AESIS

Examining geopolitical implications of global policies for access to scholarly publications and research data

Open Science and Societal Impact

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Agenda

- Open Science
- Global Realities
- African Realities
- Geo-Political Impact
- Africa's Readiness to Embrace Open Science and Open Access
- Challenges

Open Science

Open Science is creation of an **inclusive** and **integrated** culture of **collaboration** in the service of **democratizing information** and **knowledge** across **social boundaries** for the achievement of **common goals** and **objectives**

Open Access

Open access (OA) means making **research publications freely available** so anyone can benefit from **reading** and **using research.**

https://www.jisc.ac.uk/guides/an-introduction-to-open-access

Culture of Ubuntu

- **Ubuntu** is neither collectivist nor individualist;
- **Ubuntu** encourages **participation** based on building **consensus**;
- **Ubuntu** considers our **common humanity**, our **interconnectedness**, our **shared knowledge and wisdom**

Ubuntu is Collaborationist

Agenda 2063

- A prosperous Africa based on **inclusive growth** and **sustainable development**;
- An **integrated continent**, politically united based on Pan-Africanism and the vision of **Africa's Renaissance**;
- An Africa of good governance, **democracy**, respect for **human rights**, justice and the rule of law;
- A **peaceful** and **secure** Africa;
- An Africa with a **strong cultural identity**, **common heritage**, shared values and ethics;
- An Africa whose development is **people-driven**, relying on the **potential of African people**, especially its women and youth, and caring for children;
- Africa as a strong, united and **influential global player** and partner.

Global Realities

- **Climate Change:** Global greenhouse gas emissions have grown by nearly 80% in 50 years - highest level in 800,000 years. Sadly, Africa is the lowest carbon emitter, yet it is most vulnerable to climate change
- **Food Security:** Hunger, malnutrition and food security are transdisciplinary challenges. The focus on sustainable agriculture will not result in successful outcomes unless there is a systemic approach which also addresses gender parity, ageing populations, skills development and global warming, etc.
- **Disruptive Technologies:** The extensive reach of digital technologies is fundamentally changing social interaction which is potentially disruptive. It is necessary to harness the benefits of this seismic change to promote sustainability and stability?
- **Gender Equality:** Equality between men and women in all aspects of life, from access to health and education to political power and earning potential, is fundamental to whether and how societies thrive or survive. This is more than a moral issue
- **Health:** Dealing with pandemics and the rise of drug resistant and communicable diseases are exacerbated by the prohibitive costs of care, particularly in developing countries. The global population is set to rise to 9.7 billion in 2050 with 2 billion aged over 60

African Realities

- Africa is the continent that **benefits least** from **globalization**;
- More than **three quarters of Africa's export** consists of **raw materials and crude oil**;
- In 20 years only **17 of 49 Countries** have **experienced inclusive growth** (poverty and inequality reducing);
- The **solution** to fragility lies in the industrialisation and **structural economic transformation**.
- **Structural economic transformation** is attributed to **sustained investment** in the **science, technology and innovation** base of African economies;
- **Africa** will not industrialise in the absence of a careful, **purposeful, application** of **science, technology** and **innovation** for **development**

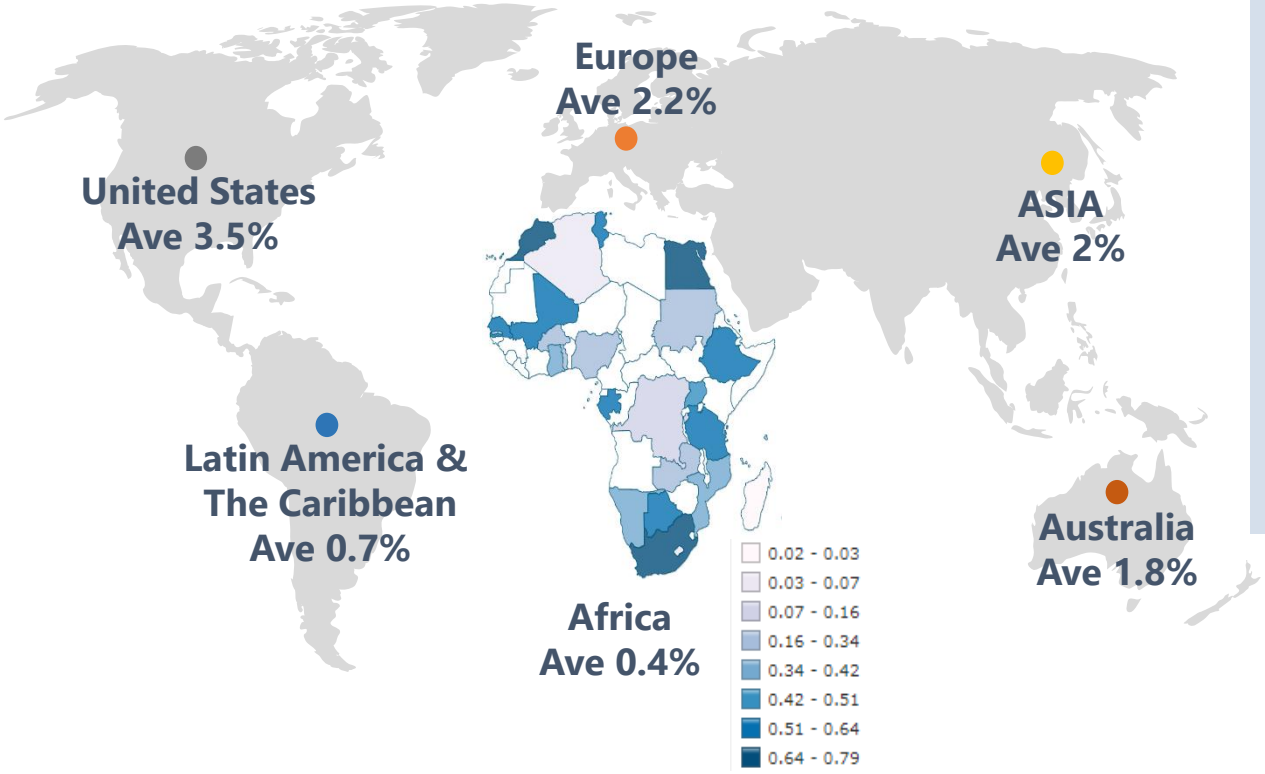
Country STI profiles: A framework for assessing science, technology and innovation readiness in African countries

African Realities

- Population: **1.4 billion**
- Percentage of Global Population: **16.7%**
- Economically Active Population: **37%**
- Female Population: **50%**
- Urbanised Population: **43.9%**
- Median Age: **19.7 years**
- GDP Growth Rate: **-2.1% (2020); 3.4% (2021)**
- Covid Infections: **11.5 million**
- Population living on **$1.90/day: 34%**

African Realities

R&D Intensity (GERD as a Percentage of GDP)



In Africa:

- **R&D spend** per capita: <$100
- Contribution to world research outputs: 3%
- Researchers per million of population: <100
- Co-Authorship: 61.3%

UIS Fact Sheet No. 50 | June 2018

The Geo-Political Impact

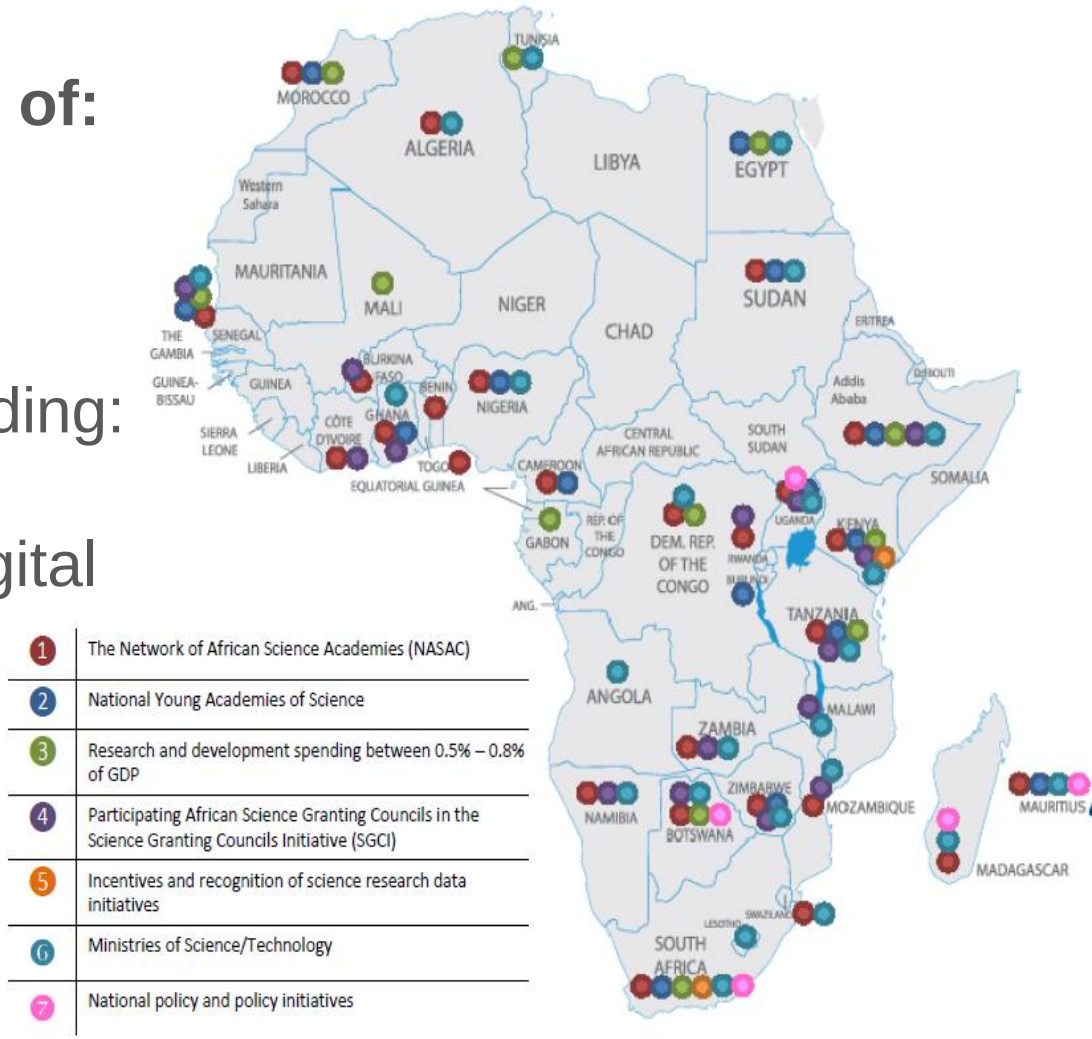
Embracing Open Access supports:

- Data intensive research as a **foundational approach** to socio-economic challenges;
- An **integrated approach** to **strengthening the research enterprise** on the continent is a priority;
- Necessary to adopt a collaborative approach to:
  - Policy development
  - Infrastructure development
  - Human capacity development

Africa's Readiness for Open Access

African Landscape Assessment of:

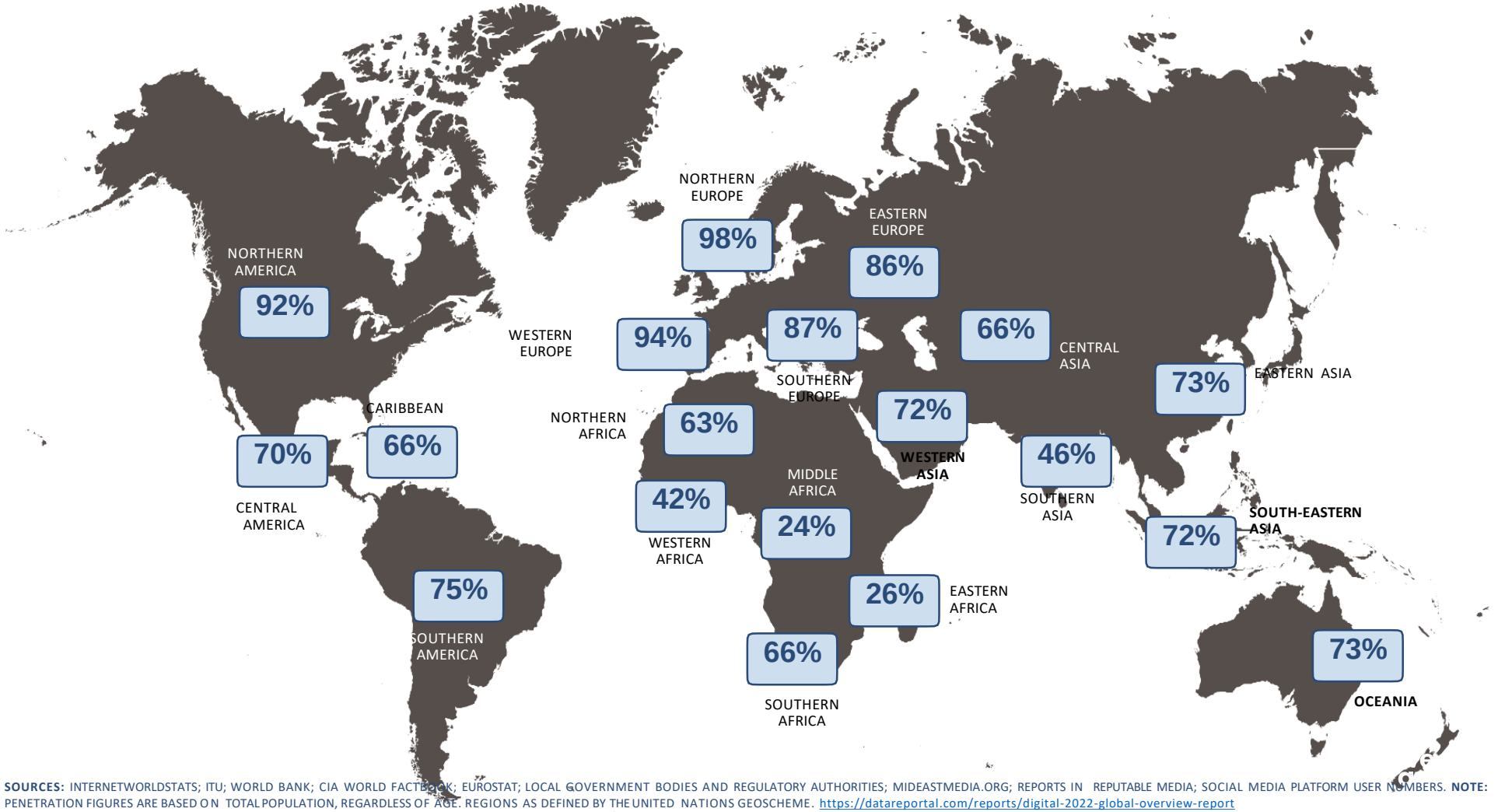
- Political willingness to invest in research and research infrastructure;
- Enabling policy initiatives including:
  - Incentives,
  - Skills development for the digital revolution.



ASSAf 2018

Africa's Readiness for Open Access

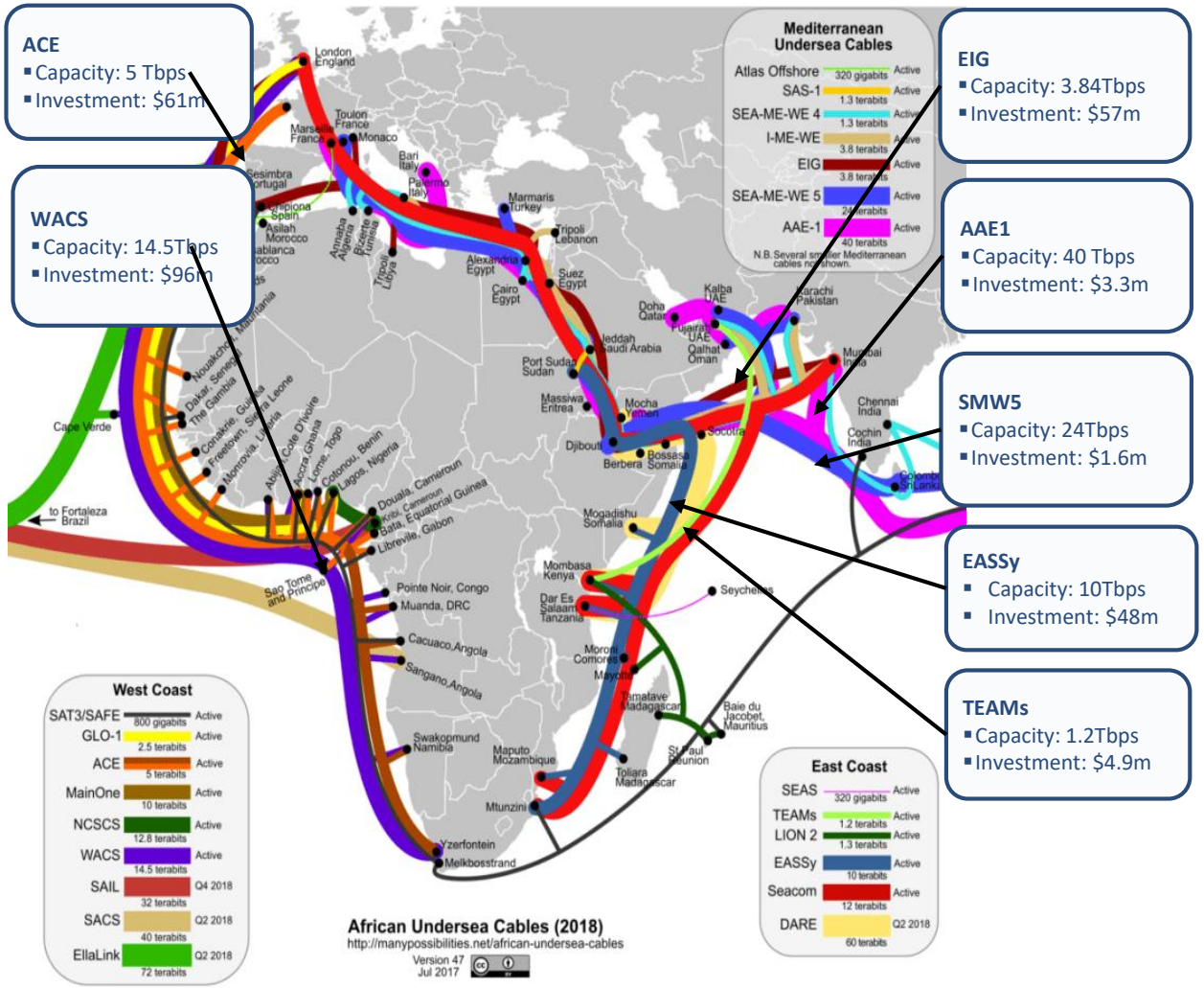
Internet users by region as a percentage of total population



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. https://datareportal.com/reports/digital-2022-global-overview-report

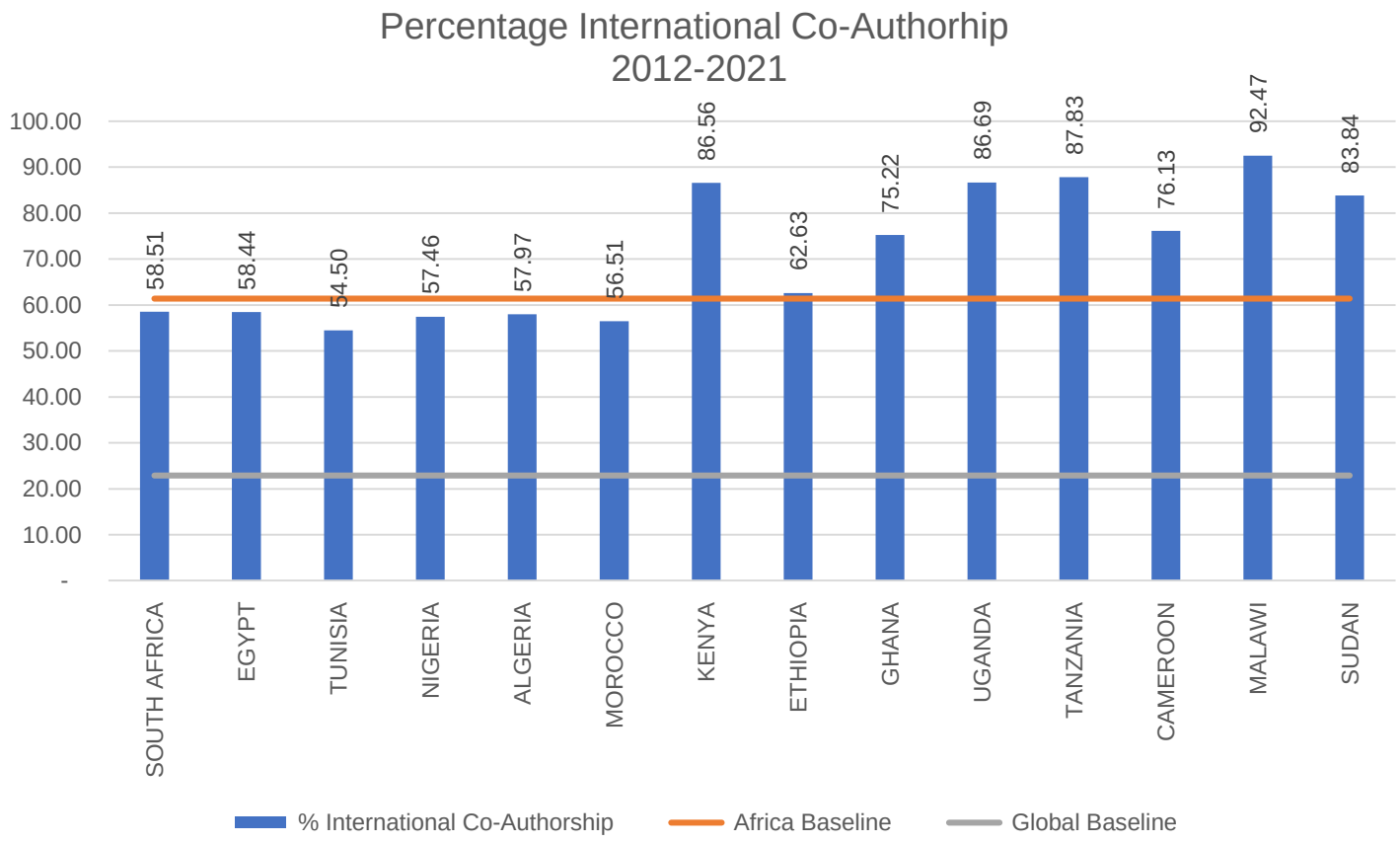
Access to Global Networks

- Africa is **surrounded** by the **necessary global telecoms infrastructure** to connect to world economies;
- It's a matter of **collaborating** on the appropriate **infrastructure** and **enabling policies** to **unlock the potential** that resides on the continent



Africa's Readiness for Open Access

- Of the 548,000 publications from the continent 344,000 (63%) are co-authored;
- What does this say about the African research enterprise?

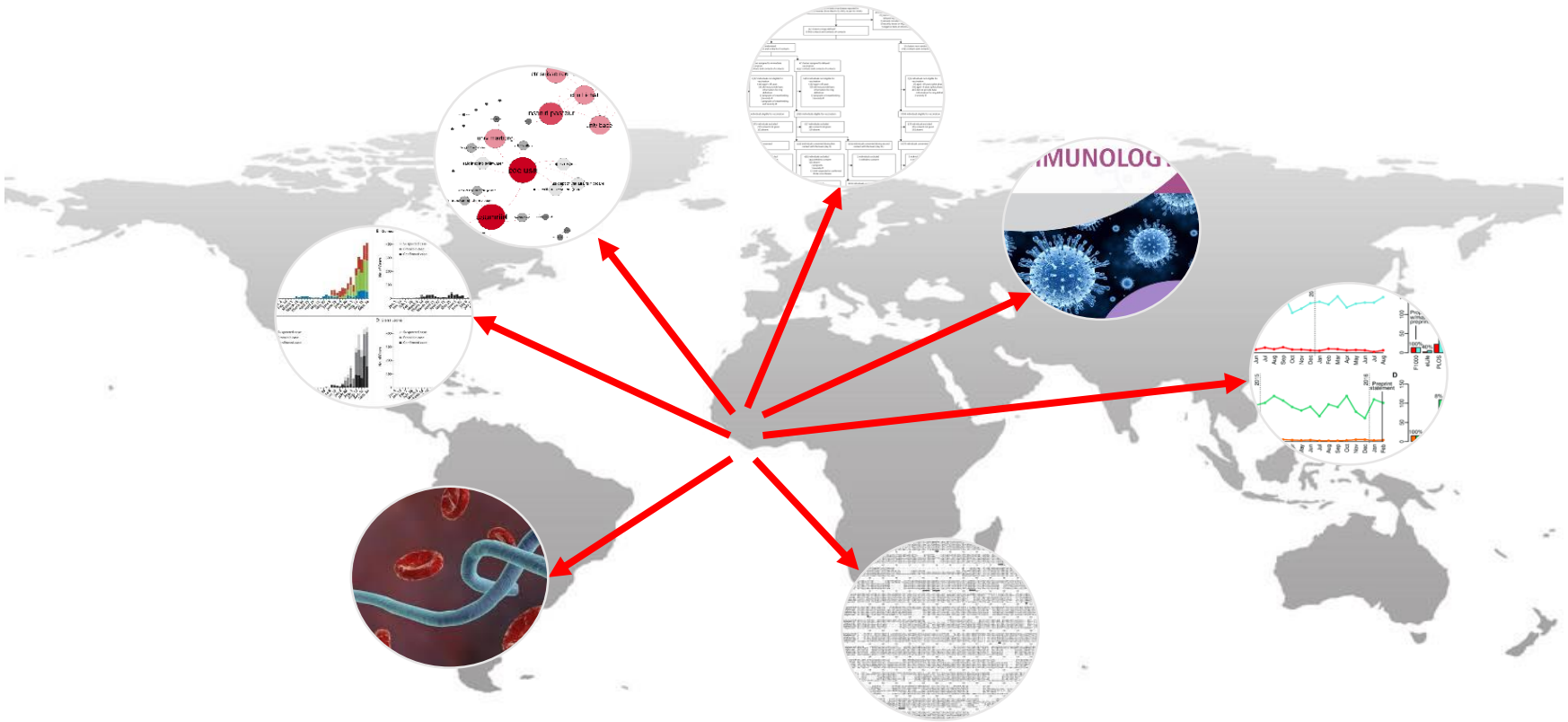


Africa's Readiness for Open Access

Ebola Outbreak 2017 – Global Response

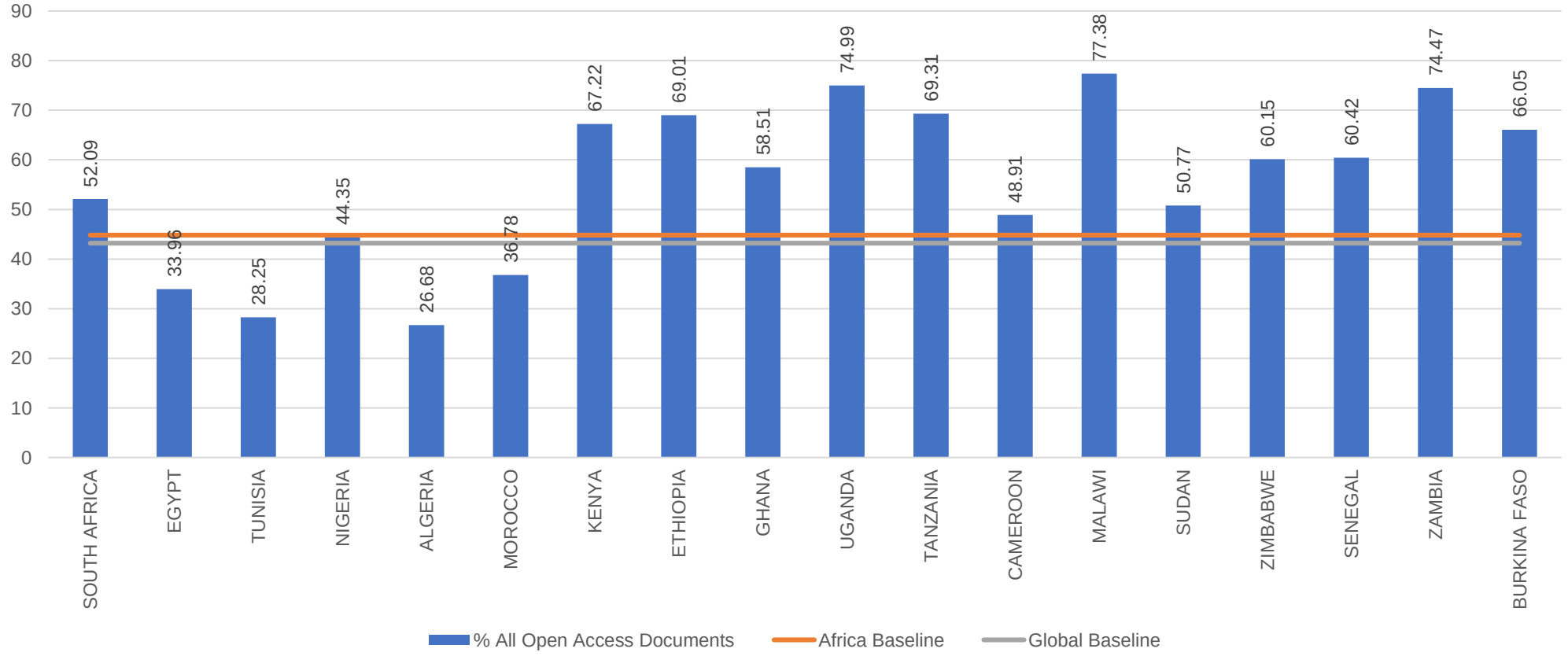
Africa's Readiness for Open Access

Ebola Outbreak 2017 – Global Response



Why aren't Africa researcher retaining the information and generating new Knowledge on the continent?

Challenges: Open Access Publications 2012-2021



44.8% of African publications were Open Access for the period with 25.5% Gold Open Access

The Geo-Political Impact

In order to unleash Africa's potential:

- Maximise the return of economic investment in research;
- Embrace the **modern storm of digital communication and data sharing** as it has profound implications for **society, the economy** and for **research;**
- Adapt the **intellectual infrastructures** to this new reality;
- Embrace Open Access; however,…..

Open Access has its challenges

Open Access – South Africa

The South African Government has placed **Open Science** and **Open Access** on the **National Agenda:**

- The White Paper on **Science, Technology & Innovation** (March 2019) defines Open Science as "..*an approach to research based on **greater access to public research data** enabled by information and communications technology (ICT) tools and platforms, broader collaboration in science – including the participation of non-scientists – and the use of alternative copyright tools for diffusing research results*"

- The **Open Science Framework for South Africa** was developed through the SA-EU dialogue and is a **commitment by the South African government** to drive scientific progress by **making publicly funded scientific research results open** for consultation, re-use and re-discovery.

Open Access – South Africa

The South African Government has placed **Open Science** and **Open Access** on the **National Agenda:**

- The draft **Open Science Policy** confirms the open-access mandate and makes it applicable to all **publicly funded research processes and outputs.** The policy also addresses:
  - The constitution of a **national forum** to **promote best practice**;
  - The issues of **incentives;**
  - The creation of a **Centre for Citizen Science;**
  - The creation a **South African Open Science Observatory** to monitor the move towards open science in the country
  - The requirement for a **national agency** to be established to **curate publicly-funded research data**
  - Longer term vision of a **"federated open science infrastructure"** to support the **accessibility of research outputs**

Open Access

National welfare depends not on the comparative advantage of nations but on their **competitive advantage. Scientific** and **technological infrastructure** is one of the determinants of **competitiveness**. This means, that one of the **loci of innovation is the nation**

(The Competitive Advantage of Nations; Michael Porter)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OBRIGADO
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GRAZIE
KIA ORA
MULTUMESC
MOCHICHAKKERAM
SALAMAT
MAMANA
MATONDO
TERIMA KASIH
MERCI
KIITOS
SPASIBO
CHOKRANE
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