

# **International Research Partnerships and Cooperation**

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# Cooperation in research: why is it important?

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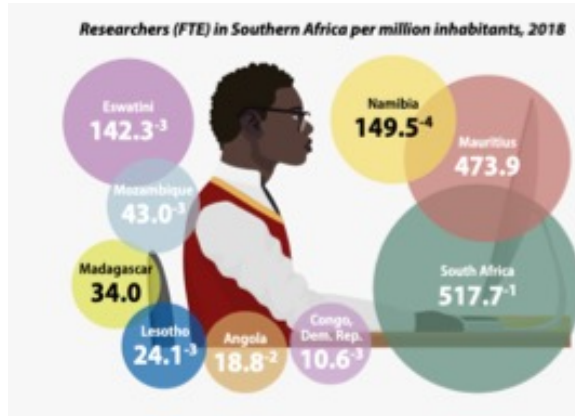
**Horizon Europe** on International Cooperation:

*Tackling together global societal challenges; access to the world's best talents, expertise and resources, ...*

From *Freedom and Responsibility in Science in the 21<sup>st</sup> Century* (Int. Science Council, 2022):

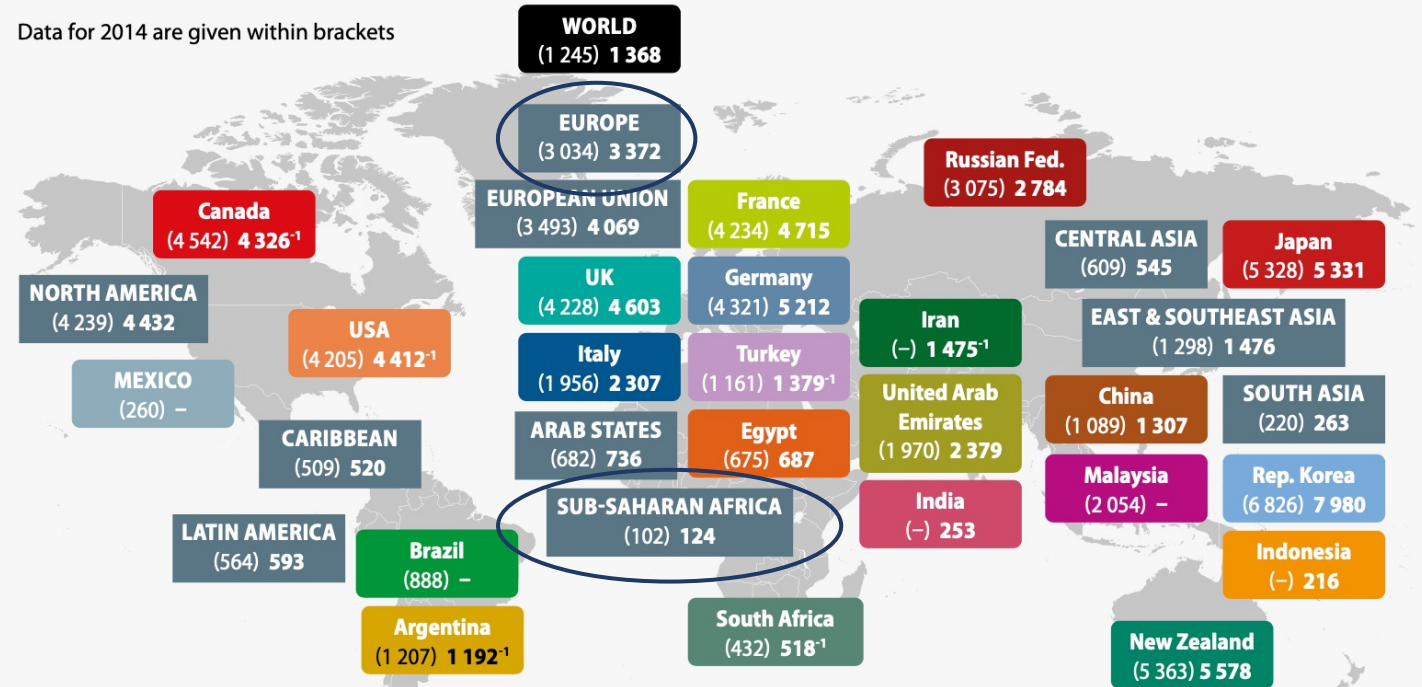
- The principle of **sharing** science in the 21st century ... engage **collectively** with different audiences, including policy-makers and the wider public.
- Broad-based, engaged, **interdisciplinary and transdisciplinary science** is imperative for a scientific response to the complex problems facing our societies.

# The state of science



## Researchers (FTE) per million inhabitants, by region and selected country, 2014 and 2018

Data for 2014 are given within brackets



**13.7%**

Growth in the global number of researchers (FTE) between 2014 and 2018

**4.6%**

Growth in global population between 2014 and 2018

**1.6%**

Growth in expenditure per researcher between 2014 and 2018

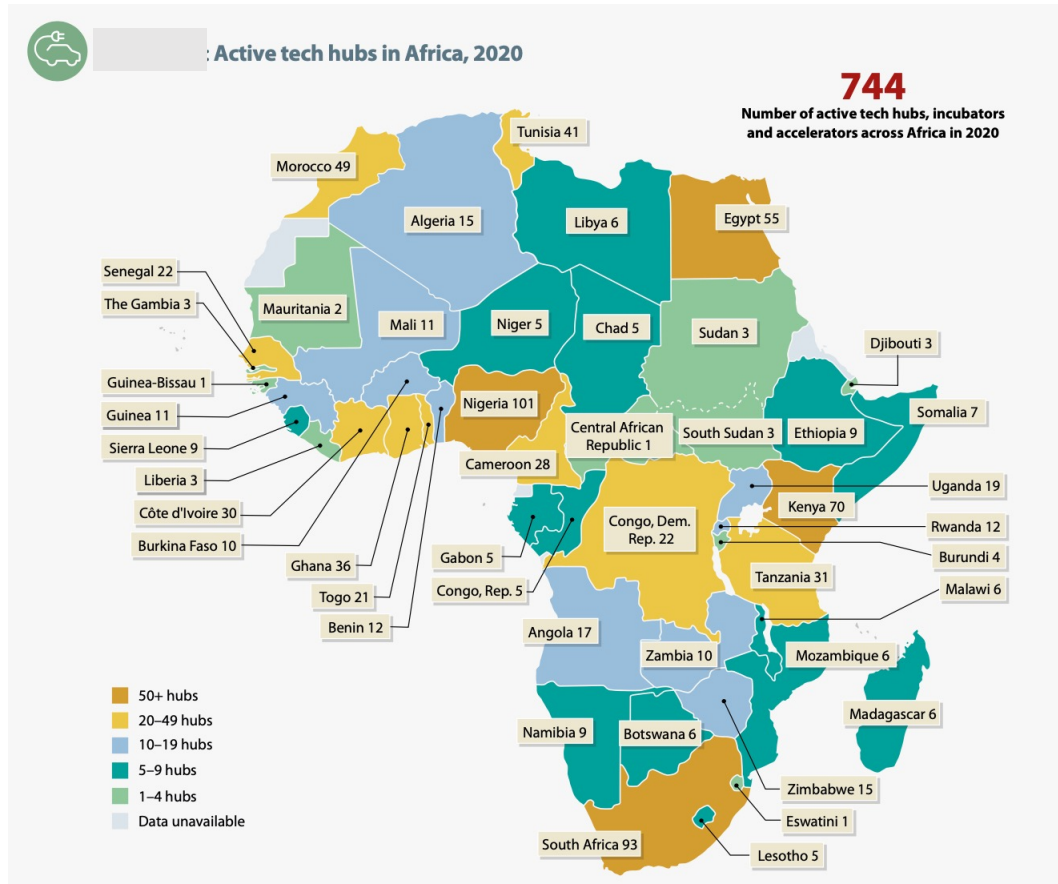
Source: UNESCO Science Report 2021

## Some important initiatives and developments

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- The African Union's STI Strategy for Africa 2024 (**STISA-2024**): science, technology and innovation as the key drivers of Africa's development and growth
- **Science Granting Councils Initiative**: a continental, multi-funder initiative to strengthen the capacities of science granting councils in sub-Saharan Africa
- Joint **AU-EU** Innovation Agenda
- Africa accounted for 12.8% of 1 000 new or modified existing technologies developed worldwide to support the **Covid-19** response. Most African inventions involved digital technologies (57.8%).

# Active tech hubs



Source: UNESCO Science Report 2021

# Centres of Excellence (CoE)

- Focal points for high-quality and high-impact collaborative research
- Pressing regional challenges

## **ARUA** Alliance of Research Universities in Africa:

- Centres in member universities

## **World Bank:**

- Since 2014, more than 80 Centres in 20 countries
- Since 2019, with **IRD France**: significant expansion

# Prerequisites, co-requisites, values for successful and effective international cooperation

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**Hurdles** in low-income countries:

- lack of capacity and critical mass
- limited research funding and research infrastructure
- limited access to library and data resources
- poor or no connections to mainstream

Basis for **effective research collaborations**:

- Establish partnerships on an equitable basis
- Co-design of research programmes and mutually agreed goals
- Contribute to capacity strengthening

Horizon Europe:

*Third countries with **good capacity** in science & technology and innovation can become associated*

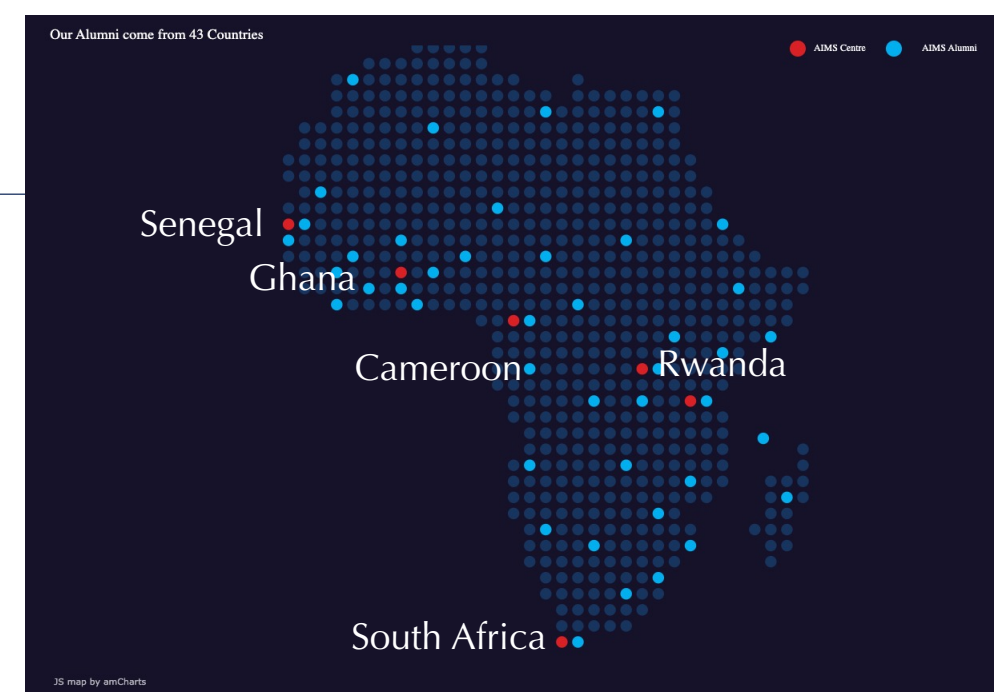
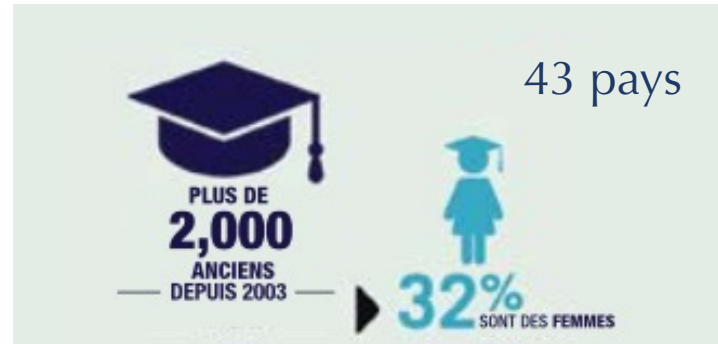
*Abundant opportunities for partnerships where capacity not strong - **balance** research and developmental goals*

# Some examples of continental and regional initiatives

Research, development and capacity building

# African Institute for Mathematical Sciences (AIMS)

## Next Einstein Initiative



## AIMS Research Centres

Extensive international *collaboration*, major boost from *externally funded chairs*:

- German Research Chair Programme – 7 chairs
- IDRC of Canada: Canada Research Chair in Climate Change
- Carnegie Corporation: Chair in Data Science
- ARETÉ Junior Chairs Programme: funded by Robert Bosch Stiftung

More than 100 postdocs  
Over 600 publications



# Open Science

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Open data

Open access

Open to Society



- Powerful basis for inclusive development and cooperation
- Greater sharing of ideas
- Failure to effect real openness will exacerbate divides between Global North and Global South

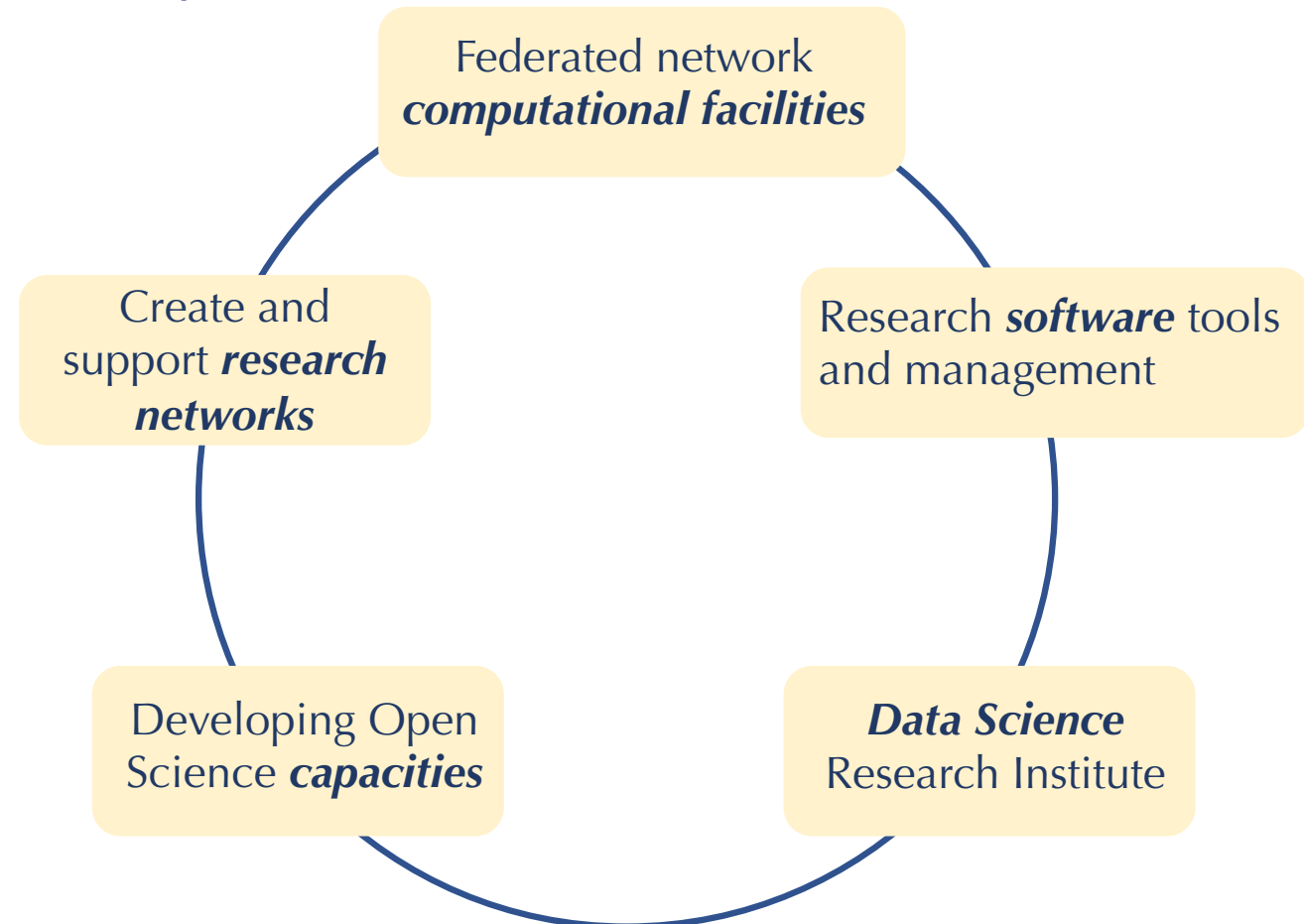
**Horizon Europe:** Embraces and prioritizes Open Science principles

# African Open Science Platform: a pan-African initiative

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Position African scientists at the cutting edge of data intensive science

Efficiencies of scale, build critical mass through shared capacities



# Square Kilometre Array Observatory

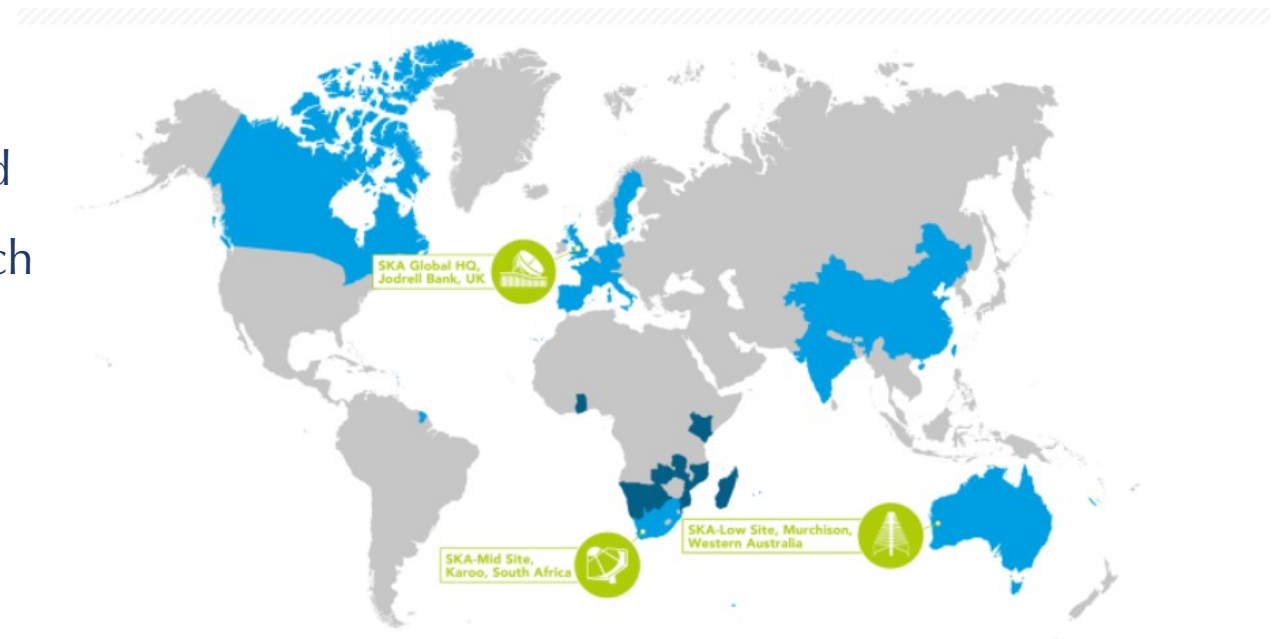
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International effort to build the world's largest radio telescope

SKA Observatory is the second intergovernmental organization dedicated to astronomy after the European Southern Observatory

Huge potential for stimulating scientific mobility and scientific collaboration and applications in fields such as AI and big data



## Perspectives shared

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- On the landscape for international research collaboration, in the developing world and Africa in particular;
- On the conditions for effective and successful cooperation;
- Some examples of pan-African initiatives which give a sense of the opportunities for such effective cooperation involving French researchers.