

Tackling Common Challenges: A New Approach to Strengthening Africa's Research, Innovation and Higher Education Capacity

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Unique window of opportunity for strengthening African-European university research collaboration



- Negotiations about a new EU-AU strategic 'equal partnership' agreement (to be signed Spring 2021)
- Growing political interest in HE, science and innovation in Africa
- Acknowledgement of importance of universities for realizing Sustainable Development Goals and promoting Knowledge Society agendas in Africa
- Rapid growth of demand for and participation in higher education in Africa
- Growing focus on research function of African universities
- Establishment of first intra-African alliance of research universities (ARUA)





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African Research Universities Alliance (ARUA):

- Brings together 16 leading universities in Africa.
- Collaboration to develop local research excellence to find solutions to the development problems of Africa.
- Set to become a pan-African network for bringing research and academic excellence to the fore throughout the region by developing strong and viable research universities.



The ARUA Approach



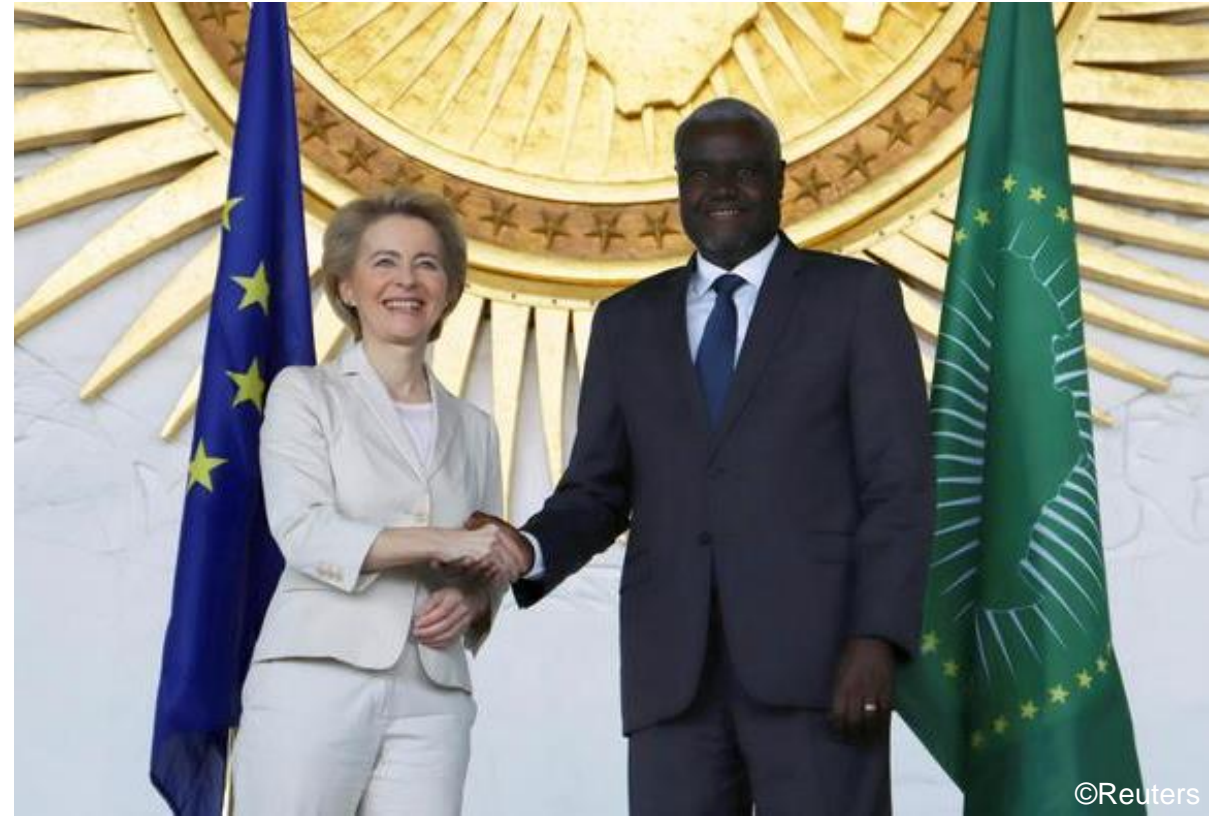
- Work with both African and Non-African Universities to achieve:
 - Enhancement of research to solve Africa's development problems (SDGs), in terms of quantity and quality
 - Expansion of graduate training significantly in order to improve the quality of African universities
 - Improvements in the capacity for research management
 - Heightened use of research for advocacy purposes

ARUA Centres of Excellence

Name of Centre	Location	Name of Centre	Location
Energy	Stellenbosch University	Poverty and Inequality	University of Cape Town
Water	Rhodes University	Migration and Mobility	University of the Witwatersrand
Materials Development and Nanotechnology	University of the Witwatersrand	Urbanisation and Habitable Cities	University of Lagos
Food Security	University of Pretoria	Post-Conflict Societies	Addis Ababa University
Climate Change	University of Cape Town	Unemployment and Skills Development	University of Lagos
Non-Communicable Disease	University of Nairobi	Notions of Identity	Makerere University
		Good Governance	Addis Ababa University

An equal AU-EU partnership

- EU and AU aim at **more equal, strategic partnership**, instead of 'relationship based on development aid'
- **Research and Innovation** will form an important component in the new AU-EU partnership.



Global rivalry and African higher education

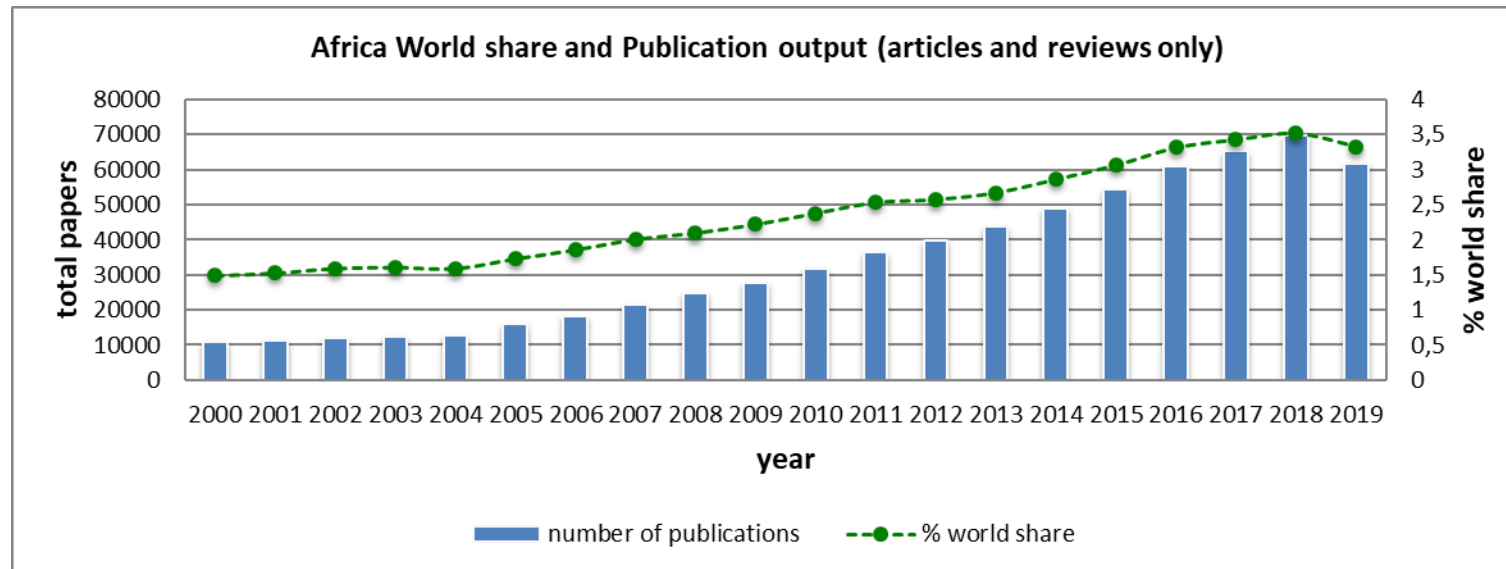
- **USA**
 - New initiative of private foundations
 - Multi-year USA – Africa university program
 - Preliminary budget: US\$ 1 billion
- **China**
 - New multi-year government program for China-Africa education cooperation
 - Preliminary budget: (equivalent of) US\$ 15 billion
 - Major new program for investing in digital technology in African HE
- **Russia**
 - Russia – Africa Summit: Sochi 23-24 October 2019
 - Key topic "Russia and Africa: Science, Education, and Innovation for Economic Development"



Key trends in African universities

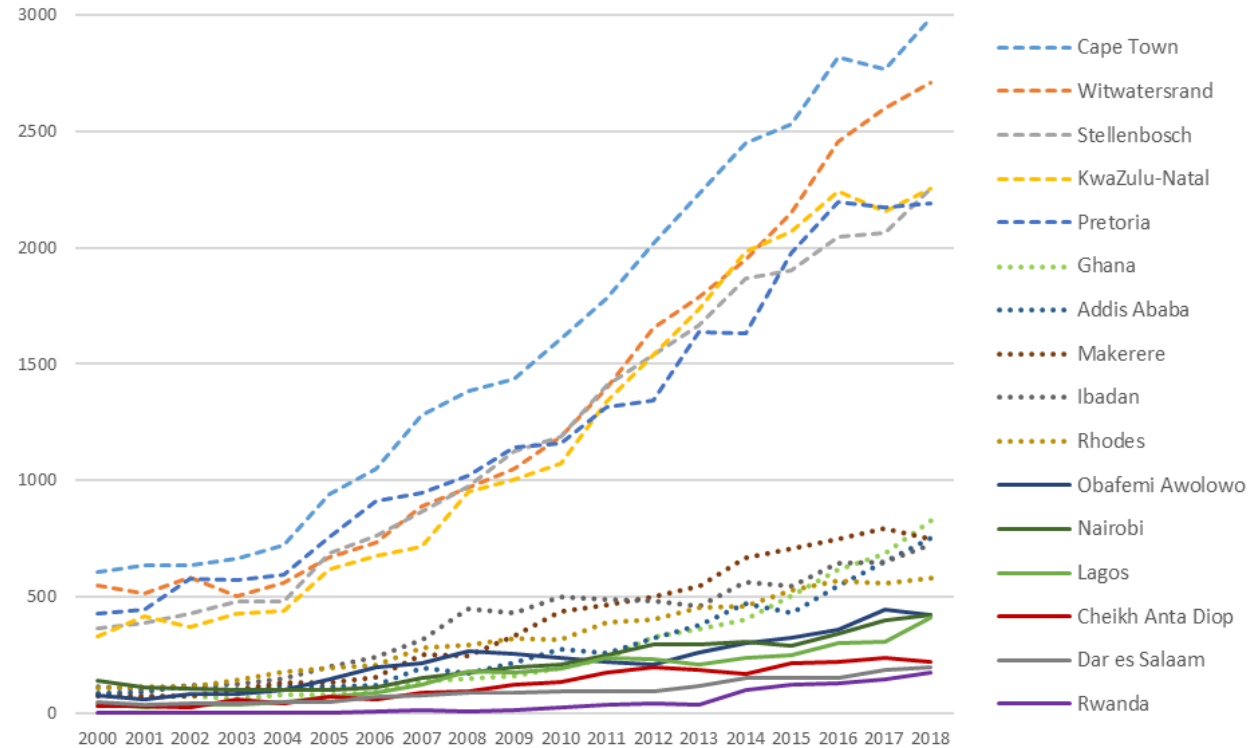
- Remarkable growth in undergraduate capacity, enrolment and graduation
- At graduate level growth especially at Master level; doctoral education is lagging behind (exception: South Africa)
- Lack of adequate career opportunities in Africa for young scholars
- Research output in African research universities is increasing, but no fields (yet) where scholars employed by African universities are both strong (in relative world share) and highly productive.
- Large dependence on international funding for R&D; continuous low levels of national public investments in HE and R&D; lack of competitive research funding in Africa
- Female participation in universities carefully increasing, but women underrepresented in senior tenured academic staff positions and institutional leadership
- Most African universities still teaching dominated, amongst other things, in their HRM/personnel policies
- Universities largely 'decoupled' from innovation investments

Africa's output of scientific papers: WoS 2000-2019



Source: CA Web of Science – all collections/ Beaudry & Mouton (2017) Young Scientists in Africa: Preliminary Results; Johann Mouton, CREST, 2020

Research output trends: top research universities in Africa



Source: CA Web of Science – all collections/ Beaudry & Mouton (2017)
 Young Scientists in Africa: Preliminary Results;
 Johann Mouton, CREST, 2020



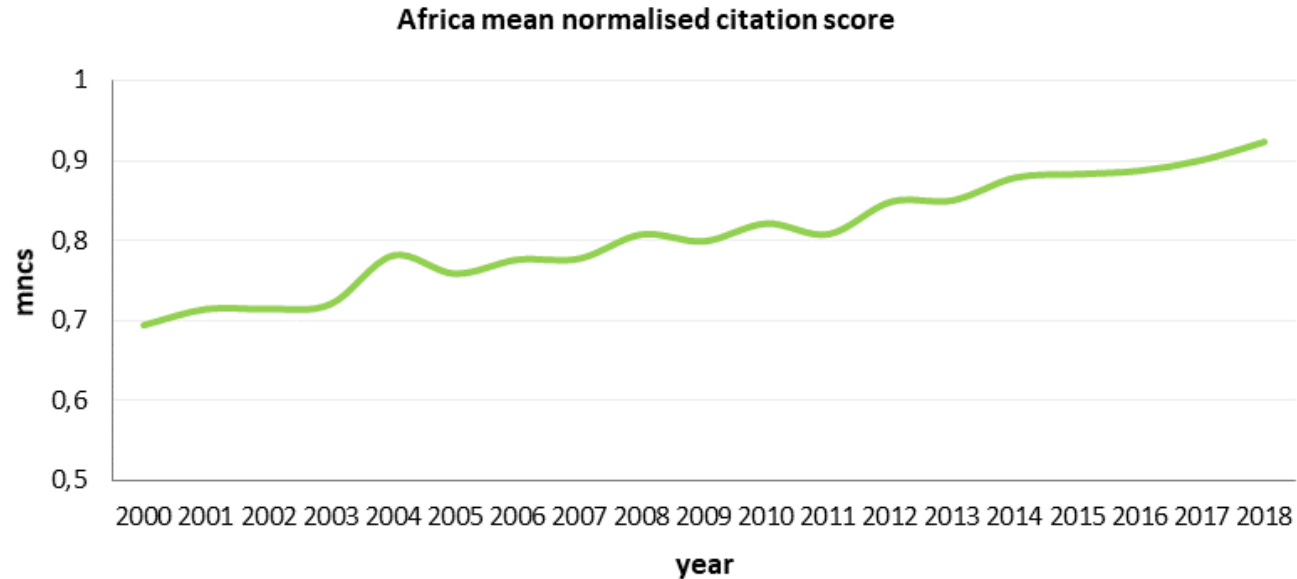
Relative share of selected universities to national research output: WoS publications 2000-2016



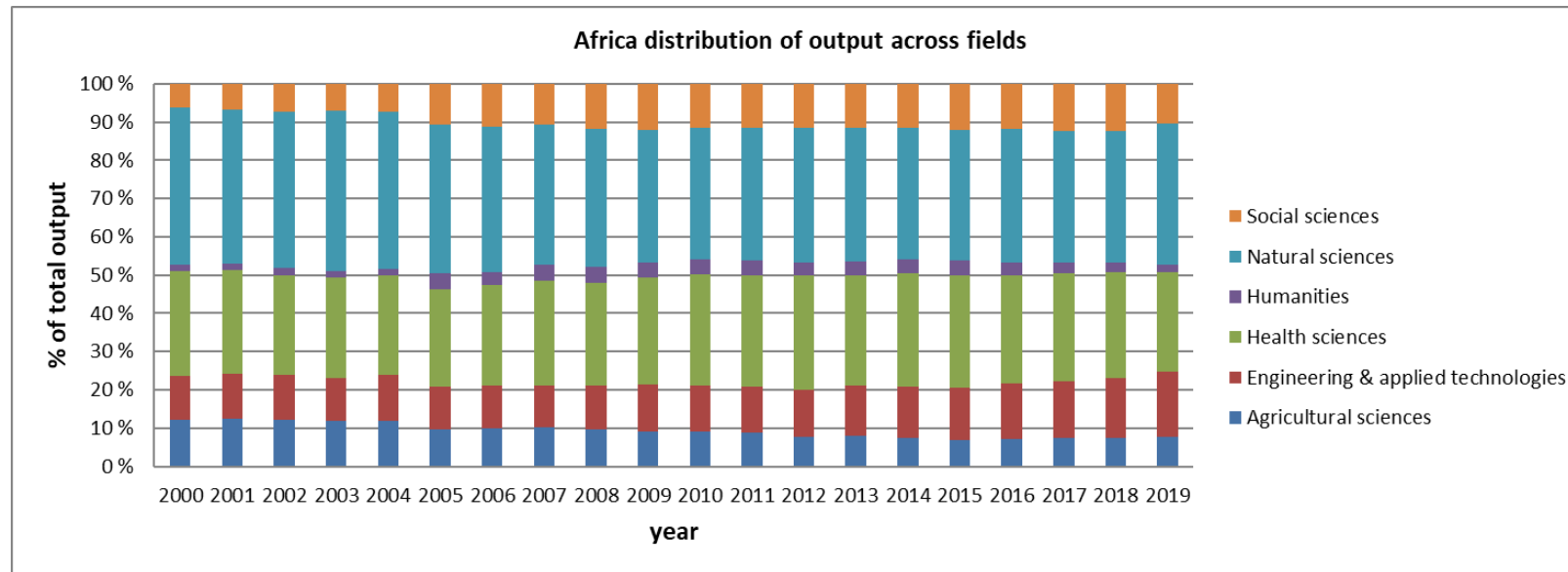
Universities	Country	University publications	Total publications for the country	HERANA university %
University of Botswana	Botswana	2 074	3 397	61%
University of Cape Town	South Africa	23 209	133 385	17%
University of Dar es Salaam	Tanzania	2 499	9 411	16%
Eduardo Mondlane University	Mozambique	768	1 956	39%
University of Ghana	Ghana	3 761	8 586	36%
Makerere University	Uganda	5 146	9 263	56%
University of Mauritius	Mauritius	858	1 311	65%
University of Nairobi	Kenya	3 191	17 893	18%



Academic impact of African research output



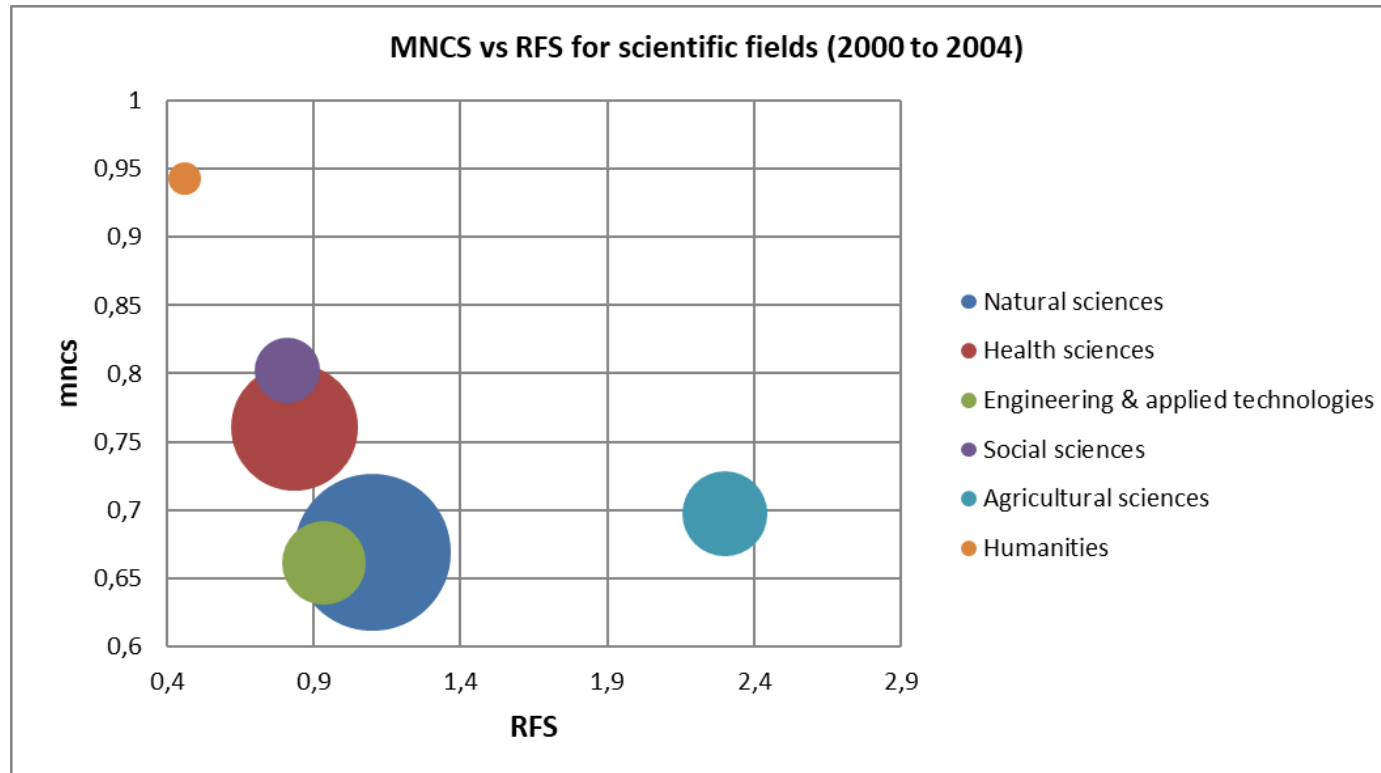
Scientific outputs across fields (Africa / 2000-2019)



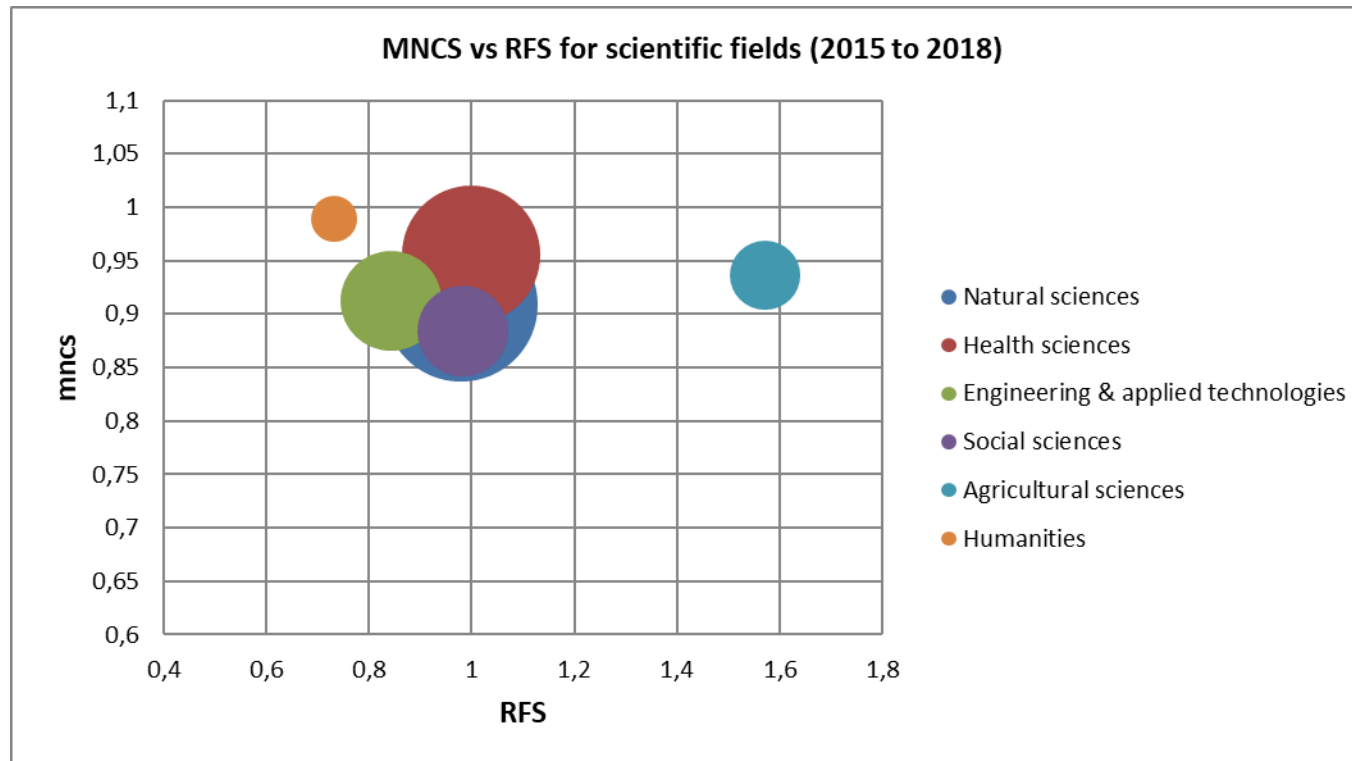
Source: SciSTIP (Mouton and Blanckenberg, 2017; Johann Mouton, CREST, 2020)



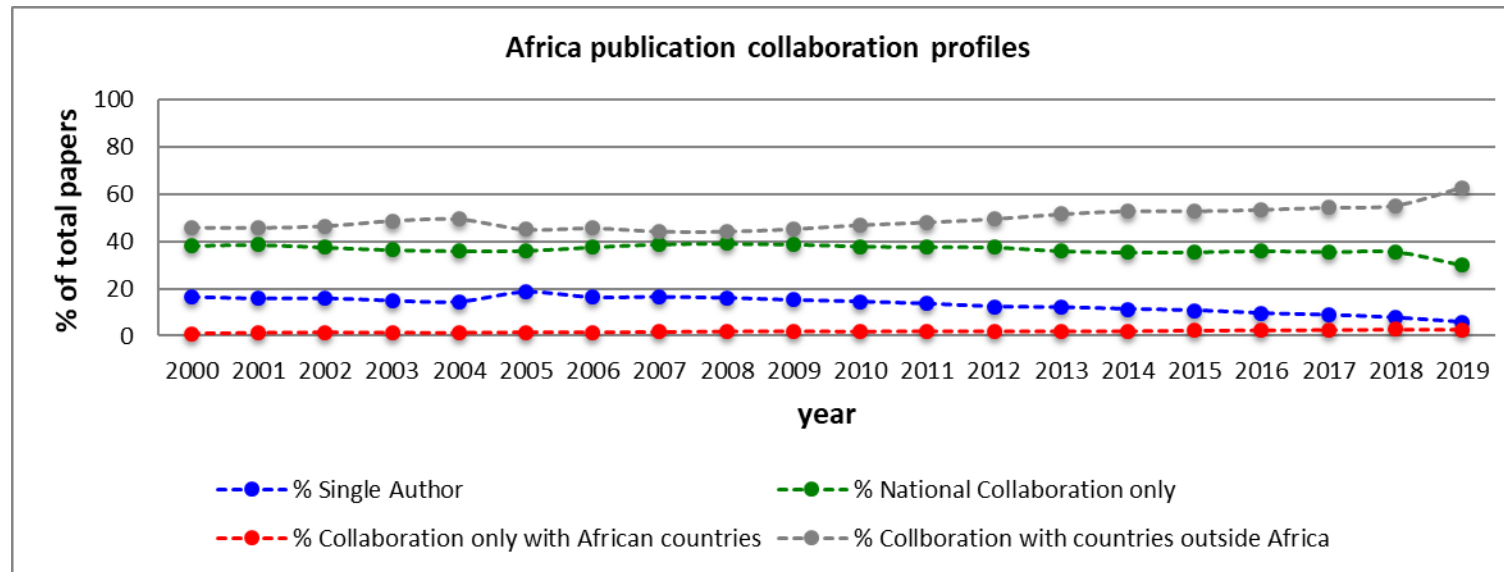
Mean normalised citation scores (MNCS) versus Relative field strength (RFS) of African research output for selected fields (2000-2004)



Mean normalised citation scores (MNCS) versus Relative field strength (RFS) of African research output for selected fields (2015-2018)



Research collaboration: African scientists WoS 2000-2019



Source: CA Web of Science - all collections/ Beaudry & Mouton (2017) Young Scientists in Africa: Preliminary Results; Johann Mouton, CREST, 2020

Research collaboration between Africa and four major science countries/regions

	2000–2004	2008–20012	2014–2018
US %	27.1	31.5↑	33.5↑
UK %	23.6	22.3↓	23.1↑
EU %	43.6	41.4↓	40.4↓
China %	1.3	3.2↑	6.7↑

CREST, Stellenbosch University, 2020



The Guild – ARUA Initiative



Starting-points:

1. **Many national and supranational programmes in Europe aimed at African higher education**
 - Valuable collaboration experience in many African and European higher education institutions
 - Programmes focus mainly on education and management/administration; research (and innovation) more marginal
 - Lack of coordination between programmes
2. **Need to develop and promote new ideas and approaches** for boosting research function of African universities
3. **Two agendas:**
 - a) **Short term:** Influence strategic AU-EU agreement under negotiation (to be signed Spring 2021)
 - b) **Long-term:** Contribute to enhanced coordination and collaboration among European countries in national programmes for supporting African universities and African-European university collaboration



Activities and developments 2019 – Spring 2020:

- Meeting (Oct. 2019) with representatives **European Commission** (from 3 DGs)
- Three **publications** (Feb. 2020) promoting major European investments in African research universities:
 1. The Guild Insight Paper
 2. Joint ARUA-the Guild call for investment in African research universities
 3. Joint ARUA – the Guild position paper
- **Intended event** (April 2020) in Brussels to promote ARUA – The Guild ideas **cancelled**
- **Online meetings** (April-May 2020) with European Commission and national organisations
- Interaction and feedback **positive**, with suggestion to develop ideas into **concrete proposal**



Strategic positioning ARUA – the Guild: Indication of impact

SFIC Africa Task Force Report (*analysis and orientations for future European-African cooperation in science, innovation and higher education*) published 08/05/2020:

The ARUA/Guild collaboration presented as one of the remarkable and successful initiatives of relevance for the new Africa-EU partnership



Second half 2020 – 2021

- July: Concept Note presenting ARUA-Guild Initiative
- July-September: Meetings with leadership representatives of various DGs and the Africa-Europe Innovation Partnership (AEIP)
- August – now: National promotion of Guild-ARUA Initiative by Guild and ARUA member universities

- Final negotiations AU-EU postponed to Spring 2021



July 2020: Launch of «Confronting our common challenges»

Concept Note
9 July 2020

Confronting our
Common Challenges:
a new Approach to
Strengthening Africa's
Research, Innovation and
Higher Education
Capacity



 **ARUA**
African Research
Universities Alliance
WWW.ARUA.ORG.ZA

 **The Guild**
of European Research-Intensive Universities
WWW.THE-GUILD.EU

- To realise the ambitious objectives of the AU and EU major investments in African universities research capacity are needed.
- We call for investing in **Centres of Excellence, built on sustainable alliances** of African research universities, in key areas of common African – European interest.



How will this work?



By focusing on **common African-European challenges** and building **long term partnerships**.

Five priority areas for investment and university collaboration:

- Public Health
- The Green Deal, Blue (Marine) Economy and Energy Transitions
- Digital Transformations for a more sustainable economy and society
- Good Governance, peace and security
- Migration, Mobility, and overcoming discrimination



Long-term African-European university partnerships

(In the 5 priority areas)

Basic elements:

- Promoting intra-African research collaboration reflecting regional/linguistic diversity
- Building on European university collaboration experience (EUI!)
- Aiming at strengthening academic excellence and socio-economic relevance of African research
- Open to collaboration with civil society, and associated public and private partners



Key areas where capacity building is needed

- **Joint research projects (Africa-African & African-European)** in one of the five priority areas
- High-quality research **Masters programmes**
- **Doctoral schools with sufficient capacity** (at least 20 PhD students per year)
- **Postdoctoral fellowships** for young African scholars
- Appropriate **administrative systems**
- **Research infrastructure and equipment**
- Effective structures for **knowledge transfer, social engagement and innovation**



Costs

- The coming ten years (2021-2030) at least € 100 million per year new investments in university research capacity in Africa are needed for realising the Agenda 2063 knowledge society aims, incl. the development of up to 200 research-intensive universities in Africa



Next steps

Short-term Agenda:

1. Continue to inform and mobilize central actors at the national and Continental (Africa and Europe) level with the aim to influence EU-AU negotiations about new agreement
2. Various events for promoting the ARUA-Guild initiative will be organised Spring 2021
3. Provide input from European universities' side into EU's development of new research and innovation programmes aimed at capacity building in Africa
 - Example: African Research Initiative for Scientific Excellence (ARISE) pilot programme (€ 25 million) (see: https://ec.europa.eu/info/news/virtual-launch-african-research-initiative-scientific-excellence-arise-pilot-programme-2020-dec-08_en)



Next steps



Long-term agenda includes:

1. Build national coalitions in Europe of key organisations and actors, including national university associations/councils; development cooperation agencies; research councils; internationalization agencies; politicians.
2. Promote the coordination of national strategies and programmes with the aim to develop an intergovernmental European strategy for strengthening research capacity at African universities and African-European research (and innovation) collaboration
3. Build strategic European-African partnerships among national (and continental) university associations and councils
4. Promote the inclusion of African associated partners in European Universities Initiative (EUI) alliances

