New procedures for datamanagement in ZonMw’s projects

Margreet Bloemers (ZonMw)
Outline

- Why does a funder require datamanagement?
- ZonMw’s policy - requirements
- Moving to a new procedure:
  - why – what – how - with whom
- Future opportunities

We invite you to join this development !!
Discussion DMPonline future developments

- ZonMw template
- Institutional templates
- Improving the templates > HOW?
  - Does your template enable the researcher to meet the key items?
- How are we going to get most out of it!!
- Which elements will we need to align / combine?
- Who is taking action? How do we know?
The context of open science for ZonMw

- EOSC
- NPOS
- LCRDM
- OAP
  - FAIR data
  - Reward
  - Citizen science

ZonMw speerpunt Open Science
ZonMw requires you to make your data REUSABLE!

What do we need for that?

Datamanagement
Datastewardship

FAIR principes

Findable – vindbaar
Accessible – toegankelijk
Interoperable – uitwisselbaar
Re-usable – herbruikbaar (duurzaam opgeslagen)
How do we get researchers to produce FAIR data?

- Subsidiebepaling artikel 20 Databestanden
- Relevantiecriterium
- Onderzoeker moet een DMP maken DMPonline
HOE? – DMPonline > de onderzoeker moet inloggen met eigen- of instellingsaccount

Zelf kijken? Zie de instructie op www.zonmw.nl/toegangtotdata
Username: toegangtotdata@zonmw.nl
Password: TTDzonmw15
HOE? – DMPonline > de onderzoeker moet datamanagementplan invullen

Onderzoeker vult per categorie een aantal vragen in. Wanneer alles is ingevuld kan je met de 'export' knop een .pdf file van het DMP maken.
How does ZonMw monitor the outcome of a researcher’s DM efforts?

Monitoring KERNGEGEVENS (key items)

1. Persistent Identifier referring to the dataset
2. Link to the repository or digital archive
3. Search engine of repository/online catalogue/web portal
4. Terms of Use of dataset
5. Machine readable data format
6. Standardized terminology for data
7. Metadata scheme

How FAIR are the data?

>> key items give some indication of ‘FAIRness’
Datamanagement at ZonMw: 
Procedure 2016 - 2018

1. Call > project idea:
   Researcher must explain: do you reuse existing data?

2. Call > full grant proposal:
   ZonMw encourages researcher to consult a data steward, and check DMPonline for planning+budgetting the project;
   ZonMw does not yet require a DMP

3. When grant is awarded: make a DMP + submit to ZonMw!
   Researcher must use ZonMw’s template for DMP on DMPonline

4. Feedback on DMP from ZonMw

5. Monitor progress during project & output from DM in final report
   Key items showing some ‘F-A-I-Rness’
   Submit final version of DMP
Until sofar ....... BUT....... It’s a burden!
WHO? FAIR data on the work floor

Research FUNDING organisations

Stimulate use of RI services

RI service providers

LIBRARIES, ELIXIR, BBMRI, EATRIS, CORBEL’s CoS, …

Datamanagement for FAIR data

Researcher (producer & reuser)

Training education

Universities

(and their Data stewards)

In short:
DM in ZonMw-projects

The procedure 2016-2018 & the obstacles:

- FAIR data researcher
- DMP
- Funder (ZonMw)
- Institute

Research infrastructure
Challenges and solutions in the new procedure

What we want to achieve:
- DM becomes integral activity in stead of hurdle
- Added value for research, quality
- For innovative research (& improving health !)

Through:
- Tailoring DM requirements
- Contributing to standardisation
- New tools
- Research institutes are responsible for DM
- Machine actionable DMP
- FAIR funding model / pilot
DM in ZonMw-projects > new procedure

Updated guidance
>> DMPonline ZonMw template

How FAIR should it be? >> ZonMw KERNGEGEVEN,
(Machine actionable) information
>> metadata

Create & Select feasible key items / metrics

>> use for monitoring output from DMP

FAIR data
researcher

Kerngegevens
DMP

ZonMw Institute

Research infrastructure
March 14: My talk stopped here, and we continued with discussion. Some issues I want clarify here: **about the DMP**

**Q1: Why does ZonMw still ask for a DMP, while its new policy is to make the researcher responsible for its own DMP?**

A: Two reasons:
- Administrative: check whether a DMP is made
- Informative: DM is more than a couple of key items. We want to learn from DM methods, tools and standards that are applied in projects. That way, we can further improve / tailor DM procedures for our research programmes.

**Q2: Why does ZonMw stop reviewing the DMP’s? What if a researcher delivers bad quality?**

A: As for all aspects of research planning & granting, it is the researcher who is responsible for the quality of his own research. We therefore trust that it is also his own benefit to make a good DM planning. In addition, we make agreements with the research support offices of the research institutes about DM planning, support and quality.
March 14: My talk stopped here, and we continued with discussion. Some issues I want clarify here: about the key items

Q3: What is the purpose of the key items of ZonMw?

A: Two reasons (similar to the reasons for asking a DMP)

– Administrative: check whether a DMP has been carried out: ZonMw will monitor the progress during a project: what information is already available at the start and halfway a project? What is the complete information at the end?

– Informative: The key items are in fact a minimal dataset about the outcome of your DM. We want to learn from DM methods, tools and standards that are applied in projects. That way, we can further improve / tailor DM procedures for our research programmes. Also, we can stimulate the use of standards within research communities.

Q4: The key items are far too ambitious. Most research is not yet ready to meet them. Or they simply do not fit the practice of a research community. How does ZonMw deal with this problem?

A: The key items are desirable topics for reasons stated in Q3. At the same time, we realise that there is still a lot to be developed for RDM. In our scheme for the key items, there is an option to state “not available” / “not applicable”, and the reason for this. All this information is input for further, community specific developments in our procedures.
Datamangement at ZonMw: Procedure 2019

1. Call > project idea:
   
   *Researcher must explain: do you reuse existing data?*
   
   *ZonMw sets requirements for output from DM through (a selection of) key items*

2. Call > full grant proposal:
   
   *Same as current procedure*

3. When grant is awarded: make a DMP + submit to ZonMw!
   
   *Researcher may choose a DMP template*
   
   *must use ZonMw’s template for DMP on DMPonline*

4. Feedback on DMP from ZonMw research support at res’s own institute

5. Monitor progress during project & output from DM in final report
   
   *Key items showing some ‘F-A-I-Rness; submit final version of DMP*
Datamanagement: from burden to benefit

**Benefits for researcher:**
- Adding value, Improve data sharing
- Efficiency: no double DMP
- ZonMw trusts researchers to be responsible for quality of research project
- Tailored requirements; fit the purpose in research communities
- Standardisation > interoperability
- Machine actionable metadata
  > information exchange – automatic workflow
Datamanagement: from burden to benefit

Benefits for ZonMw:
- Efficiency: reduce work load at ZonMw
- ZonMw recognises the value of DM support at research institute
- Tailoring requirements
- Improve research outcome (+ impact):
  - Reusable data - Standardisation in research communities
- Machine actionable metadata > improve efficiency:
  information exchange – automatic workflow
State of art introducing the new approach

– Continuing to develop procedures/methods/tools together with institutes and RI’s
– Acknowledging institutional dmp’s
– DMPonline
– Key items

Next sheets are about future opportunities:

– FAIRmetrics > more precise tailoring
– FAIR funders model
  > automation, standardisation, evaluation
In future calls for proposals: Tailoring the requirements for DM

1. Develop community specific FAIRmetrics > Make a selection for a call > requirements > criteria for monitoring DM in research projects

2. Promote the use of standards within a research community; Provide information through machine actionable metadata.

(more info soon to come on ZonMw webpage for FAIR data)
FAIR principles > FAIRmetrics > community challenges > community specific metrics
A framework to develop community specific, machine actionable FAR metrics

<table>
<thead>
<tr>
<th>FIELD</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metric Identifier</td>
<td>FM-F1A: <a href="https://purl.org/fair-metrics/FM_F1A">https://purl.org/fair-metrics/FM_F1A</a></td>
</tr>
<tr>
<td>Metric Name</td>
<td>Identifier Uniqueness</td>
</tr>
<tr>
<td>To which principle does it apply?</td>
<td>FI</td>
</tr>
<tr>
<td>What is being measured?</td>
<td>Whether there is a scheme to uniquely identify the digital resource.</td>
</tr>
<tr>
<td>Why should we measure it?</td>
<td>The uniqueness of an identifier is a necessary condition to unambiguously refer that resource, and that resource alone. Otherwise, an identifier shared by multiple resources will confound efforts to describe that resource, or to use the identifier to retrieve it. Examples of identifier schemes include, but are not limited to UIRN, IRI, DOI, Handle, trustyURI, LSID, etc. For an in-depth understanding of the issues around identifiers, please see <a href="http://dx.plos.org/10.1371/journal.pbio.2001414">http://dx.plos.org/10.1371/journal.pbio.2001414</a></td>
</tr>
<tr>
<td>What must be provided?</td>
<td>URL to a registered identifier scheme.</td>
</tr>
<tr>
<td>How do we measure it?</td>
<td>An identifier scheme is valid if and only if it is described in a repository that can register and present such identifier schemes (e.g. fairsharing.org).</td>
</tr>
<tr>
<td></td>
<td>Information about the identifier scheme must be presented with a machine-readable document containing the FM1 attribute with the URL to where the scheme is described. see specification for implementation.</td>
</tr>
<tr>
<td>What is a valid result?</td>
<td>Present or Absent</td>
</tr>
<tr>
<td>For which digital resource(s) is this relevant?</td>
<td>All</td>
</tr>
</tbody>
</table>


GO FAIR M4M

FAIR funder pilot

(1) Metadata for Machines Workshops brings domain specialists together with metadata experts, tools and resources to reuse or define novel metadata definitions, templates, and FAIR metrics.

(2) Community-defined machine-actionable metadata templates and FAIR Metrics are made available for reuse in FAIR resource repositories (e.g., CEDAR) and registered in FAIR reference repositories (e.g., FAIRsharing.org). These repositories inform 3rd-party FAIR metrics evaluation services about community-relevant FAIR standards (step 7).

(3) Funders compose new calls with metadata requirements by reusing the community defined metadata templates.

(4) Prompted automatically by CEDAR forms linked in the DS Wizard, researchers and data stewards apply for funding and create machine-actionable DS plans, supplying the required community-defined FAIR metadata. The Funder receives assurance from local data stewards attesting to the quality of the FAIR DS Plan (green check box).

(5) Funded researchers and data stewards execute the project, collect FAIR data (using FAIR tooling, e.g., Castor EDC).

(6) Machine-actionable data and metadata are deposited in FAIR repositories running automated FAIR metrics evaluations.

(7) Trusted 3rd-party FAIR metrics evaluations services (Purple Polar Bear) validates the FAIRness of the research data and metadata, sending certificates directly to funder (green check boxes). FAIR metrics are defined by the community (steps 1 & 2) with certification schemas held by GO FAIR Foundation.

Funders receive approval of FAIR DS Plan from research institution data stewards.

Funders receive FAIR metric evaluation certificates.

Research Community + Metadata Experts
ZonMw

Margreet Bloemers
Bas de Waard

toegangtotdata@zonmw.nl

Read more about Datamanagement at ZonMw

(More to come, when we finish our new website)