## Training Outline

## Research Data Management (RDM)

### Note

This outline has been created for CESSDA ERIC in 2018 and updated in 2020 by a number of its service providers' experts at: [ADP](http://www.adp.fdv.uni-lj.si/), [AUSSDA](https://aussda.at/), [CSDA](http://archiv.soc.cas.cz/), [DANS](http://www.dans.knaw.nl/), [FORS](http://forscenter.ch/en/), [FSD](http://www.fsd.uta.fi/), [GESIS](http://www.gesis.org/), [NSD](http://www.nsd.uib.no/), [SND](http://snd.gu.se/en), [So.Da.Net](http://sodanet.gr/) and [UKDS](http://ukdataservice.ac.uk/).

If you have questions or feedback from your own testing, please do not hesitate to contact us via training[at]cessda.eu.

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Skeleton for an introductory 1-day workshop on Research Data Management

Use or adapt this outline to offer your own introductory workshop on Research Data Management (RDM).

**Level**: For beginners, basic introduction to research data management

**Time frame**: 1–day workshop (ca 6 ½ hours, e.g. 09:00 - 15:30)

**Target group**: Researchers/PhD candidates

**Recommended no. of participants**: up to 30 participants

## Learning goals

* Know basic concepts of data management
* Know which tools to use and where to find information
* Know the arguments and relevant considerations to make data open while still meeting the need to protect data (in accordance with legal? and ethical requirements).

## Reading for the participants in advance

### Required reading

Chapter 1 of the CESSDA training Expert Tour Guide (1-2 hours of reading)

[[https://www.cessda.eu/DMGuide > 1.- Plan](https://www.cessda.eu/Training/Training-Resources/Library/Data-Management-Expert-Guide/1.-Plan) ]

Chapter 1 is available for offline reading and as a possible handout to be downloaded from Zenodo: <https://doi.org/10.5281/zenodo.3820473>

If relevant for your workshop, provide links to:

* Funder requirements (national/international), depending on your participants’ needs (e.g. funding requirements from the EU, national research council)
* Institutional guidelines, if they exist and if relevant (e.g. guidelines/instructions for how to store personal data, guidelines on ownership/IPR, guidelines/instructions on data management requirements – do they require that you use a specific template?)
* Other national/international guidelines, if relevant

## Programme

### Programme overview

09:00-09:30: Welcome and introduction

09:30-11:30: Research data management – what, why and how? (2 x 45 minutes)

11:30-11:45: Questions and discussion

11:45-12:30: Lunch

12:30-13:10: First Assignment block

13:10-13:15: Break

13:15-14:15: Best practices and where to find information

14:15-14:20: Break

14:20-15:00: Second assignment block

15:00-15:30: Wrap-up and conclusion (30 minutes)

### Welcome and introduction

State the learning goals (2-3 bullet points); our suggestion:

* Know basic concepts of data management
* Know which tools to use, where to find information
* Know the arguments and relevant considerations in finding the balance between open data vs. protecting data

You might want to do an introductory round (name, background, what they want to learn)

Joint discussion (unless the introductory round made this redundant): What are topics that you especially find difficult?

### Research data management – what, why and how? (2 x 45 minutes)

[tip: you can use illustrations from the online module for this part]

* What is research data (existing vs. generated data – you often have more than you think)

Cf. [[https://www.cessda.eu/DMGuide > 1.- Plan > Research Data](https://www.cessda.eu/Training/Training-Resources/Library/Data-Management-Expert-Guide/1.-Plan/Research-data)] and

[[https://www.cessda.eu/DMGuide > 1.- Plan > Data-in-social-sciences](https://www.cessda.eu/Training/Training-Resources/Library/Data-Management-Expert-Guide/1.-Plan/Data-in-the-social-sciences)]

* FAIR data principle:

Cf. [[https://www.cessda.eu/DMGuide > 1.- Plan > FAIR-data](https://www.cessda.eu/Training/Training-Resources/Library/Data-Management-Expert-Guide/1.-Plan/FAIR-data)]

* Requirements from funders, journals, institutions

Cf. [[https://www.cessda.eu/DMGuide > 1.- Plan > European-diversity](https://www.cessda.eu/Training/Training-Resources/Library/Data-Management-Expert-Guide/1.-Plan/European-diversity)]

* Data lifecycle. Show how choices made early influence the choices you can make later.

Cf. [[https://www.cessda.eu/DMGuide/1.-Plan/European-diversity](https://www.cessda.eu/Training/Training-Resources/Library/Data-Management-Expert-Guide/1.-Plan/European-diversity)]

* What’s in it for the researcher: e.g.: citable data, visibility, integrity, security, documentation also for yourself, new networks, invest time early & save time later, etc.

Cf. [[https://www.cessda.eu/DMGuide > 1.- Plan > Benefits-of-data-management](https://www.cessda.eu/Training/Training-Resources/Library/Data-Management-Expert-Guide/1.-Plan/Benefits-of-data-management)] and [[https://www.cessda.eu/DMGuide > 6.- Archive-Publish > Promoting-your-data](https://www.cessda.eu/Training/Training-Resources/Library/Data-Management-Expert-Guide/6.-Archive-Publish/Promoting-your-data)]

* What’s in it for “the greater good”: e.g.: fuel innovation, democratic principle, scientific principle.
* Data management plan as a tool for good research data management

Cf. [[https://www.cessda.eu/DMGuide > 1.- Plan > Benefits-of-data-management](https://www.cessda.eu/Training/Training-Resources/Library/Data-Management-Expert-Guide/1.-Plan/Benefits-of-data-management)]

### First Assignment block (30-45 minutes)

Handout: Everybody to try to fill in a data management plan.

You can use the downloadable CESSDA DMP checklist from the Module as an example, see [[https://www.cessda.eu/DMGuide > 6.- Archive-Publish > Promoting-your-data](https://www.cessda.eu/Training/Training-Resources/Library/Data-Management-Expert-Guide/6.-Archive-Publish/Promoting-your-data)]. A version of this DMP checklist is also available in the [TTT package](https://www.cessda.eu/Training/Training-Resources/Library/Training-Packages/Train-the-Trainers).

Discussion (20 minutes): What is most important? What is most difficult? Where to find answers?

[tip: Bear in mind that you may need to return to the DMP over the day, as participants will not yet know all RDM topics to be able to complete a DMP; but they can start here with listing with data they produce/use in their research; and for example which topics they would find challenging to answer]

### Best practices and where to find information

In this talk, you give best practice guidance and information on where to find more information (including country or institution specific requirements).

You can use illustrations from the online module for this part. Follow the structure of the online module and the Research Data Life cycle to go through the different steps.

* Finding data (the process of data discovery, data sources, data access and citation, etc.)
* Data organization and documentation (organizing files and folders; documenting data; metadata standards, etc.)
* Processing data (data integrity and authenticity; data quality assurance, etc.)
* Storing data (backup strategies; versioning; security level, etc.)
* Data protection and ethical legal considerations (ethical approval; informed consent; GDPR; anonymization, etc.)
* Archiving (choosing an archive; preparing your data for long term storage; making your data FAIR, etc.)

### Second Assignment block

Case studies and scenarios from the CESSDA module

**Example 1:** Create groups of ca 4 persons in each group and provide each group with one of the scenarios taken from the online module

(see Appendix 1 for six example scenarios based on the module).

Part 1 (10 minutes): Work in groups to propose solutions to the case study/studies.

Part 2 (20 minutes): Share and discuss the solutions and problems you identified.

Part 3 (10 minutes): The workshop leader sums up and goes through the “ideal” solutions.

**Example 2:**

Part 1 (10 minutes): Work individually to come up with at least one pro and one con for sharing your data. Then share and discuss the arguments you came up with in smaller groups.

Part 2 (10 minutes): Share the different results with the other groups

Part 3 (10 minutes): If you wish to, the workshop leader sums up and gives some authoritative pieces of advice regarding sharing of data.

### Conclusion

* Sum up key points, do the participants now feel they learnt what we expected according to the learning goals set?
* Q&A
* Activity: Ask the participants to write down the three most important things they learned that they will put into practice.
* Hand out the CESSDA course certificate (or do so by email afterwards)

### Evaluation

Ask participants to fill in a short evaluation form (suggestions for evaluation forms are available in the [TTT package](https://www.cessda.eu/Training/Training-Resources/Library/Training-Packages/Train-the-Trainers)).

Appendix 1

Here you can find some suggestions for the assignment blocks mentioned above, based on existing exercises or scenarios taken from the online module. You may also develop your own.

1. DM Planning:
   1. *List the possible benefits of creating a Data Management Plan.* See [[https://www.cessda.eu/DMGuide > 1.- Plan > Benefits-of-data-management](https://www.cessda.eu/Training/Training-Resources/Library/Data-Management-Expert-Guide/1.-Plan/Benefits-of-data-management)]
2. Data organization: “*I have never documented my data before. I have both qualitative and quantitative data and I work on a collaborative project. Where do I start*?”
   1. See [[https://www.cessda.eu/DMGuide/2.-Organise-Document/Documentation-and-metadata](https://www.cessda.eu/Training/Training-Resources/Library/Data-Management-Expert-Guide/2.-Organise-Document/Documentation-and-metadata)]. Chapter 2 is available for offline reading and as a possible handout to be downloaded from Zenodo: https://doi.org/10.5281/zenodo.3820473
   2. Exercise: Data documentation (by the UK Data Service) (30 minutes). See:

* “[TTT\_EX\_UKDS\_DataDoc](https://www.cessda.eu/Training/Training-Resources/Library/Training-Packages/Train-the-Trainers)” for the exercise
* “[TTT\_ EX\_UKDS\_DataDoc\_Ans](https://www.cessda.eu/Training/Training-Resources/Library/Training-Packages/Train-the-Trainers)” for sample solutions
  1. Exercise: Create metadata (from the Open Science Training Handbook) (5 minutes). See:
* “[TTT\_EX\_OSTH\_MetaData](https://www.cessda.eu/Training/Training-Resources/Library/Training-Packages/Train-the-Trainers)”

1. Data processing: *What steps can you take to minimise errors in survey data entry?*
   1. See: [[https://www.cessda.eu/DMGuide/3.-Process/Data-entry-and-integrity](https://www.cessda.eu/Training/Training-Resources/Library/Data-Management-Expert-Guide/3.-Process/Data-entry-and-integrity) ]. Chapter 3 is available for offline reading and as a possible handout to be downloaded from Zenodo: https://doi.org/10.5281/zenodo.3820473
   2. Exercise: Open file formats (from the Open Science Training Handbook) (15 minutes). See:

- “[TTT\_EX\_OSTH\_FileFormats](https://www.cessda.eu/Training/Training-Resources/Library/Training-Packages/Train-the-Trainers)”

1. Storage: *“I have terabytes of videotaped interviews from a European project, dozens of pseudonymised transcripts and informed consent forms. European partners need access to the files for data analysis. What's the best storage strategy for me?”*
   1. See: [[https://www.cessda.eu/DMGuide/4.-Store/Storage](https://www.cessda.eu/Training/Training-Resources/Library/Data-Management-Expert-Guide/4.-Store/Storage)]. Chapter 4 is available for offline reading and as a possible handout to be downloaded from Zenodo: https://doi.org/10.5281/zenodo.3820473
2. Protection: *“The following statement has been adapted from an actual consent form:* ***“Any information I give will be used for research only and will not be used for any other purpose“****.* *Consider the implications for data sharing for any data generated using this consent statement. Do you have any suggestions for alternative wording or other changes?”*
   1. See: [[https://www.cessda.eu/DMGuide/5.-Protect/Informed-consent](https://www.cessda.eu/Training/Training-Resources/Library/Data-Management-Expert-Guide/5.-Protect/Informed-consent)] Chapter 5 is available for offline reading and as a possible handout to be downloaded from Zenodo: https://doi.org/10.5281/zenodo.3820473
   2. Exercise: Consent for data sharing and reuse (by the UK Data Service) (15 minutes). See: “[TTT\_EX\_UKDS](https://www.cessda.eu/Training/Training-Resources/Library/Training-Packages/Train-the-Trainers)”\_Consent for the exercise
3. Archiving: *Think about different points that may motivate researchers to share their data*
   1. See: [[https://www.cessda.eu/DMGuide/6.-Archive-Publish/Towards-archiving-publication](https://www.cessda.eu/Training/Training-Resources/Library/Data-Management-Expert-Guide/6.-Archive-Publish/Towards-archiving-publication)]. Chapter 6 is available for offline reading and as a possible handout to be downloaded from Zenodo: https://doi.org/10.5281/zenodo.3820473
   2. Exercise: Data access and licensing (by the UK Data Service) (15 minutes).

See:

* “[TTT\_EX\_UKDS\_Access](https://www.cessda.eu/Training/Training-Resources/Library/Training-Packages/Train-the-Trainers)” for the exercise
* “[TTT\_EX\_UKDS\_Access\_Ans](https://www.cessda.eu/Training/Training-Resources/Library/Training-Packages/Train-the-Trainers)” for sample solutions