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How to prepare your River Studies Data for the future with 4TU.Centre for Research Data

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Introduction

Due to the latest funder requirements on data management and Open Data, documenting and managing research data during the research and preparing it for publication gained in importance. Making research data findable and accessible for decades via a trusted and certified data archive – such as 4TU.Centre for Research Data – and therefore enabling the interoperability and reusability of its content can positively impact the future of river studies.

About 4TU.Centre for Research Data

4TU.Centre for Research Data (http://researchdata.4tu.nl) is the central and certified data-archive of the four Dutch universities of technology (TU Delft, TU Eindhoven, Twente University, Wageningen Uni-versity & Research), joining forces as the 4TU.Federation. The mission of 4TU.Centre for Research Data is to ensure the accessibility of technical scientific research during and after completion of research to give a quality boost to contemporary and future research. It is specified for research data in netCDF and has over 3.700 datasets of the Geoscience communities. The complete collection of the Zandmotor-Project (https://data.4tu.nl/repository/collection:zandmotor) is openly available in 4TU.-Research Data and the RiverCare-Project has decided to publish and preserve its research output via this archive as well (https://data.4tu.nl/repository/collection:rivercare). 4TU.Research Data offers 100GB of free data publication per year for researchers affiliated with the Dutch universities of technology, and it is also available for international researcher, including a free data publication feature of 10GB.

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The services(S), features(F), and benefits(B) of 4TU.Centre for Research Data:

Services (S):

- Reservation-service for data-DOI: While you are writing your scientific publication, you may reserve a data-DOI in the upload-form of the archive. By providing the link to the underlying data of your publication in the text or reference section, you enable the ideal link between these two types of research output. The data-DOI will be activated once you published the data-set online, its metadata section will include a link to the related publication. With the paper-DOI and the data-DOI available, you will receive citations and tracking for both publications seperately.
- Free Data Deposit: Researchers affiliated with Delft University of Technology, University of Twente, and Eindhoven University of Technology can deposit up to 100GB individually each year. International researcher can archive 10GB for free annually. Exceeding these free limits leads to a one-time fee of 4.50 EURO per GB.

Features (F):

- Claiming your Data: To ensure accurate citation and retrieve-ability of your datasets by other researchers in the future, datasets must be equipped with an identifier (preferably a persistent identifier). Every dataset in 4TU.Centre for Research Data is provided with a unique, persistent Digital Object Identifier (DOI), which can be linked to or cited in publications.

- Link between publication and dataset: Previous studies have indicated that publications containing links to the underlying data are cited more frequently than are publications without such links. By storing your research data in 4TU.Centre for Research Data, you can encourage the reuse of your data for new research or verification. DOIs can be assigned at every

level of detail or size within a publication. For example, a DOI can be assigned to an entire data collection, as well as to each component within. In the choice of which levels should be registered with a DOI, researchers should proceed from the expectations of future data users.

Benefits (B)

- Search-ability and findability of research data: The data in 4TU.ResearchData are also available through NARCIS, DataCite, NedDat Hub, Index, Google, Google Scholar and many other search engines and portals.
- Make your data FAIR: By using 4TU.ReserachData and providing your data-sets in the requested form – which includes DOI, metadata body, the openly accessible data-files accompanied by a readme-file – your data complies to the FAIR data principles.
- Long-term archiving and availability of research data: 4TU.ReserachData guarantees that the deposited data will be findable, accessible, and usable in its authentic form for at least 15 years. All creators and contributors are listed and linked to their ORCID-ID, if possible.

River Studies Data in 4TU.Research Data

A popular way to use the services and features of the data archive is to deposit the publication related and receive a data-DOI for it. PhD supervisors encourage their PhD-candidates to publish data in relation to their thesis to keep the link between them over time and prevent data-loss due to the PhD-project finishing. Complex and long-term research projects make use of the collection-feature of the archive, which enables them to represent their research output appropriately and publish relevant data at suitable times throughout the project duration.
4TU.ResearchData is categorized as valid long-term data archive by funding bodies. By publishing data via its service the data-creators adhere to Open-Data and FAIR-Data demands.

Related to the proposed workshop on data documentation 'To document, or not to document? How to write a readme file and what is metadata.' this poster illustrates the benefits, features and services of 4TU.Centre for Research Data that are relevant for the NCR Days 2018 attendees. Although it is an institutional data archive, it serves as hub for multi-disciplinary data-sets. Next to finding existing data and reusing it for new projects, researcher can improve their visibility and impact by publishing data via 4TU.Research-Data. Transferring the responsibility of long-term preservation and data access to an certified institution helps to reduce risks and responsibilities for the research team after the project has ended. Due to the correct indexing of ownership and engagements, creators and contributors are recognised and accredited for decades.

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