



Developing a Stronger Research Ecosystem in Africa: Towards an Enhanced Role for Universities through Clusters of Excellence

Africa has many development aspirations, at the top of which is structural and institutional transformation. This transformation is what will facilitate the achievement of the Sustainable Development Goals (SDGs) and other aspirations. The needed transformation will only occur with the application of sound and appropriate knowledge in the production of goods and services, the realization of innovation, and in the governance of nations. The generation of new knowledge must come from high-quality research. It is these interlinked ideas and activities that make the development of a stronger research ecosystem in Africa an essential requirement for the continent's future.

Universities are central to the development of a stronger research ecosystem in Africa. This is because they generate 50-90 percent of the research output in the various countries of the region, and their research output has grown significantly in the last decade. Consequently, Africa contributes almost 4 percent of global knowledge production. Responsible for this growth are public universities in a relatively small number of countries. At the same time, most universities in Africa remain uncompetitive in global rankings, given their low research output. The quality and scale of research from these universities, while significantly improved, are not yet at the level they should be for several reasons.

The challenges of universities in the region include the fact that several of them remain trapped in the traditional expectation of developing the growing human capital needs of mainly public organisations. In this situation, the goal of raising the requisite skills for attracting competitive grants, undertaking cutting edge research, and producing new knowledge remains largely unattained. Several African universities remain state organs for different public initiatives and depend heavily on state funding for their operating expenses. Foreign funding for research and the reliance on partners from the global north as leads in collaborative research with African academics still dominate the limited research landscape. In the end, there is a general lack of proper recognition through citations for African researchers, and the findings of African researchers are therefore more likely to be overlooked in decision making and policy formulation, even in their own countries. This is not



surprising since the total national expenditure on research and development is only at between 0.1 and 0.6 percent of GDP.

There is a strong and urgent need to refine and further strengthen the research ecosystem in Africa with universities at the centre of it. The recent experience of tackling the Covid-19 pandemic in the region, as in the rest of the world, saw universities rise to the occasion and lead country initiatives to develop local affordable sanitisers, conduct testing and participate effectively in global vaccine development research. African researchers who are based at African universities led the processes in the region. This example only illustrates their enormous potential. Similar examples can be found in food production, environmental management and many other areas. Research production at universities in Africa is clearly rising, but needs greater support to rise much faster.

One of the main obstacles to developing a critical mass of Africa-based researchers to conduct cutting-edge and globally competitive research has been the brain-drain. A lot of thinking has gone into finding ways to halt or slow down the brain-drain. One way that is currently perceived globally as providing an effective means to tackling it and lead to favourable outcomes for research and innovation is the identification and development of “Clusters of Excellence” for different thematic areas in support of African transformation. Research clusters are interdisciplinary networks of researchers working to find solutions to key societal challenges. These challenges usually cut across the traditional disciplines of universities, which are generally associated with departments, institutes and centres. Increasingly, they are becoming transnational and deal with transnational challenges. The African Research Universities Alliance (ARUA) and the Guild of European Research-intensive Universities (the Guild) issued a call for the development of research clusters at African universities in July 2020. (<https://www.the-guild.eu/publications/arua-guild-concept-note-common-challenges.pdf>).

ARUA has already taken an important step in the direction of developing African Clusters of Excellence by establishing 13 Centres of Excellence in the areas of (1) Climate Change, (2) Renewable Energy, (3) Water, (4) Materials Development and Nanotechnology, (5) Non-Communicable Diseases, (6) Food Security, (7) Poverty and Inequality, (8) Unemployment and Skills Development, (9) Good Governance, (10) Notions of Identity, (11) Urbanization and Habitable Cities, (12) Post-Conflict Societies, and (13) Migration and Mobility. These have all been supported by United Kingdom Research and Innovation (UKRI) and have successfully provided the base for bringing together groups of African researchers to work collaboratively on finding solutions to African development problems. There are other initiatives, including those supported by the World Bank, to develop Centres of Excellence in the region.

It is becoming urgent that these Clusters of research excellence associated with emerging research universities in Africa are properly supported and coordinated. ARUA, in partnership with the Guild, proposes to select and support the Africa-wide development of 40 major research clusters over the next five years. These are intended to be clusters hosted by very high-achieving African universities that will bring together researchers in various stages of their career from all over Africa, Europe and the rest of the world to work on realizing African research goals. This will engender not only the appropriate and innovative responses to the fast-changing needs of African societies, but also hold significant benefits for global science.



The clusters will be the channel for developing world-class research infrastructure at African universities. They will be the vehicles for attracting researchers in the diaspora as they provide similar environments as may be found anywhere in the global north.

We, the signatories to this statement, are the Vice Chancellors and Rector of 16 of Africa's flagship universities. Our universities have constituted themselves into the African Research Universities Alliance (ARUA). We are mindful of the fact that the European Union and the African Union will hold a high-level summit in Brussels on 17-18 February, 2022 where emphasis on research and innovation will be pronounced. We have taken note of the fact that in 2017, a similar summit recognized the need for science collaborations and the strengthening of the research and innovation capacity of African universities as priorities in the African-European partnership. There have been several positive developments from the European Union since then, including the launch of the Africa-Europe Alliance for Sustainable Investment and Jobs in September 2018, followed by the first AU-EU research and innovation ministers' meeting held in July 2020. Coming out of this agreement to focus on research and innovation have been such new initiatives as the African Research Initiative for Scientific Excellence (ARISE) Pilot Programme. We have also seen significant new investments in collaborations with African universities through various established programmes that include Erasmus+, Neighbourhood, Development, and International Cooperation Instrument (NDICI), and Horizon Europe. This is highly commendable.

In a [statement](#) coming out of the joint conference we hosted on 22nd November 2021, ARUA and the Guild called for African governments to support the initiative of developing Clusters of Excellence with matching funds. We are, by this statement, appealing to our governments in Africa and the African Union to do two things: the first is to make support for the Clusters of research excellence initiative and the expansion of the research infrastructure at African universities a priority at the upcoming EU-AU Summit. The second is to 'walk the talk' by making national and regional support for the research clusters associated with various universities as planned, and the general improvement of the research ecosystem, a major priority for African governments to be adequately reflected in annual budgets with earmarked funds. This will be the best way to achieving the SDGs and transforming Africa.

Signatories

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2. *Professor Sizwe Mabizela* - *Vice Chancellor, Rhodes University (Co-Chair)*
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5. *Professor Nana Aba Appiah Amfo* - *Vice Chancellor, University of Ghana*
6. *Professor Wim de Villiers* - *Vice Chancellor, Stellenbosch University*



7. *Professor Tassew Woldehanna* - *Vice Chancellor, Addis Ababa University*
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