Introduction
Increasingly, researchers are required to write Data Management Plans (DMPs) and to deliver the plan to their research funder or research institute. The Research Support and Advice working group of the Dutch National Coordination Point Research Data Management (LCRDM) was curious to learn about the process of reviewing DMPs. The working group aims to provide all those involved in reviewing DMPs with dos and don’ts and to get a rough idea of the effort of reviewing.

Therefore, an online survey was published through LCRDM, targeting both “official” reviewers (for instance, Horizon2020 staff reviewing DMPs that were submitted to Horizon2020) and “previewers” such as research support staff who help project leaders to write a DMP. The survey ran from mid-February to the end of April 2017. This report contains the main findings. The survey questions can be found in the appendix to this report. The data has been anonymised and made available at https://doi.org/10.17026/dans-zbf-8h3h. The bracketed numbers in this report refer to specific questions from the survey (see appendix) and correspond with those in the data file.

We are very grateful that so many colleagues responded to our call. The OpenAIRE project currently runs a related survey to collect feedback on the Horizon2020 DMP template specifically. The Dutch working group collaborates with them on relevant questions.

1. Respondents

![Number and origin of responses](image)
The majority of respondents answered our questions from a ‘previewer’ perspective, i.e. from the perspective of research support staff who review and advise on DMPs prior to submission. Some respondents also or only reviewed DMPs in an official capacity, after the DMPs have been submitted.

2. DMP templates in use

Review experience [4, 6, 8]
(more than one answer allowed)

Reviewed DMPs that were based on a particular template for a particular funder or organisation

Reviewed DMPs that were not based on a particular template but had been written for a particular funder or research organisation

Reviewed DMPs that were written voluntarily, i.e. not for a particular funder or research organisation

[5] *DMPs that were based on a particular template for a particular funder or organisation* mostly were templates for Horizon2020, NSF, Dutch funders NWO and ZonMw, and UK funders, as well as local/institutional templates.

[7] The majority of *DMPs that were not based on a particular template but had been written for a particular funder or research organisation* were written for the same funders. That seems to indicate that, even though specific templates are available, project leaders tend to use other or no templates. For instance, in Horizon2020 a template is provided, but using this specific template is not mandatory.

[9] If for *DMPs that were written voluntarily* a template had been used, this was often a local/institutional one. Although the number is small, the fact that nearly a third of respondents (17 out of 60) encountered voluntarily written DMPs is encouraging. It indicates that data management planning is becoming part of researchers’ workflows.
Some respondents stated that they develop or have developed DMP templates themselves (supposedly for their research institute).

3. Rubrics, assessment grids, or templates to support reviewing DMPs
One-third of respondents were provided with a rubric, assessment grid or template to aid their reviewing of DMPs. Of those who were not provided with a rubric a small number made one themselves. A respondent referred to the DART project as helpful in developing a rubric for NSF DMPs. The majority of respondents review DMPs based on, we assume, their own knowledge of research data management.

We did not ask for opinions on the lack of assessment grids, but can imagine they would be helpful to individual (p)reviewers. We strongly recommend funders and institutions to not only publish their DMP templates, but also the rubrics they use for reviewing the DMPs that are submitted to them. That would help support staff in assisting researchers with their DMPs, and would stimulate a consistent and objective assessment of DMPs.

4. Review effort
The majority of respondents indicate that reviewing a DMP on average takes between 30 and 90 minutes.

Since 32 respondents have reviewed DMPs for various funders, based on various templates, this survey doesn’t allow for linking the indicated effort to a particular template. Also, it isn’t possible to relate the indicated effort to the (in)availability of a rubric, since the question about rubrics (see Section 3) is a plain Yes-No question about a respondent’s overall review experience, regardless of the number of different templates.
Feedback on DMPs

The majority of respondents indicate that they provided feedback to the researchers who submitted DMPs to them for (p)review. This feedback can for the most part be grouped in two main categories:

- explaining the template itself: explaining the ‘why’ of certain questions, explaining certain terms and/or referring to more guidance on topics in the template; and
- feedback on the responses to template questions: asking for information that was insufficient or lacking and/or pointing out inconsistencies in the answers.

This suggests DMP templates aren’t as self-explanatory to researchers as we would like them to be. This underlines the importance of adequate research data management support and may improve over time as researchers’ understanding of research data management grows. However, it also warrants a call on template owners to regularly re-examine the templates they provide and take into account the feedback they receive (see Section 7).

[17] In free text 53 respondents provided examples of other feedback they gave. A selection of recurring feedback:

- information about (the importance of) metadata and standards, persistent identifiers, persistency of links to data, and file formats;
- requests for more details on file size and data volume;
- explanations of the difference between storage/backup of active data on e.g. servers and archiving/preservation of final data in (trusted) repositories;
- pointers on (local solutions for) storage and back-up of data;
• information about sharing data, FAIR, privacy;
• recommendations to provide more details and be more specific.

6. Advice for future DMP submitters
[18] Based on their experience, the respondents have all sorts of advice for future DMP writers. Here is a selection:

• Make your answers as concrete as possible, not vague generalisations. Show that you are well versed in data management or that you have consulted with someone who is.

• Read the guidance and ask for advice early on in the process. Don’t leave the DMP to the last minute before submission as the consultation process may take some time.
• Use the already available in-house services as much as possible.
• Talk to your supervisor/lab-members about existing RDM policies.
• Look at somebody's plan already submitted, and copy as much as you can.
• Just like each research project is unique, so are the data that it generates, therefore copying text from sample DMPs isn't sufficient.
• Use DMPonline.
• DMPs are a description of your digital research methods and should be defined, updated, and followed just as you would any other methods (e.g. lab protocols).
• Best to indicate what you do not yet know (and how you want to go about resolving those questions later).
• Think of data broadly - Several of the DMPs we’ve reviewed start with “no data will be generated from this project” and then go on to talk about the software code that will be created and the analyses planned to test modelling algorithms. NSF, DOE and other funders define data broadly, so think about active and ongoing management and sharing of your software code or other data that might be considered a research asset to funders.
• Anticipate the expectations [of data] for re-use by others.

7. Feedback to DMP template initiators

Examples of owners and initiators of DMP templates are research funders (e.g. NWO, ZonMw, Horizon2020) and research organisations that require DMPs from their research staff, as well as organisations that provide DMP templates (e.g. DANS).

In section 5 we’ve seen that respondents indicated that their feedback to DMP submitters in large part consists of explaining the template itself: explaining the rationale behind questions, explaining terms and/or referring to more guidance on topics in the template. From this, one might expect that DMP template owners receive similar feedback, to help them clarify their templates. According to our survey (see the chart on the next page), they indeed have received feedback in this vein, but only from a very small minority of our respondents. The majority of respondents have not provided any feedback to template owners.

Asked for what other feedback they provided, apart from the feedback options we gave in our survey, respondents reported among other things:
• For reviewers it would be very helpful when information from IPR and Ethics deliverables would be copied into the DMP, whenever relevant.
• The notion of “standards” would benefit from more guidance and/or examples. Some projects seem to interpret this very limitedly as file extensions. Also the notions of “open” and “sharing” are sometimes misinterpreted as project-internal.
• More guidance about the difference between storing data – i.e., during the project – and archiving and preservation – i.e., after the project – should be provided.
There are many overlapping questions and also questions that have no direct link to the “Guidelines on Data Management in Horizon 2020” – you can't review what you haven’t asked.

I alerted the template owner to the disparity between the amount of information asked for, and the lack of space provided for the answers.

H2020 DMPs can be very long; we need a stated maximum number of pages to help both reviewers and authors of these DMPs.

Overall, we encourage (p)reviewers to provide feedback to template owners, because we feel that is a very valuable contribution to improving DMP templates and making templates easier to use for researchers.
8. Further remarks
[23] At the end of our survey we asked whether respondents had anything else on DMPs they would like to share with us. A selection of answers:

- [DMPs] should be a means, not a goal.
- DMPonline is a very useful tool - we recommend its use to our researchers. It would be very helpful if many more funders provided DMP templates or referred applicants to DMPonline / other similar tools.
- In general a reward and recognition system for DMP, to motivate people to improve their DMP writing. Also, shouldn't DMP be deposited and archived as well? Some crucial parts of documentation are in there, perhaps even things that the actual documentation (that is included as readme file in the data-set) is lacking.
- Giving researchers and universities a chance to organize and realize the F and A of FAIR for data should at this stage (next 3 years) be more important than the R and finally the I.
- Current DMPs still very much take a bibliographic approach: data is generated, used and archived. I would like to go to a world where the data is not archived, but well-maintained and continuously enriched. That may lead to a slightly different approach.

9. Working group recommendations
In addition to the advice that respondents have for future DMP authors (see Section 6) we have some recommendations to DMP (p)reviewers and template owners of our own.

**DMP (p)reviewers**
- We encourage (p)reviewers to provide feedback to DMP template owners, to help improve DMP templates and make templates easier to use for researchers.

**DMP template owners**
- We call on template owners to regularly re-examine the templates they provide, to make sure the templates are as self-explanatory to researchers as they can be.
- We strongly recommend funders and institutions to publish the rubrics they use for reviewing the DMPs that are submitted to them, to help support staff in assisting researchers with their DMPs and stimulate a consistent and objective assessment of DMPs.
Appendix: survey questions

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Please note: the bracketed numbers have been added afterwards, for the purpose of clarifying the connection between the questions below and both the charts in this report and specific parts of the data file.

Information about yourself

We’d appreciate it when you fill in your name and affiliation. We will not publish combinations of names and individual answers. If you provide us with your email address, we can you inform you about the results of this survey.

Your name
[free text]

[1] Your affiliation
[free text]

[2] Your email address
[free text]

[3] You answer these questions as
○ official reviewer
○ previewer
○ both

Templates

[4] Did you review DMPs that were based on a particular template for a particular funder or organisation?
○ yes (go to next question)
○ no (skip next question)

[5] Which template was (or, if you have handled multiple templates: which templates were) used?
[free text]

[6] Did you review DMPs that were not based on a particular template but had been written for a particular funder or research organisation?
○ yes (go to next question)
○ no (skip next question)

3 Data Archiving and Networked Services (DANS), The Hague.
4 University of Amsterdam (UvA)/Amsterdam University of Applied Sciences (AUAS).
5 Hanze University of Applied Sciences, Groningen.
6 ZonMw (The Netherlands Organization for Health Research and Development), The Hague.
7 Utrecht University.
[7] For which funder or research organisation?
[free text]

[8] Did you review DMPs that were written voluntarily, i.e. not for a particular funder or research organisation?
○ yes (go to next question)
○ no (skip next question)

[9] Which template was used, if any?
[free text]

Review checklist
[10] Before reviewing, were you provided with a rubric, an assessment grid, a review template or anything like that?
○ yes (skip next two questions)
○ no (go to next question)

[11] Did you make a rubric before reviewing?
○ yes (go to next question)
○ no (skip next two questions)

[12] Would you be willing to share this rubric publicly?
○ yes
○ no
○ maybe

[13] Have you discussed the rubric with others before reviewing?
○ yes (go to next question)
○ no (skip next question)

[14] To which (or: what kind of) changes did this discussion lead (if any)?
[free text]

Feedback for DMP submitters
[15] Have you provided feedback to DMP submitters?
○ yes (go to next question)
○ no (skip next two questions)

[16] What kind of feedback did you provide? (more than one answer allowed)
○ You explained the rationale behind one or more questions in the template, because you noticed/assumed they were misunderstood
○ You explained one or more terms in the template, because you noticed/assumed they were misunderstood
○ You referred to more guidance about one or more topics in the template
○ You asked for more information on one or more topics, because information was lacking or you considered it insufficient – with regard to the version of the DMP (initial, mid-term, final)
- You remarked on one or more inconsistencies within the DMP
- Other

[17] Could you please give us three examples of feedback that you have provided?
[free text]

[18] Which feedback or advice would you like to give future DMP submitters?
[free text]

**Feedback for DMP template initiators**

*Examples are research funders (e.g. NWO, ZonMw, Horizon2020) and research organisations that require DMPs from their research staff, as well as organisations that provide DMP templates (e.g. DANS).*

[19] Have you provided feedback to the owner or initiator of the DMP template?
- yes (go to next question)
- no (skip next question)

[20] What kind of feedback did you provide?
- You alerted the template owner to one or more questions in the template that tend to be misunderstood by DMP submitters (are confusing, ambiguous, ...)
- You alerted the template owner to one or more terms in the template that tend to be misunderstood by DMP submitters (are confusing, ambiguous, ...)
- You gave the template owner advice on relevant extra guidance on one or more topics in the template
- You alerted the template owner to inconsistencies in the template
- You alerted the template owner to inconsistencies in the rubric
- Other

[21] If you selected 'other': could you give an example?
[free text]

**Review effort**

[22] How much time do you need to review a DMP on average?
- Less than 30 minutes
- Between 30-60 minutes
- Between 60-90 minutes
- More than 90 minutes

**Conclusion**

[23] When it comes to DMPs, is there anything else that you would like to share with us?
[free text]