Netherlands Organisation for Scientific Research (NWO): Data Management Plan NWO (September 2020)

General Information

Name applicant and project number

Guidance:

Provide the name of the project leader and the project number provided by NWO.

Name of data management support staff consulted during the preparation of this plan and date of consultation.

Guidance:

You are expected to consult with data management support staff at your home institution for the completion of this plan. Academic and research institutions in the Netherlands provide professional support for research data management. Relevant contacts can be found on the RDM in the Netherlands website.

NWO strongly advises researchers to seek support at an early stage. **Plans that have not been consulted with institutional data management support staff will not be considered.**

1. What data will be collected or produced, and what existing data will be re-used?

1.1 Will you re-use existing data for this research?

If yes: explain which existing data you will re-use and under which terms of use.

- Yes
- No

Guidance:

NWO encourages the re-use of existing data wherever possible. Explain which existing data you will re-use and state any constraints on re-use of existing data if there are any.

1.2 If new data will be produced: describe the data you expect your research will generate and the format and volumes to be collected or produced.

Guidance:

Give details on the kind of data: for example numeric (databases, spreadsheets), textual (documents), image, audio, video, and/or mixed media.

Give details on the data format: the way in which the data is encoded for storage, often reflected by the filename extension (for example pdf, xls, doc, txt, or rdf).

Give preference to open and standard formats as they facilitate sharing and long-term re-use of data. Several repositories provide lists of such 'preferred formats (see e.g. DANS File Formats and 4TU.ResearchData Preferred Formats).

1.3. How much data storage will your project require in total?

- 0 – 10 GB
- 100 – 1000 GB

- 10 – 100 GB
- >1000 GB

2. What metadata and documentation will accompany the data?

2.1 Indicate what documentation will accompany the data.

Guidance:

Consider what other documentation is needed to enable re-use. This may include information on the methodology used to collect the data, analytical and procedural information, definitions of variables, units of measurement, and so on.

Consider how this information will be captured and where it will be recorded for example in a database with links to each item, a 'readme' text file, file headers, code books, or lab notebooks.

2.2 Indicate which metadata will be provided to help others identify and discover the data.

Guidance:

To be findable, accessible, interoperable and reusable, data must be accompanied with descriptive information in the form of metadata.

- Where these are in place, researchers are advised to use community metadata standards. The Research Data Alliance maintains a Directory of Metadata Standards.
- Depositing data in a certified or trustworthy repository will typically involve providing information about the data according to a metadata standard scheme (typically Dublin Core or DataCite Metadata Schema). If this is the case for the data described in this plan, that can be specified here.

Contact your university library and/or other institutional research data management support staff for advice on metadata standards.

3. How will data and metadata be stored and backed up during the research?

3.1 Describe where the data and metadata will be stored and backed up during the project.

- Other (please specify)
- Institution networked research storage - default

Guidance:

Give preference to the use of robust, managed storage with automatic backup, such as provided by IT support services of your home institution. Most research institutions have networked research drives, which offer ample storage space and data security for most purposes. Please specify if you make use of other storage solutions for storage and backup of research data during the project, in addition to or instead of the institutional research drive. This may be because you need more space than offered by your institution; to facilitate data sharing with collaborators; or because your data requires additional security. Please explain.

3.2 How will data security and protection of sensitive data be taken care of during the research?

- Default security measures of the institution networked research storage
- Additional security measures (please specify)
- Not applicable (no sensitive data)

Guidance:

Consider data protection, particularly if your data is sensitive – for example, containing personal data, politically sensitive information or information relating to religion and health, trade secrets or national security information. Describe the main risks and how these will be managed. Inquire with your institution's research support staff whether your intended storage solution meets your institution's data security policy if your research involves sensitive data. If you are using offline storage, describe how data will be recovered in the event of an incident.

4. How will you handle issues regarding the processing of personal information and intellectual property rights and ownership?

4.1 Will you process and/or store personal data during your project?

If yes, how will compliance with legislation and (institutional) regulation on personal data be ensured?

- Yes
- No

Guidance:

If yes, NWO strongly recommends that you seek advice from specialised support staff at your university or institute. You must ensure that when dealing with personal data, data protection laws (for example GDPR/ Dutch AVG) are complied with.

- Gain informed consent for preservation and/or sharing of personal data.
- Consider anonymisation of personal data for preservation and/or sharing. This means irreversibly altering personal data such that data subjects can no longer be directly or indirectly identified. Truly anonymous data are no longer considered personal data. In practice, in some cases, it can be difficult to determine whether data has been anonymised or is still personal data.
- Consider pseudonymisation of personal data (the main difference with anonymisation is that pseudonymisation is reversible).
- Consider encryption which is seen as a special case of pseudonymisation (the encryption key must be stored separately from the data, for instance by a trusted third party).
- Explain whether there is a managed access procedure in place for authorised users of personal data.

4.2 How will ownership of the data and intellectual property rights to the data be managed?

Guidance:

- Explain who will be the owner of the data, meaning who will have the rights to control access
- Make sure to cover these matters of rights to control access to data for multi-partner projects and multiple data owners in the consortium agreement.
- Indicate whether intellectual property rights are affected. If so, explain which and how will they be dealt with.

5. How and when will data be shared and preserved for the long term?

5.1 How will data be selected for long-term preservation?

- All data resulting from the project will be preserved for at least 10 years - default
- Other (please specify)

Guidance:

Indicate what data must be retained or destroyed for contractual, legal, or regulatory purposes. Indicate how it will be decided what data to keep. Describe the data to be preserved long-term.

NWO expects you to preserve the data resulting from your project for at least ten years, unless legal provisions or discipline-specific guidelines dictate otherwise.

5.2 Are there any (legal, IP, privacy related, security related) reasons to restrict access to the data once made publicly available, to limit which data will be made publicly available, or to not make part of the data publicly available?

If yes, please explain.

- No
- Yes

Guidance:

Indicate whether there are any restrictions on the re-use of the data. If it is necessary to restrict access to certain parts of the data or to apply a data sharing agreement, explain how and why. Explain what actions will be taken to overcome or to minimise restrictions.

5.3 What data will be made available for re-use?

- All data resulting from the project will be made available - default
- Other (please specify)

Guidance:

Indicate what data will be made available for re-use. This selection may differ from the data that is preserved, when the data are so large that it is unfeasible to deposit the data in a repository in its entirety, or if there are reasons that prohibit making data available for re-use as specified in the previous question.

As much as possible, research data should be made publicly available for re-use. **As a minimum, NWO requires that the data underpinning research papers should be made available to other researchers at the time of the article's publication, unless there are valid reasons not to do so.** The guiding principle here is 'as open as possible, as closed as necessary.' Due consideration is given to aspects such as privacy, public security, ethical limitations, property rights and commercial interests.

5.4 When will the data be available for re-use, and for how long will the data be available?

- Data available upon completion of the project
- Data available as soon as article is published - default
- Data available after completion of project (with embargo)

Guidance:

Explain when the data will be made available. Indicate the expected timely release. Explain the reason and duration of any embargo periods. Explain whether exclusive use of the data will be claimed and if so, why and for how long. Indicate whether data sharing will be postponed or restricted for example to publish, protect intellectual property, or seek patents. **As a minimum, NWO requires that the data underpinning research papers should be made available to other researchers at the time of the article's publication, unless there are valid reasons not to do so.**

5.5 In which repository will the data be archived and made available for re-use, and under which license?

Guidance:

Indicate where the data will be deposited after the project. Repository Finder can help you find an appropriate repository to deposit your research data. It is recommended that you discuss the repositories policies and procedures (including any metadata standards, and costs involved) with your data steward or other institutional RDM support staff.

Indicate whether a persistent identifier will be pursued. Typically, a trustworthy, long-term repository will provide a persistent identifier.

Indicate under which license the data may be re-used. Check the commonly usedCreative Commons licenses.

Indicate whether the repository is certified. NWO highly recommends the use of certified repositories where possible. These offer the best possible guarantees for data security and continuity. In case no such repositories can be found or are suitable, NWO advises adherence to the following minimum selection criteria: provision of persistent and unique identifiers; use of metadata standards that are broadly accepted by the scientific community; provision of information that is publicly available; enabling access to data under well-specified conditions and following open and standard access protocols; provision of information about licenses and permissions; ensuring persistence of data and metadata.

5.6 Describe your strategy for publishing the analysis software that will be generated in this project.

Guidance:

- Indicate whether potential users need specific tools or software (e.g. specific scripts, codes or algorithms developed during the project) to access, interpret and (re-)use the data.
- Indicate how these items will be made available. Consider the sustainability of software needed for accessing the data. Check the Five Recommendations for FAIR Software.

6. Data management costs

6.1 What resources (for example financial and time) will be dedicated to data management and ensuring that data will be FAIR (Findable, Accessible, Interoperable, Re-usable)?

Guidance:

Explain how the necessary resources (for example time) to prepare the data for sharing/preservation (data curation) have been costed in. Indicate whether additional resources will be needed to prepare data for deposit or to cover any charges from data repositories. If yes, explain how much is needed and how such costs will be covered**.** Please elaborate on the budget in your NWO grant application, if appropriate.