

OPEN SCIENCE FOR SUSTAINABILITY

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INTRODUCTION TO OPEN SCIENCE

- Science involves Collecting, Analysing, Critiquing, Reusing, Publishing Data
- To advance the frontiers of knowledge in Science requires:
 - collaboration,
 - interdisciplinary collaboration
 - cooperation
 - Transparency
 - Ready access to information

INTRODUCTION TO OPEN SCIENCE

- Factors that impede or restrict ready access to Scientific data:
 - publishing for profit making / expensive paywalls
 - non standardization of data formats
 - proprietary software
 - reluctance to share or loose control

INTRODUCTION TO OPEN SCIENCE

- STAKEHOLDERS
 - Institutions
 - Researchers and Innovators
 - Citizen scientists
 - Funding bodies
 - Publishers
 - Policy analysts
 - Civil society groups

INTRODUCTION TO OPEN SCIENCE



- FOUR CORE ISSUES
 - Open access
 - Open data
 - Open source
 - Open standards

WHAT IS OPEN SCIENCE ?

- The practice of science in such a way that others can collaborate and contribute.
- Research data and processes are freely available under terms that enable reuse, redistribution and reproduction of the research and its underlying data methods.
- Other shareable resources: - software – devices – networks – grids - publications and other outcomes of research and innovation - standards framework
- Open Science has become a movement to promote the free sharing of knowledge rather than restricted publications that are paid for.

OPEN ACCESS

- Open Access refers to free unrestricted online access to research outputs such as journal articles with no access fees and as such is compliments Open Science.
- Open Access Repositories - OAR's are database systems that are used to collect, store and share the scientific outputs.
- Open Access Journals are now receiving the highest citation rates.
- Repositories play a fundamental role in Open Science.



WHY OPEN SCIENCE IS IMPORTANT

- Much scientific research output resides behind pay walls making it difficult for African researcher to access
- The process of publishing research on proprietary platforms slows the availability of research.
- Open Science makes content free and focus on the impact of research output where it is published.
- Open Science saves money as the tools & platforms used in research are largely open source software.
- Knowledge and collaboration is accelerated leading to speedier solutions and sustainability of societal needs particularly in Africa.



ROLE OF LIBRARY

- As custodians of the intellectual knowledge their institutions using their institutional repositories
- Play an increasingly important and evolving role as information managers.
- Managing the collection, storage, sharing and dissemination of their research content
- Leverage Open Science and Open Access to deliver services to their local Users: Researchers, Academic Professionals and Students.
- Expose content globally to increase visibility of Users and their institutions.



CAPACITY BUILDING FOR LIBRARY

- Awareness of evolving role of librarians as information management professionals
- Upgrading traditional skills of librarians to digital skills required for managing library systems and repositories.
- Understanding how to manage content and publishing and research authors and data migration using appropriate meta data tags and data exchange models.
- Understanding how to leverage available infrastructure within their networks and in the cloud to increase visibility and discoverability.



ROLE OF THE NREN

- National Research and Education Networks (NgREN, Eko-Konnect) have a role to play in providing the high capacity networks and e-infrastructure for library platforms and repositories to thrive.
- Support Library in digitising their content
- Provide required trust and identity frameworks and infrastructure that allows institutional repositories to securely share and federate their repositories among themselves.
- Provide hosted cloud services.

LIBSENSE PROJECT: courtesy WACREN



LIBSENSE- **Library Support for embedding NREN services and e-Infrastructure**



- Formal program and research agenda to develop sustainable institutional support for HE librarians to play a central role in NRENs
 - Build capacity to support Open Science
 - Bootstrap establishment of NREN Identity Federations by integrating into content acquisition strategies
 - Tracking research outputs, populating repositories and improving researcher visibility
 - Promoting National, Regional and Global Collaborations
 - Assess the feasibility of the adoption of a regional harvester
 - Undertake training in the area of repository management and support updating repository platforms in WACREN
 - Act as institutional focal points in a network of communication and collaboration
- On-going study in collaboration with University of Sheffield and AULNU to understand challenges and enablers.
 - Survey validation in #WACREN2017 and Extended to all members of WACREN
 - RITER is interface for francophone translation and management

SOME HISTORY OF ACTIVITY



- Mar 2014 – Hosted 3rd ei4Africa thematic workshop
- Mar 2016 – Among the first signatories to the “Dakar Declaration” supporting Open Science
- Nov 2016 – Hosted “WACREN e-Research Hackfest” 10 day event for researchers and ICT practitioners to build and host applications on e-infrastructure
- Dec 2017 – Facilitated “Tracking Research Outputs & Populating Repositories” Workshop for Librarians
- Nov 2018 – Participation in the Libsense Repository Workshop hosted by WACREN in Ubuntunet Alliance Conference in Zanzibar



Sci-Gala Thematic Workshop,



Federated DevOps Workshop, Lagos



Libsense Workshop, Cote D'Ivoire



Libsense Workshop Zanzibar

EXPECTED OUTCOMES



- Greater understanding of the roles and responsibility of participants in driving open science and open access.
- Completion of the Libsense survey.
- Define and commence activity that librarians can engage in to promote Open Science and Open Access.
- Activities will serve as inputs into the WACREN 2019 conference.
- Bring wider stakeholder participation to open science e.g. researchers, students other interested groups.
- Re-engagement of Eko-Konnect User Community for more REN activity and growth.