

The pathway to EU–Africa equity is paved with good intentions

But scientists say meaningful investment is essential for real progress in fixing power imbalances in science and innovation. **By Abdullahi Tsanni**

Science is at a turning point in Africa. The past two decades have seen impressive growth: scientific publications in the Web of Science database involving at least one African country rose by more than five times since 2001 to reach over 50,000 in 2018. But disparities within Africa remain stark. Most countries on the continent contributed to fewer than 2% of these publications and just one nation – South Africa – appeared among the top 50 countries and territories in the 2023 Nature Index annual tables.

Underlying this is a general expectation from policy watchers and researchers that African nations should invest in science and technology to power Africa's economic transformation. The African Union (AU) envisions that every member state should spend 1% of its gross domestic product (GDP) on research and development. But, according to 2020 data from the World Bank, only Egypt has achieved this in the past few years.

Sluggish local investment has forced African scientists to rely to a large extent on overseas universities and international organizations for funding and opportunities to grow their careers. Researchers at African institutions often collaborate with colleagues in Europe, exchanging knowledge and materials while also spending time in European universities. Of the top ten countries for participation in Nature Index articles that feature global north–south collaboration, half are in Europe. This year, the European Union (EU) and the AU sought to formalize these links. Announced in July, the AU–EU Innovation Agenda aims “to transform and increase the innovative capacities and achievements of European and African researchers and innovators into tangible outputs, such as products, services, businesses and jobs”, according to the European Commission.

Whether the agenda will make a substantial difference to African research and the working lives of its scientists is another matter. “It has the potential to spur science in Africa,” says Uzma Alam, lead of science-policy engagement at the Science for Africa (SFA) Foundation in Nairobi, Kenya. But for this to become a reality,

there must be a rebalancing of partnerships between European and African researchers, colonially entrenched inequities in science need to be addressed, and there must be more accountability on all sides. “We need to place African scientists and leadership at the centre.”

Promises and pitfalls

The AU–EU Innovation Agenda has four objectives grouped according to the priority areas for research collaboration between Europe and Africa: public health, green transition, innovation and technology. “These areas can positively impact lives in Africa,” says Alam, whose organization consulted on the agenda.

The agenda recognizes the potential for two-way knowledge exchange between Europe and Africa, says Fifa Rahman, a global-health specialist working on equitable access to health technologies. She points to examples of Europe learning from Africa during the COVID-19 pandemic, such as African scientists deploying virus tests in hospitals across Sierra Leone, Senegal and Nigeria before countries in Europe had organized such testing. Details for how African scientists will be

“African governments should be held accountable to provide matching funds to ensure equity in scientific partnerships.”

involved in setting the agenda for the thematic areas of the EU–Africa research collaboration aren't explicitly clear in the document, however. Such decisions should come from within Africa, led by African researchers, according to Christian Happi, a geneticist and director of the African Center of Excellence for Genomics of Infectious Diseases at Redeemer's University in Ede, Nigeria. “Let them set the priority areas for research that they believe will be important for the development of the continent,” he says.

Olusola Oyewole, secretary-general of the Association of African Universities (AAU) in

Accra, Ghana, says that although the agenda holds promise for Africa, it needs to ensure that all universities and industries across the continent work together to harness its benefits for good. He is concerned that otherwise only a few “elite” institutions will benefit.

Then there is the issue of funding. In June, just before the agenda was announced, some 2,000 leading universities and research organizations in Africa and Europe called for the agenda to be backed with dedicated investment. The hope was to pilot an Africa–EU science fund, specifically for research collaboration between African and European researchers. The universities want such funds to be funnelled through an integrated Africa–EU science, technology and innovation programme. Existing AU–EU initiatives should also be built on to support the implementation of the innovation agenda, say university representatives.

“The investment in research and development determines the research output of African countries and the research capacity that we see across the continent,” says Oyewole, whose organization, the AAU, was one of the signatories in the call for the science fund.

It could take a few years before such an Africa–EU science fund could materialize, however, especially given the next EU research programme will not start until 2028.

Further hurdles

Some funding mechanisms do already exist. ARISE, the African Research Initiative for Scientific Excellence, was set up in 2020 with funding of €25 million (US\$27.20 million) from the EU. Coordinated by the non-profit African Academy of Sciences (AAS), headquartered in Nairobi, it provides research grants and supports 45 principal investigators at universities and research institutions in 38 countries across Africa. ARISE helps grant recipients establish links and collaborations with universities and institutions in Africa and Europe, facilitating knowledge exchange.

Obed Ogega, ARISE's manager at the AAS, says the initiative is empowering early-career scientists to pursue cutting-edge research in



TONY KARUMBA/AFP VIA GETTY IMAGES

A scientist analyses a camel's blood sample at the International Livestock Research Institute, in Nairobi.

Africa, adding that the researchers funded through ARISE propose their projects and decide what to do with the money. He and his colleagues believe that the initiative is responding to Africa's research needs. They hope that it could eventually help African science to flourish and reduce research inequality on the continent. Ogega says that in 2022, about 56 PhD and 70 master's students from across Africa benefited from various ARISE projects. "I have seen what I would call the real impact of the EU–AU partnership on African scientists," he says.

Although many EU–AU initiatives have been beneficial, governance and coordination of resources across the African continent can be a challenge. In 2021, major international donors including the Bill & Melinda Gates Foundation, the UK government and the UK charity Wellcome pulled millions of dollars from the AAS amid a governance crisis, with some programmes and staff transferring to the SFA Foundation.

The AAS told Nature Index that ARISE's implementation is shepherded by an independent committee, which has representatives from the EU and AU. "This structure minimizes ARISE's

exposure to internal and external risks, such as governance issues," the AAS says. Ogega clarifies that despite the "disruption that affected part of the AAS's work in 2021, ARISE's implementation went on uninterrupted".

The crisis was a wake-up call for African science, however. EU–AU research collaboration grants should be documented live and in real-time on a public website, with penalties for non-compliance to ensure accountability and transparency, suggests Nadia Sam-Agudu, a paediatrician at the University of Minnesota, in Minneapolis, who works at the Institute of Human Virology Nigeria in Abuja.

There are challenges beyond the issues with Africa's fledgling science organizations and funding. Sam-Agudu is accustomed to international research collaborations and says African researchers often face difficulties building equitable partnerships. The inequities start from funding, including global-north funders dictating who in the global south gets to participate in the funded research and who gets credit on papers, she says. "This has to change. We don't take [global-north collaborators] to task because of the power and resource imbalance."

The marginalization of African scientists in international research collaborations has wide repercussions for the continent.

Agnes Binagwaho, a specialist in emergency paediatrics and Rwanda's former health minister, says that because of historical colonial power imbalances, research partnerships between global north and African scientists might perpetuate inequalities, including the extraction of knowledge and a brain drain from the continent. "It's like having a good white master – it's still slavery," she says.

Binagwaho isn't afraid to call for equity in research collaborations between Europe and Africa, and she's not alone – debates for fairness have intensified in the past five years.

"Africa should be in the business of generating scientific knowledge for the world," says Isabella Aboderin, an expert on global ageing issues who in January 2020 established the Perivoli Africa Research Centre at the University of Bristol, UK. "But that's a shift that I don't see" in the AU–EU Innovation Agenda. Aboderin suggests that a first step for Africa could be building a stronger consciousness among African researchers and communities

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that it is their place to generate knowledge. In July, when the AU-EU agenda was announced, Aboderin was on a plane to Namibia, where she and her colleagues launched a charter on equitable collaborations. “African research collaborations should shift from local problems to generating scientific knowledge for global impact,” Aboderin argued at the meeting, held in Namibia’s capital, Windhoek, and attended by several leading universities in Africa. She pointed to the humanities and social sciences as fundamentally important fields where Africa can make a mark.

Although Africa has almost a fifth of the world’s population, it contributes only 2% of the world’s research output and, in turn, produces just 0.1% of all patents. One focus of the agenda is tangible outputs – translating the innovations of EU-AU researchers into products and ensuring their uptake in Europe and Africa. But Aboderin is concerned that a focus on economic impact and products could just as well benefit European markets alone, citing an already uneven landscape and global market economy. “This will not really change the imbalance and that’s not what Africa needs,” she says.

Rahman agrees. She urges African governments to prioritize domestic research and development funding. Increasing allocations towards local scientific research and innovation will help rebalance the power dynamic. “That’s what will eventually wean the continent off of relying on European money and a repeat of existing inequities,” says Rahman. Happi adds that, most importantly, African governments should be held accountable to provide matching funds to ensure equity in scientific partnerships between the EU and AU. “If not, then it’s going to be exploitation – I don’t expect much from it,” says Happi.

At the same time, China is deepening scientific links with countries on the continent, including training African scientists and investing in infrastructure. Some researchers welcome China’s approach as more helpful for boosting African science, given it provides access to tangible resources such as scholarships for students to study in Chinese universities. Others worry that both European and Chinese initiatives will make Africa too dependent on outside powers, exposing the continent and its scientists to research imperialism.

Aboderin says that although “research collaboration is good”, the aim of the AU-EU Innovation Agenda is not to “rebalance the science ecosystem”.

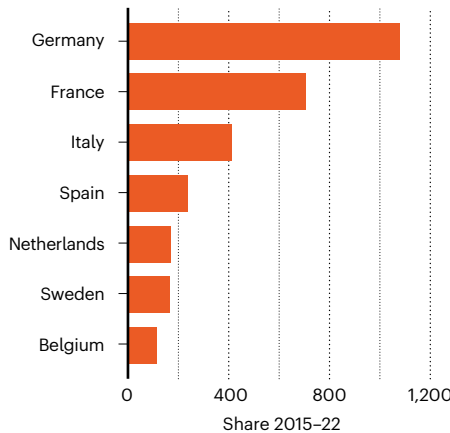
“It’s about positioning the EU in terms of its stake in Africa.”

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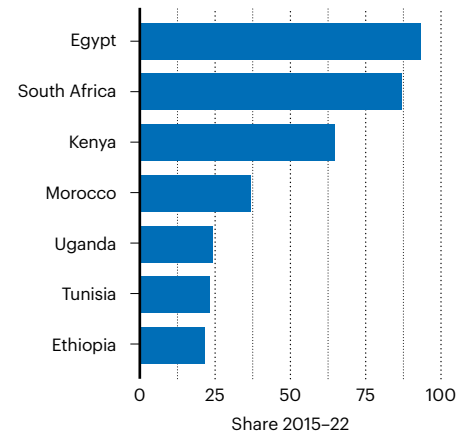
LEADING LIGHTS

Among the top 50 countries for global north-south collaboration in the Nature Index, only seven African countries appear. Shown here alongside the leading European Union countries, the difference in the output is stark. Similarly, just one African institution appears in the 200 leading institutions for north-south collaboration from 2015 to 2022: South Africa’s University of KwaZulu-Natal.

Leading seven European Union countries



Leading seven countries in Africa



KNOWLEDGE TRANSFER

The leading global north-south institutional partnerships between African and European Union countries in the biological sciences reveal hubs of excellence in the subject. But there is much room for improvement. The most successful north-south partnership in the subject overall – the University of Oxford, UK, and Kenya Medical Research Institute – has a bilateral collaboration score of 17.87 for 2015-22, more than double that of the leading partnership shown here.

