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Africa-Europe research and innovation hold the key to improve climate adaptation

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Summary

Research and innovation (R&I) is a notable area of collaboration in the Africa-EU partnership. In June, two high-level events spotlighted the continents' collaboration on R&I: the African Union (AU)-European Union (EU) Innovation Festival (Cape Town, June 15) and the AU-EU Agriculture Ministerial Conference (Rome, June 30).

While the two continents have a long-standing collaboration on R&I in agri-food systems, investments have so far been fragmented across many small projects, and several gaps persist in terms of funding, knowledge exchange and capacity development efforts. Also, the focus on climate change adaptation is still relatively new, but it is increasingly gaining importance.

This brief provides an overview of the state-of-play of adaptation-related R&I in agri-food systems and outlines three conditions for the R&I agenda to achieve tangible success *for all*:

(1) strengthen outreach and uptake of R&I activities through multistakeholder approaches;

(2) increase adaptation funding for Africa and better track climate-related R&I finance; and
(3) clearly articulate the interests of both continents and their institutions, based on shared priorities and responding to local needs.

Introduction

On 15 June 2023, representatives from the public sector and civil society, investors, corporations, and innovation actors from Africa and Europe convened in Cape Town for the first-ever AU-EU Innovation Festival. The event aimed at gathering the views of innovators from the two continents on the upcoming implementation of the AU-EU Innovation Agenda, while showcasing the vibrancy of African and European innovation ecosystems, with a particular focus on youth and women.

The **AU-EU Innovation Agenda will represent the policy mainstay of the continents' cooperation on research and innovation (R&I) for the next decade** – which aims to translate research findings into sustainable, tangible impact by taking an inclusive approach (Lorusso et al. 2022).

The final version of the agenda, currently undergoing the process of adoption, is the result of several dialogues that took place throughout 2022, including an online public consultation and a big stakeholder event in Nairobi (Lorusso et al. 2022b; AU-EU 2022b). These consultations, coupled with the further review by the Bureau of the AU-EU High-Level Policy Dialogue (HLPD) on Science, Technology and Innovation (STI) and AU and EU member states, have increased the weight of climate change adaptation under the Agenda's Green Transition pillar, including for the agri-food sector. As a result, the agenda now has a better balance between climate adaptation and mitigation, as well as between resilient agri-food systems and its initial focus on renewable energy.

The **AU-EU collaboration on R&I in agri-food systems is well-established**, for example, through the AU-EU Food and Nutrition Security and Sustainable Agriculture (FNSSA) partnership (EC 2020), under which several initiatives have been launched, such as the recent Development Smart Innovation through Research in Agriculture (DeSIRA) (EC 2017). On 30 June, during a thematic session at the AU-EU Agricultural Conference in Rome, agriculture ministers reviewed priorities for future R&I activities in this domain. They also discussed how to further

support and upscale the existing FNSSA partnership to reduce knowledge gaps, strengthen capacities and foster smart policies for more sustainable and resilient agri-food systems, in line with the objectives of the AU and EU green transition agendas (EC 2023a).

The meeting recognised that **investments in agri-food systems innovations have so far been fragmented across many small projects, and several gaps persist in terms of funding as well as knowledge exchange and capacity development efforts** – as also indicated in the draft version of the AU-EU Innovation Agenda (EC 2022a; AU-EU 2022a; AU-EU 2022c). Also, the focus on adaptation is still relatively new. So, how can the EU and AU reap the full potential of the R&I agenda in favour of adaptation in agri-food systems and ensure it is effective and inclusive?

Making Africa-Europe R&I a driver for climate adaptation

1. Strengthen outreach and uptake

The AU Climate Strategy (2022-2032; AU 2022) unequivocally stresses that R&I priorities in food and agriculture must focus on addressing the fundamental challenges farmers face. Too often, however, research projects are still conceived with a passive, technology transfer mindset that does not adequately involve farmers in identifying effective adaptation actions (Nature 2020). But investing in developing technologies, such as new drought-resistant crop varieties, will only achieve socio-economic impacts if there are systems in place to bring researchers, agricultural extension and advisory services and farmers together to test, scale up and promote their use (D'Alessandro and Bizzotto Molina 2023). **More reflection needs to go into identifying the barriers to farmers' uptake of innovations, such as a lack of access to land, credit or markets, as well as in monitoring longer-term outcomes of research projects** (Haselip and Hughes 2018). The thematic session on R&I at the Agriculture Ministerial meeting highlighted the importance of the connection between R&I and the farmers and promoted a more integrated approach towards agricultural knowledge and innovation systems tailored to address the users' needs (AU-EU 2023).

The AU-EU Innovation Agenda recognises the role of the private sector in innovation and aims to support the scale-up of the most innovative and commercially viable AU-EU R&I projects, such as those from the FNSSA partnership so that they could turn into 'tangible and sustainable business ventures', and deliver products and services to citizens (EC 2021a). An option currently being explored is deploying financial mechanisms, such as grants or blended finance, to help the 'best-performing' projects leap to their next stage of development. This can enable moving innovations from the lab or pilot field to the market. **Involving the private sector can indeed increase investment opportunities, but it comes with challenges too**. The sector's risk adversity has so far not led to a strong track record in adaptation investments supporting smallholder farmers, who largely operate in informal settings (Knaepen 2022). The support instruments and the choice of projects should consider this to avoid excluding already marginalised groups.

Moreover, **efforts to engage with and influence policymakers in both continents need to move from mainly being ad hoc to purposefully informing public policy-making**, as also recognised by the AU-EU Innovation Agenda (Haselip and Hughes 2018). Policymakers have an essential role in setting targets for public investment in R&I and education and providing the legal and institutional framework for innovations to develop. Translating research findings into targeted, evidence-based policy recommendations can support better policy formulation for improved food and nutrition security and climate adaptation outcomes (Brajesh et al. 2021).

Lastly, given the existing gender gaps in agri-food systems (FAO 2023), **research initiatives must focus on producing and disseminating agriculture and food-related R&I that respond to women's needs and priorities in various agri-food value chains**. This is also highlighted in the AU-EU Innovation Agenda. A promising initiative is the African Women in Agricultural Research and Development (AWARD), which invests in gender-diverse research teams and promotes gender-responsive agricultural R&I.

2. Increase and track adaptation-related R&I finance

The **EU's financial landscape for R&I is complex and fragmented** as it is distributed over different channels with various instruments (EC 2022b). As such,

tracking how much the European Commission's various departments invest in R&I in agriculture- and food systems-related adaptation is difficult. Concretely, the European Commission's Directorate-General for International Partnerships (DG INTPA) supports agriculture- and food systems-related R&I by funding global, regional and national research institutions, platforms and research programmes as well as by including research components in other food-related programmes and projects. The DG for Research and Innovation (DG RTD), with the DG for Agriculture and Rural Development (DG AGRI), is in the lead for the implementation of the FNSSA Partnership. It also decides on and manages the financial envelope that the EU has earmarked for cooperation on climate change and sustainable energy with Africa, and specifically adaptation, in its Horizon Europe programme for 2023-2024 (EC 2023b).

A **more comprehensive overview and better tracking of how these investments support climate adaptation R&I in Africa is needed**. It would increase transparency and improve strategic decision-making, identifying gaps, overlaps or synergies across multiple initiatives (Sweatman and Yrivarren 2018).

The Directorate-General for Climate Action (DG CLIMA)'s finance unit is currently looking into mainstreaming the OECD's Rio Markers (used by DG INTPA, among others, to track climate-related finance) to *all* external funding of the EU budget in the post-2028 period (OECD 2017). This could allow for climate-related finance from DG RTD to be tracked against the EU's Green Deal targets and the Paris Agreement. However, caution is warranted, as the European Commission has been accused of double-counting (ECA 2022).

Secondly, **there is room to increase adaptation funding for Africa**, as required by the EU Adaptation Strategy (2021), which has an explicit external dimension (EC 2021b). A review of the recent Horizon Europe calls for 2023-2024 shows that the allocated budget for adaptation in the 'Africa window' is limited (EC 2023b; EC 2023c). The total Horizon Europe budget, under the current 2021-2017 Multiannual Financial Framework amounts to €95.5 billion. Two Work Programmes, each with an annual budget of approximately €1 billion, look at climate and agri-food systems. First, the Work Programme on Climate, Energy and Mobility has three calls with a specific mention of 'Africa' in the title, in a list of approximately 200 calls (EC 2023b). This Work Programme has a generally strong focus on energy-related themes, particularly European battery value chains. Second, the

Work Programme on Food, Bioeconomy, Natural Resources, Agriculture and Environment (cluster 6) presents six calls with specific references to 'Africa' in a similarly long list (EC 2023c).

As a way forward, a larger proportion of climate-related funding (for instance from DG INTPA) could be used for innovation while making EU climate funding more compatible with African needs (Stepman 2022).

The **AU-EU Innovation Agenda will be supported through a dedicated flagship investment of the Global Gateway Africa-Europe Investment Package** (EU 2022). The Global Gateway is the EU's new model of trusted connectivity in partner countries that aims to boost smart investment. Its primary focus is quality infrastructure development with half of the planned €300 billion going to Africa (Bilal 2022). This strong private sector approach needs to be accompanied by investments in 'soft' infrastructure, such as the set-up of platforms for knowledge exchange, bottom-up co-innovation processes involving local actors to develop home-grown, locally adapted solutions, and supporting the application and scaling of relevant innovations in policies and practices.

3. Aligning European and African views on R&I

While **R&I is a less politicised area of collaboration in the AU-EU partnership compared to others, the two continents' visions on adaptation and climate-resilient pathways in agriculture and food systems do not necessarily converge** (EC 2022b). For example, the EU and some member states – notably France – emphasise agroecological approaches. This often clashes with a strong push for technology and productivity increases, including through fertiliser subsidies, in several African countries (although divergent views within countries exist as well). This increases the challenge of setting a coherent and agreed-upon R&I agenda for food and nutrition security and sustainable agriculture across the two continents.

Moreover, **despite the narrative of 'an equal partnership' with 'shared values and the pursuit of common objectives', funding and priority setting remain mainly in EU hands** (EU 2022b). African countries only contribute 2%of global research output and spend less than 1% of GDP on scientific research (Kariuki and Kay 2017; NACOSTI 2023). Therefore, building more African ownership requires

creating an enabling environment through pro-innovation investments while bringing together the public and private sectors and academia – to avoid a further brain drain. Kenya could be an interesting model, as it established a Ministry of, and Roadmap for, Education, Science and Technology and plans to mobilise 2% of GDP to science, technology and innovation (NACOSTI 2021).

The successful implementation of AU-EU collaboration on R&I thus requires a clear articulation of the interests of both continents and their institutions and inclusive agenda-setting that allows African partners to co-design and lead research programmes (Proctor 2021). **By engaging in a more profound and frank dialogue based on the explicit recognition of interests, roles and expectations, AU and EU partners can better design R&I programmes** that address shared priorities and effectively respond to local needs, ultimately having higher chances of improving food systems' resilience and adaptation to climate change (Tammerman et al. 2022).

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