Institutional Open Data Policy and Services

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Scholarly Communication Librarians

Head

IR

IR

RDM

RDM

RDM

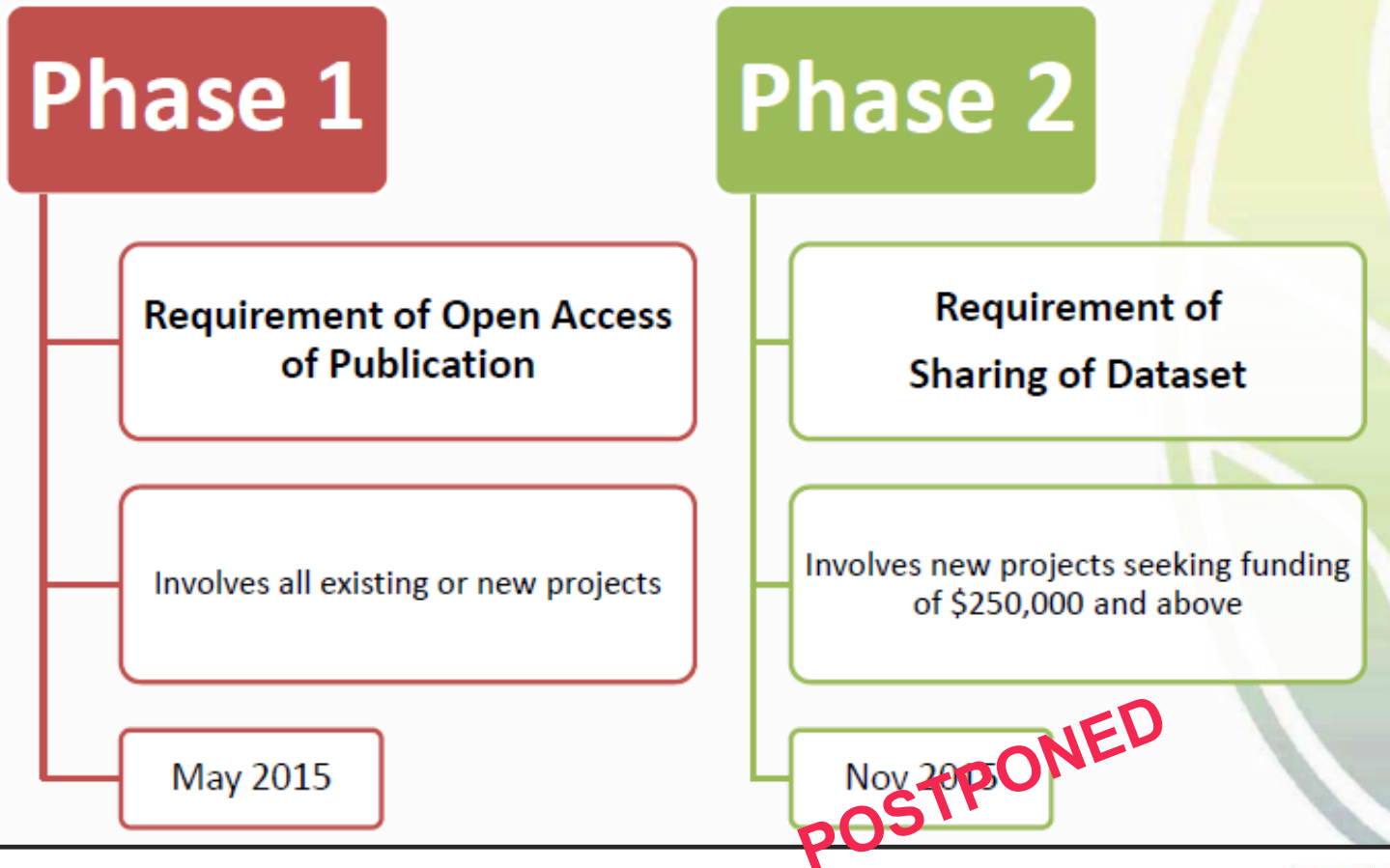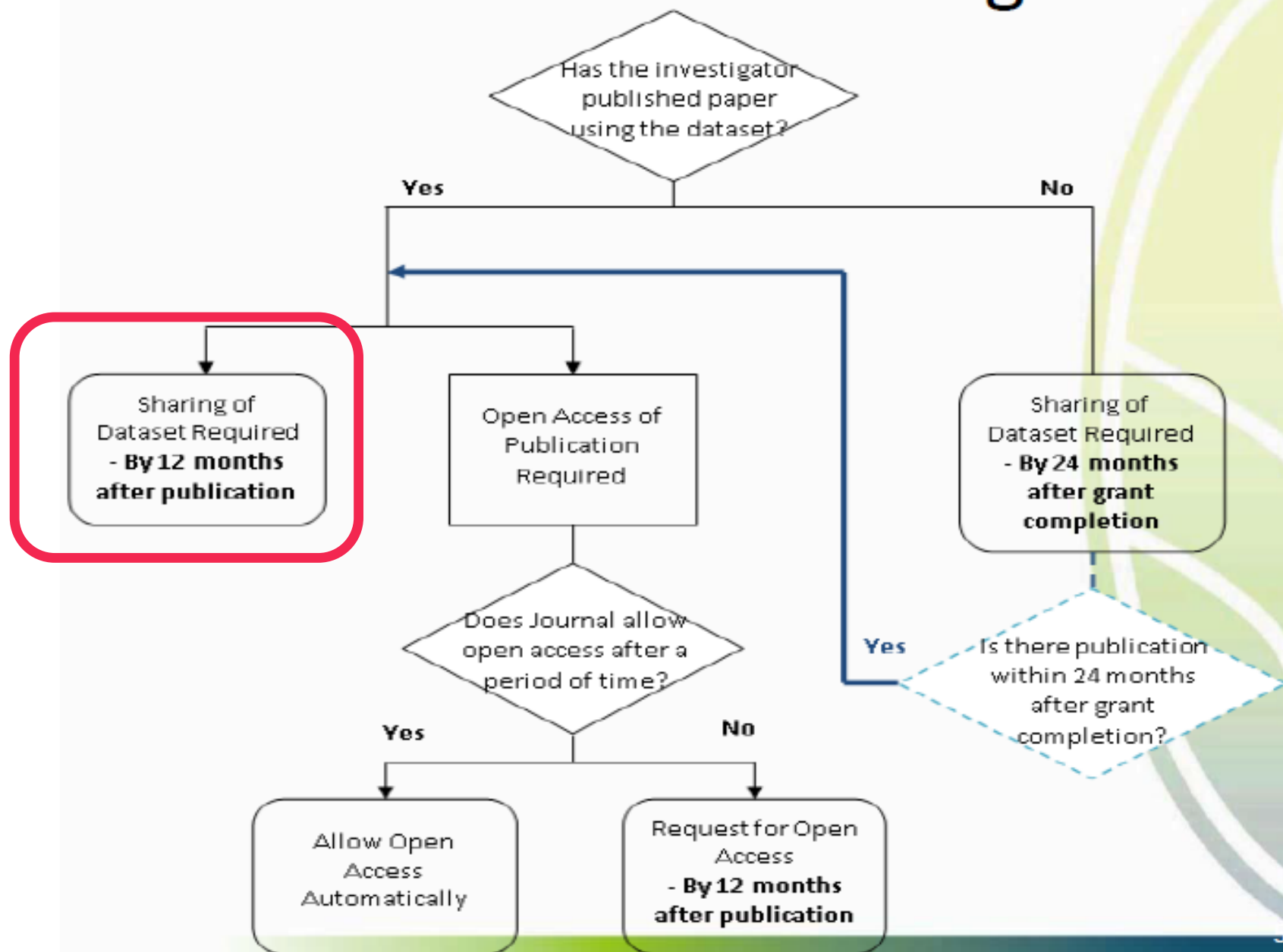**Digital Projects**

Citation Service

Copyright

National Medical Research Council (NMRC)

Workflow of Sharing

NTU RESEARCH DATA MANAGEMENT MODEL

Policies and Guidelines
- NTU Research Data Policy
- Data Governance
- Open Access Data

Technical Infrastructure
- NTU Data Management Plan in RIMS
- NTU Research Data Repository
- NTU Electronic Lab Notebook

Service Infrastructure
- Data Management Plan Writing Advisory
- Data Curation for Long-term Preservation & Access
- Data Literacy
- Data Management Advisory

NTU Researchers	Research Integrity Office	Library	Centre for IT Services	Research Support Office

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NTU RESEARCH DATA POLICY

- Provides **clarity** on **institution's expectations** and **responsibilities** of relevant parties

  - Drafted by NTU Libraries in consultation with Research Support Office (RSO), Research Integrity Office (RI) and Centre for IT Services (CITS)

  - Available at Research Integrity webpage (http://research.ntu.edu.sg/ResearchIntegrity/) and NTU Policy Portal in Intranet ^{upcoming}

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NTU Research Data Policy Briefing for NTU Faculty
14 Apr & 1 Sept 2016

University Librarian

Research Director, Research Integrity Office

NTU Research Data Policy

- A research integrity initiative
- National Medical Research Council requested grantee institutions for their policies in Feb 2016
- Implemented 14 Apr 2016
- Open access data sharing by default
  - no later than paper publication
  - On upcoming NTU repository or other recognised open access data repositories (eg. those specified by funding agencies or journal publishers)
  - CC-BY-NC (Creative Commons-attribution-non-commercial) license is recommended

UK Institutional Research Data Policies

HE Institution in chronological order	Date the policy was adopted	Definitions — Offers definitions of key RDM terms, i.e. "data", "documentation"	Support — Broadly defines the role institution plays in supporting RDM and outlines RDM responsibility of researchers	DMP — Specifies a requirement to complete a DMP (either institutional or funder)	Scope — Policy specifies who it covers	Ownership — Contains a statement on institutional ownership of research data	External — Contains a statement on the primacy of external funding requirements	Criteria — Specifies criteria on what data and documentation is required to be retained	Retain — Contains a statement on length of time data should be kept	Ethics — Contains a statement on the ethical use/reuse of data, particularly how it affects potential reuse.	Access — Contains a statement on how data will be accessed	Open — Contains a statement on data availability	Costs — Contains a statement on the costs of RDM	Review — States it is subject to periodic review
University of Birmingham	2009 October	○	◐	○	●	●	◐	◐	●	●	●	●	○	●
University of Edinburgh	2011 May	○	●	●	◐	○	○	●	○	●	◐	●	○	○
University of Northampton	2011 June	●	●	◐	●	○	●	○	●	○	◐	●	○	○
University of Hertfordshire	2011 September	●	●	●	●	●	○	◐	●	●	●	●	○	●
University of Warwick	2011 November	◐	●	◐	●	○	●	●	●	●	◐	●	○	◐
Glyndwr University	2011 December	○	○	◐	◐	○	○	○	○	●	◐	○	○	●
University of Southampton	2012 February	●	○	○	●	●	●	●	●	●	◐	●	○	○
University of East London	2012 March	○	●	●	◐	○	◐	◐	●	●	●	●	●	●
Brunel University	2012 March	○	●	●	●	○	○	○	○	●	◐	●	○	○
University of Essex	2012 April	○	●	●	●	○	○	○	○	●	●	●	○	●

Horton, L and DCC (2014) 'Overview of UK Institution RDM Policies', Digital Curation Centre. Available at: http://www.dcc.ac.uk/resources/policy-and-legal/institutional-data-policies

Overview of UK Institution RDM Policies

Category	Coverage	Su Nee's score
Ethics	Contains a statement on the ethical use/reuse of data, particularly how it affects potential reuse.	26.5
Support	Broadly defines the role institution plays in supporting RDM and outlines RDM responsibility of researchers	26
DMP	Specifies a requirement to complete a DMP (either institutional or funder)	26
Open	Contains a statement on data availability	25.5
Access	Contains a statement on how data will be accessed	25
Scope	Policy specifies who it covers	22
External	Contains a statement on the primacy of external funding requirements	21
Retain	Contains a statement on length of time data should be kept	19
Review	States it is subject to periodic review	17
Defnitions	Offers definitions of key RDM terms, i.e. "data", "documentation"	15
Criteria	Specifies criteria on what data and documentation is required to be retained	15
Ownership	Contains a statement on institutional ownership of research data	8

Reference: Horton, L and DCC (2014) 'Overview of UK Institution RDM Policies', Digital Curation Centre. Available at: http://www.dcc.ac.uk/resources/policy-and-legal/institutional-data-policies

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NTU Research Data Policy defines the following:

- Ownership
- Data management plan
- Retention
- Disposal
- Deposit
- Data sharing

Roles & Responsibilities

- **Principal Investigators (PIs)**
- Colleges and Schools
- Research Support Office (RSO)
- Library (LIB)
- Centre for IT Services (CITS)

NTU RESEARCH DATA POLICY – RESEARCH SUPPORT OFFICE #6.3

- **IMPLEMENT** and **COORDINATE** execution of the Research Data Policy

- Ensure Policy is **UPDATED** to take into account the latest funder requirements and national research directives and guidelines

NTU RESEARCH DATA POLICY – LIBRARY #6.4

- Provide **TRAINING** and **ADVICE** on research data management

- Develop, revise and maintain the **NTU DMP TEMPLATE** and other data management tools

- Develop and manage the **NTU OPEN ACCESS DATA REPOSITORY** and maintain the Registry of NTU Research Data deposited in external open access data repositories

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NTU RESEARCH DATA POLICY – CITS #6.5

- Provide **TECHNICAL SUPPORT** to maintain all **SYSTEMS** required for compliance with the research data policy

- Advise and make available **STORAGE OF RESEARCH DATA** where necessary throughout the data life cycle of a research project

- Provide **SOFTWARE** to support effective research data management

Data Management Plan– What & Why?

DMP is a systematic plan written by the researcher on how they will collect, keep and use their data as well as enabling others to use their data.

- Identify potential data management issues for various stages of data lifecycle
- Identify additional resources needed
- Ensure continuity
- Facilitate proper record keeping
- Allow for validation
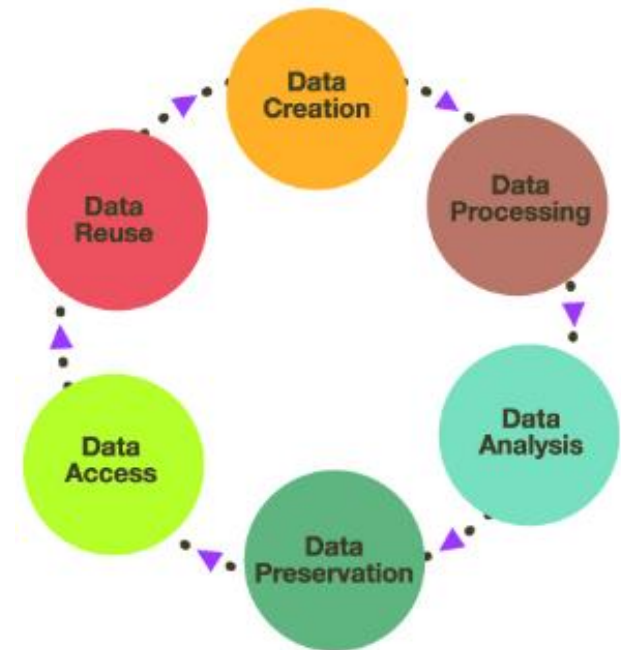
Research Data Lifecycle

10 QUESTIONS IN NTU DMP TEMPLATE (I)

ABOUT THE DATA

1. Types, Formats & Collection Methods of Data
What data will you be collecting and how?

2. Processing & Transformation of Data
How will the data be used and managed in your research project?

3. File Extensions & Software/ Tools
a. Check the relevant file extensions that you will be using (you may choose more than one)
b. What software(s) and/or tool(s) is/are needed to process/read the file(s)?
c. Where can this/these software(s) and/or tool(s) be obtained?

4. Confidentiality, Privacy & Security of Data
If your data is sensitive, how will you be managing and using it?

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10 QUESTIONS IN NTU DMP TEMPLATE (II)

ACCESS TO DATA
5. Access & Usage Restrictions
Will there be restrictions on accessing & sharing your final research data?

10 QUESTIONS IN NTU DMP TEMPLATE (III)

METADATA AND DOCUMENTATION

6. Metadata & Standards
What metadata and/or data standards will you be using to describe your data?

7. Data Documentation
What documentation will you be providing to facilitate a better understanding of the project data?

DATA STORAGE AND PRESERVATION

8. Data Storing
Where and how are you storing the data during the project lifetime?

9. Backup & Versioning Control
What backup and versioning control procedures will you be undertaking?

10. Long-term Storage & Preservation
a. What are your plans for storing your working data (physical and digital copies) other than your final dataset after the completion of your project?
b. I will store the final research data in: NTU Data Repository; or another open data repository and its URL is: __

NTU DATA MANAGEMENT PLAN (DMP)

- Guide for each question

Question 1: What data will you be collecting and how?

- Describe type of data e.g. quantitative, qualitative, survey data, experimental measurements, models, images, audiovisual data, samples etc.
- Describe format of data e.g. text, numeric, audio-visual, models, computer code, discipline-specific, instrument-specific.
- Describe data collection method e.g. observational, experimental, simulation, derived/compiled.
- How stable is the data? Does the data ever change or grow?
- Are there any existing data that you will be using? This could include data from earlier projects or third-party sources. Provide the title, author, date, URLs/name of these sources. Do you need to pay to reuse existing data? Are there any restrictions (copyright or licensing) on the reuse of third-party data?

Additional Information:
- You may refer to Re3data for a list of data repositories where you might find existing relevant third-party research data.

NTU DATA MANAGEMENT PLAN (DMP)

- Sample text for each question

Question 1: What data will you be collecting and how?

SAMPLE 1:
Class observation data, faculty interview data and student survey data will be collected. Observations will be diarised and interviews will be recorded, and then each will be coded using Ethnograph. Survey data will be captured using Qualtrics. The data will be collected during the research period (Jan 2013 - Dec 2013).

Source:
Cmor, D., & Marshall, V. (2006). Librarian Class Attendance: Methods, Outcomes and Opportunities. 27th Annual IATUL Conference.

SAMPLE 2:
Datasets to be collected are mainly experimental and observational. Most datasets will be collected 1-3 times per year (i.e. production and decomposition, ecophysiological functional traits, soil extractable nutrients and mineralization rates) for a period of 3 years. Temperature, light availability and soil moisture at multiple depths in the experiment will be logged every 15 minutes, these data will be stored on local data loggers and downloaded every two weeks.

Source:
Cleland, E., Lipson, D., & Kim, J. The influence of plant functional types on ecosystem responses to altered rainfall. Retrieved Nov 24, 2015, from UC San Diego Sample NSF Data Management Plans website:https://libraries.ucsd.edu/services/data-curation/data-management/dmpsample/DMP%20Example%20Cleland.pdf

NTU DATA MANAGEMENT PLAN (DMP) FAQ

1. What is a Data Management Plan?

   A Data Management Plan (DMP) outlines the steps you intend to take in managing the data you collect or generate in the entire course of your research project. It provides information on what the data is about, how it will be processed, the security measures to be taken, where and when it will be stored and preserved and who can have access and use of the data.

2. Why do I need to submit a NTU DMP?

   The NTU Research Integrity Policy requires all NTU researchers to maintain full and accurate records of their research for a minimum period of 10 years. As research data is an important component of your research, your DMP is an important record of your research that you need to submit to fulfil the NTU Research Integrity Policy.

3. What are the benefits of having a DMP?

   A systematic approach in planning the life-cycle of your data will help to alert you on possible data collection and management issues so that you can prepare for them before the project begins. In addition, it will help in the continuity of your research project when staff leaves or new staff start work. Importantly, adherence to data management processes will ensure that the

Data Management Plan Writing Workshops

http://blogs.ntu.edu.sg/lib-datamanagement/workshop/

- Monthly sessions
- Attended by PIs (and/or research team members)
- 2-hour hands-on

LIBRARY SUPPORT ON DMP WRITING

- **DMP WRITING WORKSHOPS**

- one-to-one **CONSULTANCY**, face-to-face or via email.

- **Research Data Management GUIDE** via the NTU Libraries homepage
http://www.ntu.edu.sg/Library/

- Email: **library@ntu.edu.sg**
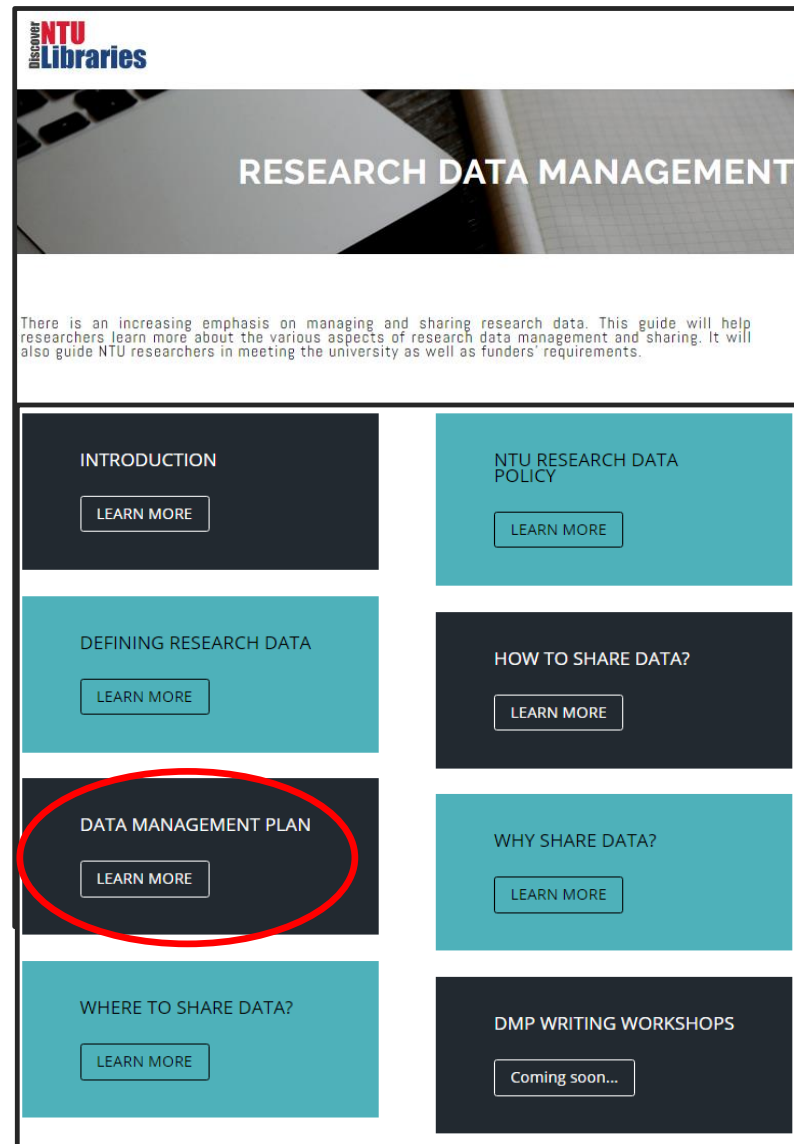
There is an increasing emphasis on managing and sharing research data. This online guide will help researchers learn more about the various aspects of research data management and sharing. It will also guide NTU researchers in meeting the University as well as funders' requirements. An overview of the NTU Data Management Plan Template (with guides and samples) is also available here.

Research Data Management Online Guide

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Library newsletter

NTU RESEARCH DATA POLICY: HOW TO GET STARTED?

The NTU Research Data Policy was launched in Apr 2016. The implementation of the Policy will require all NTU researchers to adhere to guidelines in planning their funded research projects. It will ensure systematic planning in preserving and managing research data in NTU. The Library is pleased to play a role in the drafting of the policy and putting in place systems for some of its implementation.

What is the NTU Research Data Policy?
The policy clarifies NTU's expectations on the management of research data by researchers. It lays down the responsibilities of principal investigators, colleges and schools, Research Support Office, NTU Libraries and Centre for IT Services. It also provides guidance to NTU researchers in following good research data management practices.

But I'm not the Principal Investigator (PI)
As long as you participate in research work that involves the use, collection or generation of research data, you still need to pay attention to the NTU Research Data Policy. Whether you are the PI or not, you can get started by considering the following:

1 Familiarise yourself with the NTU Research Data Policy

Firstly, it is important that you understand the University's requirements now, so that you will make the necessary provisions and considerations towards the fulfilment of your obligations. The Policy provides guidelines on matters such as research data ownership, retention, disposal, deposit, sharing, etc. If you are a PI, you may wish to alert and brief your research team on guidelines and requirements at the very beginning of your research project. It usually requires the effort of the entire team to properly manage research data in a manner that allows it to be reusable by yourself, your research team and others, in accordance with funders' requirements and NTU policy.

Access the Policy via the NTU Research Integrity webpage at research.ntu.edu.sg/ ResearchIntegrity/ or by scanning the QR code.

2 Submit a Data Management Plan (DMP)

Secondly, you need to be aware of the requirement to prepare a data management plan (DMP) using the NTU DMP template in RIMS for each new research project. The DMP is a formal document where you outline the steps that you will be taking to collect, use, manage, keep, preserve and share the research data for a specific research project.

To get a head start on the NTU DMP template, you may like to take a look at the online Research Data Management Guide, accessible via the NTU libraries homepage. There is an overview of the 10 questions guides and samples, as well as FAQs.

If you are required to write a DMP but not sure of where or how to start, we welcome you to attend a DMP Writing Workshop conducted by the Library. At the end of the workshop, you should have completed a draft DMP for a specific research project. Register via the online Research Data Management Guide. For more help and advice, you can also send an email to library@ntu.edu.sg.

3 Prepare Research Data For Open Sharing

The Policy requires open data sharing unless agreements with external parties prevent such sharing.

You may start by incorporating good research data management practices in your research work. These could include creating supporting documentation to explain how you organise or code your data; establishing consistent and meaningful file naming conventions; identifying back-up and versioning policies and procedures, etc. This is to help prepare your research data for open sharing later.

Re-printed from the Aug 2016 issue of LibraryXpress. To read the full issue, visit http://bit.ly/2blG6qc.

WRITING YOUR DATA MANAGEMENT PLAN: ARE YOU READY?

More and more research funding agencies in US, UK and Australia are starting to require data management and sharing plans for grant applications. Examples include the National Science Foundation (NSF) and National Institutes of Health (NIH) in US, Wellcome Trust in UK and Australian Research Council in Australia. The National Medical Research Council in Singapore has also indicated that it would be having similar requirements for new grant applications soon.

But I Don't Know How to Write a Data Management Plan!
If you need to write a data management plan (DMP) and would like some tips, the NTU Libraries would be glad to help. We are conducting workshops and providing consultancy for NTU researchers who need help to write such a a plan. At the end of the workshop or consultancy, you would be able to identify the key elements for an effective data management plan and write one for your own research proposal.

What is a Data Management Plan?
A DMP is a formal document you develop at the start of your research project which outlines all aspects of your data (i.e. what you will do with your data during and after your research project). Key elements likely to include the type of data you will be collecting and how it will be collected, in a DMP are whether there will be restrictions on accessing and sharing your data, the documentation you will be

providing to facilitate a better understanding of the project data, where and how would the data be stored during and post project.

Developing a DMP may seem daunting. However, it is a vital step in your research process that you cannot afford to skip. It helps you ensure your research data are accurate, complete, reliable, and secure both during and after you complete your research.

Good Stewardship of Research Data
Research data is one very important component of research. Whether you are working alone or in a team, have you taken the necessary measures to effectively manage your research data? What if your laptop stops working? What if you are accused of fraud? What if someone in your lab quits? What if you need to reuse your old data? Good stewardship of research data can bring many benefits to the researchers as well as the organisation. According to MANTRA (a free online research data management course provided by the University of Edinburgh at bit.ly/2bXJhcN, the benefits of managing data include:

- Ensuring research integrity and reproducibility
- Increasing your research efficiency
- Saving time and resources in the long run
- Enhancing data security and minimising the risk of data loss
- Ensuring research data and records are accurate, complete, authentic and reliable
- Preventing duplication of effort by enabling others to use your data
- Complying with practices conducted in industry and commerce
- Facilitating the analysis of change, by providing data with which data at other points in time can be compared
- Meeting funding body grant requirements (if applicable)

Questions from the audience

- Will there be a national drive in data sharing? Like those in US, UK and Australia
- When researchers leave NTU, can data still be used by researchers? Can others still cite these researchers?
- What about data that has already been collected?
- How long is considered as long term?
- What formats are not considered research data?
- Why should researchers open themselves to scrutiny by making data publicly available?
- The first video actually referring to research data repository, regardless on whether the data has been used for publication or not. Will NTU has such system?
- Under content analysis, my data could be newspaper articles which are the copyright of publishers. In such a case what do I have to share?

Questions from the audience

- Does the data need to be "peer reviewed"?
- What is considered as a 'recognized open access data repository'?
- Wouldn't funding agency has the final say on whether research data can be shared or reused?
- When is workshop on cc-by thing? We need to understand these?
- Research product say a device or a sample like thin films, crystals etc also form the part of data set. Do we need to share them? If yes where is repository?
- Why did you choose the CC-BY-NC license and not a less restrictive one such as CC-BY? shouldn't we encourage maximum reuse of data to advance discovery?
- Since sharing is the main intention behind OA data, shouldn't all the data sets submitted to OA repositories be in machine-readable formats?
- What resources would I need for data sharing?
- How does the upcoming NTU research data repository look like?
- Who owns my data? Myself, the publisher, the grant dispenser or my institution?

What challenges would you foresee in open access data sharing?

- How is it recognized for tenure ad promotion? Same level as a paper on a journal?
- The cyberattack that may cause threats to our research depositories in the future
- Conflict with patents and collaboration contracts that involves monetization of the research output
- Lack of understanding or training in data classifications and uploading.
- Data might only be accessible using proprietary software
- You have helpdesk to guide us?
- Misuse of data which I shared
- Storage
- Data being plagiarized
- Ethical issues
- Misinterpretation of data
- Need time to put in, need to sort data more clearly for other people to read.

What challenges would you foresee in open access data sharing?

- Extra time and effort
- Need to contact the data owner for clarification of how the data was collected (methods, accuracy)
- Uploading big datasets
- Not sure why is final data
- Security
- Don't know how to anonymize sensitive data
- Data theft and non-citation of data creator
- Data size as some data can be 1TB or close to it
- Depositors may not provide detailed enough metadata
- Lazy to upload data
- Safety
- It'll be so costly
- Hacking
- Lack of citations attribution
- Time
- Filling the metadata form

What would make data sharing easier?

- Training by professionals to all researchers including fyp students .
- Universal data format
- Good trainer and training program
- Less things to input. Can input eg journals that were published. Don't have to type many things
- Researchers should be more proactive in doing all the preparatory work needed to share their data
- Demonstration of sharing story from peers within university or other institutes
- Systematic indexes and classifications
- Understanding need rationale logic and how to do it.
- Recognition of being an open data PI.
- Incentives/recognition for sharing data open
- Administrative support for meta tagging and uploading
- Provide a template where we can just fill-in the necessary details and upload our data to be available online

What would make data sharing easier?

- Knowledge Services dept to help us
- Easy to use platform
- Helpdesk to render quick help….
- A clearer explanation on the meta-data input form or less required fields on it.
- More staff to help
- Budget to hire data managers
- Make it optional
- Pay bonus :^)
- Support from the library!
- Give time
- User friendly interface
- Simple data storage mechanism
- Availability of resources.
- Clear guidelines for sharing
- Clear instructions
- Right culture and mindset

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Publishing and Sharing Sensitive Data

Existing or new

Right to publish

Make non-sensitive

Consent

License

Metadata

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NEXT STEPS …

NTU Open Access Research Data Repository

- Upcoming in early 2017
- Local installation using Dataverse – open source software by Harvard University
- For final datasets that support findings reported in publications

CIAT - International Center for Tropical Agriculture Dataverse (CGIAR)   CIAT - Eco-efficient agriculture for the poor

==Within a child dataverse==

Harvard Dataverse > CIAT - International Center for Tropical Agriculture Dataverse > **Digital mapping of soil properties in the West of Honduras, Central America.**

⬛ Metrics **3 Downloads**

Digital mapping of soil properties in the West of Honduras, Central America.

Da Silva, Mayesse; Monserrate, Fredy; Valencia, Jefferson; Quintero, Marcela; Jarvis, Andy, 2016, "Digital mapping of soil properties in the West of Honduras, Central America.", doi:10.7910/DVN/QVXA7U, Harvard Dataverse, V2

≡ Cite Data ▾

ⓘ Learn a...

EndNote XML

RIS

BibTeX

Description	Digital soil property maps were generated at 30 meters resolution for the West of Honduras in order to dev... (Monserrate et al., 2016). AGRI (from its Spanish words AGua para RIego) is a tool that combines information about climate, relief ... o identify suitable water sources for implementing small irrigation projects. The soil properties ... clay (%), texture class, field capacit... ...pacity (v/v), and curve numbers. A database of 1887 points from González et al. (200... ...d, silt, and clay. This database was also used to determine field capacity, wilting poi... ...t by applying pedotransfer functions according to Saxton & Rawls (2006). A regres... ...ombining 80% of point data with the terrain attributes aspect, mid-slope position, normalized height, plan and profile curvature, slope and topographic wetness index generated from a digital elevation model SRTM of 30 meters resolution. The combination of sand, silt, and clay maps resulted on texture class map. The curve number was mapped using the texture and land cover maps according to Soil Conservation Service of the United States of America (USDA-SCS, 1985). The maps performance was evaluated by the normalized root mean square error (RMSEn) expressed in percentage and using 20% of data point not used for mapping. Clay, sand, silt, field capacity, water holding capacity and wilting point presented error of 16%, 17%, 13%, 19%, 10% and 18% respectively.
Subject	Earth and Environmental Sciences
Keyword	Soil texture , Wilting point , Field capacity, Water holding capacity, Honduras, DEM, Topographic Wetness Index (TWI), Curve numbers, Dry corridor, Soils, Latin America and the Caribbean
Related Publication	Gonzalez, J.P., Jarvis, A., Cook, S., Oberthur, T., Rincon-Romero, M., Bagnell, J., Bernardine, D. 2008. Digital Soil Mapping of Soil Properties in Honduras Using Readily Available Biophysical Datasets and Gaussian Processes, in: Hartemink, A.E., McBratney, A., Mendonça-Santos, M. de L. (Eds.), Digital Soil Mapping with Limited Data. Springer Netherlands, Dordrecht, pp. 367–380. doi:10.1007/978-1-4020-8592-5

==Data citation==

==Exporting data citation==

==Related publication==

Dataset Persistent ID — The unique persistent identifier for a Dataset, which can be ... or DOI in Dataverse. — doi:10.7910/DVN/QVXA7U

DOI

Publication Date — 2016-10-04

Title — Digital mapping of soil properties in the West of Honduras, Central Americ...

Publication date

Author

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Valencia, Jefferson (International Center for Tropical Agriculture - CIAT)
Quintero, Marcela (International Center for Tropical Agriculture - CIAT)
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Author with ORCID

Contact

ℹ Use email button above to contact.

CIAT Data and Information team (International Center for Tropical Agriculture - CIAT)

Description

Digital soil property maps were generated at 30 meters resolution for the West of Honduras in order to develop the AGRI v.1 tool (Monserrate et al., 2016). AGRI (from its Spanish words AGua para RIego) is a tool that combines information about climate, relief, soils, land cover, and hydrology to identify suitable water sources for implementing small irrigation projects. The soil properties mapped were sand (%), silt (%), clay (%), texture class, field capacity (v/v), wilting point (v/v), water holding capacity (v/v), and curve numbers. A database of 1887 points from González et al. (2008) were used to generate the maps of sand, silt, and clay. This database was also used to determine field capacity, wilting point and water-holding capacity for each point by applying pedotransfer functions according to Saxton & Rawls (2006). A regression kriging approach was performed by combining 80% of point data with the terrain attributes aspect, mid-slope position, normalized height, plan and profile curvature, slope and topographic wetness index generated from a digital elevation model SRTM of 30 meters resolution. The combination of sand, silt, and clay maps resulted on texture class map. The curve number was mapped using the texture and land cover maps according to Soil Conservation Service of the United States of America (USDA-SCS, 1985). The maps performance was evaluated by the normalized root mean square error (RMSEn) expressed in percentage and using 20% of data point not used for mapping. Clay, sand, silt, field capacity, water holding capacity and wilting point presented error of 16%, 17%, 13%, 19%, 10% and 18% respectively.

Subject — Earth and Environmental Sciences

Keyword

Keywords

Soil texture (AGROVOC) http://aims.fao.org/aos/agrovoc/c_7199
Wilting point (AGROVOC) http://aims.fao.org/aos/agrovoc/c_32626
Field capacity (AGROVOC) http://aims.fao.org/aos/agrovoc/c_32445
Water holding capacity (AGROVOC) http://aims.fao.org/aos/agrovoc/c_25304
Honduras (AGROVOC) http://aims.fao.org/aos/agrovoc/c_3651
DEM
Topographic Wetness Index (TWI)
Curve numbers
Dry corridor
Soils (CIAT Research Area)
Latin America and the Caribbean (CIAT Region)

Topical classification

Metadata

Topic Classification — Land use mapping (AGROVOC) http://aims.fao.org/aos/agrovoc/c_9000100

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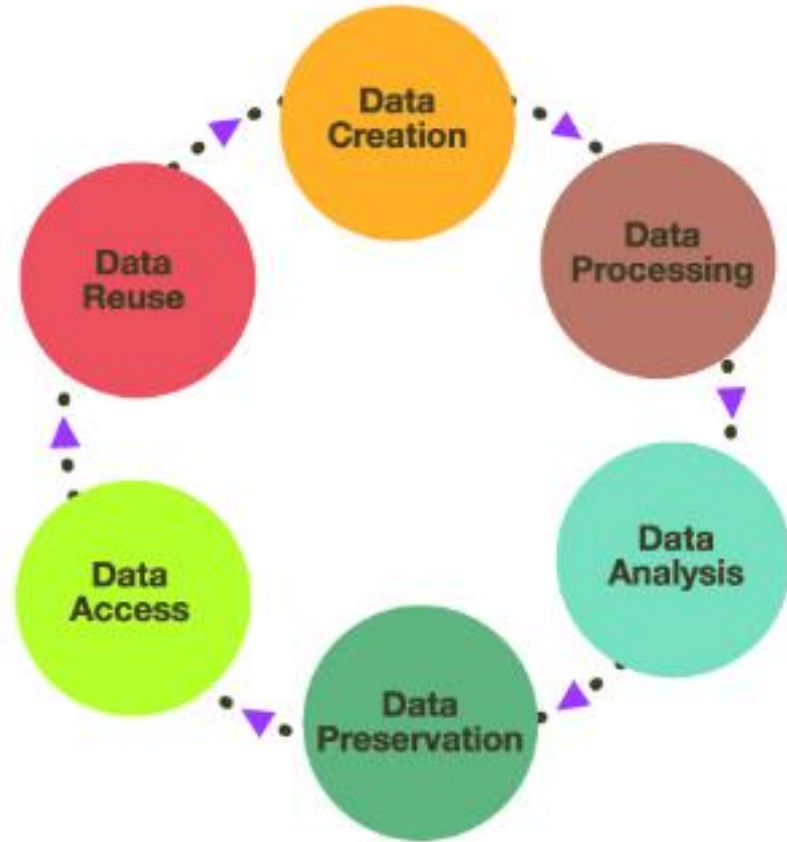
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