Open Science Africa: Principles and Actions for Global Participation

This statement is prepared by the LIBSENSE Working Group on Open Science policies, governance and leadership

LIBSENSE is led by the West and Central African Research and Education Network (WACREN) in collaboration with sister regional African RENs (ASREN and UbuntuNet Alliance). Other participating partners include several national RENs, libraries, library associations, universities and research communities in Africa, in conjunction with COAR, EIFL, University of Sheffield, National Institute of Informatics (Japan), GEANT, and OpenAIRE.

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Preamble

LIBSENSE is building communities of practice and strengthening local and national services to support open science and research in Africa. Open science is an international trend aimed at sharing the results of research widely. Open science is transforming the way research is done, and increasing its value and impact by accelerating the pace of scientific discoveries and expanding the adoption of research outcomes for everyone.

Although global in nature, there are important local and regional considerations in how open science and open access are approached and implemented. It is critical that the policies and infrastructures created to support open science are designed and delivered to meet the needs and requirements of the research communities in different regions.

The LIBSENSE initiative was launched in 2016 to bring together the research and education networks (RENs) and academic library communities in order to advance open science in Africa and foster the continent's global open access participation.

This LIBSENSE-prepared statement for UNESCO proposes a set of principles and actions for open science indigenous to Africa but one within a sustainable framework of international cooperation and collaboration for advancing more inclusive global scholarship.

Addressing inequality and supporting equity, diversity and social justice

African researchers, institutions and countries should be proactive in defining and implementing global and local open science policies and practices best suited for their needs and environment.

Scholarly communication and publishing, for the most part, is being defined, implemented, and measured by countries in the Global North, making certain aspects of the current programs and initiatives undertaken outside the African context inappropriate or challenging for many institutions and researchers in Africa (and the Global South in general).

If we take open access publishing as an example, in which many countries in the Global North are negotiating transformative agreements and a switch from subscriptions to article processing charges (APCs), this direction can seriously harm African research because it means many researchers would be hard-pressed to publish in commercial journals because of little to no available resources to cover APCs, and subscription budgets at many institutions are comparatively meagre. The imposition of APCs, as a result, stymies African research acceleration from meeting the United Nations' Sustainable Development Goals critical to finding solutions unique to Africa.

Biases towards publishing in international infrastructures and the practice of measuring quality of publishing venues by standards and tools produced by commercial interests in the North further displaces African scholarship to the periphery of knowledge.

Shifting the focus towards equitable, global, long-term, non-commercial, open source, scalable and sustainable transformation of the scholarly publishing ecosystem/landscape is crucial, enabling equal opportunities for all researchers to publish their research in open access, regardless of field of research, funding basis, or career stage. African repositories are already playing a role in knowledge sharing and should be strengthened and enhanced.

Collaborative community-based models and open public infrastructures for scholarly publishing provide a more efficient, timely, durable, local solution and ensure a smooth transition to global open access. The result will ensure that Africa's scholarship increases and participation will enable a shift toward the epicentre of the global knowledge economy. This economy will then allow for knowledge exchanges between the Global North and Global South, thus bringing about an equitable representation of global research and scholarship.

African open science values and principles

Equity and social justice are fundamental values that should be included in the UNESCO Open Science framework. The policy environment should support equitable dissemination of marginalised research and improve access to content in support of liberating repressed African scholarly content.

These values are supported by a number of principles underpinning open science in Africa:

Africa-led and operated open infrastructures

- African research community should maintain control of the publishing process and ownership of the publishing and data sharing infrastructure.

- Open - set up with free and open source software, public - not-for-profit, infrastructure hosted and operated in Africa; addresses the needs of African researchers.

- African community governs open infrastructures and bears responsibility for reliable and trustworthy management and maintenance.

- Ensure diversity and inclusivity in scholarly communications and supporting multilinguality.

- Collaborative open access publishing.

Indigenous/Traditional Knowledge

- Co-creating knowledge outputs with communities by following responsible research methods.

- Supporting local open access publishing.

- Ensuring language pluralism.

- Ensuring inclusivity of media and formats, for example, when capturing oral culture tradition.

Actions

To support these values, we are recommending the following actions:

- Strengthen equitable partnerships of editors and publishers, libraries, RENs, funders and other actors to provide immediate open access to African research via journals, repositories and other means supported by an evolving scholarly communication landscape.

- Develop sustainable, collaborative open access publishing models for African research.

- Develop training for African editors to create and manage African journals.

- Encourage open peer review.

- Ensure that research data and methods are as open as possible and as closed as necessary.

- Embrace CARE (Collective benefit, Authority to control, Responsibility, Ethics) principles for Indigenous Data Governance, reflecting the crucial role of data in advancing indigenous innovation and self-determination.

- Develop standards for capturing and disseminating indigenous/traditional knowledge together with communities.

- Support community-university research partnerships, including community-based participatory action research and citizen science approaches.

- Promote synergies and have a coordinated approach among national infrastructures as well as with regional and global infrastructures and initiatives.

- Ensure the quality, interoperability and reliability of infrastructures, including through the use of internationally-recognised certification mechanisms, specifications, and standards and through utilising open source systems and software whenever possible, complying with the rules of inclusiveness, transparency, good governance and non-profitability.

- Develop (if doesn't exist yet) and offer training for the infrastructure management, data service and management in order to set standards in the creation, use, maintenance and support for open science.

- Design research incentives and structures that support the open science work and equality of researchers.

- Ensure that universities and research organisations have the evaluation practices, incentives and services needed to support open science and research, e.g. the academic career system supports and rewards researchers who participate in a culture of sharing the results of their research; adopt open responsible research metrics, along with ways of rewarding the full diversity of outputs and contributions, capturing the broader social impact of research.

- Stress multilingualism and diversity: ensure that in the process of expert-based evaluation, high quality research is valued regardless of the publishing language or publication channel; and when metrics-based systems are utilised, journal and book publications in all languages are adequately representative of the region.

- Enhance open science skills: those involved in each stage of the research process should have the capacity and skills necessary to publish in open access, manage research data and practice open science.

- Embrace Africa-centred open science.