of your research by publishing data that underpin your results.

✓ Ensure that you are in compliance with current legislation and requirements from funding agencies and publishers.

✓ Follow the Code of Conduct for Research Integrity.

✓ Make your grant proposal more successful.

✓ Identify technical, legal and ethical challenges right at the beginning of your project.

✓ Get the right support.

What is a Data Management Plan?

A Data Management Plan describes the data that form the basis of your research project. It contains details on how you want to collect, structure, analyze and publish the data, how you deal with external requirements and what value your data might have for other researchers and the public.

It is an important part of any research project and covers all aspects of the **Data Life Cycle**.

Research Planning	Active State of Research	Sharing Results
Project Proposal → Project Start-up	Collect Data → Analyze Data → Share Data	Publish Results → End of Project
Funding Agency Requirements	Storage and Backup	Publication of Data
Data Management Plans	Access Control Management	Discoverability
Reuse of Previous Data	Metadata and Documentation	Long-term Preservation

Write your Data Management Plan now

DTU Bibliometrics and Data Management has created a template as a tool to guide you through the relevant questions and help you organize your project.

We know that writing a data management plan it is not easy and will take some time.

But it will make your life as a researcher much easier in the future and will give you more time to work on all the exciting things that you're really interested in instead of worrying about your data.

And most importantly: You don't have to do it all by yourself. We will assist you, answer your questions and review your plan if you like.

Need help or want to know more? Contact us!

DTU Bibliometrics and Data Management

DATA COLLECTION

Research data can be many different things, depending on the type of research they are used for – e.g. observational data, experimental data, simulation data or processed data – and come in a variety of different types and formats – such as tables, documents, audio and video recordings, methods, algorithms and software, real-time data, big data, smart data and many, many more.
Some data might also be sensitive or confidential and require special care.

- What type of data will be collected?
- How will the data be collected?
- Which file formats are the data in?
- What are the estimated amounts of data?
- How will the data be structured?
- Are there any limitations on the use of existing data?
- Are there any ethical or legal issues to be considered?

DATA STORAGE

Most researchers at DTU use the IT infrastructure provided by their department or by AIT for storing and sharing their data with collaborators. However, in some cases special solutions might be needed, in particular when the amounts of data are very large or when additional security requirements need to be fulfilled.
Frequent and reliable backups are crucial at any stage of the research project.

- Where are the raw data and results stored?
- How are the data backed up?
- How is access control managed?
- How are data shared within the project?
- How is the security of sensitive data guaranteed?

DOCUMENTATION

Documentation of data is often considered time-consuming and costly. However, documentation also means adding value to the data and making it usable in a broader sense. Any file or data set should contain metadata describing its origin, that is when, where, how and by whom it was created.
Good documentation is a prerequisite for making research reproducible and complying with the Danish Code of Conduct for Research Integrity.

- How will the data be versioned?
- Are there metadata standards?
- What metadata will be included?
- How will the metadata be generated?
- How will the data be documented?
- How will the data be understandable for secondary users?
- How will reproducibility of results be ensured?

DATA SHARING

Research data is very valuable and of high interest for others in the scientific community and the society at large. When research is funded by public money, the methods should be transparent and the outcomes should be made available for everyone. Sharing data will enable reuse and stimulate new research projects. Data sets can be published in special journals and repositories and can – in the same way as regular articles – be acknowledged and cited and thereby increase the visibility of your work.

- Which data will be shared?
- Which tools/software are needed to view/visualize/analyze the data?
- Which data cannot be shared?
- Who will have access to the data?
- When will data be shared?
- Where will data be shared?
- How will the data be made discoverable?
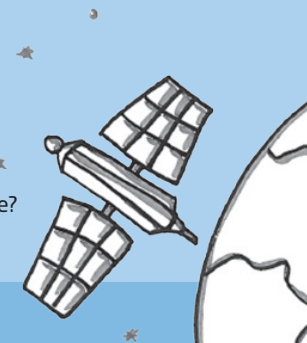
LONG-TERM PRESERVATION

There is a high risk of data getting lost when a project finishes or the researcher who collected the data leaves the institution. This would mean a big waste of time, money and knowledge. Choosing which data should be preserved for a longer time and making sure that it is readable and understandable is a major challenge but also a rewarding investment.

- Which criteria will be used to select the data that should be archived for preservation and long-term access?
- Where will data be archived?
- How will readability of the data be guaranteed?
- Which data have to be destroyed?
- Who will be responsible for long-term preservation?
- How long should the data be preserved?
- How will long-term preservation be financed?