

Workplan NPOS - project F

Professionalizing education and training on open science and data stewardship

Version 3, November 14 2019

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1. Background

In the past years, it has become clear that there is a large need for and shortage in individuals with open science and data stewardship expertise available within research organizations. This is felt in all research domains and also transcends the institute and even the national level. In order to prevent that open science initiatives hamper and to accelerate the implementation of open science and data stewardship, researchers, research assistants, data professionals and policy staff must be familiar with its content, and need to take up their responsibilities and tasks. This asks for competent staff. Moreover, national coordination is necessary, resulting in coherent education, training and HR policy. It is a precondition for efficiency in manpower needed to implement open science and data stewardship, that by definition will then also have a high degree of reusability of products and output.

The current project focuses on national coordination on the competences and learning outcomes ('eindtermen') for data professionals, as well as on training in data stewardship in the context of open science. We build upon the widely supported outcomes and recommendations of two previous projects and their final reports that were published in 2019, i.e. the [ZonMw data stewardship project](#) and the [LCRDM data stewardship project](#). Building on the community-endorsed competencies and skills for data stewardship of the [ZonMw data stewardship project](#), we will now work towards formal recognition and implementing these competencies and skills in Dutch organisations.

The project will integrate the challenges, efforts and output of various national initiatives and organisations into a national plan on professionalizing data stewardship in the Netherland, thus preventing duplication and reinventing the wheel. Stakeholders such as Promovendi Netwerk Nederland (PNN), Vereniging van Universiteiten (VSNU), Vereniging van Hogescholen (VH) and SURF will provide significant in-kind contributions to the project.

2. Aim and focus

The aim of this 1-year project is twofold:

1. National coordination on the competences and learning outcomes ('eindtermen') for data professionals supporting researchers in activities related to data stewardship in the context of open science.
The competences and learning outcomes drafted out by the previous [ZonMw data stewardship project](#) have been widely endorsed already.

In this project, however, we aim to take the next step, i.e. obtaining formal agreement on those competences and learning outcomes by relevant Dutch national stakeholders, including their willingness to actively incorporate them in their policy (implementation). Such agreement is needed to enable developers of educational programs to develop (modules for) curricula for future data professionals, researchers and policymakers.

For aim 1 the target audience includes (a) policy makers at universities (WO) and universities for applied sciences (HBO), and their umbrella organizations ('koepels'), e.g. VSNU, VH and NFU, that are specialized in educational programs, and (b) developers of educational programs.

2. A well-annotated and searchable overview of training in open science and data stewardship for the scientific community.

For aim 2 the target audience includes staff members of universities (WO) and universities for applied sciences (HBO), who decide about the portfolio for training for data professionals, researchers, and policymakers.

When using the overarching term 'data professionals', we refer to a wide range of functions and roles related to research data and research data management; comparable terms are, for instance, 'data science professions' (Edison EDSF project) or 'data stewardship professions' (ZonMw data stewardship project). For aim 1 and aim 2, the target audiences differ.

The target audiences will be aligned with the NPOS-H project. Throughout the project, end users (teaching and/or needing training) will be involved, i.e. data professionals, researchers, and policymakers in the field of open science and data stewardship.

The scope of the project is defined as:

- Data stewardship aspects of open science (instead of the general topics of open science and data science)
- A domain agnostic approach (independent of a specific scientific discipline)
- Context of the universities (WO) and universities for applied sciences (HBO) in the Netherlands (excluding the middle-level applied education/MBO, which may be taken on in future projects)

3. Deliverables

The two main deliverables of the project are the following:

1. An overview of competences and learning outcomes for data professionals supporting researchers in activities related to data stewardship in the context of open science that is endorsed by the national stakeholders (cf. deliverable 2 in the table below).
2. A. An inventory of existing training related resources (websites, blogs, articles, existing course materials) for data professionals.
B. A strategy and design for an interactive tool that explores the knowledge, skills and abilities (KSAs) and learning objectives (LOs) for data

professionals. This includes (self-)assessment, identifying gaps and reference to existing resources to bridge these gaps. This effort includes exploring potential developers/maintainers of such a tool (cf. deliverable 3 in the table below).

Undoubtedly, there is a strong relationship between the two deliverables: ideally, the strategy and design for the interactive tool should be based on competences and learning outcomes for the data professionals, as well as on the terms/criteria for the educational programs there are to be developed on the long term/beyond this project. See the next section for a further subdivision of the deliverables.

With the deliverables, the responsible parties in the context of the universities (WO) and universities for applied sciences (HBO) in the Netherlands can further develop their range of education and training for data professionals, including working towards quality requirements and formal certification/accreditation. Potential first steps could be defining stakeholders for educational programs and their target group, as well as converting the strategy and design for the interactive tool into building the actual tool itself.

4. Workplan with sub deliverables

| | | 2019 | | | | 2020 | | | | | | | |
|----------|--|------|-----|-----|-----|------|-----|-----|-----|-----|-----|-----|-----|
| | | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug |
| | Activity/deliverable | | | | | | | | | | | | |
| 1 | <i>Creating nationwide commitment for adoption/implementation</i> | | | | | | | | | | | | |
| 1.1 | Prepare project workplan | | | | | | | | | | | | |
| 1.2 | Prepare nationwide adoption and implementation plan | | | | | | | | | | | | |
| 1.3 | Share workplan and adoption and implementation plan with the LCRDM pool of experts and relevant stakeholders | | | | | | | | | | | | |
| 1.4 | Mobilize in-kind partners | | | | | | | | | | | | |
| 1.5 | Recruit experts for 2 (overview of competences and learning outcomes of data professionals) via pitch LCRDM task group | | | | | | | | | | | | |
| 1.6 | Recruit experts for 3 (inventory, strategy and design for an interactive tool) via pitch LCRDM task group | | | | | | | | | | | | |
| | <i>Deliverable 1: adoption and implementation plan (including workplan and communication plan)</i> | | | x | | | | | | | | | |
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|-----|--|--|--|--|--|--|--|--|--|--|--|--|---|---|
| 2 | Overview of competences and learning outcomes of data professionals | | | | | | | | | | | | | |
| 2.1 | Draft sub workplan with expert group | | | | | | | | | | | | | |
| 2.2 | Decide on sub deliverables with expert group | | | | | | | | | | | | | |
| 2.3 | Work on deliverables with expert group | | | | | | | | | | | | | |
| 2.4 | Prepare report on sub deliverable with expert group | | | | | | | | | | | | | |
| | <i>Deliverable 2. Overview of competences for and learning outcomes of data professionals</i> | | | | | | | | | | | | X | |
| | | | | | | | | | | | | | | |
| 3 | Inventory, strategy and design for an interactive tool | | | | | | | | | | | | | |
| 3.1 | Draft sub workplan with expert group | | | | | | | | | | | | | |
| 3.2 | Decide on sub deliverables with expert group | | | | | | | | | | | | | |
| 3.3 | Work on deliverables with expert group | | | | | | | | | | | | | |
| 3.4 | Prepare report on sub deliverable with expert group | | | | | | | | | | | | | |
| | <i>Deliverable 3. Strategy and design for an interactive tool</i> | | | | | | | | | | | | X | |
| | | | | | | | | | | | | | | |
| 4 | Dissemination | | | | | | | | | | | | | |
| 4.1 | Broadcast deliverables and reports via Zenodo, posters, presentations, webinars, blogs and paper | | | | | | | | | | | | | |
| 4.2 | Symposium with stakeholders | | | | | | | | | | | | | |
| 4.3 | Prepare final report | | | | | | | | | | | | | |
| | <i>Deliverable 4. Final report, including deliverables</i> | | | | | | | | | | | | | X |

5. Project organisation and budget

Core project team

The project runs for one year, from September 1 2019 up to September 1 2020. It is coordinated by a core project team that consists of three members: Celia van Gelder (DTL), Mijke Jetten (RU) and Salome Scholtens (UMCG). This core team is responsible for the content of the project and for the coordination of the deliverables. However, the core project team does not produce deliverables itself. For that, the in-kind task groups are responsible (see below). On behalf of the project team, DTL will deal with the financial aspects of the project.

Partners with in-kind contributions

Significant in-kind contributions will be provided by PNN, VSNU, VH and SURF, in direct liaison with the in-kind task groups and coordinated by the core project team.

In-kind LCRDM task groups

For the execution of the project deliverables, the project team can count on LCRDM task groups ('expert groups') for each main deliverable, consisting of people active in the field of data stewardship with a representation of the broad fields of competences of and training for data professionals. One task group will be responsible for the overview of competences and learning outcomes for data stewards, and one task group for the strategy and design for the interactive tool. It will be the task groups that create the deliverables (in-kind), coordinated by the core project team.

Project coordinators

The project team collaborates with and reports to two formal project coordinators/NPOS members: Margreet Bloemers (ZonMw) and Ingeborg Verheul (LCRDM, SURFsara). An important role of the project coordinators is to align with the overall NPOS project.

Budget

The budget for the NPOS-F project originates from NPOS partners and the ministry of OCW (education). It consists of cash contributions from ZonMw (25k) and the ministry OCW (16k), and in-kind contributions (equivalent in Euro) from VSNU (6k), ZonMw (35k), SURF (35k), VH (6k), and LCRDM (12k). For the cash contributions the following has been planned:

- 27k for the core project team
- 8,6K for fees for experts
- 5k for material costs

6. Alignment with other projects and initiatives

This project takes on the recommendations of the [ZonMw data stewardship project](#):

1. It will depart from the ZonMw function description and competence definition for three types of data stewards. Relevant next steps could be differing in prior educational level (bachelor/master/PhD) and function level (junior/senior) as well making efforts to embed data stewardship in the formal function profile structure of data professionals (VSNU, UFO and FUWAVAZ).
2. Use this function description and competence definition for three types of data stewards as a basis for a (self-)assessment tool for data stewardship, including available training and learning materials. A next step could be exploring how such a tool could aid universities (WO) and universities for applied sciences (HBO) in assessing the maturity of data stewardship in their organization.

Additionally, the project will link with/continues the work done by the National Coordination Point RDM (LCRDM), among others the report of the [LCRDM data stewardship project](#) and the current activities of the [RDA adoption grant/23 things project](#). It will also seek cooperation with relevant stakeholders at the national level, such as the Dutch organisations for higher education, NLQF, DTL data steward interest group, the Health-RI community, the NFU data management group, and the international communities of RDA, EOSC and FAIRsFAIR, as well as GO FAIR, GO

TRAIN and the ELIXIR training program among others. We will explore certification of trainings and professional roles, among others with the Go FAIR Foundation, first contacts are already established.

In the NPOS context, we will collaborate and align where appropriate with the other projects, most notably with projects H and E. The goal of the overall NPOS project is the proper securing of open science and data stewardship in Dutch research institutions and other science organizations. This will be reached via a coordinated structural offer of up-to-date basic knowledge and information about open science and data stewardship, open science and data stewardship training, training programs for lifelong learning, and a clear valuation system of open science professionals, including career prospects.