Institutional Open Data Policy and Services

Goh Su Nee
Senior Assistant Director (Scholarly Communication)
NTU Libraries
Nanyang Technological University, Singapore
National Medical Research Council (NMRC)

Implementation – 2-Phase Approach

Phase 1

Requirement of Open Access of Publication
- Involves all existing or new projects
- May 2015

Phase 2

Requirement of Sharing of Dataset
- Involves new projects seeking funding of $250,000 and above
- Nov 2015

POSTPONED
Workflow of Sharing

- Has the investigator published paper using the dataset?
  - Yes
    - Sharing of Dataset Required - **By 12 months after publication**
  - No
    - Open Access of Publication Required
      - Does Journal allow open access after a period of time?
        - Yes
          - Allow Open Access Automatically
        - No
          - Request for Open Access - **By 12 months after publication**

- Sharing of Dataset Required - **By 24 months after grant completion**
  - Is there publication within 24 months after grant completion?
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
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**
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
DCC ‘QUICKSTART’ LEAFLET

FIVE STEPS TO DEVELOPING A RESEARCH DATA POLICY

January 2014

Policy recommendations for open access to research data

www.recodeproject.eu
# UK Institutional Research Data Policies

<table>
<thead>
<tr>
<th>HE Institution in chronological order</th>
<th>Date</th>
<th>Definitions</th>
<th>Support</th>
<th>DMP</th>
<th>Scope</th>
<th>Ownership</th>
<th>External</th>
<th>Criteria</th>
<th>Retain</th>
<th>Ethics</th>
<th>Access</th>
<th>Open</th>
<th>Costs</th>
<th>Review</th>
</tr>
</thead>
<tbody>
<tr>
<td>University of Birmingham</td>
<td>2009 October</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>University of Edinburgh</td>
<td>2011 May</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>University of Northampton</td>
<td>2011 June</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>University of Hertfordshire</td>
<td>2011 November</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>University of Warwick</td>
<td>2011 December</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Glyndwr University</td>
<td>2012 February</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>University of Southampton</td>
<td>2012 March</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>University of East London</td>
<td>2012 March</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Brunel University</td>
<td>2012 April</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

## Overview of UK Institution RDM Policies

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

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
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?
**ACCESS TO DATA**

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

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:
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

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

http://blogs.ntu.edu.sg/lib-datamanagement/workshop/
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.
NTU RESEARCH DATA POLICY: HOW TO GET STARTED?

The NTU Research Data Policy was launched in April 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.

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.

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, Welcome 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 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/2bUnHNo), 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 minimizing 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
- Feeding the analysis of changes, by providing data with which data at other points in time can be compared
- Meeting funding body grant requirements (if applicable)
Discussion Forum: Open Access Research Data Sharing
Requirements: Are you ready?

27 Oct 2016 (OA Week)
Organised by NTU Libraries

“What challenges would you foresee in open access research data sharing?”

“What would make data sharing easier?”

goo.gl/Gm82r8
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 have 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 have 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
Publishing and Sharing Sensitive Data

Reference:
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
University dataverse

Share, publish, and archive your data. Find and cite data across all research fields.

Child dataverses

Search

Facet browsing

Sort

Name (A-Z)
Name (Z-A)
Newest
Oldest

Dataverse Category
- Research Project (515)
- Researcher (511)
- Organization or Institution (162)
- Journal (124)
- Teaching Course (14)

Metadata Source
- Harvested (42,548)

Publication Date
- 2015 (15,739)
- 2011 (10,024)
Within a child dataverse

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

Da Silva, Mayesse; Monserrate, Freddy; Valencia, Jefferson; Quintero, Marcela; Jarvis, Andy, 2016, "Digital mapping of soil properties in the West of Honduras, Central America.", doi:10.7910/DVN/QVX47U, Harvard Dataverse, V2

Data citation

Exporting data citation

Related publication

Related Publication

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

Da Silva, Mayessa (International Center for Tropical Agriculture - CIAT)
Monserrate, Fredy (International Center for Tropical Agriculture - CIAT)
Valencia, Jefferson (International Center for Tropical Agriculture - CIAT)
Quintero, Marcela (International Center for Tropical Agriculture - CIAT)
Jarvis, Andy (International Center for Tropical Agriculture - CIAT) - ORCID: orcid.org/0000-0001-6543-0798

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

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.

Earth and Environmental Sciences

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)

Land use mapping (AGROVOC) http://aims.fao.org/aos/agrovoc/c_9000100
Da Silva, Mayesse (International Center for Tropical Agriculture - CIAT)
Monserrate, Fredy (International Center for Tropical Agriculture - CIAT)
Valencia, Jefferson (International Center for Tropical Agriculture - CIAT)
Quintero, Marcela (International Center for Tropical Agriculture - CIAT)
Jarvis, Andy (International Center for Tropical Agriculture - CIAT) - ORCID: orcid.org/0000-0001-6543-0798
<table>
<thead>
<tr>
<th>#</th>
<th>File Name</th>
<th>Description</th>
<th>Size</th>
<th>Date</th>
<th>Downloads</th>
</tr>
</thead>
<tbody>
<tr>
<td>1a</td>
<td>sand.jpg</td>
<td>JPEG Image - 1.5 MB - Oct 4, 2016 - 2 Downloads</td>
<td>1.5 MB</td>
<td>Oct 4, 2016</td>
<td>2</td>
</tr>
<tr>
<td>1b</td>
<td>sand.asc</td>
<td>Fixed Field Text Data - 834.1 MB - Oct 22, 2016 - 0 Downloads</td>
<td>834.1 MB</td>
<td>Oct 22, 2016</td>
<td>0</td>
</tr>
<tr>
<td>1c</td>
<td>sand.zip</td>
<td>ZIP Archive - 150.2 MB - Oct 22, 2016 - 0 Downloads</td>
<td>150.2 MB</td>
<td>Oct 22, 2016</td>
<td>0</td>
</tr>
<tr>
<td>2a</td>
<td>Clay.jpg</td>
<td>JPEG Image - 1.6 MB - Oct 4, 2016 - 0 Downloads</td>
<td>1.6 MB</td>
<td>Oct 4, 2016</td>
<td>0</td>
</tr>
<tr>
<td>2b</td>
<td>Clay.asc</td>
<td>Fixed Field Text Data - 834.1 MB - Oct 22, 2016 - 0 Downloads</td>
<td>834.1 MB</td>
<td>Oct 22, 2016</td>
<td>0</td>
</tr>
<tr>
<td>2c</td>
<td>Clay.zip</td>
<td>ZIP Archive - 152.9 MB - Oct 22, 2016 - 0 Downloads</td>
<td>152.9 MB</td>
<td>Oct 22, 2016</td>
<td>0</td>
</tr>
<tr>
<td>3a</td>
<td>Silt.jpg</td>
<td>JPEG Image - 1.6 MB - Oct 4, 2016 - 0 Downloads</td>
<td>1.6 MB</td>
<td>Oct 4, 2016</td>
<td>0</td>
</tr>
<tr>
<td>3b</td>
<td>Silt.asc</td>
<td>Fixed Field Text Data - 836.0 MB - Oct 22, 2016 - 0 Downloads</td>
<td>836.0 MB</td>
<td>Oct 22, 2016</td>
<td>0</td>
</tr>
</tbody>
</table>
### Example with some files locked up

#### 00235Sears-Patterns-Box 5 of 6-SELECT.zip
- **Type:** ZIP Archive - 23.3 MB - Jan 22, 2015 - 23 Downloads
- **MDS:** 41035d55db83f02d30123f32950a75f
- **Description:** Transcripts for subjects 707, 709, 720, 723, 727, 728, 745, and 746.

#### 00235Sears-Patterns-BoxCoverSheets.pdf
- **Type:** Adobe PDF - 22.3 KB - Jun 20, 2016 - 51 Downloads
- **MDS:** db30b45a65d4621059d59a5597093
- **Description:** Describes contents of each box of a paper data set.

#### 00235Sears-Patterns-Codebook.pdf
- **Type:** Adobe PDF - 10.5 MB - Nov 27, 2007 - 87 Downloads
- **Description:** Description of coded data variables.

#### 00235Sears-Patterns-Data.zip
- **Type:** SPSS Portable - 348.8 KB - Nov 27, 2007 - 27 Downloads
- **Description:** SPSS portable numeric data file.

#### 00235Sears-Patterns-Data.tab
- **Type:** Tabular Data - 309.0 KB - Nov 27, 2007 - 20 Downloads
- **Description:** 372 Variables, 379 Observations. Data for Study in Tab Delimited Format.

#### 00235Sears-Patterns-Measures.pdf
- **Type:** Adobe PDF - 588.8 KB - Nov 27, 2007 - 78 Downloads
- **Description:** Blank measures for study.

#### 00235Sears-Patterns-MemoOfAgreement.pdf
- **Type:** Adobe PDF - 443.5 KB - Nov 27, 2007 - 70 Downloads
- **Description:** Legal agreement between data depositor and Murray Archive.
What else?

- Dataverse workshops
- RDM training for subject librarians
- Data literacy programme
- Advocacy
- Metrics
- Lots more
TERIMA KASIH