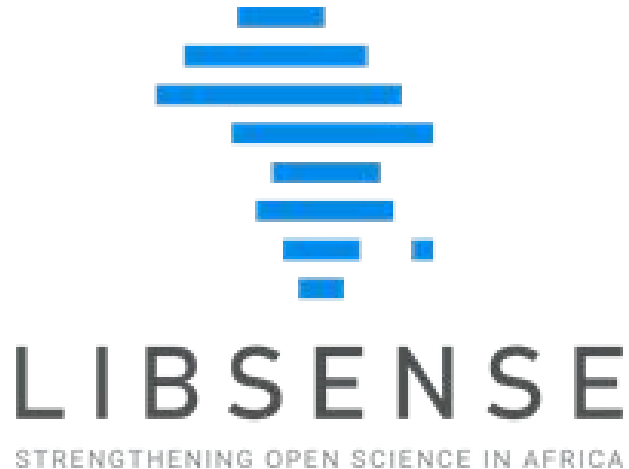# LIBSENSE-RUFORUM Collaboration for Improved Agricultural Research Data Management in Africa

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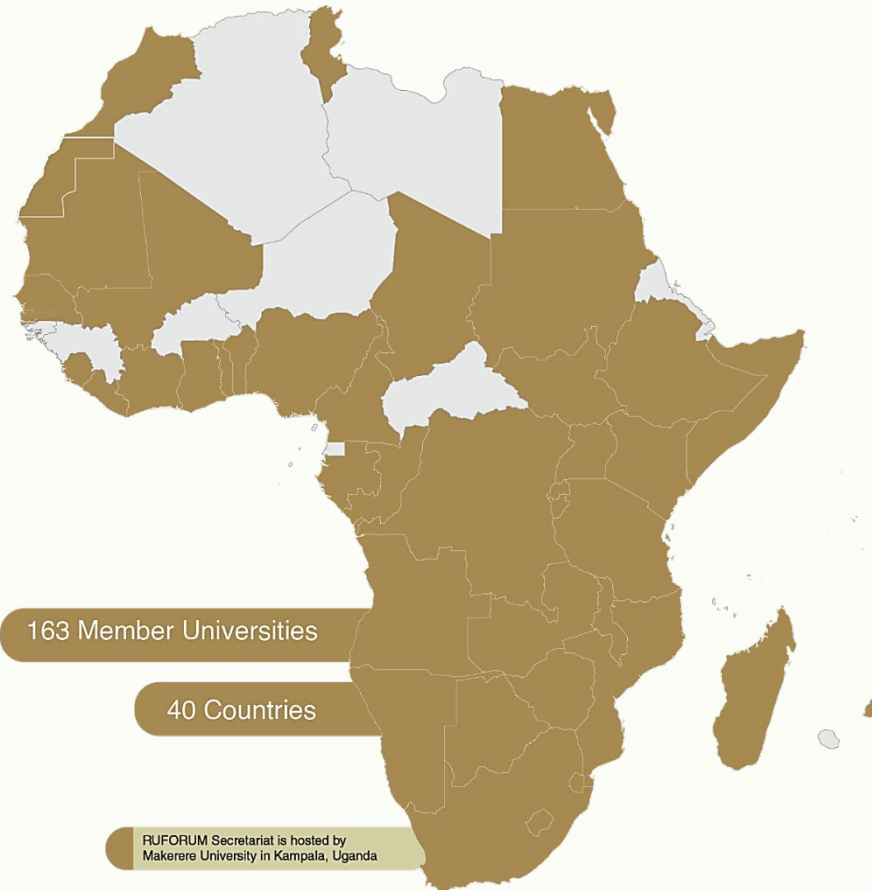
INTRODUCING RUFORUM

OUR COVERAGE

The Regional Universities Forum for Capacity Building in Agriculture (RUFORUM), established by ten Vice Chancellors in 2004, is a consortium of universities in Africa. December 2022 membership stands at 163 universities in 40 countries.

OUR MOTIVATION

Transforming agriculture in Africa requires innovative scientific research, education and outreach approaches. The education sector needs to be more connected to the new challenges facing rural communities and needs to build capacity of young people to be part of the transformation of the agricultural sector.

163 Member Universities

40 Countries

RUFORUM Secretariat is hosted by Makerere University in Kampala, Uganda

INTRODUCING RUFORUM

OUR MISSION

To strengthen the capacities of universities to foster innovations responsive to demands of small-holder farmers through the training of high quality researchers and collaboration.

OUR VISION

A vibrant, transformative universities catalyzing sustainable, inclusive agricultural development to feed and create prosperity for Africa.

RUFORUM-LIBSENSE COLLABORATION

1. RUFORUM has aspired to harness the role of digital technologies in making research outputs and learning materials available for researchers, students and other stakeholders, as Africa still contributes just a little fraction of the world's research output.

2. In light of this, RUFORUM and West and Central African Research and Education Network (WACREN) have signed a Memorandum of Understanding (MoU) to enhance scientific and scholarly communication in Africa, through the AfricaConnect3 project and the LIBSENSE initiative. This cooperation is:

   ✓ A step in the direction to help our native agriculture researchers to access valuable open resources to engage within their scientific discovery, and make decisions.
   ✓ Expected to support and facilitate universities in acquiring relevant and practical data/information/knowledge for adoption of ICT in teaching and learning.
   ✓ Networking universities to be able to train through innovative and creative ICT-enabled techniques that deliver and enhance the student learning experience.

Needs Assessment Aims and Objectives

1. To establish through a needs assessment questionnaire the key issues that should be addressed by a new state of the art agricultural data repository

2. To gather requirements for the data repository through targeting potential end users within the member institutions of RUFORUM who would be engaging with this repository

Response Demographics

Majority of the respondents (36%) aged between 36 and 45, next highest age range was 26 to 35 (34%)

Gender split: 25% female, 75% male

Majority hold a Masters degree (44%), 33% a Doctoral degree as their highest educational attainment

Respondents highly experienced, with the majority (44%) having more than 10 years work experience

56% were representing higher education institutions, while 19% were from research institutions

Majority were from 4 countries: Uganda (25%), Ethiopia (14%), Kenya (12%) & Nigeria (11%)

Modes and Methods of Data Collection

- 85% of the respondents collect primary data

- 71% collect secondary data

Top 2 highlighted in red

Sources of Secondary Data	%
Open data repositories, e.g., USDA Ag Data Commons, data.IITA.org, Africa RISING Dataverse	41.4
Commercial data repository services	11.2
Shared data repositories through consortia, e.g. university consortia like RUFORUM	29.0
Outputs from collaborative projects with researchers/students	52.0
Other (specify)	6.6

Use of Policies and Guidelines

77% use guidelines on the management of collected data, with *70% of these* using an institutionally-provided **standard data management plan template**

89% follow ethical guidelines covering the collection of the data and *of these 90%* use a **standard institutional ethics process**

Digitization and Storage of Data

- 66% of respondents capture data manually and digitize it at a later stage

- 54% capture data in digital format

- Only 29% store their data in an online/offline data repository

Non- repository storage spaces	%
In a physical file storage facility	32.3
On a fixed personal digital storage device, e.g. a desktop PC	45.0
On a mobile personal digital storage device, e.g. a laptop	44.4
On an institutionally-supplied fixed digital storage device, e.g. a desktop PC	17.5
On an institutionally-supplied mobile digital storage device, e.g. a laptop	15.1
On institutionally monitored shared data storage, e.g. a password-protected network drive	6.6
On institutionally monitored cloud-based data storage, e.g. a Google drive	10.9
Other (specify): (in print form)	0.9

Top 2 highlighted in red

Attitudes Towards Data Sharing

- 56% <u>do not share data</u> with others outside of their own institution, *of these, 73% would wish to do so*

- 44% <u>do share data</u> with others outside of their own institution, but *of these 57% indicate that they do not follow data sharing guidelines*

Preferred Conditions for Data Sharing	%
Open data sharing	13.0
Widely accessible data with some conditions such as non-commercial reuse or reuse with attribution	15.1
Sharing data with specific groups, such as peers from another university	19.9
Controlled access to data and sharing with collaborators	26.0
Other	0.3

Top 2 highlighted in red

Main Preferred Uses of an Open Agricultural Data Repository

To gain access to agricultural data once the projects that produced them are finished.	To store agricultural data safely and securely once the project I am collaborating on is finished.	To store agricultural research publications safely and securely once the project I am collaborating on is finished	To meet the requirements of publishers or funders who may want me to provide open access to data sets	To promote and implement the FAIR data principles
Strongly Agree + Agree % - 77.7%	Strongly Agree + Agree % - 84.0%	Strongly Agree + Agree % - 81.8%	Strongly Agree + Agree % - 87.0%	Strongly Agree + Agree % - 89.5%

FAIR data principles **F** – Findable **A** – Accessible **I** – Interoperable **R** – Reusable Ref: (Wilkinson et al., 2016)

Top 2 highlighted in red

Open Question 1

- Are there any other objectives that you might like to achieve through using the data repository??
  - 93% of the 331 respondents answered this question
  - Of these 50% were usable responses to the question

Prominent themes	Meaning	Density %
Accessibility and Convenience	Ensuring data are freely available and easy to access	24%
Improving the quality of data and research	Ensuring that data has the right quality and can be used to improve the quality of research undertaken with those data sets	18%
Analytics	Preforming various analyses on the data including trend analyses, comparative analyses, computational analyses etc.	13%
Collaborating, Networking and Community-Building	Using data sharing as a means of building networks and collaborations within the academic community	12%
Data Governance, Protection and Security	Ensuring copyright protection, data security and protection and data governance	8%
Making data available for future use and referencing	Ensuring data are made available for future studies and that there is sufficient documentation on how studies were done with these data sets	8%
Making practical use of data	Using the data for decision-making, policy development, monitoring and evaluation, commercial purposes, etc.	7%
Training and Capability-Building	Providing data management training and other capability-building activities	6%
Using data for the benefit of science and society	Using data for social benefits, for ensuring its sovereignty, for feeding information back to the farmers, for further funding etc.	5%

Thank You!

For further information regarding the survey and the LIBSENSE-RUFORUM collaboration, please email:

libsense-ruforum@ren.africa