Towards a continental Open Science Vision

Making African Research Information & Data Accessible

THE AFRICAN OPEN SCIENCE PLATFORM

Dr Nokuthula Mchunu
Deputy Director, National Research Foundation

Fiesole Retreat

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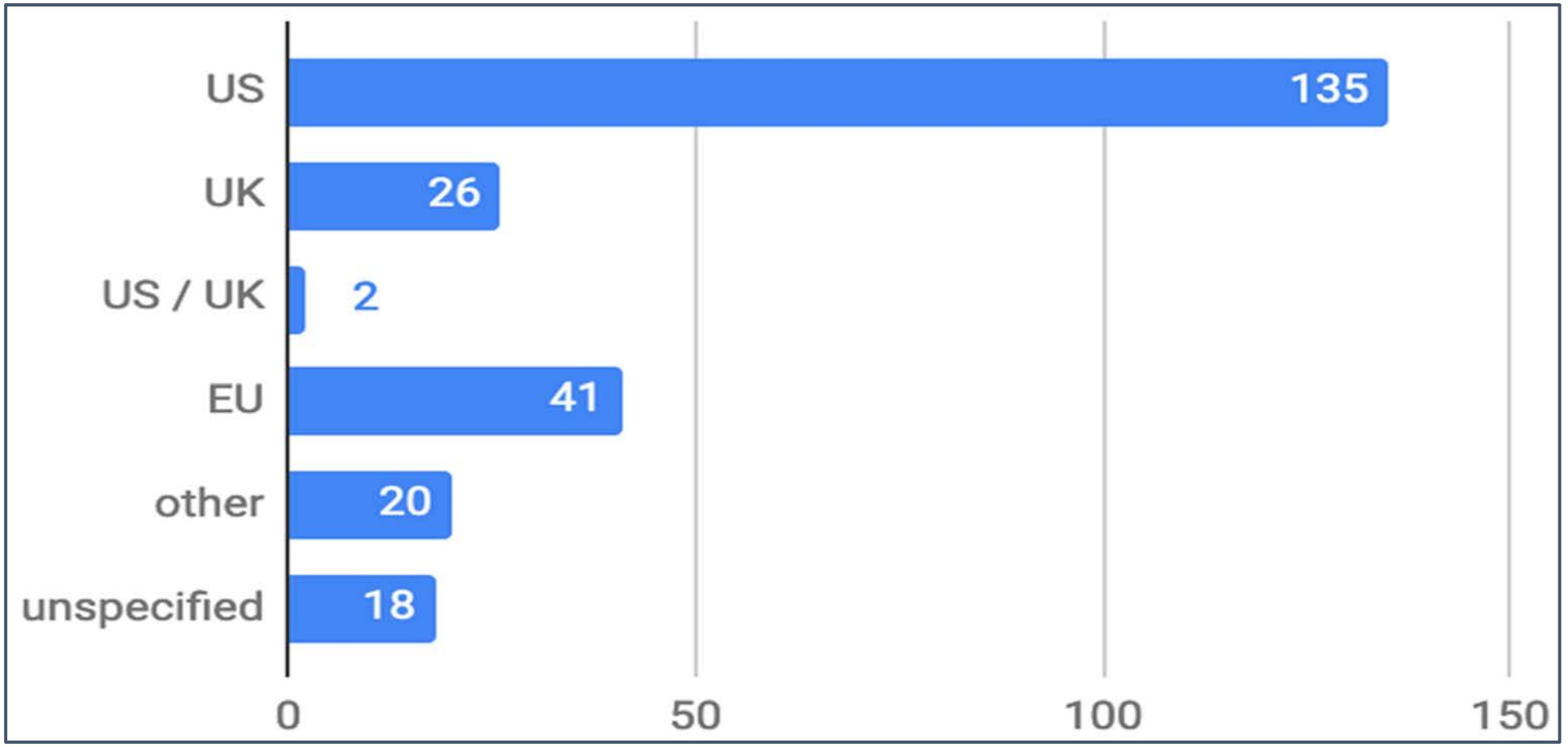
Rethinking the “A” in FAIR: Issues of Accessibility in Research

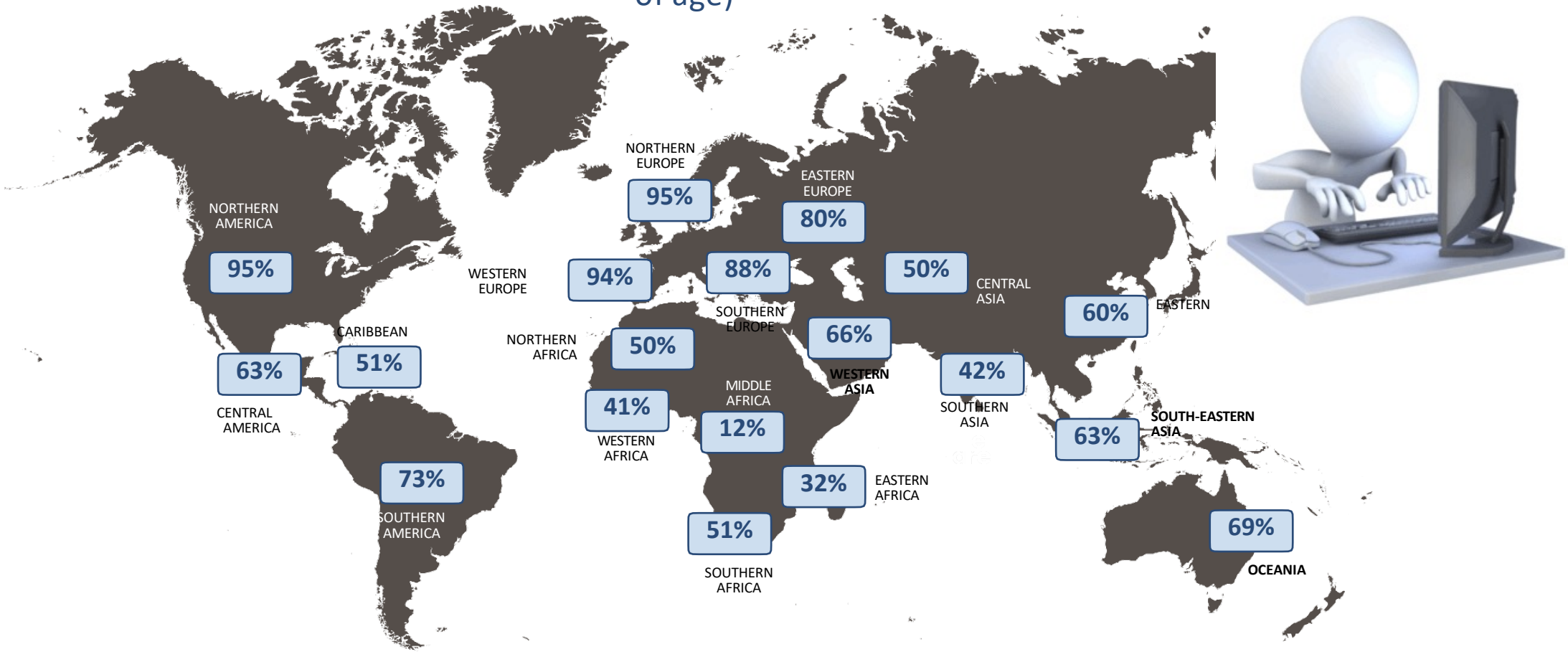
Louise Bezuidenhout and Hugh Shanahan, 2023

Location of Digital Open Science Tools



Internet Penetration by Region – 2019

Internet use by region, comparing the number of internet users to total population (regardless of age)



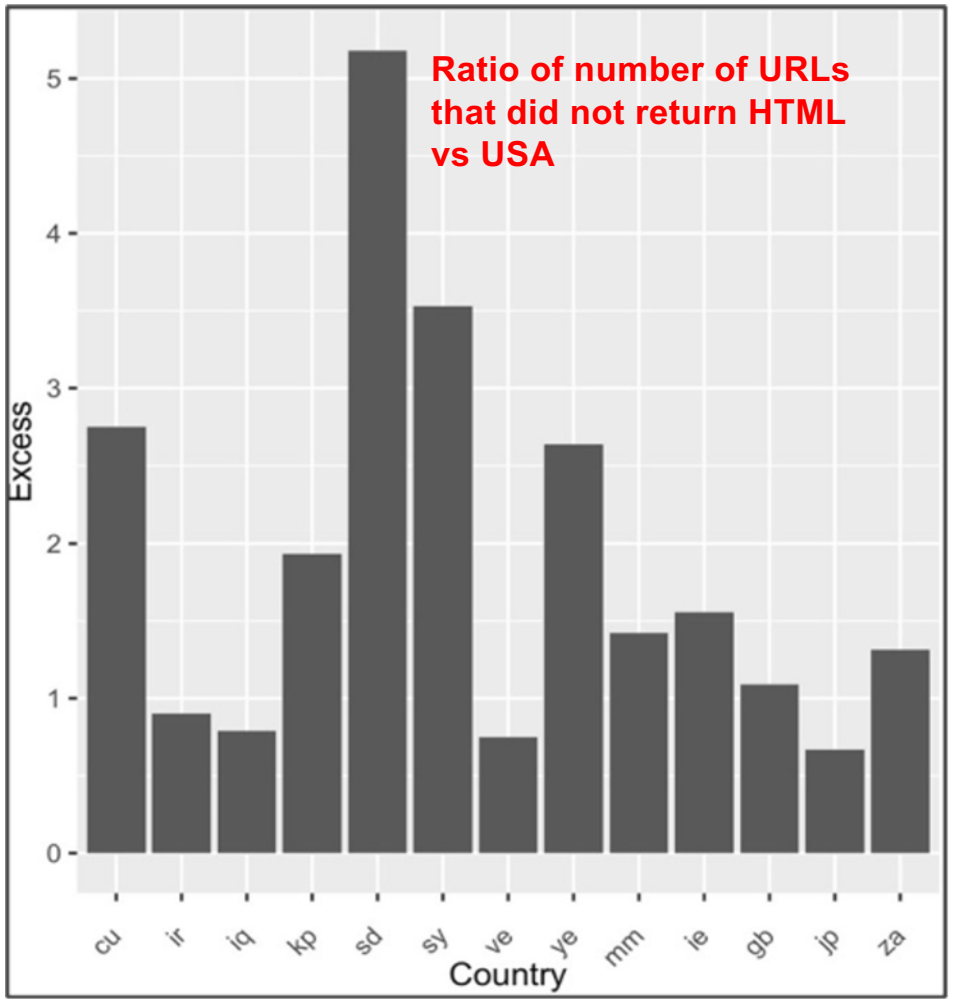
SOURCES: INTERNETWORLDSTATS; ITU; WORLD BANK; CIA WORLD FACTBOOK; EUROSTAT; LOCAL GOVERNMENT BODIES AND REGULATORY AUTHORITIES; MIDEASTMEDIA.ORG; REPORTS IN REPUTABLE MEDIA; SOCIAL MEDIA PLATFORM USER NUMBERS. **NOTE:** PENETRATION FIGURES ARE BASED ON TOTAL POPULATION, REGARDLESS OF AGE. REGIONS AS DEFINED BY THE UNITED NATIONS GEOSCHEME.

Shifting the Focus

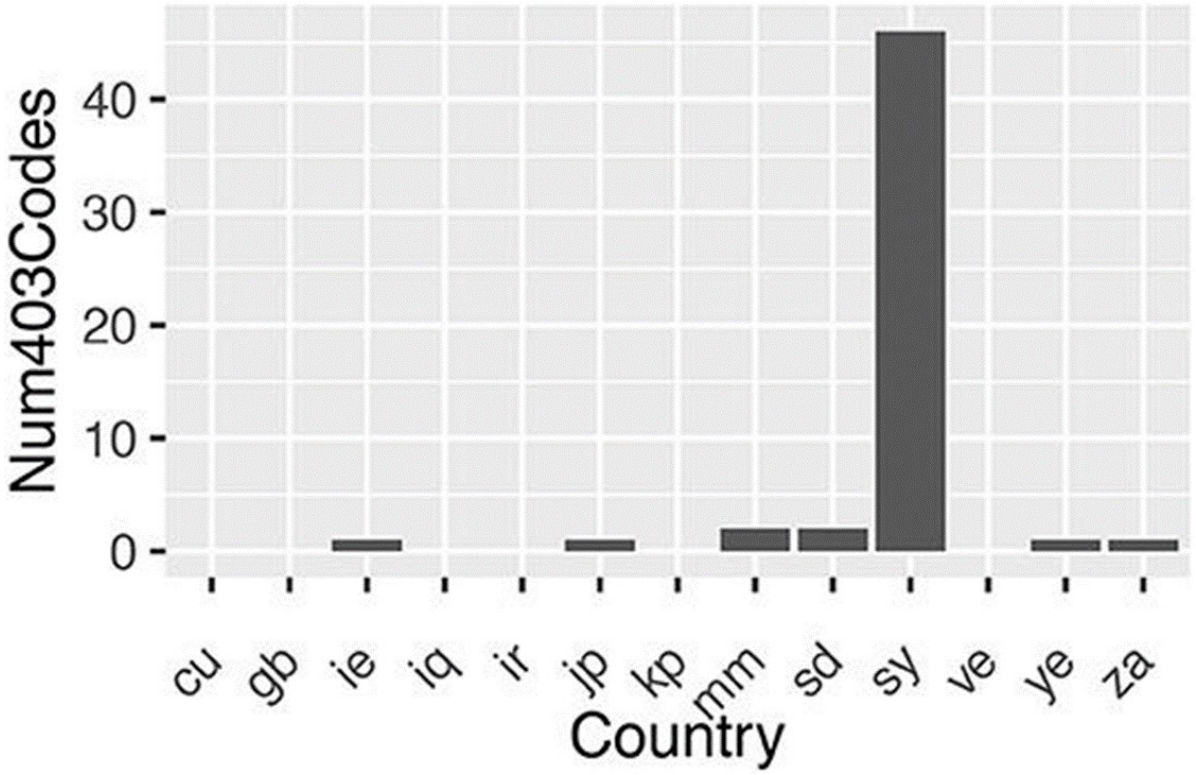
Differing technical systems

Can <u>all users equally</u> engage with the OS landscape when they have an internet connection?

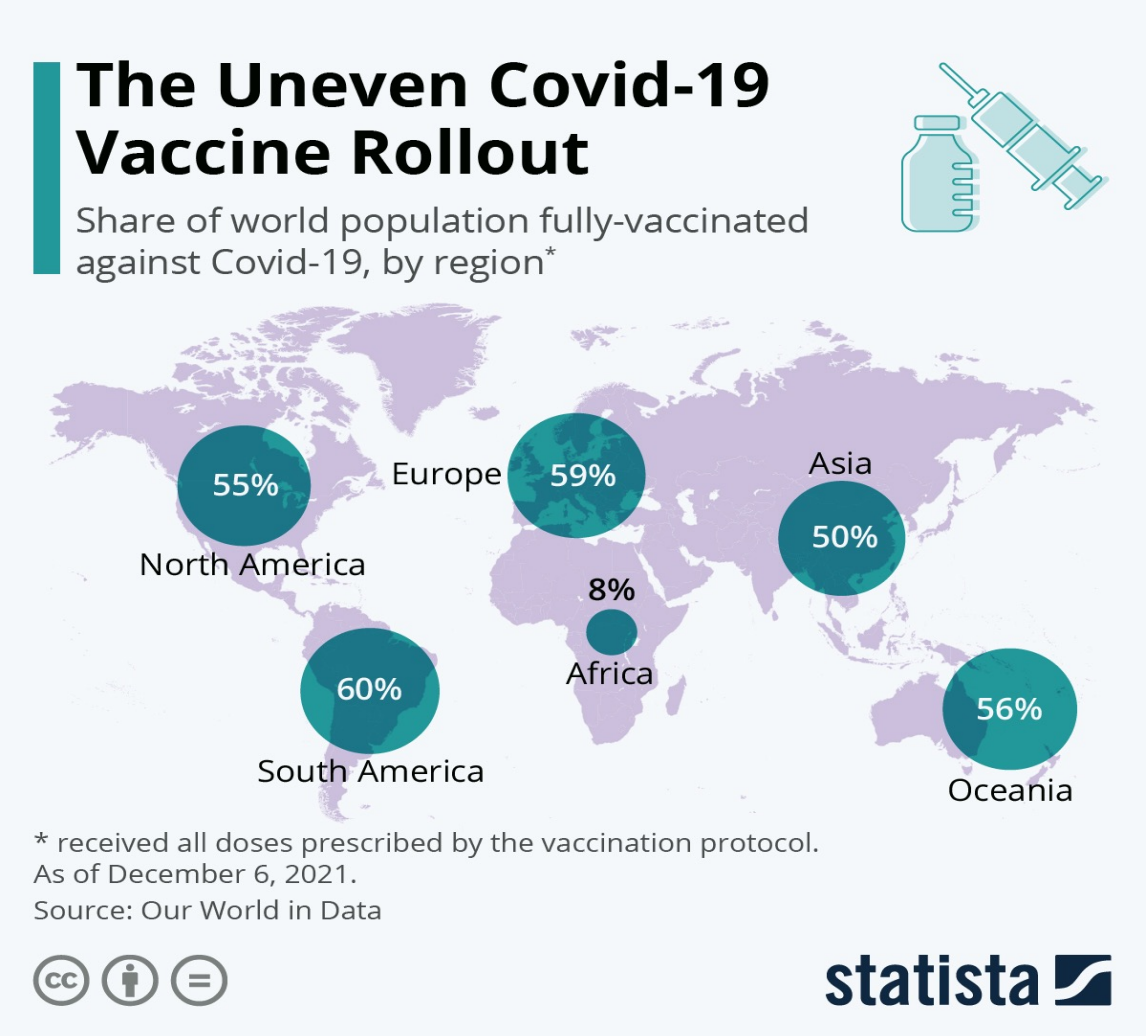
Overall Rank	Country	Average price of 1GB (USD)
155	Malawi	$27.41
154	Benin	$27.22
153	Chad	$23.33
152	Yemen	$15.98
151	Botswana	$13.87



Number of URLs that returned a 403 HTTP response status code when the same URL returned a 200 HTTP response status code from US.



Access to innovation products - 2021



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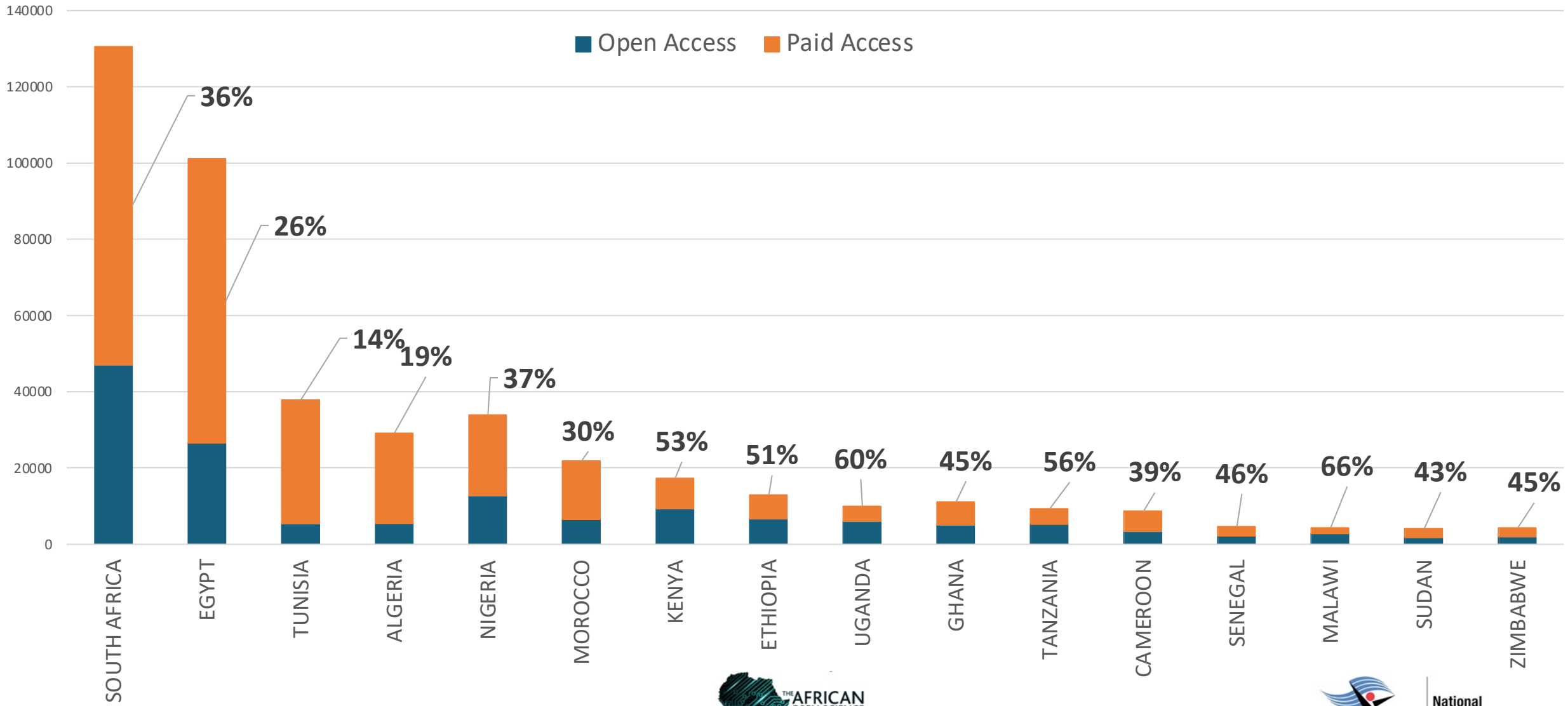
The African Reality with Opportunity

- Population: **1.3 billion**
- Percentage of Global Population: **17%**
- Economically Active Population: **37%**
- Female Population: **50%**
- Urbanised Population: **43%**
- Median Age: **19 years**
- GDP Growth Rate: **4%**
- Population living on $1.90/day: **>40%**

Access to scholar data & information:

Open vs Pay to Read: 2009-2018



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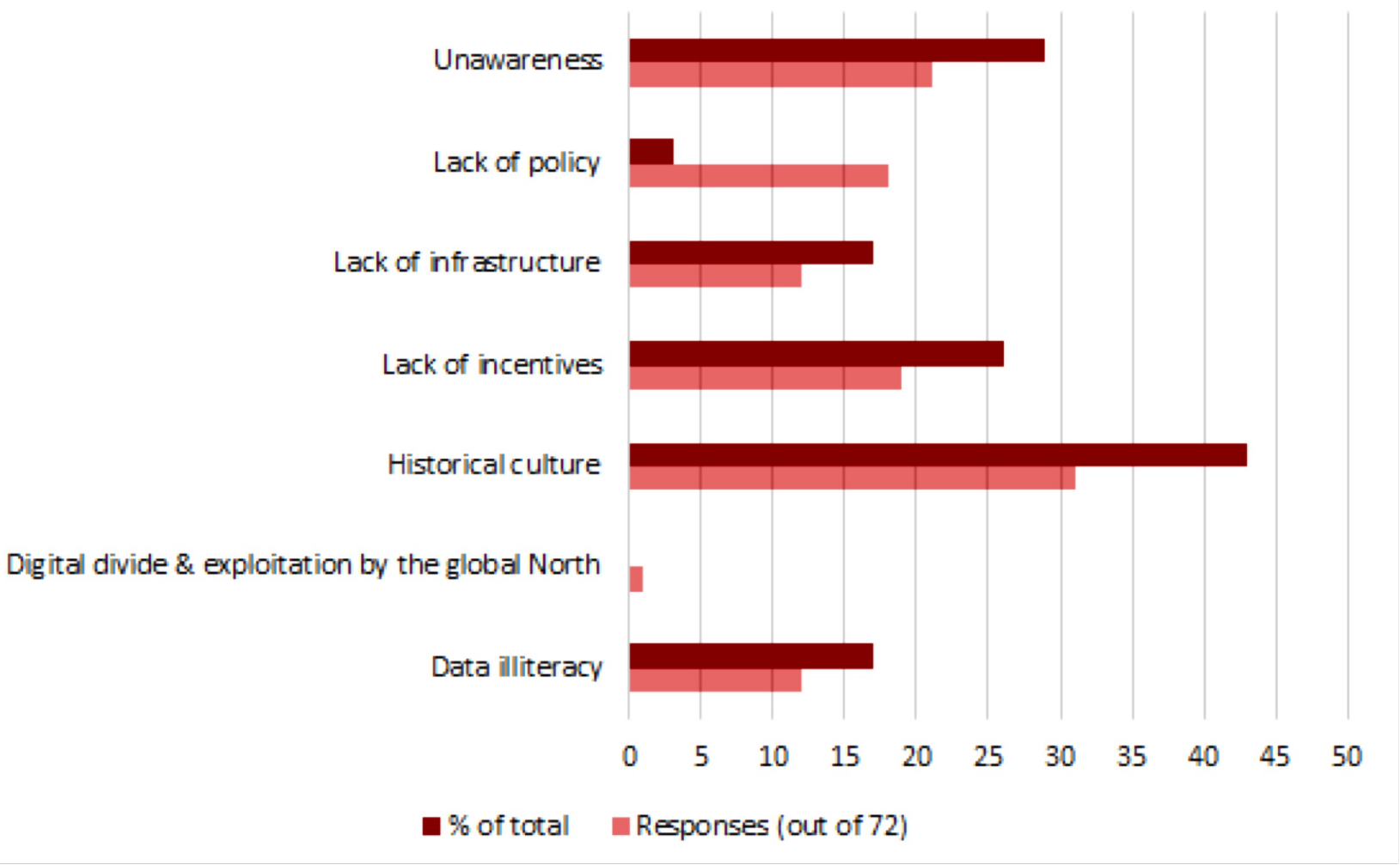
Barriers to Open Science practices in Africa



Restricted access to research funding

Source
https://aosp.org.za/wp-content/uploads/2022/05/aosplandscape-12aug2019_compressed.pdf

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Pathways of using open science to promote science and technology exchange and cooperation

Making science more:

- Accessible
- Inclusive

and,

- Equitable

for the benefit of all

The African Open Science Platform

Open science resources:
- Outreach and Engagement
- Education and capacity development

Data-intensive science outcomes:
- Global Challenge Projects

Cutting-edge support:
- Data Science & AI Institute

Essential Infrastructure:
- Cloud Computing
- Data Management Tools

Convene and coordinate the interests, ideas, people, institutions and resources for Open Science in and for Africa

Investing in People, Institutions and Infrastructure

People

- Knowledge Professionals
- Scientists
- Technology and Technical Specialists
- STI Policy Specialists

Institutions

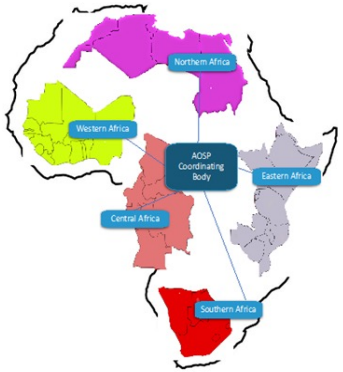
- Universities
- Research Performing Institutions
- Research Supporting Institutions

Infrastructure

- Research Infrastructure

Embrace the philosophy of Open Science

Nodes



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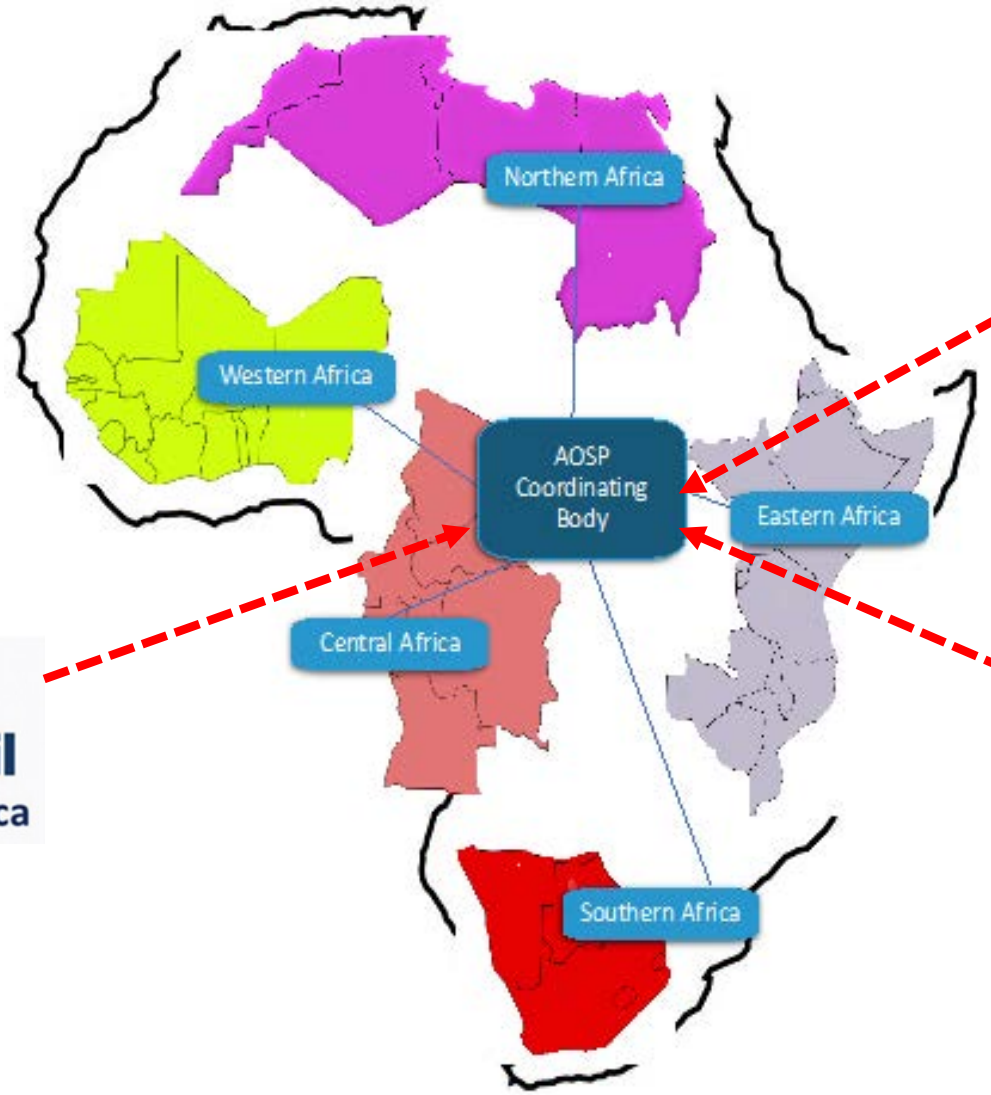
CALL FOR EXPRESSIONS OF INTEREST

Establishment of the African Open Science Platform (AOSP) Regional Nodes

Applications Submitted 15 January 2023

https://www.nrf.ac.za/call-for-expression-of-interest-establishment-of-the-african-open-science-platform-aosp-regional-nodes/

Regional Nodes



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Regional Office for Africa

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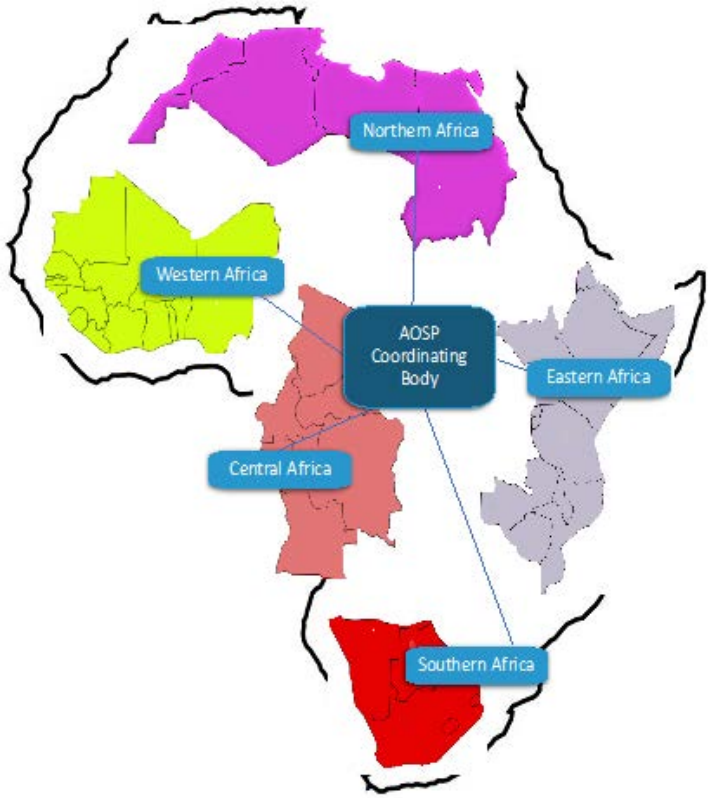
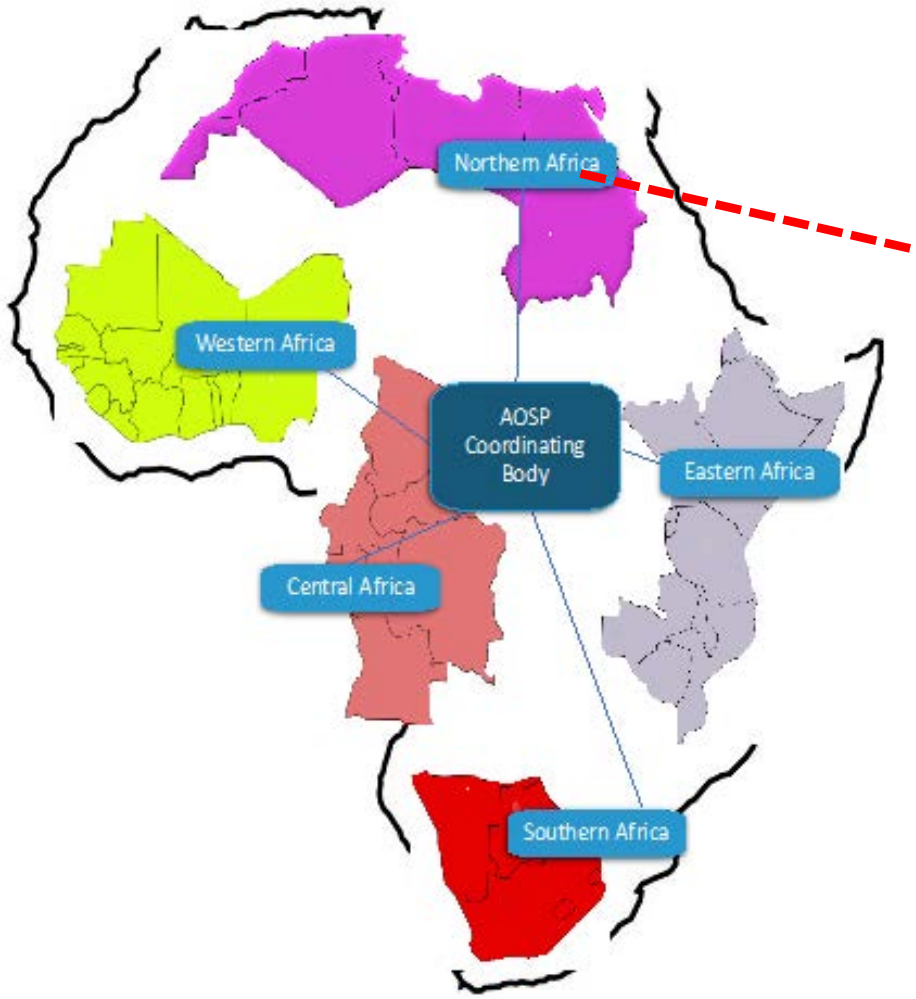
Role of Nodes

- ✓ Regional coordination
- ✓ Policy
- ✓ Programme delivery and implementation
- ✓ Education and skills programmes
- ✓ Science communication
- ✓ Societal engagement and dialogue

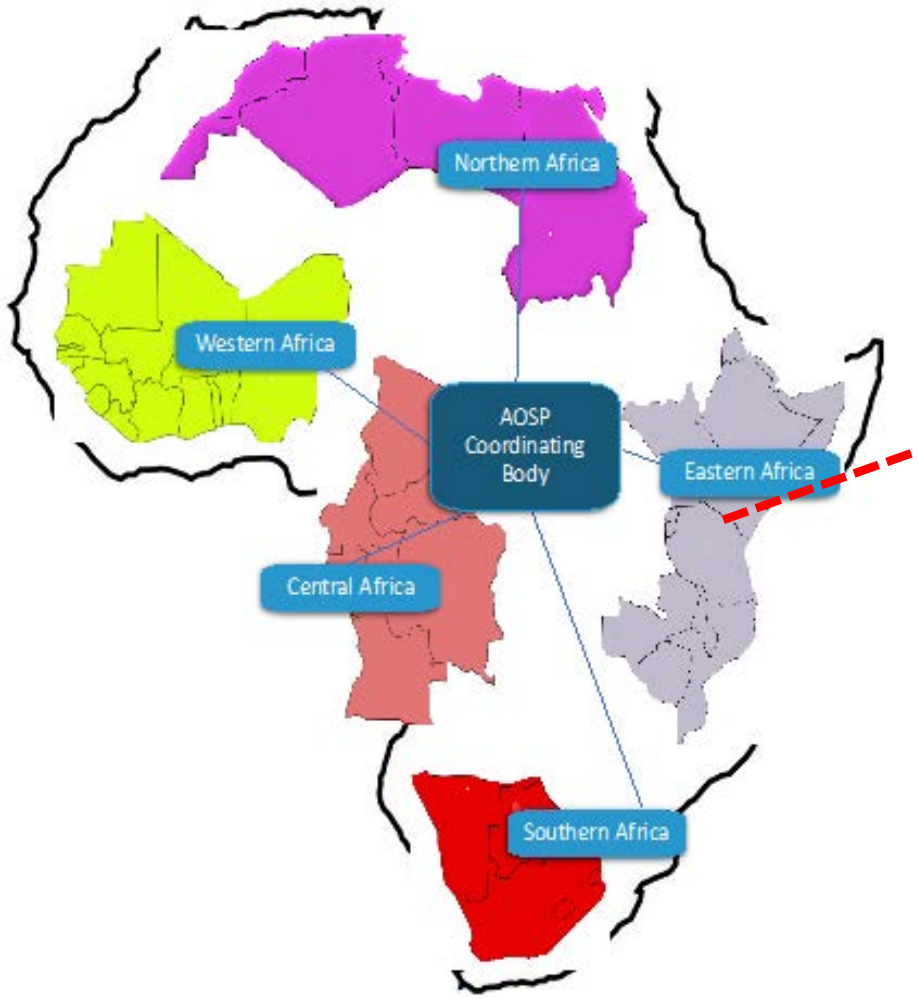


North Africa Node



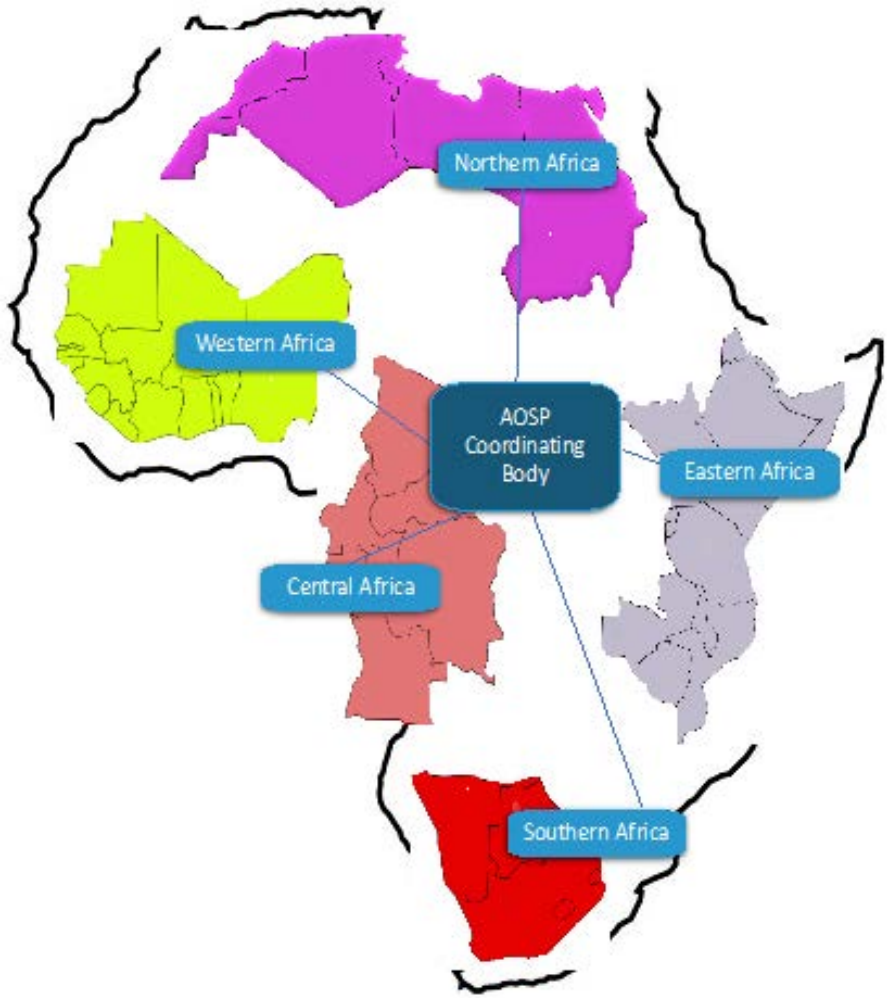
National Authority for Remote Sensing & Space Sciences: EGYPT

East Africa Node



AFRICAN INSTITUTE FOR CAPACITY DEVELOPMENT
AICAD

Node



UbuntuNet Alliance

Our Region

22
Countries in Our Region

16
Member NRENs

14
NRENs Connected

1000+
Institutions Connected

3.48
Million Students & Staff Connected

- Uganda (RENU)
- Botswana (BotsREN)
- DRC (Eb@ale)
- Zambia (ZAMREN)
- South Africa (TENET)
- Sudan (SudREN)
- Ethiopia (EthERNET
- Somalia (SomaliREN)
- Kenya (KENET)
- Rwanda (RwEdNet)
- Burundi (BERNET)
- Tanzania (TERNET)
- Malawi (MAREN)
- Madagascar (iRENALA)
- Mozambique (MoRENet)
- Zimbabwe (ZIMREN)

Leverage existing and new initiatives and partnerships

Science Granting Council Initiative - SSA

17 Countries in East, West and Southern Africa

- Central to funding and catalysing a national system of innovation
- Management of research competitions for impact and development by the SGCI participating councils
- Responsive impact oriented multilateral funding
- Institutional capacitation

AJCORE | Africa-Japan Collaborative Research

Long Term Africa-Japan Research and Innovation Partnership

Training on Digital Archiving

April 17, 2024

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Access 2 Perspectives

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COVID-19 Africa Rapid-Grant Fund

Permanent URI for this community https://africarxiv.ubuntunet.net/handle/1/1385

[Research: African Health Governance Systems]

[Research: COVID-19 Virus]

[Research: Mental Health]

[Research: Prevention and Control]

[Research: Science engagement]

[Research: Socio-cultural Dynamics of Transmission]

[Research: Vulnerability]

[Science Engagement: Science Advisers]

[Science Engagement: Science and Health Journalists and Communicators]

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Launch:

AfricArXiv as a locally hosted repository

AOSP and Regional Policy Alignment

African Open Science Platform

Revised Regional Indicative Strate
Development Plan, RISDP

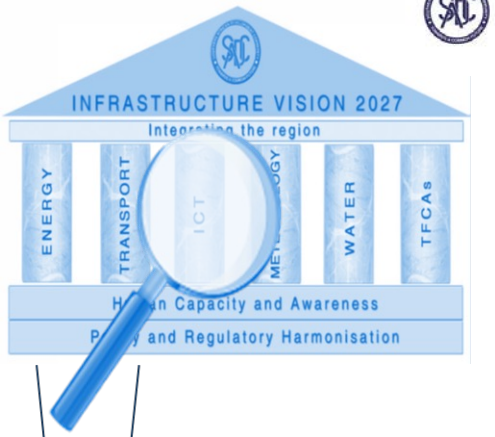
Industrialization Strategy and Roadmap

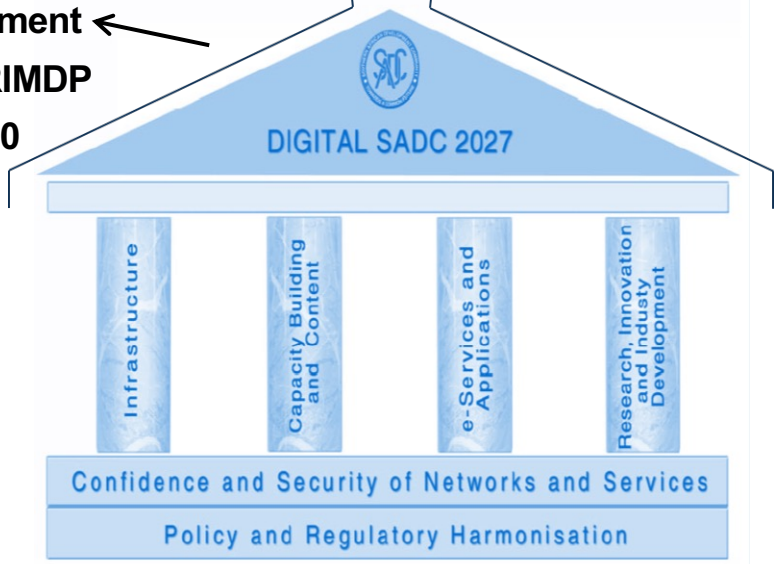
SADC CI Framework

Regional infrastructure Development Master Plan, RIMDP

SADC Strategic Plan on STI 2015 - 2020

Protocol on STI





AI and Data in Health

Southern African Dialogue

Date

28 – 29 June

Venue

NRF, Pretoria (Albert Luthuli Audiotorium)

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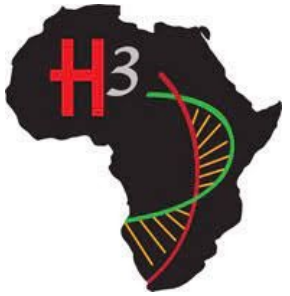
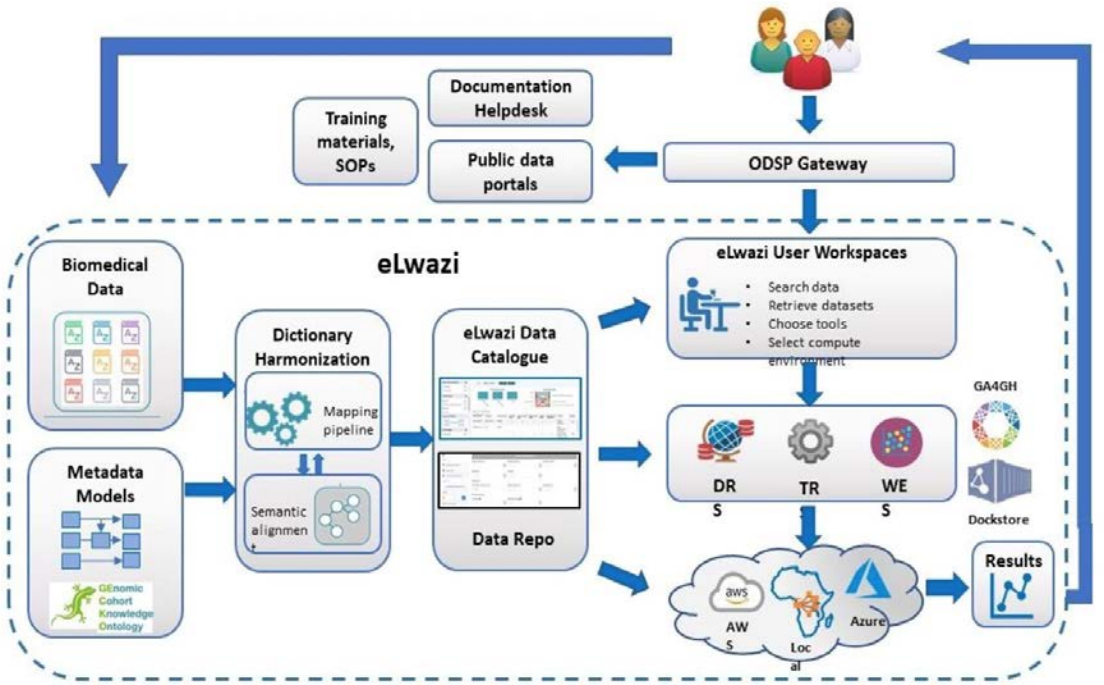
SCAN ME

eLwazi Open Data Science Platform and Coordinating Centre

- ✓ Genomics Research in Africa, Genomic Data, Data Science
- ✓ Aims to provide a flexible, scalable open data science platform for the DSI-Africa consortium (NIH Project) to find and access data, select tools and workflows and run analyses on a choice of computing environments, all through easy-to-use workspaces.
- ✓ UCT eResearch collaboration with H3ABioNet to build an Open Data science Platform
- ✓ H3ABionet = large Pan-African bioinformatics network of 27 institutions in 17 countries
- ✓ Scalable for Pan African Footprint
- ✓ Can promote Open Science practices





http://www.eresearch.uct.ac.za/eresearch/news/elwazi

https://reporter.nih.gov/project-details/10311568

Training

SAVE THE DATE
HOST CITY: Gaborone, Botswana
DATE: 23-25 November 2022
UbuntuNet CONNECT 2022
THEME:
Redesigning the Digitalized African College and University
The UbuntuNet-Connect 2022 conference theme looks broadly at the issues surrounding the redesign of digitalised colleges and universities in Africa.
23 November 2022 – 1 day Open Science training for Librarians: Open Data Repository.
For more information: https://ubuntunet.net/uc2022/
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Morocco
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Libya
Egypt
Western Sahara
Mauritania
Mali
Niger
Chad
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Eritrea
Somalia
Senegal
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14
Guinea
Burkina Faso
Benin
Nigeria
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Cote d'Ivoire
Liberia
Ghana
Cameroon
Central African Republic
South Sudan
Ethiopia
12
Congo
Gabon
Uganda
Kenya
19
20
DR Congo
18
Tanzania
Angola
Zambia
21
Mozambique
Zimbabwe
Namibia
Botswana
Madagascar
22
South Africa
23

Opportunities for Engaging AOSP

- Development of a federated network of computational facilities and services, software tools and advice on policies and practices of research data management,
- Development of Data Science and AI Institute spanning and embedded at African institutions,
- Collaborative projects and application programmes addressing African priorities through Open Science – including in health, biodiversity, disaster risk reduction, agriculture and open innovation ,resilient cities, indigenous knowledge etc.,
- Creation of a Network for Education and Skills in data and information,
- Creation of Network for Open Science Access and Dialogue.

SHUKRAN
PARAVAA ILLA
NGIYABONGA
POITTU VARÉN
ROMBA NANDRI
THOBELA
THANK YOU
NDI A LIVHUHA
KE A LEBOHA
NDZA KHENSA
ENKOSI
DANKIE
NGIYATHOKOZA
BUCKLE UP - DRIVE SAFELY

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LET'S WORK TOGETHER FOR AFRICA – AND THE WORLD

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ACADEMY OF SCIENCE OF SOUTH AFRICA

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CODATA