

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



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

## Introduction

Africa and Europe have a unique opportunity to develop their relationship in new, strategic ways, through collaboration on common global challenges that delivers on the key objectives of the African Union (AU) and the European Union (EU). The AU has, in its strategic 2063 Agenda, expressed its commitment to developing an African knowledge society based on research and innovation, and to tackle priorities such as biodiversity, climate resilience, and democracy and governance. The European Union is firmly committed to environmental sustainability and digital transitions, whilst both the AU and EU have agreed to focus jointly on strengthening public health.

To realise the ambitious objectives of the AU and EU a new strategic collaboration programme in the area of research, innovation (R&I) and higher education (HE) is needed.

Africa must be supported to be able to become a more equal partner in tackling the AU's and EU's most pressing common challenges, through major sustainable investments in Africa's research capacity, and making sure this enhanced capacity has maximum societal impact. Such investments in research are essential to support social and economic innovation, contribute to a substantial increase in the delivery of high-skilled graduates, and produce knowledge to support evidence-based policy-making. The African Research Universities Alliance (ARUA) and The Guild of European Research-Intensive Universities call for investing in Centres of Excellence (CoE), built on sustainable partnerships between African research universities, in research and innovation in key areas of common African – European interest. Our proposals are based on our joint position paper published in February 2020, on

strengthening African research universities in new, sustainable ways.<sup>1</sup>

The CoE should be built on strong collaborative networks of universities across Africa, closely linked with European partners. In envisaging these we have a unique opportunity to build on European experience in strengthening institutional capacities through collaborative networks (for instance, Teaming in Horizon 2020 and the European Universities initiative in Erasmus+). Moving away from an over-reliance of short-term project-based funding, to enhance institutional capacities for excellent research and innovation through long-term collaboration, the CoE will be the central knowledge institutions to strengthen key components of the African R&I and HE capacity to deliver on key strategic priorities identified by the AU and the EU.

## Prioritising common challenges

Given the need to focus resources on common challenges, we propose to prioritise five areas for investment in research, innovation, and higher education:

- 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

These focus areas have been derived from the [EU Joint Communication](#), which identified the key priority areas for a new AU-EU partnership.<sup>2</sup> Since then, public health has become an urgent area of common concern, with the AU and the EU agreeing that collaboration on diagnostics, therapeutics and vaccines on Covid-19 is an urgent priority for research and innovation.

Moreover, the AU identified seven priority areas for its 2063 strategy,<sup>3</sup> emphasizing the need for sustainable economic growth (including the opportunities for digital transformation 'to reshape Africa's social and economic landscape',<sup>4</sup> good governance, peace and security, inter-African collaboration, and strengthening its people). These priority areas present substantial areas of overlap with the European Commission's strategic interests.

Finally, in May the Strategic Forum for International Cooperation (SFIC) published a report<sup>5</sup> urging for, inter alia, collaboration on the Green Deal and the Blue (marine) economy, more intra-African collaboration in research and innovation, the creation of doctoral schools to train Africa's next generation of researchers without the risk of brain drain, and the creation of early career fellowships to ensure that world-class young researchers build their careers in Africa.

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<sup>1</sup> ARUA-The Guild (2020), Recommendations for Strengthening African Research Universities (Brussels): <https://www.the-guild.eu/publications/aru-guild-position-on-africa>

<sup>2</sup> Green transition and energy access; Digital transformation; Sustainable growth and jobs; Peace and governance; Migration and mobility

<sup>3</sup> (1) A prosperous Africa based on inclusive growth and sustainable development; (2) An integrated continent, politically united, based on the ideals of Pan Africanism and the vision of Africa's Renaissance; (3) An Africa of good governance, respect for human rights, justice and the rule of law; (4) A peaceful and secure

Africa; (5) An Africa with a strong cultural identity, common heritage, values and ethics; (6) An Africa whose development is people-driven, relying on the potential of African people, especially its women and youth, and caring for children; and (7) Africa as a strong, united, resilient and influential global player and partner. African Union (2015). 'Agenda 2063. The Africa We want', Framework Document, p. 12.

<sup>4</sup> African Union (2015). 'Agenda 2063. The Africa We want', Framework Document, p. 113.

<sup>5</sup> See: <https://data.consilium.europa.eu/doc/document/ST-1355-2020-INIT/en/pdf>

The five priority areas for investment in R&I and HE identified above bring the concerns of the European Commission, the AU and of the SFIC together. We also agree with the SFIC that one important outcome for the African research universities and their Centres of Excellence must be their capacity to attract international third-party funding, including enhanced participation in existing EU programmes.

## Sustainable investment in the African knowledge society

Africa has a low share of under 4% of global knowledge production, but depending on national contexts, 50-90% of this research output is produced by public research universities.<sup>6</sup> These research universities are scalable, and are committed to the public good. Any investment in the African knowledge society must start here, building on existing research, innovation and higher education achievements, and dedicated to strengthening the capacity to enhance regional, societal and economic development throughout the whole continent. At the same time, many individual African universities still lack the infrastructure, human resources and administrative systems to live up to the ambitions of the African knowledge society.

For African universities to deliver on the growing expectations and knowledge needs of their societies, we propose the establishment, through a competitive funding programme, of 40 CoE each funded by up to €20m per year. Each CoE will address key common societal challenges in one of the five areas identified above, within the local, national and regional contexts of the African partner universities. These Centres would represent a structural,

long-term commitment to enhancing African R&I and HE capacity, in close collaboration with European partners, for the benefit of Africa's societies and their socio-economic, cultural and political progress. These Centres must:

- Comprise at least three African universities located in different countries to foster intra-African scientific collaboration.
- Work with at least three universities from three different European countries that are committed to the long-term strengthening of research capacities of their African partners.
- Be embedded in the concrete societal realities of their local/national/regional/continental contexts, because the societal challenges for research, innovation and higher education will have different manifestations in different parts of the continent.
- Be spread geographically and reflect regional/linguistic diversity, while being awarded on the basis of an evaluation by a dedicated panel of scientific experts which will make the selection based on academic excellence and socio-economic relevance.
- Attract a significant share of local/national public and private co-funding to demonstrate a local commitment to boosting research capacity for the long term.
- Be open to collaboration with civil society, and associated public and private

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<sup>6</sup> Maassen, P. (2020). Developing equal, mutually beneficial partnerships with African universities. Recommendations for a new European collaboration strategy (The Guild Insight Paper No. 1).

Retrieved from The Guild of European Research Intensive Universities' website: <https://www.the-guild.eu/publications/insight-paper-one>

partners, aimed at enhancing research capacities for the benefit of individual citizens, institutions, and societies across the continent.

## Centres of Excellence

Modelled on the Teaming instrument in Horizon 2020, European partner universities would be called to support each CoE as co-applicants, providing collaboration and support where appropriate, mindful of the need to provide value for money and enhance the long-term capacity of their African partner universities.

Each CoE would address a specific thematic cluster, building up capacities in research, innovation and education through:

- Joint research projects with local/national/regional/continental and European partners in one of the five areas identified above, that are mindful of the specific African context and the political and socio-economic impact of their work.
- The creation of high-quality *research* Masters programmes in each CoE's area of specialism to provide outstanding graduates for employers and candidates for doctoral schools.
- The creation of one doctoral school per CoE enrolling at least 20 PhD students per year. Each PhD student should have the opportunity to spend 6-12 months at a European partner institution, but will graduate at one of the African universities involved in hosting the CoE in question.
- Providing up to ten postdoctoral fellowships per year for young African scholars, with a guarantee of at least 50% research time along with regular teaching and administration duties. These scholars would also have an attachment to a European partner university.
- The provision of bespoke training for academic and professional services and staff as appropriate, support in the development of appropriate administrative systems.
- Where appropriate, focused investments in research infrastructure and equipment.
- Where appropriate, the establishment of an effective office for knowledge transfer and innovation.

Each Centre would be measured on its capacity to conduct frontier research and produce world-class knowledge that benefits society, culture and industry, and which informs study programmes for students. All projects will be built on close and sustainable partnerships between African and European universities, prioritizing the resource and capacity building needs of the African partners. Finally, it is essential that the Centres identify how they can act as lighthouses in their host universities. They need to demonstrate how they can disseminate their outcomes, experiences and achievements to their wider institutional, national and regional higher education and public/private sector contexts to ensure that they will also have transformative effects beyond the participating universities.

## Costs and process

We propose that 40 CoE are awarded in successive calls, to enable future applicants to build up knowledge and experience to develop the partnerships they need, and for a learning process to take place about how calls are structured and evaluated. Ambitious new instruments such as the European Universities initiative (Erasmus+) or the Teaming instrument (Horizon 2020) have demonstrated the value of launching a first pilot call, and learning/adjusting the calls in response to experience.

Each Centre in Public Health; Green Deal, Blue (Marine) Economy and Energy Transitions; and Digital Transformations for a more sustainable economy and society should be funded by up to €20m per year for five years, with an option of a second period of funding, depending on the performance of the Centre in the first funding period. We need such long-term investment to develop the ability to attract and retain outstanding talent, to attract third-party funding, and develop strong relationships with industry, civil society and public as well as non-governmental organisations. National commitments for co-funding and ensuring the sustainability of the Centre after the end of the funding period would be a key evaluation criterion at the point of application. We would expect the funding for CoE on Good Governance, peace and security; and on Migration, Mobility, and Overcoming Discrimination, not to exceed €10m per year. It would be up to individual CoE how to allocate the budget to different funding lines to realise their overall aims.

## By 2030, the Centres of Excellence will

- Have contributed to developing more sustainable ways of life and a substantial improvement in socio-economic factors in their local/national and regional contexts thereby contributing to the development of more sustainable demographic trends throughout the whole continent.
- Have contributed to substantially enhancing Africa's share of global scientific production.<sup>7</sup>
- Have contributed to a substantial increase in intra-African research and innovation collaboration.<sup>8</sup>
- Be important voices in national and African discussions around higher education, innovation and research initiatives, including the facilitation of an African Credit Transfer System, the establishment and empowerment of national research agencies, and the creation of an African Research Council.
- Provide ground-breaking, relevant knowledge to support locally, nationally and regionally owned businesses develop new products and services, leading to a new momentum of economic and societal transformation throughout the continent in green sustainability, digital growth, and public health.

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<sup>7</sup> This would include an increase over the period 2020-2030 of at least 50% in the number of high-quality academic publications (compared to the output in 2020), measured by Africa's share in the top 10% of most highly cited research.

<sup>8</sup> This would imply, amongst other things, that by 2030 the intra-African collaborative academic publication production would represent at least 10% of the total academic paper production by scholars employed by African universities.

- Ensure a pipeline of talented students and researchers, equipped with cutting-edge skills, competencies and knowledge, and capable to carry out research in fit-for-purpose facilities, to increase the supply of highly trained academic professionals for universities, businesses, and the public sector.
- Quintuple Africa's participation in European collaborative programmes, such as Erasmus+ and Horizon Europe.
- Go beyond the economic multiplier effect of the Seventh Framework Programme.



### About The African Research Universities Alliance (ARUA):

Composed of 16 leading universities in Africa, ARUA aims to enhance research and graduate training in member universities through a number of channels, including the setting up of Centres of Excellence (CoEs) at its member universities. Addressing key challenges of Africa's sustainable development, ARUA CoEs are intended to be focal points for aggregating world-class researchers from member universities and elsewhere to undertake collaborative research in priority thematic areas while providing opportunities for graduate students from the region and elsewhere to work with the researchers.

### About The Guild of European Research-Intensive Universities:

Founded in 2016, the Guild comprises 19 of Europe's most distinguished research-intensive universities in 14 countries and is dedicated to enhancing the voice of academic institutions, their researchers and their students. The Guild is committed to the pursuit of excellence, the importance of truth-seeking and trust-building as the foundation of public life, and the creation of new knowledge for the benefit of society, culture, and economic growth.



Addis Ababa University	Makerere University
University of Cape Town	University of Nairobi
University Cheikh Anta Diop	Obafemi Awolowo University Ile-Ife
University of Dar es Salaam	University of Pretoria
University of Ghana	Rhodes University
University of Ibadan	University of Rwanda
University of Kwa-Zulu Natal	University of Stellenbosch
University of Lagos	University of the Witwatersrand



Aarhus University	University of Groningen	Université de Paris
Babeş-Bolyai University	Jagiellonian University	Radboud University
University of Bern	King's College London	University of Tartu
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