Malaysia Open Science Platform

Open science today for new science tomorrow

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the value of research data increases with use

minimally restrictive and voluntary common-use license

The Beijing Declaration on Research Data

The Beijing Declaration supports international efforts to make research data as open as possible and only as closed as necessary. It seeks to make data Findable, Accessible, Interreusable, and Reusable (FAIR) on a global basis and, wherever possible, automatically processable by machines. Although this Declaration is relevant mostly for research data that are generated through public funding; there are also instances in which privately funded data are made closed on a global basis. These principles would also apply. In addition, data not initially generated for research may be used in research at a later stage. The Beijing Declaration endorses many existing research data policies and management practices that have been promoted by previous declarations and statements, and they are included as references in the Appendices. The participants in the September 2019 policy meeting have produced the following set of ten principles:

1. Research is increasingly driven by data that are beyond human processing alone. Researchers therefore should have access to diverse, trustworthy, and reusable sources of data that are readily available and machine actionable. Data stewardship capacity building and comprehensive policies that promote the creation, dissemination, preservation, and above all the global reuse of data and information are essential, including sustained support for the required infrastructure and expertise.

2. Research data have global public good characteristics. A pure public good cannot be deprived by use (also called non-rivalrous) and cannot be excluded from use. Research data cannot be depleted, but can be restricted in use, although exclusions of reuse by others can be very inefficient and controversial, especially if the data are generated by public funding. The value of research data increases with use.

3. Publicly funded research data should be findable online to build an international data commons. Findable data require comprehensive metadata descriptions and persistent identifier tags, because data that cannot be easily located by potential users—whether by humans or machines—are of limited value.

Together, principles three to seven result in “FAIR” data that are Findable, Accessible, Interreusable, and Reusable—both for machines and humans.

4. Publicly funded research data are, by default, in the public interest and should be accessible to the greatest extent possible for international reuse. They were created or collected on behalf of the public that paid for them, and thus should be as open as possible and only as closed as necessary. This is even more important in cases where the data relate to issues covered by the UN landmine agreements.

5. Publicly funded research data should be interoperable and, preferably without further manipulations or conversion, to facilitate their broad reuse in scientific research. Software, instruments, and data formats should be well-documented and should not impose any proprietary lock-in that restricts reuse. Data should be described with rich metadata and should use community-recognized terminologies to maximize interoperability and reuse.

6. Despite strong reasons for making research data as open as possible, there are legitimate reasons to restrict access to and reuse of data, including interests of national security, law enforcement, privacy, confidentiality, intellectual property, and Indigenous data governance, among others. Restrictions should have an express justification and research data otherwise should be open by default on a global basis. If the data need to be closed, an effort should be made to provide responsible and proportionately controlled access.

7. National legislation that exempts research data from copyright or other intellectual property (IP) protections is one way to enable and support reuse of public data. Another way is for researchers to choose a minimally restrictive and voluntary common-use license.

8. Funders of academic and applied research should require the submission of adequate data stewardship plans, including clear guidelines for the provision of long-term availability, accessibility, and conditions for reuse. Open data policies should be accompanied by commensurate penalties for noncompliance as well as appropriate incentives.

9. Activities that address the “divide in scientific production” between less economically advanced regions and those economies with advanced research infrastructure should include access to publicly funded research data and related information. The wider deployment and access to advanced technical research infrastructures is a necessary, but not sufficient, condition to reduce the divide.

10. Research data policies should promote the principles in this Declaration and be coordinated internationally. They should be implemented with clear policy wording and guidelines, specific funding, and a commitment to monitor their impact with the overall objective of building a global FAIR data commons.

as open as possible
as closed as necessary
be open by default
on a global basis

data stewardship plans

address the “divide in scientific production”
What is Open Science?

“An inclusive construct that combines various movements and practices aiming to make scientific knowledge openly available, accessible and reusable for everyone, to increase scientific collaborations and sharing of information for the benefits of science and society, and to open the processes of scientific knowledge creation, evaluation and communication to societal actors beyond the traditional scientific community.” - UNESCO Recommendation on Open Science

It demands science, which includes basic and applied sciences, natural and social sciences and the humanities, to be done with integrity that assures accuracy of research data, in an open, reliable and reproducible fashion.

For Open Science, data sharing is guided by the FAIR principle.

FAIR stands for Findable, Accessible, Interoperable and Reusable. Specifically, FAIR is described as:

a. **Findable** – Data and metadata are easily to find by both humans and computers. Usually this task is enabled by machine-readable persistent identifiers and metadata
b. **Accessible** – Data can be retrieved using the outlined protocols
c. **Interoperable** – System can be used with other tools
d. **Reusable** - Data is well-defined and can be used for different purposes and in different settings
What is Open Science?

**OPEN SCIENCE INFRASTRUCTURES**
shared research infrastructures (including major scientific equipment or sets of instruments, knowledge-based resources, open computational infrastructures that enable data analysis and digital infrastructures) that are needed to support Open Science and serve the needs of different communities.

**OPEN SCIENCE COMMUNICATION**
a range of science communication activities that accompany Open Science practices and that support the dissemination of scientific knowledge to scholars in other research fields, decision-makers, and the public at large.

**OPEN ACCESS TO SCIENTIFIC KNOWLEDGE**
timely, free and affordable access to: i) scientific publication, ii) open research data, iii) open-source software and source code, and iv) open hardware

**OPEN ENGAGEMENT OF SOCIETAL ACTORS**
extended collaboration between scientists and societal actors beyond the scientific community, by opening up practices and tools that are part of the research cycle and by making the scientific process more inclusive and accessible to the broader inquiring society.

**OPEN DIALOGUE WITH OTHER KNOWLEDGE SYSTEMS**
dialogue between different knowledge holders, that recognizes the richness of diverse knowledge systems and epistemologies and diversity of knowledge producers

**FIVE KEY PILLARS OF OPEN SCIENCE**

Source: Draft text of the UNESCO Recommendation on Open Science (SC-PCB-SPP/2021/OS-IGM/WD3)
1. MOSP is initiated by the Ministry of Science, Technology and Innovation (MOSTI), managed by Academy of Sciences Malaysia (ASM) through the Malaysia Open Science Alliance

2. Launched on 7 November 2019 (then MESTECC)

3. A 2-year pilot project (2019 to 2021), linking all 5 Research Universities and Research Institutes under MOSTI

4. The pilot project is to look into the initial 3 main areas:
   a. Landscape studies and Guidelines for Open Science in Malaysia;
   b. Capacity Building and Awareness and
   c. Infrastructure
The Cabinet approved a paper for Malaysia Open Science Platform (tabled by MOSTI) to be initiated on 14 August 2020.

**Aim:**

To gather and consolidate Malaysia’s research data which are valuable national assets in a platform that would enable accessibility and sharing of these research data in accordance with the FAIR principle.
MOSP is a strategic transformative initiative to strengthen Malaysia’s STI Collaborative Ecosystem towards achieving Shared Prosperity Vision 2030 and addressing the United Nations Sustainable Development Goals.
To gather and consolidate Malaysia’s research data which are valuable national assets in a platform that would enable accessibility and sharing of these research data in accordance to the FAIR principle.

Source: MASTIC, 2019

Purpose of MOSP

GERD (1.04%), RM15,060 million (2018)

234,765 research papers indexed by Scopus with more than 1.7 million citation and more than 15,669 domestic patent filed (2001-2017)

3,942 Researchers (2,853 Full Time Equivalent) from 52 Government Research Institutes/Agencies

72,806 Researchers (55,051 Full Time Equivalent) from 100 public and private Institution of Higher Learnings

Source:

i. National Survey of Research and Development (R&D) 2019
ii. National Bibliometric Study 2001-2017
Value of MOSP

- **Responsible Science**
  - Reinforces open scientific inquiry
  - **Promotes research quality and integrity** through reproducibility, transparency and accountability for verification and avoid fraud

- **Democratise Science**
  - Publicly funded researchers are accountable to society
  - Increases the return on public investments in scientific research
  - Promotes equitable use of data and enables citizen science participation
  - Business enterprises benefit in producing new products and services through open innovation
  - Science-informed policy-making

- **Rationales for Open Science**
  - Maximise data utility
  - **Minimise costs of unnecessary duplication** of research
  - Better planning in research management and funding

- **Scientific Progress**
  - Finding solution to local and global challenges through Big Data Analytics
  - Fostering collaborations and research beyond disciplinary boundary
  - Internationalising our local research
1. promoting a common understanding of Open Science, associated benefits and challenges, as well as diverse paths to Open Science;
2. developing an enabling policy environment for Open Science;
3. investing in Open Science infrastructures and services;
4. investing in human resources, education, digital literacy and capacity building for Open Science;
5. fostering a culture of Open Science and aligning incentives for Open Science;
6. promoting innovative approaches for Open Science at different stages of the scientific process;

Source: Draft text of the UNESCO Recommendation on Open Science (SC-PCB-SPP/2021/OS-IGM/WD3)
MOSP Focus Areas

TARGETS:

1. To develop one Landscape Study on Open Science in Malaysia by end of 2020
2. To develop one National Guidelines on Open Science by end of 2020
3. To train 200 data stewards by 2022
4. To reach 500,000 people and raise awareness about Open Science
5. To develop and execute one Platform for raw research data sharing by 2022
Engagement of MOSP with International Agencies working on Open Science

MOSP has been in consultation with other open science initiatives globally such as Australia’s ANDS, OECD, ISC-CODATA, and Japan’s RCOS to learn best practices of Open Science and to get their support to materialise MOSP.

MOSP is also a member of international open science networks such as the
- Global Open Science Cloud (GOSC), CODATA
- UNESCO Open Science Advisory Committee
Open Science does not require that all data are fully open and accessible. They should be available under well-defined conditions and that is why we support the FAIR guiding principles, rendering data Findable, Accessible, Interoperable and Reusable.

Pursuant to this, we recognise that Open Science has a vital role in fostering sustainable and inclusive economic growth and development, bringing with it the full benefit of innovation. This can only be realized by increasing the commitment of the public and private sector to a robust Open Science ecosystem which will underpin the aspirations of society for a more equitable sharing of scientific information.
Malaysia Open Science Alliance

1. Academy of Sciences Malaysia (ASM)
2. Ministry of Higher Education (MOHE)
3. Ministry of Health Malaysia (MOH)
4. Ministry of Natural Resources, Environment and Climate Change
5. Ministry of Science, Technology and Innovation – Malaysia Science and Technology Information Center (MASTIC)
6. Malaysian Administrative Modernisation and Management Planning Unit (MAMPU)
7. Forest Research Institute Malaysia (FRIM)
8. Malaysia Research University Network (MRUN)
   i. University of Malaya
   ii. Universiti Sains Malaysia
   iii. Universiti Teknologi Malaysia
   iv. Universiti Kebangsaan Malaysia
   v. Universiti Putra Malaysia

Pilot Initiative: Linking Platform for sharing of Research Data
National Guidelines for Open Science

Targets:
1. To develop one Landscape Study on Open Science in Malaysia by end of 2020
2. To develop one National Guidelines on Open Science by end of 2020

1. Engagements with global Open Science initiatives
2. Surveys
3. Interviews
   Target groups: Top management universities, researchers, librarians, head of data centres
4. Workshops, Meetings
   Target groups: universities, government agencies, ministries, legal units, industry
   - Completed
   - Workshops, discussions, meetings
     Target groups: universities, government agencies, ministries, legal units, industry
     - On-going
   - Best practices of other countries
     - Completed
   - Landscape Study on Open Science in Malaysia
     - Completed

National Guidelines on Open Science has been drafted

National Guidelines is in the final phase of publication. Embargoed until launching of Malaysia Open Science Platform
Training of Trainers Program for Data Stewardship on Open Science

Target: To train 200 data stewards by 2022

Trained by eLearning Curve (online), certified by CIMP Jun-Sept 2020
Status: Completed

<table>
<thead>
<tr>
<th>ToT Program</th>
<th>SERIE 1</th>
<th>SERIE 2</th>
<th>SERIE 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duration</td>
<td>09/2020-01/2021</td>
<td>03/2021 – 08/2021</td>
<td>11/2021 – 03/2022</td>
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<tr>
<td>Trained data stewards</td>
<td>56</td>
<td>137</td>
<td>42</td>
</tr>
<tr>
<td>Target groups</td>
<td>Librarians &amp; research managers</td>
<td>Researchers, librarians, &amp; research manager</td>
<td>Researchers, librarians, &amp; research manager</td>
</tr>
<tr>
<td>Institutions</td>
<td>5 Research Universities and agencies under MOSTI</td>
<td>Higher learning institutes (public &amp; private), research institutes and agencies</td>
<td>Higher learning institutes (public &amp; private), research institutes and agencies</td>
</tr>
</tbody>
</table>
# Trained Data Stewards Statistics

<table>
<thead>
<tr>
<th>Institute</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Universiti Teknologi Malaysia (UTM)</td>
<td>36</td>
</tr>
<tr>
<td>Universiti Malaya (UM)</td>
<td>25</td>
</tr>
<tr>
<td>Universiti Sains Malaysia</td>
<td>19</td>
</tr>
<tr>
<td>Universiti Putra Malaysia (UPM)</td>
<td>11</td>
</tr>
<tr>
<td>Universiti Kebangsaan Malaysia (UKM)</td>
<td>11</td>
</tr>
<tr>
<td>Universiti teknologi mara (UiTM)</td>
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</tr>
<tr>
<td>Universiti Pertahanan Nasional Malaysia (UPNM)</td>
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<tr>
<td>Universiti Islam Antarabangsa Malaysia (UIAM)</td>
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<tr>
<td>Universiti Sains Islam Malaysia (USIM)</td>
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</tr>
<tr>
<td>Universiti Utara Malaysia (UUM)</td>
<td>3</td>
</tr>
<tr>
<td>Universiti Pendidikan Sultan Idris (UPSI)</td>
<td>1</td>
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<tr>
<td>Universiti Malaysia Sarawak (UniMAS)</td>
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<tr>
<td><strong>Institute Total</strong></td>
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<tr>
<td><strong>Universiti Malaysia Terengganu (UMT)</strong></td>
<td><strong>10</strong></td>
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<tr>
<td><strong>Universiti Sultan Zainal Abidin (UniSZA)</strong></td>
<td><strong>1</strong></td>
</tr>
<tr>
<td><strong>Xiamen University</strong></td>
<td><strong>10</strong></td>
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<tr>
<td><strong>Multimedia University</strong></td>
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<tr>
<td><strong>Monash University</strong></td>
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<tr>
<td><strong>University of Southampton</strong></td>
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<tr>
<td><strong>Newcastle University</strong></td>
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<tr>
<td><strong>International Medical University (IMU)</strong></td>
<td><strong>1</strong></td>
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<tr>
<td><strong>MAHSA University</strong></td>
<td><strong>1</strong></td>
</tr>
<tr>
<td><strong>Asia e University</strong></td>
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<tr>
<td><strong>Peserta Pasca Pengajian</strong></td>
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<tr>
<td><strong>UNESCO</strong></td>
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<tr>
<td><strong>Institute Total</strong></td>
<td><strong>187</strong></td>
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<tr>
<td><strong>PLAN Malaysia</strong></td>
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<td><strong>Akademi Sains Malaysia</strong></td>
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<tr>
<td><strong>MASTIC</strong></td>
<td><strong>2</strong></td>
</tr>
<tr>
<td><strong>Kementerian Pengajian Tinggi (KPT)</strong></td>
<td><strong>1</strong></td>
</tr>
<tr>
<td><strong>National Institute of Health (NIH)</strong></td>
<td><strong>10</strong></td>
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<tr>
<td><strong>Maritime Institute of Malaysia (MIMA)</strong></td>
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<tr>
<td><strong>Forest Research Institute Malaysia (FRIM)</strong></td>
<td><strong>6</strong></td>
</tr>
<tr>
<td><strong>Malaysia Space Agency (MYSA)</strong></td>
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<tr>
<td><strong>Jabatan Kimia Malaysia</strong></td>
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</tr>
<tr>
<td><strong>Institute for medical Research (IMR)</strong></td>
<td><strong>4</strong></td>
</tr>
<tr>
<td><strong>Jabatan Metereologi Malaysia (MET)</strong></td>
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</tr>
<tr>
<td><strong>Jabatan Nuklear Malaysia</strong></td>
<td><strong>1</strong></td>
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</tbody>
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Awareness about Open Science

Target: To reach 500,000 people and raise awareness about Open Science

Website & Social Media updates
Infographics:
1. Malaysia Open Science Platform
2. Future careers in Open Science
3. Research data lifecycle

Events:
1. Launching of MOSP (7 Nov 2019)
2. Open Science Forum for Asia and the Asia Pacific (13 Feb 2020)
3. Dialogue on Open Science (14 Feb 2020)
4. APEC Policy Sharing Webinar on Open Science (21 Aug 2020)
5. Asia-Pacific Online Regional Consultation Towards a UNESCO Recommendation on Open Science (15 Sep 2020)
6. Citizen Science from Malaysia’s Perspective (05 Oct 2020)
7. Webinar on Open Science by UM (11 Jan 2021)
8. Open Science Symposium @ USM (4 March 2021)

Video promotions
Newspaper articles
Media appearance
Webinars on Open Science
Side events/roadshows

500,000 people reached by end of 2021

MOSTI nominated Prof Dr Noorsaadah Abd Rahman FASc as a representative for Malaysia at UNESCO Open Science Advisory Committee
Awareness Activities And Outreach

- Professor ChM Dr Noorsaadah Abd Rahman presented about MOSP on RTM – Selamat Pagi Malaysia
- Newspaper articles:
  - Open Science, Envisioning that No One is Left Behind
  - Malaysia Open Science Platform: A Dream or A Reality?
- Online outreach through webinars, presentations and news
- Public and private engagements
- Promotional video for Open Science by ML Studio

= 2 mil
<table>
<thead>
<tr>
<th>University</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Universiti Malaya</strong></td>
<td>1 RDM Policy, 1 Research Data Repository Pilot Project, 1 UM Open Science Committee, 25 Trained Data Stewards</td>
</tr>
<tr>
<td><strong>Universiti Sains Malaysia</strong></td>
<td>1 Open Science Guidelines, 1 USM Library TV, 1 Jawatankuasa Pemandu Open Science USM (2021), 19 Trained Data Stewards</td>
</tr>
<tr>
<td><strong>Universiti Teknologi Malaysia</strong></td>
<td>1 Research Data Management Platform, 2 Open Science Academic Presentation, 1 Open Science Policy and Guidelines in review, 36 Trained Data Stewards</td>
</tr>
<tr>
<td><strong>Universiti Putra Malaysia</strong></td>
<td>1 Raw Research Data Repository, 11 Trained Data Stewards</td>
</tr>
<tr>
<td><strong>Universiti Kebangsaan Malaysia</strong></td>
<td>1 Data Repository in development, 11 Trained Data Stewards</td>
</tr>
</tbody>
</table>
Open Science Outreach Beyond MOSP Initiative

Besides the 5 research universities under the pilot project, MOSP is also being discussed and promoted by other institutes and individuals.

Keluarga Malaysia Berbudaya Ilmu Dengan 'Sains Terbuka'

“MOSP diharapkan menjadi suatu strategi penting bagi universiti, institusi penyelidikan, perpustakaan dan para penerbit untuk mencapai hasrat mencipta, menyebar, dan memelihara ilmu untuk manfaat seluruh masyarakat tanpa sempadan.


- Nor Azzah Momin (Head Librarian, USIM Library)

Infrastructure development

Target:
To develop and execute one Platform for raw research data sharing by 2022

- Engagements with five Research Universities, government agencies (for example, MAMPU & MIMOS) and industries involved in data sharing platforms. **Completed**
- Engagements with KPT to learn about MyGRANTS as a benchmark and cross-reference for MOSP to avoid overlapping information or operational definitions. **Completed**
- Development of functional requirements and technical specifications. **Completed**

Raw research data sharing platform executed at 5 Research Universities
MOSP Architecture (Pilot Project)
MOSP Activity and Timeframe

**STAGES**

1. **Community Building**
   - Malaysia Open Science Alliance
   - National Outreach

2. **Intelligence Gathering**
   - National Guideline, Data Management Plan and Policy
   - Landscape Mapping and Analysis

3. **Management Planning**
   - Pilot: Malaysia Research University Network (MRUN)

4. **Capacity Building**
   - Malaysia Open Science Platform

5. **Platform Development**
   - MOSP integrates national repositories

6. **Integration**
   - MOSP linked to regional and international platforms

7. **Platform Enhancement**
   - MOSP functions upgraded

8. **Going Global**

**OUTPUT**

- Connect 2020
- Develop 2021
- Integrate 2025
- Upgrade 2030
Data Stewardship for Biodiversity

Laying the foundation for Open Science Journey in Malaysia
Project Overview

1. **Project title**: FAIR Data Stewardship Guidelines for Reproducibility in Biodiversity Research (Phase I)
2. **Project duration**: 1 year; from 01.10.2021 until 30.09.2022.
3. **Funder**: ISC ROAP/Academy of Sciences Malaysia
4. **Implementer / Secretariat**: Universiti Malaya
Project Deliverables

1. Produce sets of biodiversity (specimen) stewardship guidelines & training materials.

   **Three core modules:**
   - Biodiversity Data Management
   - Digitisation
   - Data Cleaning

2. Building capacity in data stewardship for curators, researchers and data custodians

   **Two parts:**
   - Part 1: ToT Data Stewardship for Open Science
   - Part 2: Physical Training on “FAIR Biodiversity Data Stewardship”
## Project Timeline

<table>
<thead>
<tr>
<th>Oct 21</th>
<th>Nov 21</th>
<th>Dec 21</th>
<th>Jan 22</th>
<th>Feb 22</th>
<th>Mar 22</th>
<th>Apr 22</th>
<th>May 22</th>
<th>June 22</th>
<th>July 22</th>
<th>Aug 22</th>
<th>Sept 22</th>
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**Landscape Assessment: Desk study, surveys & workshop**

**Training on General Data Stewardship (Online training using MOSP modules)**

**Development of FAIR Biodiversity Data Stewardship Guidelines & Training Materials for BioD Data Stewards**

**Data Gap - Need Analysis Submission (Q4 2021)**

**Draft Guidelines Submission (Q1 2022)**

**Guidelines & Training Module Submission (Q2 2022)**

**Trained BioD Data Stewards (Q3 2022)**
Snapshots from engagements organized between September 2021 to March 2022

(Malaysia)
1. Seven Collection Centres & Museums in Malaysia
2. FRIM
3. MyBIS (KeTSA)
4. Universiti Malaya
5. Universiti Kebangsaan Malaysia
6. Universiti Malaysia Sabah
7. Universiti Malaysia Sarawak
8. Sabah Biodiversity Centre
9. Precision BioD Task Force (ASM)

(Presentation & Participation)
1. Naming Nature 2
2. CODATA/Global Open Science Cloud
3. TropSc 2021
4. GBIF Asia Virtual Summit 2021
5. STIPAC Presentations
6. Special Seminar on Biodiversity Conservation and Museum Management

(Overseas)
1. Singapore’s Lee Kong Chian Natural History Museum
2. Australian Biodiversity Information Services
Findings from the Data Gap-Need Analysis

1. Biodiversity data management processes and workflows are not standardised.

2. Lack of active taxonomists and expertise in digital and physical curation.

3. There are nomenclature, taxonomic and spatial errors in data entry.

4. Lack of proper guidance for all stakeholders in the data sharing ecosystem.

CURRENT STATE
## Overview of the Guideline

<table>
<thead>
<tr>
<th>Domains</th>
<th>FAIR Data Stewardship Guidelines</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biodiversity (Specimen) Data Management</td>
<td>Digitisation</td>
</tr>
<tr>
<td>2. Labelling</td>
<td>2. Specimen Image Capture</td>
</tr>
<tr>
<td>3. Curating and Storing</td>
<td>3. Specimen Image Processing</td>
</tr>
<tr>
<td>4. Retrieving and Analysing</td>
<td></td>
</tr>
<tr>
<td>5. Disseminating</td>
<td></td>
</tr>
</tbody>
</table>

### Scopes
- **Key elements**
- **Outcomes**

### Roles & Responsibilities
1. Standardised biodiversity data management & digitisation processes and workflows.
2. High quality and fitness-for-use of biodiversity data
3. Clear roles and responsibilities for data custodians, data aggregators and data in the data sharing ecosystem for biodiversity
DATE: 22 JUNE 2022

Photographing and recording step-by-step:
1. Introduction of Equipment,
2. Digitization Hands-On,
3. File Naming of Digitized Specimen.
DATE: 23 – 24 JUNE 2022

TWO MAIN AGENDA:
1. Refine and finalize Guidelines and Training Materials
2. Planning for Stakeholder Engagement Workshop & Capacity Building Activities
FAIR BIODIVERSITY DATA STEWARDSHIP CAPACITY BUILDING PHYSICAL TRAINING

DATE: 26 - 29 SEPTEMBER 2022
PARTICIPANTS: 46 person from 13 Institutions

OBJECTIVES:
1. To create awareness and/or improve understanding about FAIR principle, Open Science, biodiversity data management, digitisation and data quality.
2. To refine, validate and improve draft guidelines and training manuals on Biodiversity (Specimen) Data Management, Digitisation and Data Quality.
3. To provide hands-on training for Biodiversity (Species) Data Management, Digitisation and Data Cleaning modules.
Way Forward

Phase I: Lay the Foundation
- FAIR BioD Stewardship Guidelines (A one-year project)
  - Oct 2021 – Oct 2022

Phase II: Digitisation
- Training for Biodiversity Data Stewards
  - June 2022 - Sept 2022
- Digitisation of biodiversity collection
  - Nov 2022 – 2025 (Under KeTSA)

*The digitisation training module will be useful for digitisation of biodiversity collection under the KeTSA’s initiative

Phase III: Connect & Share
- Development of curation platform
- Data Aggregator, e.g. MyBIS

Open Science Journey
Issues & Challenges

1. Researchers’ “buy-in”
2. Institutional support
3. Trained and skilled personnels
4. Awareness and understanding
5. Technical readiness and capabilities
6. Central “ownership”
7. MAJOR CHALLENGE: SUSTAINABILITY PLAN
“The best collaborations create something bigger than the sum of what each person can create on their own.”

Thank You

Malaysia Open Science Platform