

# Building a Culture for Research Data Management in Kenya: A Scoping Review of the Early Indicators

Joel Nakitare<sup>1</sup> Dr.Salome Mathangani<sup>2</sup> Dr.Grace Kamau<sup>3</sup>

<sup>1</sup>Rongo University

<sup>1,2,3</sup>The Technical University of Kenya

*22<sup>nd</sup> April, 2024 - 26th Standing Conference of Eastern, Central and Southern African Library and Information Associations (SCESCAL) at PridelInn  
Paradise Beach Resort, Convention Centre & Spa, in Mombasa, Kenya.*

# Presentation Outline

## 1. Introduction

- Background of the study
- Problem Statement

## 2. Methodology

- Research Design,
- Analysis & presentation

## 3. Findings & Discussions

- Early indicators

## 3. Conclusion and Recommendations

# Background to the study

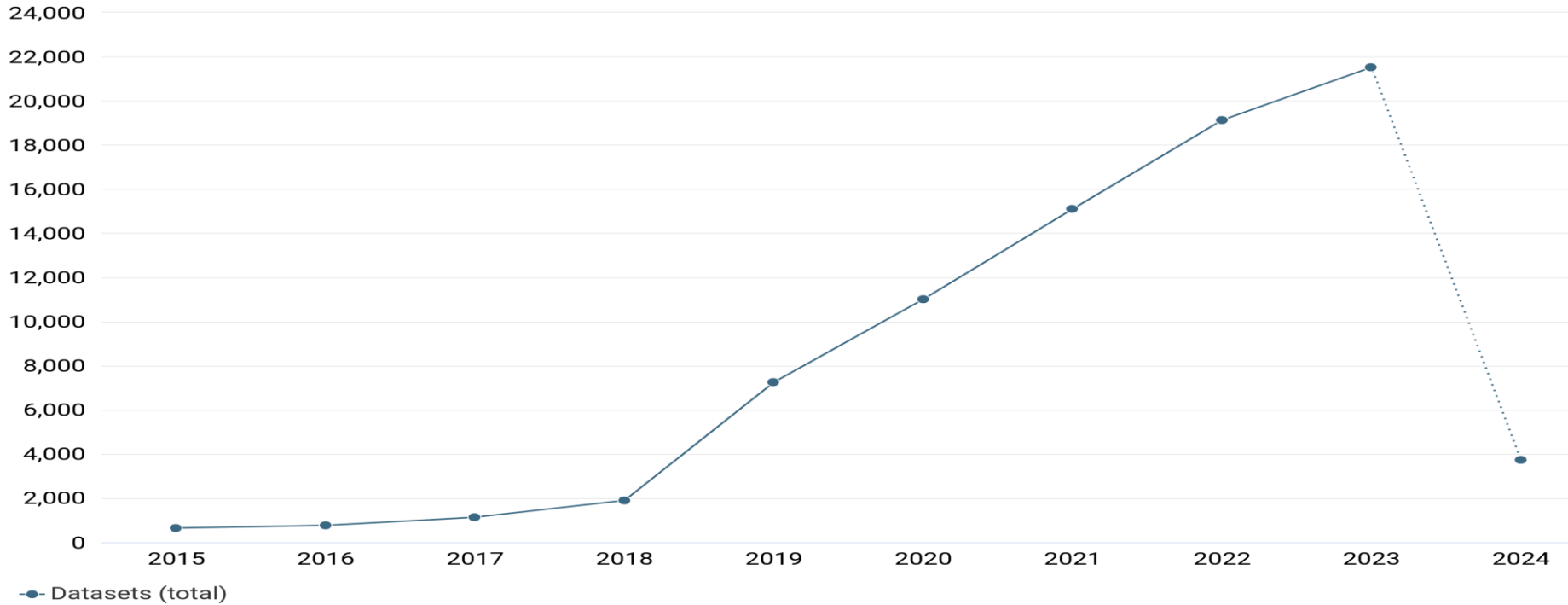
- Research data - the information collected, observed, generated, or created during all stages of the research process (*Corti, Van den Eynden, Bishop, & Woollard, 2019*).
  - Examples - *notes* (field or laboratories), *responses* (surveys), *images*, *audio*, or *video recording* (camera or sound recording), etc.
- Research data is a valuable intellectual asset that should be used and managed well.
- It's a currency for research,
- Without data; we can only speculate
- Before 21<sup>st</sup> century, little or no attention was paid to effective data management, especially after the research project.

# Background to the study

- As such, data was distorted or lost before its full potential was exploited (*Gunjal & Gaitanou, 2017; Pryor, 2018*).
- In the 2000s, different stakeholders started adopting better RDM practices (*Cox, et al, 2017; Redkina, 2019*).
- To date, RDM is on the rise & varies as per disciplines, institutions, countries, and researchers.
- Developed countries have taken the lead over developing countries (*Gunjal & Gaitanou 2017, Pispiringas et al., 2019*).
- Like other countries, (RDM) in Kenya has been gradually improving, albeit challenges

# Datasets in Dimensions - Kenya (1952 - 2024)

Datasets in each year. (Criteria: see below)



Source: <https://app.dimensions.ai>  
Exported: April 20, 2024  
Criteria: 'Kenya' in title and abstract.

© 2024 Digital Science and Research Solutions Inc. All rights reserved. Non-commercial redistribution / external re-use of this work is permitted subject to appropriate acknowledgement. This work is sourced from Dimensions® at [www.dimensions.ai](http://www.dimensions.ai).

# Statement of the Problem

- Kenya has a vibrant research systems - 3000 research projects (NACOSTI, 2020).
- As such, a lot of research data is produced annually
- There is inadequate evidence on how data is managed in the country
- The Re3data.org, lists only five data repositories in Kenya – None is for a university
- This means most Kenyan data is lost, distorted prematurely, or deposited in overseas repositories.
- There is need to establish early adopters & trends to act as champions/ catalysts for best practice

# Methodology

- Study adopted a qualitative design as it was purely content analysis
- To identify early indicators of RDM, thematic analysis of Reports, publication and policies etc. from websites, electronic databases, institutional repositories, and grey.
- Key variables were identified using RDM Capability Maturity Model:
  1. Legal and policy,
  2. IT Infrastructure,
  3. Support Services, and
  4. Data literacy.

# RDM Legal and policy framework – Early indicators

- At National level- A number of legal instruments & Institutions e.g ;
  - The 2010 Constitution of Kenya-
    - Article 31 - *“Every person has the right to privacy”*
  - The Kenya Data Protection Act 2019
    - Operationalizes the constitution & the GDPR
    - Establishes the National Data Protection Commission
  - The Science, Technology, and Innovation Act of 2013,
    - NACOSTI - Emphasizes on ethical standards and guidelines
  - Universities Act of 2012, - establishes CUE that regulates all university processes and programs, including research



# RDM Legal and policy framework – Early indicators

- At Institutional level, - A rise of Institutional RDM policies and guidelines, e.g ;
  - KEMRI Wellcome Trust - *Research Data Sharing Guidelines (2015)*,
  - The International Livestock Research Institute (ILRI),
  - The African Population and Health Research Center Data Protection and Privacy Policy (2021)
  - The World Agroforestry Centre (ICRAF).
  - The Kabarak University Research Data Management Policy (2019) and
  - The JKUAT Open Research Data (JORD) policy

# RDM IT Infrastructure– Early indicators

- There are five repositories listed in the <https://www.re3data.org/> directory:
  - Kenya Open Data (<https://www.opendata.go.ke/>)
  - KWTRP Research Data Repository (<https://dataverse.harvard.edu/dataverse/kwtrp>),
  - GeoCommons Archive (<http://geocommons.com/>),
  - DEWA/GRID-Geneva (<https://unepgrid.ch/en/>), and
  - The ICRAF Dataverse (<https://dataverse.harvard.edu/dataverse/icraf>)

# RDM IT Infrastructure– Early indicators

- Other data repositories in the country but not indexed in the Data Repository Directory include:
  - Open Data (iCEOD),
  - APHRC's Microdata Portal,
  - Kenya National Bureau of Statistics (KNBS), and
  - African Open Data Network among others.
- Online open access data repositories
  - Zenodo (<https://zenodo.org/>),
  - Figshare (<https://figshare.com/>), and
  - Global Biodiversity Information Facility (GBIF) (<https://www.gbif.org/>)

# RDM Support Services— Early indicators

- There's been several initiatives to build capacity;
- CODATA, & JKUAT - Workshop on Open Data (2014; 2017)
- The Global Biodiversity Information Facility (GBIF) (Webinars)
- Kenya Education Network (KENET) – infrastructures i.e Data Centers, Internet connectivity, and disaster recovery services
- The Training Center in Communication in Africa (TCC Africa) training on open science
- Research institutions have divisions and personnel supporting researchers e.g., libraries, IT divisions, ethical review boards etc

# RDM Data Literacy– Early indicators

- Mosei (2015), Scholarly communication in Universities in Kenya
- Anduvare (2019), RDM in private Universities in Nairobi.
- Allela and Mwai (2019) RDM practices at the Technical University of Kenya.
- Adika and Kwanya (2020) Data literacy level in Strathmore
- Agava (2024), Feasibility of offering Data literacy in private universities

# Conclusions

- There is evidence of progressive production and archiving of data in Kenya; However
  - There are gaps in the existing laws
  - Inadequate IT infrastructure
  - Inadequate capacity and resources,
  - Lack of awareness and understanding, and
  - The rapidly evolving nature of technology and data practices
- Research institutions like KEMRI, ILRI are leading
- Universities are lagging behind
- Institutions should benchmark on the early adopters

# Recommendations

- Establishment of RDM framework outlining the steps and actions needed to entrench a culture of RDM in Kenya.
- All research institutions to;
  1. Develop and Implement Comprehensive RDM Policies that align with international best practices and standards.
  2. invest in Technological Infrastructure, including data repositories and collaborative platforms, to facilitate efficient and secure data management.
  3. Develop and implement programs and services that support researchers, to enhance their skills and awareness of effective RDM practices.
- Researchers and research institutions should benchmark with the early adopters of RDM like KEMRI, ILRI are lagging behind



Thank you