Deliverable D3.1. Hands-on EUTOPIA Research Data Management/ Open Science e-courses for Researchers and Data Stewards

_____

Lennart Stoy (VUB) and Elisa Maes (VUB)

Corresponding author: elisa.maes@vub.be

Executive Summary

EUTOPIA-TRAIN WP3.1 aims to deliver Open Science training to EUTOPIA researchers and staff. Through the period from January 2021 until December 2022, we carried out six different training webinars and developed five training guides on topics such as Open Science in Horizon Europe, Research Data Management, Reproducible research, as well as Open Access publishing. Based on our commitment to openness, almost all resources are made available via YouTube or Zenodo for later use, with open licenses. Throughout the activities, 245 participants joined one of the webinars. The resources, videos and training guides, have been downloaded or viewed at least 430 times. Plans to further the impact of our trainings include the development of quizzes to gauge learning achievements and a staff training on Open Science. This foundation will also be expanded through activities in the EUTOPIA-MORE project, which will provide even more dedicated Open Science training and support to the EUTOPIA Connected Research Communities.

CONTENTS

1. Introduction

To support the mainstreaming of Open Science across EUTOPIA universities, EUTOPIA-TRAIN Work Package 3.1 supplies training and guidance to researchers and staff of the member institutions. The Description of Work specifically mentions a number of activities and objectives (Figure 1). A main feature is the delivery of modular, online courses on different topics to researchers and data stewards in order to assist in the transformation to Open Science.

- Identify gaps and needs regarding training and policy documents
- Train EUTOPIA researchers (PhD-students, Postdocs, professors) by creating a modular, interactive, hands-on Research Data Management course. This course will focus on how Research Data Management can support Open Science and will take into account the disciplinary and interdisciplinary mix of EUTOPIA partner institutions
- Train data stewards by offering in-depth, interactive courses on (discipline-)specific topics (e.g. metadata, anonymising)
- Promote the courses at each EUTOPIA university by, including them in local study programmes
- Distribute course materials and make them externally available
- Courses will be provided through an e-learning platform such as the FOSTER portal
- Versions suitable for printing of the course materials and additional documents (e.g. policy guidelines) will be made available via an online EUTOPIA 'community' (e.g. OpenAire, Zenodo)

Figure 1.   Training objectives of WP3.1

This report shortly summarises the actions taken to address these objectives . The type of deliverable is *Websites, patents filling, etc.* It therefore provides an overview of the implemented actions and training. The resources themselves are available via their indicated locations. By reaching this objective, the EUTOPIA-TRAIN project constitutes an exemplary case where Open Science education has become a joint effort, leading to increased efficiency and high-quality resources that will ultimately benefit the research community as a whole.

2. Training implementation

2.1.   Topical priorities and approach

In order to fulfil the task and exploit both the strengths of each partner institution as well as synergies with other projects, in particular EUTOPIA2050 and EUTOPIA-SIF, we conducted a mapping of training resources and priority areas from the partners. This was based on the EUTOPIA2050 output "EUTOPIA – Towards a best practices report for Open Science" from 2020, which had already compiled information on Open Science training offers at the six original EUTOPIA universities. The mapping identified the following interests in Open Science training:

- Developing RDM training material from basic to intermediate with different disciplinary topics
- Introductory material about Open science in general
- Open software

- Open peer review
- Data protection & ethics

Based on these priorities, we further selected the training activities under two main headings:

- Research Data Management and FAIR data
- Open Science in Horizon Europe and Open Science in general

This selection was done considering the existing expertise at EUTOPIA universities. Research data management and FAIR data, as the highest priority, was addressed through several events and the development of several training documents. In addition, supporting topics were identified, namely reproducible research and Open Access publishing agreements.

Following the selection of priorities, the development of the training actions was implemented resting on three pillars, shared between EUTOPIA-TRAIN and EUTOPIA2050. EUTOPIA-TRAIN would develop a series of webinars and develop guidance material on the identified priorities. EUTOPIA2050 complements these actions through the identification and curation of a list of recommended online training resources on Open Science – thereby reducing the need to develop new material from scratch if sufficient material is already accessible online.

Figure 2.   Three pillars of EUTOPIA Open Science training

WP3.4 of EUTOPIA-TRAIN, fostering Citizen Science across partners, is implemented in alignment with this approach. Citizen Science training activities included both webinars as well as guidance documents (see e.g. D3.4 Citizen Science Starter Kit). The Citizen Science Community of Practice and Citizen Science Clinics are a model which also informed our development of design of follow-up activities through EUTOPIA-MORE (see "Next steps").

2.2.   Partner and stakeholder involvement

The implementation of the task was led by VUB as task lead and work package lead. Partners contributed to individual webinars or training documents as presenters, moderators and reviewers of documents. In addition to VUB, experts, researchers and library staff from the University of Ljubljana, University of Warwick, Universitat Pompeu Fabra, University of Gothenburg, and NOVA University Lisbon participated as speakers in the webinars. Contributors to the training guides are indicated in the documents themselves.

While EUTOPIA universities already possess a wide range of expertise on Open Science-related topics, the implementation of webinars featured relevant stakeholders for specific expertise. Throughout the series of events, this included presenters affiliated with:

- Research Data Alliance (RDA)
- CoData and FAIRsFAIR
- European Commission
- Open Research Europe
- FAIRsharing and Oxford e-science Centre
- Portuguese Reproducibility Network
- ReproducibiliTea

The list of speakers and presenters for each webinar is available in the annex of this deliverable.

2.3. Open sharing

An explicit aim of the work package is to make training resources openly available in order to allow their re-use, adaptation and sharing, as well as abiding by the FAIR principles. We achieved this by depositing all guidance material on Zenodo. This ensures the findability of all material via the dedicated EUTOPIA community on Zenodo (https://zenodo.org/communities/eutopia/) and the EUTOPIA Open Research Portal powered by OpenAIRE (https://eutopia.openaire.eu/). All material on Zenodo is shared with a CC-BY 4.0 license to enable re-use. Videos uploaded on YouTube are shared with a standard YouTube license, which also permits re-use in broad terms.

2.4. Communication of events

All events and releases of training material were announced via the EUTOPIA website, social media and newsletter. Institutional channels were used, too, at the discretion of the individual partners. Events were generally open to attendees from the original six EUTOPIA partner universities as well as the four EUTOPIA members which joined in late 2021.

2.5. Deviations from the task description

During the planning and implementation of the task, it became apparent that not all ambitions as envisioned by the description of work could be addressed. This particularly concerned the use of an e-learning platform. This reflects the fact that there is no common training portal available for EUTOPIA with sufficient integration into existing infrastructure such as institutional learning management systems (LMS). The task by itself did not have the capacity to develop a functional e-learning platform for the entire alliance (including e.g., Authentication and Authorization Infrastructure) and using an external provider was deemed insufficient due to shortcomings of sustainability and lack of integration into each partners learning management systems (e.g. to certify participation and assess learning progress). Using a separate service not supported by EUTOPIA at-large would have risked a fragmentation of EUTOPIA training infrastructure and resources etc. This shortcoming will be further addressed by EUTOPIA-MORE and its strategic mapping of digital infrastructure for the alliance.

This meant that the training activities would be less interactive (e.g. using quizzes, assignments or hands-on exercises for learners) than they would have been through an e-learning platform. The combined approach of providing detailed training guides together with webinars with opportunities to ask questions to experts was chosen address this shortcoming. Moreover, it is planned to develop additional material for quizzes to gauge the learning progress.

3. Overview of training activities

In total, WP3.1 organised five webinars and developed six training guides on the topics described in section 2.1. Table 1 below presents an overview of all these training activities carried out under WP3.1. It reports topics, type, date and availability of the results of each activity or output.

As described in section 2.3, we aspired to publish all webinars organised as part of WP3.1. Only in one instance of webinars we deviated from this plan and a public recording is not available ("Making research reproducible and replicable", 9 December 2022). This was due to the fact that the session took place in the context of the VUB Ethics Week, a training event mainly targeted at doctoral candidates. Recordings are not made publicly available to encourage open discussions about ethics questions and challenges which early careers researchers might face.

Table 1 Overview of training activities

Topic / title	Type	Published	Available at	Comments
Open Science in Horizon Europe				
Open Science in Horizon Europe. A quick guide for researchers	Training guide	26-07-22	https://doi.org/10.5281/zenodo.6821325	
Navigating Open Science in Horizon Europe	Webinar	30-05-22	https://youtu.be/nGKAq_T5EnE	
Open Science in Horizon Europe - training for EUTOPIA postdoctoral fellows	Training guide	14-04-22	https://doi.org/10.5281/zenodo.6452053	Lesson outline; tested with EUTOPIA-SIF fellows
Research data management				
Understanding Metadata: A Beginners' Guide for Researchers & Data Stewards	Training guide	04-11-22	https://doi.org/10.5281/zenodo.7124032	
Understanding Data Repositories: A Beginners' Guide for Researchers & Data Stewards	Training guide	25-11-22	https://doi.org/10.5281/zenodo.7258305	
Planning for research data management: the basics	Webinar	08-11-22	https://youtu.be/vJB-iukJWBk	
A deeper look into RDM practices: the FAIR principles and the role of metadata	Webinar	10-11-22	https://youtu.be/Bj_AGiLNQmk	
Reproducible research				
Open and reproducible research. An introduction to practical measures	Training guide	15-12-22	https://doi.org/10.5281/zenodo.7418817	
Making research reproducible and replicable	Webinar	09-12-22	n/a	Part of VUB Ethics Week 2022
Other				

Topic / title	Type	Published	Available at	Comments
Why Open Science and where to get started	Webinar	25-10-22	https://youtu.be/Tq7SD-po-kY	
Publishing contracts and Open Access. A navigation guide for researchers	Training guide	15-12-22	https://doi.org/10.5281/zenodo.7418832	

4. Engagement and uptake

All training material is developed with the intention to be used by internal and external audiences. The target audience includes researchers and support staff, but also Open Science experts who want to re-use the material and employ it in their own trainings.

To gauge the reach of our training material, we collect the participant number of training events and workshops, as well as the download numbers of Zenodo documents and views of YouTube videos. These may be a proxy for the use and uptake of the resources and therefore the impact of the project overall.

Table 2 Engagement and uptake of training material as of 15 December 2022
(n/a = no download numbers available at the time of submission of the deliverable)

Topic / title	Type	Date	Participants	Downloads / views
Open Science in Horizon Europe				
Open Science in Horizon Europe. A quick guide for researchers	Training guide	26-07-22	Not applicable	72
Navigating Open Science in Horizon Europe	Webinar	30-05-22	31	70
Open Science in Horizon Europe - training for EUTOPIA postdoctoral fellows	Training guide	14-04-22	Not applicable	93
Research data management				
Understanding Metadata: A Beginners' Guide for Researchers & Data Stewards	Training guide	04-11-22	Not applicable	56
Understanding Data Repositories: A Beginners' Guide for Researchers & Data Stewards	Training guide	25-11-22	Not applicable	23
Planning for research data management: the basics	Webinar	08-11-22	20	13
A deeper look into RDM practices: the FAIR principles and the role of metadata	Webinar	10-11-22	21	10
Reproducible research				
Open and reproducible research. An introduction to practical measures	Training guide	15-12-22	Not applicable	n/a
Making research reproducible and replicable	Webinar	09-12-22	116	/
Other				
Why Open Science and where to get started	Webinar	25-10-22	57	95
Publishing contracts and Open Access. A navigation guide for researchers	Training guide	15-12-22	Not applicable	n/a
Total			**245**	**432**

In total, the activities attracted some 245 participants during the events and at least 432 downloads or views of the resources on Zenodo or Youtube, respectively. Since many resources had been uploaded towards the end of 2022, the number of views and downloads can be expected to increase over time. All documents on Zenodo have been provided with relevant keywords to improve their findability. Guidance documents have been uploaded using the document type "lesson" to highlight them as training material.

The re-usable nature of the material (see section 2.3) means that resources can be integrated into training guides of the individual partners. In the case of VUB, the material on "Open Science in Horizon Europe" has been prepared as an internal SharePoint page with institutional-specific content and resources (Figure 3). The recordings and EUTOPIA documents are linked to from this page.
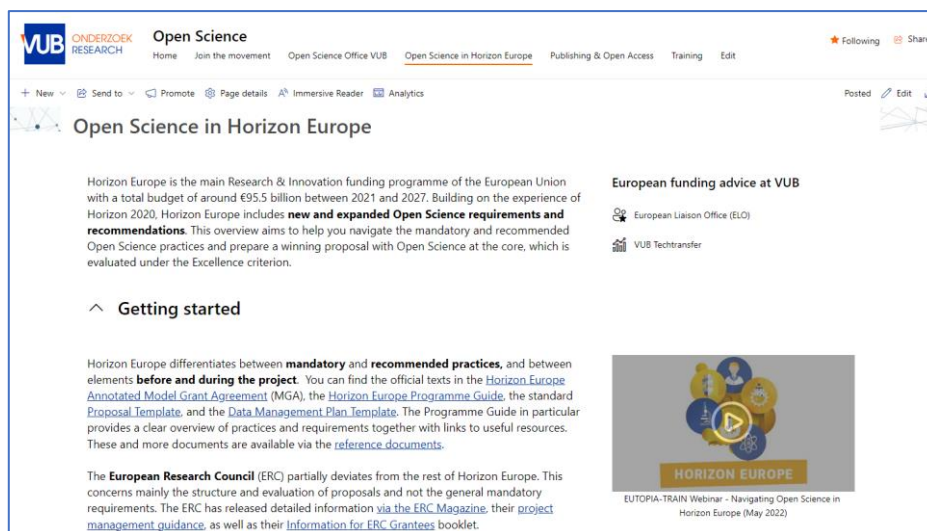

Figure 3.   *VUB info page 'Open Science in Horizon Europe'*

5. Next steps

WP3.1 prepared training material and created a community of learners and ends in month 30 of EUTOPIA-TRAIN (June 2023). Remaining priorities under EUTOPIA-TRAIN after the submission of this deliverable include the organization of a staff training on Open Science for research managers and administrators during the first half of 2023, for example at the next EUTOPIA Week.

Another action to increase the usability of the material will be the development of short quizzes about the learned content of the training guides. We are exploring tools for online, interactive implementation of such quizzes to measure if users will meet the intended learning outcomes.

To increase findability, we are monitoring the development of training catalogues in the context of the European Open Science Cloud (EOSC). Once a

The conclusion of the EUTOPIA-TRAIN WP3.1 in June 2023 will coincide with the launch of training activities in the EUTOPIA-MORE project. As part of EUTOPIA-MORE, the community of Open Science trainers will be continued and expanded with staff from all 10 member universities. Training delivery will focus on several cohorts of Connected Research Communities with targeted material. EUTOPIA-

MORE will also expand the creation of train-the-trainer material and templates for courses in order to support capacity development for training in different domains.

Annex: webinar speakers

Why Open Science and where to get started?

Monday, 25 October 2021 (14:30-16:00 CEST)

- Jean-Claude Burgelman, Professor of Open Science Policy, Vrije Universiteit Brussel

- Hugh Shanahan, Professor of Open Science, Royal Holloway University, London

- Antica Culina, Researcher, Netherlands Institute of Ecology (NIOO-KNAW); Coordinator, SPI-Birds Network & Database; FAIRsFAIR Data Champion

Navigating Open Science in Horizon Europe

Monday, 30 May 2022 (15:00-16:30 CEST)

- Alea Lopez de San Roman, Policy Officer, European Commission

- Michael Markie, Publishing Director, F1000

- Prof. Wim Vranken, VUB; Coordinator, RNAct ITN

- Lennart Stoy, EUTOPIA Open Science Project Leader, VUB/EUTOPIA

Planning for research data management: the basics

Tuesday, 8 November 2022, 15:30-17:00 CET)

- Sebastian Dahle, Assistant professor, University of Ljubljana

- Julie Jordens, Data archivist, Vrije Universiteit Brussel

A deeper look into RDM practices: the FAIR principles and the role of metadata

Thursday, 10 November 2022, 10:00-12:00 CET)

- Ishwar Kapoor, Research Data Officer, University of Warwick

- Özgün Ünver, Data steward Humanities and Social Sciences, Vrije Universiteit Brussel

- Allison Lyster, Content and Community Coordinator, FAIRsharing/RDA Domain Ambassador

Making research reproducible and replicable

09 December 2022 (12:00-14:00 CET)

- Maria Alexandra Ribeiro, Professor, NOVA Medical School, NOVA University Lisbon/Steering Committee, Portuguese Reproducibility Network

- Talar Moukhtarian, Assistant Professor/Senior Research Fellow, Warwick Medical School, University of Warwick/Warwick ReproducibiliTea

- Tim Vantilborgh, Associate Professor, Work & Organizational Psychology Research Group, Vrije Universiteit Brussel

- Wouter Ryckbosch, Professor, Director, Brussels Platform for Digital Humanities, Vrije Universiteit Brussel