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Refresh and reload: EU AND AFRICA WORKING TOGETHER ON RESEARCH AND INNOVATION

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This is the second paper on collaboration on research and innovation (R&I) between Europe and Africa. The first one looked at African perspectives on the topic and this second one focuses on the EU.

The next European Union (EU) leadership 2019–2024 will need to ‘refresh and reload’ how Africa features in its priorities. Collaboration on R&I offers a prime space for equal partnership that can contribute to sustainable development. But, in an unequal world, a narrative of equal partnerships can be counterproductive as much as assistance can set a patronising tone for relationships.

Europe and Africa need to take many steps to escape from this. One such step for the EU could be to recognise African excellences and innovations alongside the numerous development challenges that persist on the continent. Regrettably, neither of these materialise to any degree of substance in Horizon Europe (the proposed next EU R&I framework programme) and R&I is left in a fragile space under EU development cooperation. Another major step would be to increase integrated EU action and work more closely with EU member states, which could help to address rising concerns of Europe losing ground in Africa. Programming of EU external financing and of Horizon Europe offer the chance to widen EU outreach beyond its comfort zone, encompassing a variety of relevant actors in the research and entrepreneurial communities in Africa.

More equal partnerships will never materialise if Africa herself does not change. Possible steps include putting African resources on the table and a clear national and continental articulation of what R&I can do for African countries and the continent as a whole.

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Acronyms

ACP	African-Caribbean-Pacific
AU	African Union
CAAST-Net	Coordination and Advancement of sub-Saharan Africa-EU Science & Technology Cooperation Network
DEVCO	Directorate-General for International Cooperation and Development (European Commission)
DG	Directorate-General (European Commission)
EACEA	Education, Audiovisual and Culture Executive Agency
EASME	Executive Agency for Small and Medium-sized Enterprises
EC	European Commission
ECDPM	European Centre for Development Policy Management
EDCTP	European and Developing Countries Clinical Trials Partnership
EDF	European Development Fund
EU	European Union
GDP	Gross domestic product
JAES	Joint Africa-EU Strategy
MFF	Multiannual Financial Framework
NDICI	Neighbourhood, Development and International Cooperation Instrument
REA	Research Executive Agency
R&I	Research and Innovation
SDG	Sustainable Development Goal
STI	Science, technology and innovation

1. Introduction

Africa appears a privileged partner for European Union (EU) external action and is likely to be so under the next EU leadership that will take office in the second half of 2019 too. It remains to be seen whether the next European Commission (EC) will follow the high aspirations of Jean-Claude Juncker, the outgoing EC President, of Africa as “Europe’s twin continent” (Juncker 2018). Strengthening people-to-people ties between Europe and Africa is part of this vision and international collaboration on research and innovation (R&I) is one suitable space for this development.¹

Our recent paper on what African actors in Cabo Verde, Ghana and South Africa think of R&I collaboration with Europe through the support of EU institutions detected the vast potential of R&I for such a renewal (Di Ciommo et al. 2019). African actors greatly value R&I collaboration with Europe: resources matter as well as the high quality of European research and its variety in culture, languages and approaches. Common values and sustainable development objectives can ground collaboration. However, those who generously shared their insights with us stressed that there is a long road ahead to shape more equal and mutually beneficial collaboration and locally relevant research agendas that can also contribute to global challenges.

This second paper looks at the implications of such findings for EU international R&I collaboration with African countries for European policy-makers. It analyses the status quo and comments on the potential future set-up for R&I under the multiannual financial framework for 2021–2027 (Sherriff 2019). The paper is based on desk research and data analysis. It is complemented by 25 interviews (17 women and 8 men) in Europe and builds on previous interviews with African actors (Di Ciommo et al. 2019).

Our work confirmed that the leadership of the EC 2019–2024 will need to “refresh and reload” how Africa features in its priorities well beyond the traditional area of development cooperation. It could strengthen its own ways of working, in particular acknowledging the potential for R&I collaboration with African partners and showcasing it in Europe, but also raising the profile of science, technology and innovation (STI) with counterparts in Africa.

2. The twin continents approach in a changing R&I world

Collaboration on STI between Africa and Europe has evolved into a multi-layered set of relations. These have grown from colonial times, when research was mainly extractive, through to the emphasis on Africa in the 1990s – developing from individual ties among scientists to formal governmental involvement. The 2007 Joint Africa-Europe Strategy (JAES) was a landmark that solidified a continent-to-continent approach, favoured by both the EU and the African Union (AU).² The JAES is an inherently political agreement that aims “to move away from a traditional relationship and forge a real partnership characterised by equality and the pursuit of common objectives” (AU and EU 2006: 3). It envisions a broad-based and people-centred partnership and set the foundation for STI collaboration between Europe and Africa. Another reference is the Cotonou Agreement, under which African-Caribbean-Pacific (ACP) collaboration occurs.

¹ For example, at a recent event jointly organised by the European Political Strategy Centre and the EC’s Directorate-General for International Development, academics, civil society, businesses and networks discussed how to strengthen people-to-people ties between Europe and Africa, including on R&I. The paper uses R&I and science, technology and innovation (STI) as interchangeable terms.

² For example, the AU’s Scientific Excellence Award for key scientific contributions to African development or commitment to spend 1% of GDP by African countries under the Khartoum Declaration, the latter largely unmet up to now.

STI is seen as a successful area for JAES in an otherwise-more-complex partnership, although some practitioners are more critical (Cherry et al. 2018; European Parliament 2017). During the 2017 EU–AU Summit in Abidjan, Ivory Coast, STI featured under the priority area ‘Investing in people – education, science, technology and skills development’. The JAES structure allows for EU–Africa high level policy dialogue on STI policy and long-term collaboration between 28 EU and 55 African countries. A bureau carries the dialogue conclusions forward.

Bi-regional R&I collaboration is challenged by “misalignment between the goals of advancing excellence in science through cooperation as equal partners on the one hand, and European assistance for African capacity building on the other” – most clearly so in access to funding for the latter (Barugahara and Tostensen 2018: 8). The sheer variety of national R&I ecosystems in African countries, the limited engagement of European and African states and the dependency on EU funding also pose challenges. National and local bottom-up approaches, nascent networks and the growing diversity of STI actors in civil society, the private sector and foundations – some of which are major STI investors in Africa – tap into as well as defy intergovernmental planning.³

The AU’s Agenda 2063 carves a pivotal role for STI and aims for “an integrated, prosperous and peaceful Africa, an Africa driven and managed by its own citizens and representing a dynamic force in the international arena” (AU 2015: iii). It acknowledges STI’s contribution to African development and underlines that the continent’s economic transformation and competitiveness depend on sustainable technology investments and innovation.

The AU’s Science, Technology and Innovation Strategy for Africa 2024, though it suffers from lack of progress, aims to “accelerate Africa’s transition to an innovation-led, knowledge-based economy” by improving infrastructure, professional and technical competence and entrepreneurial capacity through STI. The strategy has six priorities (AU n.d.):

- eradication of hunger and achieving food security
- prevention and control of diseases
- communication
- protection of our space
- living together – building the society
- wealth creation.

More than a decade after the JAES agreement, the EU’s international collaboration on R&I risks to subside to a global tendency “to privilege hard power over soft power in foreign policy – with an added preference for bilateral transactional diplomacy over multilateral institutional diplomacy” (Higgot et al. 2019: 7). EU member states, which share R&I competencies with the EU institutions, flirt with the above trend, potentially increasing R&I collaboration’s vulnerability to the political whims of the day. Yet in the EU, excellent science and international collaboration coexist along with a push for a rapprochement between politics and science, so this is risk rather than a clear direction.

The power politics of R&I is a major test case for future Europe and Africa partnerships. China is increasingly combining its emphasis on economic development with cultural diplomacy, STI and academic cooperation.⁴ Other countries like India, Russia, Turkey and the United States influence the global R&I

³ African non-governmental initiatives exist, for example the African Research Universities Alliance established in 2015. The African Academy of Science is another example of continent-wide work.

⁴ China considers the Belt and Road Science, Technology and Innovation Cooperation Action Plan (Office of the Leading Group for Promoting the Belt and Road Initiative 2019) to be instrumental to the Science, Technology and Innovation Strategy for Africa 2024 and encourages knowledge and technology transfer to Africa through, for

landscape. Some of them have historically established knowledge and technology exchange mechanisms, based on the paradigm of South–South cooperation. And all of them have increased their engagement with Africa in recent years. On their parts, African countries have welcomed this attention as it allows them to diversify partnerships. Healthy competition can encourage excellence and innovative ideas and lead to productive collaboration and could tame alarmism that R&I is reduced to “coercive soft power” (Ishmael 2019).

On the one hand, a more concerted approach between the EU institutions and member states would help to raise the European profile and added value. Member states have a large presence in Africa but EU-wide coordination or even information exchange on R&I is limited. On the other hand, bi-regional collaboration would benefit from a politically strong agenda endorsed by African countries. Nationally, they will need to articulate their systems and demands better, following the steps of countries seen as STI leaders such as South Africa, Kenya and Rwanda. In our previous research, Ghana was a prime example of how a narrative of partnerships that go beyond aid at the top level of national politics coexists with an STI environment highly dependent on international resources and the occurrence of innovations despite of, rather than thanks to, national systems (Di Ciommo et al. 2019).

Europe will remain a research leader and is slowly starting to realise that its interests in stability and jobs creation in Africa also depend on endogenous healthy education, R&I systems and thriving innovative enterprises. The Africa-Europe Alliance for Sustainable Investment and Jobs has some emphasis on academic mobility and technical education, but offers much less on innovation (EC 2018a). The EU could go much further in systematising its approach and giving it higher political relevance. Unlike in the Alliance, African partners – well beyond diplomatic circles and including students, scientists, academics and innovators – should be involved early on, also to avoid pushback later. The JAES and concrete R&I projects funded through the EU provide some space for dialogue, but society-wide involvement at a strategic level seems to be beyond the scope at this stage.

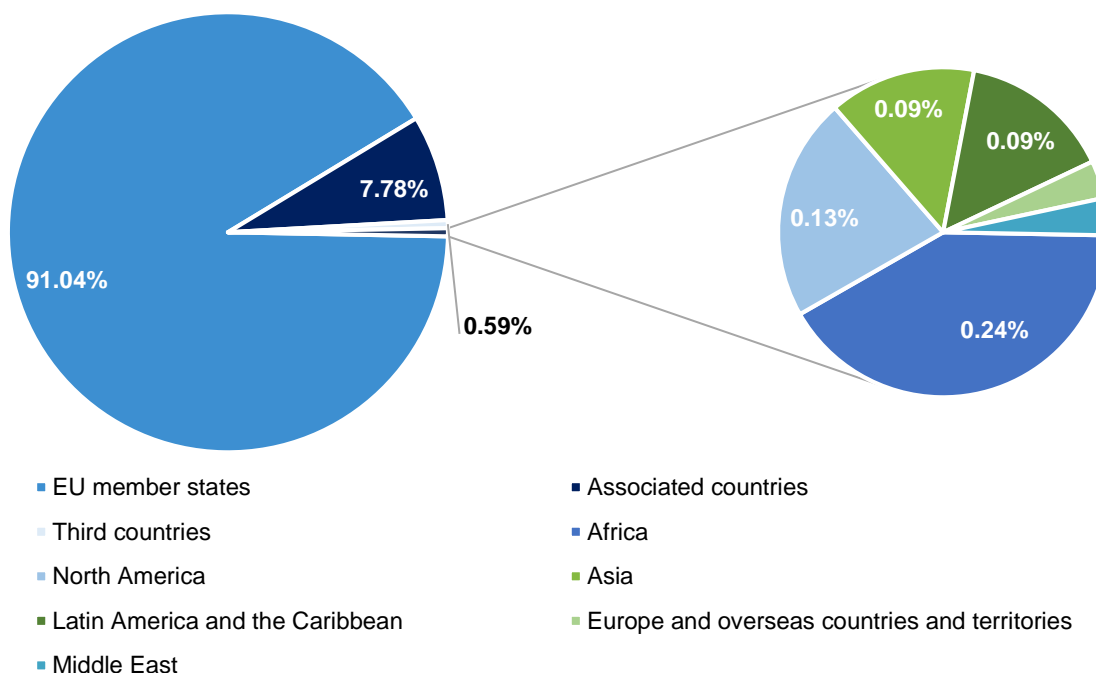
3. The story so far: extensive but fragmented collaboration

African participation in Horizon 2020, the EC’s R&I framework programme, is not negligible. Qualitative evidence suggests that the EC’s Directorate-General (DG) for Development Cooperation (DEVCO) portfolio on STI focuses on Africa, but publicly accessible, good quality data on its operations is not available. Horizon 2020 data is more transparent.

Up to January 2019, most of Horizon 2020 investments going outside Europe went to African countries (excluding Tunisia, which is counted among associated countries), for a total of €94.3 million. This is 41% of international investments and 0.24% of total Horizon 2020 funds. However, those investments are divided among almost 40 participating countries. The second-largest region is North America, with only two countries involved. This picture of high investments contrasts with a comparably low number of participants: only 618 (15%) in Africa of 4,089 international participants in total.

example, technology transfer offices and the recent creation of a China–Africa joint research centre (SAJOREC 2018).

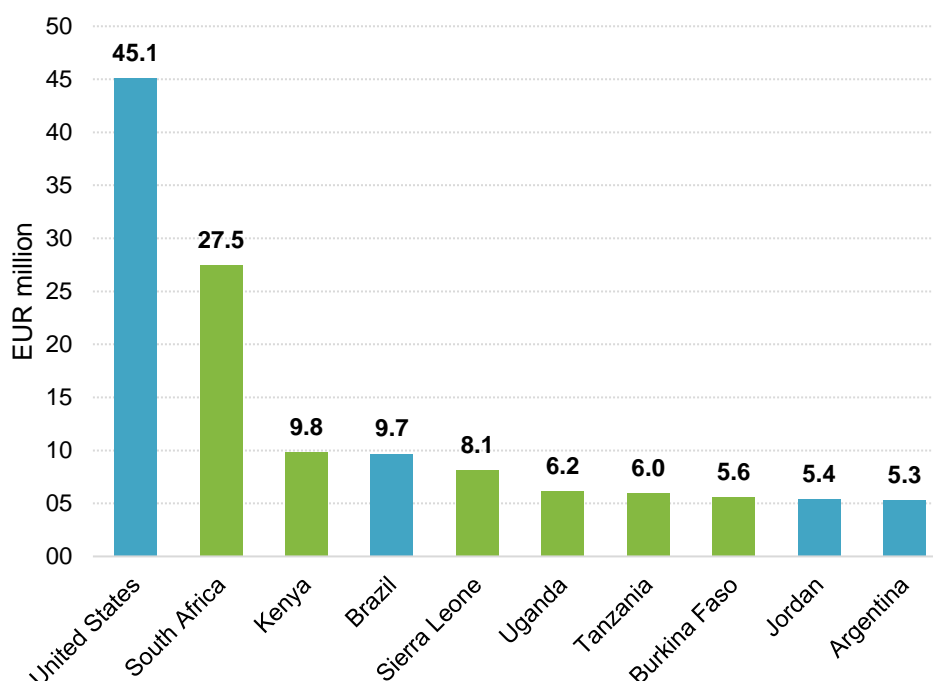
Figure 1. Africa receives most international investments under Horizon 2020



Source: EC 2019; % of total Horizon 2020 investments from its inception to January 2019

Funds are concentrated in just a few countries. South Africa is Horizon 2020’s African champion (€27.5 million) and the second-largest third country beneficiary after the United States (€45.1 million).⁵ South Africa is followed at a distance by Kenya, Sierra Leone and Uganda.⁶ Some African countries receive funds comparable with countries in other regions, for example Kenya and Brazil or Burkina Faso and Jordan.

⁵ Third countries are those outside the EU, the European Free Trade Association and the European Economic Area.
⁶ It is likely that this level of funding to Sierra Leone is due to health research projects. Authors did not have access to project-level data behind the figures in the graph, but the CORDIS database shows two large projects for vaccines against Ebola.

Figure 2. Some African countries receive funds comparable with countries in other regions

Source: EC 2019; Horizon 2020 investments in third countries from its inception up to January 2019

Tunisia is the only country in Africa associated to Horizon 2020, also the result of a political push to gain an ally in the EU's Southern Neighbourhood. Algeria, Egypt, Morocco and South Africa (the only African country outside the Southern Neighbourhood) each have a R&I agreement with the EU.

Under Horizon 2020, Africa retained the same access to funding it previously had, including for middle-income countries.⁷ However, some interviewees suggested that participation has suffered under the programme. It may be that inserting international cooperation as a cross-cutting tool for European R&I under Horizon 2020 has made access more complex, compared with having a dedicated financial envelope for international cooperation and specific topics for Africa as before.

Key priority areas for participation for Africa in the EU's Horizon 2020 include:

- infectious and parasitic diseases
- food and nutrition security
- sustainable agriculture and sustainable energy
- climate change
- marine research
- transport and information and communications technology.

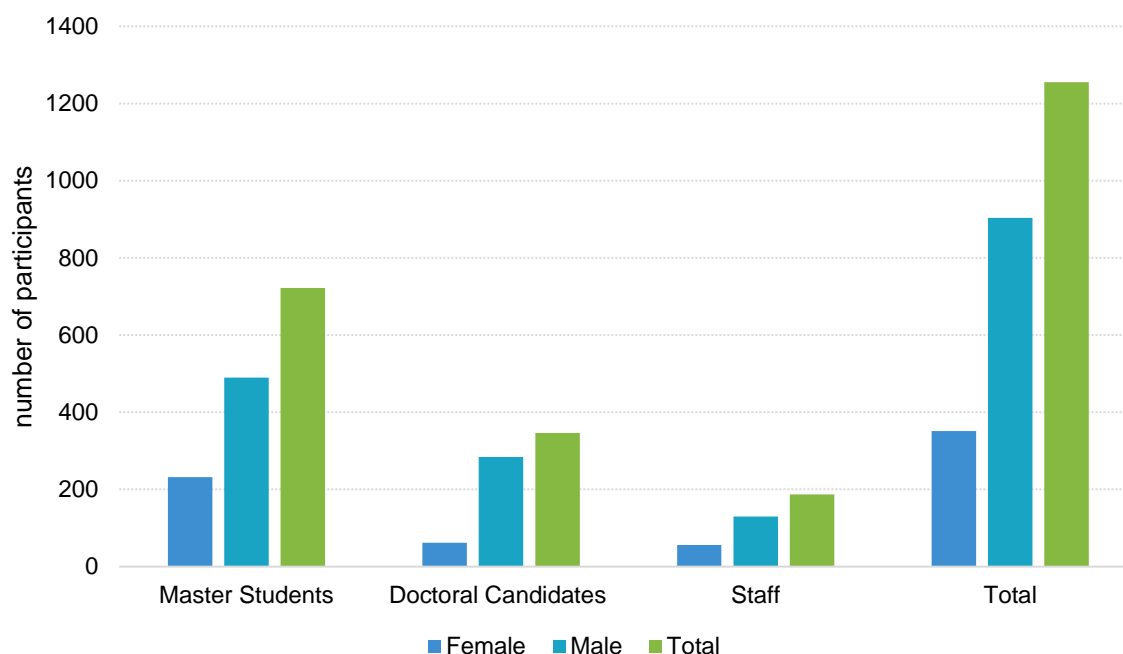
Chronic diseases, astronomy, violent extremism and forced displacement are areas for increased collaboration, a reflection of European interests. Operationalising the R&I component of the JAES remains a core element of collaboration, funded by Horizon 2020 and the EU's Pan-African Programme.⁸ The joint partnerships on Food and Nutrition Security and Sustainable Agriculture (2014) and Energy and Climate

⁷ Some middle-income countries in other regions lost access to EU bilateral aid and have lost eligibility for funding under Horizon 2020. Some of those experienced a drop in participation from previous years (EC 2017a).

⁸ For an overview of the Roadmap see EC 2018b. The Pan-African Programme is a financial envelope under the Development Cooperation Instrument.

Change (2017) are flagship programmes (AU and EU nd(a); AU and EU nd(b)).⁹ The EU also funds the AU's research grants and the Intra-Africa Academic Mobility Scheme. Between 2011 and 2017, the scheme benefited 1,255 Africans from 43 countries and 97 higher education institutions (AU 2018). Interestingly, the previous [intra-ACP mobility scheme](#) inspired the intra-Africa one.

Figure 3. Most participants in the intra-African mobility scheme are masters students



Source: AU 2018; Number of participants between 2011 and 2017, by type of occupation and gender

[Other initiatives](#) geared towards sustainable development results take place in the EU ACP framework, some of them in joint alignment with the JAES and Cotonou Agreement. In January 2019, a new pilot ACP–EU innovation programme was announced that tests a stronger focus on R&I ecosystems, innovation (including an ACP Innovation Pilots fund), the labour market, local knowledge and demands. It also includes a policy support facility that aims to help strengthen national R&I systems. However, South Africa and Southern Neighbourhood countries cannot take part as they are not eligible for funding under the European Development Fund (EDF).

While other initiatives exist, often as part of wider projects, they would be impossible to summarise here. The EU's Joint Research Centre produces knowledge relevant for EU policy on African development and works with African actors (Joint Research Centre 2018). It is reflecting on how to frame its work with Africa more consistently and provide clearer policy indications to the EC. Moreover, the European and Developing Countries Clinical Trials Partnership (EDCTP) is a flagship initiative which supports action on poverty-related and neglected infectious disease in sub-Saharan Africa. Originally covering only 16 African and 14 European countries, it now covers 37 and 17, respectively. It has also built a more inclusive decision-making structure with more voice for African countries. Between 2003 and 2018 it supported 442 projects for more than €651 million (EDCTP 2018).

Collaboration between Europe and Africa has faced several limitations. Bottlenecks for participating in EU programmes include unequal access and capacity in Africa, weak institutional structures and limited experience with EU programmes, along with their complexity. Limited collaboration between policy-makers,

⁹ For examples of projects under JAES, see EC 2017b.

the scientific community and industry would need to be addressed. Timely uptake of research results, the translation of these into actions relevant to local development and more visibility of successes could improve the profile of EU–Africa R&I collaboration. Academic mobility has suffered because of the difficulty of transferring credits across academic institutions, cumbersome visa procedures and delays to the start of academic years. One major concern remains the paucity of African investments in R&I and the dependency on external funds.

The collaboration between Europe and Africa on R&I is as extensive as it is fragmented. Many of our interviewees showed great pride and drive in their work and, in some cases, were shining examples of intra-EU institutions coordination. While this was a pleasure to testify, on a larger scale, our research must note that steps could be taken to follow such examples. Some improvements in synergies between Horizon 2020 under the EC's DG Research, Training and Development and external instruments under DG DEVCO occurred and collaboration improved. But a better division of labour and collaboration between DGs is still a work in progress. A variety of other DGs are also involved, sometimes as thematic leaders (for example, DG Education and Culture on academic mobility under Erasmus+ or DG Agriculture and Rural Development on [LEAP-AGRI](#)).

EU Delegations in African countries sit in a special position to frame collaboration too but they are usually underexploited. Implementing agencies such as the Education, Audiovisual and Culture Executive Agency (EACEA), Research Executive Agency (REA) and the Executive Agency for Small and Medium-sized Enterprises (EASME) assist in managing and implementing initiatives, but administrative complexity is mentioned repeatedly by African counterparts (Makanga 2018; EC 2017a; EC 2017c). Sheer competition under Horizon 2020 is often a disincentive to participating.

The latest evaluation of DEVCO support to R&I for development (2007–2013) noted that DEVCO funds multiple initiatives, sometimes as part of wider programmes, but support is fragmented, uncoordinated and has a low profile in DEVCO. Support to R&I is relevant for DEVCO objectives on international development and ending poverty but “these efforts have not achieved a critical mass, nor a substantial overall result that might have left real improvements in the R&I institutional framework across partner countries” (EC 2016: ix).

A key recommendation is that DEVCO should formulate an internal R&I for development policy along with national strategies. Capitalisation of R&I results, in collaboration with DG Research, Training and Development, and a visibility strategy that spells out the importance of R&I for development are also advised. These are in line with our findings on the need for a more strategic approach to EU's R&I collaboration with Africa (Di Ciommo et al. 2019).

4. A fresh vision for Europe and Africa on R&I

Negotiations on the future framework programme for R&I, [Horizon Europe](#), under the next multiannual financial framework (MFF), for 2021–2027, progressed swiftly. Early in 2019, the Council of the EU and the European Parliament reached a political agreement on Horizon Europe that confirms most of the programme, although not its proposed budget of €100 billion.¹⁰ Horizon Europe envisions a three-pillar structure on open science, global challenges and industrial competitiveness, and open innovation. The programme retains a strong emphasis on realising the Sustainable Development Goals (SDGs), although some interviewees expressed concern on merging global challenges and industrial competitiveness under

¹⁰ This also includes the Euratom Research and Training Programme. The European Parliament asked for increased funding of €120 billion and, in April 2019, endorsed the programme in plenary.

the same pillar. A future European Innovation Council will be mandated to boost innovation in Europe. Missions will give directions for top-down actions under the second pillar (Mazzucato 2018).

Discussions on non-EU participation in Horizon Europe are on hold, with Brexit as a major hindrance. But some broad details are available. The objective for international cooperation is to increase EU access to R&I assets worldwide and make Europe the place to be for researchers and innovators. The emphasis is squarely on EU competitiveness, policy priorities and research excellence and on collaboration based on common interests and mutual benefits (EC 2018c). Horizon Europe says international cooperation should:

- attract top researchers, innovators and knowledge-intensive companies to Europe
- influence the global R&I policy agenda, in particular on global challenges and the SDGs
- support Europe to benefit from globalisation (EC 2018d).

Following the call of the Council, European Parliament and external stakeholders, Horizon Europe aims to strengthen international R&I cooperation. The proposal envisions an extension of association status to any country worldwide with adequate science, technology and innovation capacities (EC 2018e). Notably, association “should ensure a close approximation between payments and returns” (EC 2018d: 101). It also proposes to expand the tools for cooperation, deepen participation in international flagship initiatives, rationalise partnerships, and increase joint programmes and calls.

African countries are reassured that Horizon Europe will retain funding for low and middle-income countries, while emerging economies will still be financed only under certain conditions. But the proposal does not provide much of a narrative for collaboration with Africa and, conversely, emphasises industrialised and emerging countries.

This risks sending out weak signals to a continent with which the EU aims to structure closer and more mature partnerships. Further policy direction on the matter dates back to 2012 under the communication *Enhancing and Focusing EU International Cooperation in Research and Innovation: A Strategic Approach* (EC 2012). In line with it, interviewees confirmed that R&I contribution to EU external policies and tackling global challenges are the principal drivers for collaboration with African countries. They include EU objectives on migration and development as well as EU interests, such as tapping into new markets for EU technology and investments. Political objectives or complementarity with broader alliances also matter.¹¹

Some interviewees suggested that the 2012 communication should be updated to allow for a more tailored, innovation-led, ecosystem-based and demand-driven approach to collaboration between Europe and Africa. Such an update could more decisively build on the reality of African R&I today. Our previous research pointed to opportunities that could arise from a stronger recognition of the innovations that are taking place in Africa and of the contribution that collaboration with African partners could bring to global challenges, including and beyond the development of the continent (Di Ciommo et al. 2019). More demand-driven and locally relevant research could be built on wider and more timely engagement with African actors. This would be in line with the spirit of the JAES and the Horizon Europe proposal for co-creating and co-designing some aspects of the programmes with society, including in strategic programming and specific projects. This is easier for research but becomes more complex for closer-to-market innovations.

Existing initiatives could be of inspiration. A [recent visit to Kenya](#) to promote Horizon 2020 highlighted the EU desire to harness talent on the continent. Participation in the Marie Skłodowska-Curie Actions and the

¹¹ For example, the [Mindelo Agreement](#) with Cabo Verde complements a larger All Atlantic Ocean research cooperation initiative.

European Research Council grants could improve – available data shows that only eight Africans benefited from European Research Council grants under Horizon 2020 up to late 2018.¹² The council's openness for excellent research to take place outside Europe is good practice.¹³ The ongoing discussion on the African Research Council and the envisaged secondment of a science counsellor to the EU Delegation to the AU provide opportunities. European support to African academic policy such as Tuning Africa and the EDCTP offer examples of more demand-driven and policy-led R&I practices.

The EU has showed its limits in working in the field of innovation. There is demand in Africa for more risk-taking as well as flexible and rapidly deployed funding. Flexible funding can support researchers to speed up the development and innovation of new products under Horizon Europe, making them more adaptable to the fast-paced and efficient landscape of the private sector (Makanga 2018). The EU is also seen as an ally to support networking among innovators and investors in Africa and Europe and a knowledgeable technical expert on regulatory matters. The new approach tested under the ACP-EU innovation programme could offer lessons on how to devise a nimbler EU able to work in innovation ecosystems and small-scale enterprises.

Today most collaboration between the EU institutions and Africa is bi-regional, while bilateral cooperation is ad hoc with limited exceptions. This is likely to remain the focus of R&I engagement, although there is some acknowledgement that the diversity of African R&I environments, national capacities and challenges could lead to better tailoring to national circumstances. This is the direction of travel of EU international cooperation overall, where the aim is to shift funding to geographic cooperation as much as possible and diversify EU action more according to context (Di Ciommo and Sayós Monràs 2018).

Time seems ripe for renewal. Interviewees broadly agreed that Africa is higher on the EU agenda, also thanks to the Africa-Europe Alliance for Sustainable Investment and Jobs (EC 2018a) and concerns about security and migration to Europe. Optimism was measured by some degree of realism that demand for R&I collaboration in Europe often sees other parts of the world first rather than Africa. Demand in Africa is not always forthcoming. The ineludible bedrock of bottom-up demand is real mutual interest and shared objectives, some of which escape governmental processes. However, the EU and African partners could help to identify some of those and steer opportunities on both ends. Some of our interlocutors mentioned that this needs a change of mindset in Europe, away from a clichéd image of Africa as a continent hindered by intractable issues alone. Africa needs to move away from the donor–recipient mentality when looking at Europe.

In Africa, it means a broader and more strategic outreach to R&I African actors that often lie beyond the circles familiar to EU institutions. Governmental outreach should continue to include the AU Commission but also expand to African governments which fund and implement programmes of substance. Interviewees suggested that initiatives with high visibility such as those associated with the JAES could help to increase awareness among decision-makers on the importance of R&I. For example, this could be through an endorsement of R&I by member states and a strong commitment to existing actions.

The complementarity between EU external resources, mostly aid, and its R&I funding should be further exploited, rather than challenged. While cross-DG collaboration seems to have improved, synergies between the future external resources under the proposed broad instrument for external action called the Neighbourhood, Development and International Cooperation Instrument (NDICI) and the funding available

¹² CORDA database.

¹³ Researchers need to be affiliated to European institutions but team members can be based outside Europe. Under the European Research Council's Synergy Grants, grantees can perform their research outside Europe. Participation is for scientists with excellent frontier research ideas, irrespective of nationality.

under Horizon Europe could be deepened. The former with a focus on development-enhancing actions; the latter maintaining its principles of openness and research excellence (EC 2012; Sherriff 2019). Together, they should have a clear focus on SDGs, global challenges and building stronger partnerships between Europe and Africa (EC 2018f).

5. Equal partnerships in an unequal world: R&I's potential

The discussions on R&I international cooperation under Horizon Europe and the set-up of the future EU external financing instruments are ongoing. Funding for African countries will be available and potentially increase, following a renewed interest on the European side. How these resources will be spent on R&I will depend on various factors. First, whether Africa will receive the same level of attention from the next EC President and, if so what the thinking on R&I will be. Senior political steering could mean more incentives for better EU institutions working together on R&I with Africa. A related factor will be if – a big if – a Commissioner for Africa will materialise and whether she will have a say beyond traditional development assistance.

Second, the vision the next Research, Training and Development Commissioner will have on Africa and what the European added value will be compared with players that range from China to Google will affect R&I's priority. A measure of interest will come from any move around a potential update of the narrative for future R&I engagement with developing countries namely Africa. The need for an update is a key finding of our research so far, which also identified space for a better articulation of national R&I engagement.

Third, interviewees brought our attention to the programming phase and the preparatory work that should lay the ground for its smooth working in 2020 – for Horizon Europe and the NDICI. The strategic programming under the first will benefit from inputs of [public consultations](#) towards the end of 2019. It is important that due attention is given to international cooperation with African countries and that these actors are meaningfully consulted. This also applies to the DEVCO planning process, where attention to the insertion of R&I national and regional programmes will be key. We estimated that, for African countries, only ten national indicative programmes or similar document have a relevant reference to R&I and only five include concrete actions, either as a focal sector or as a visible element of other sectors.¹⁴ Leadership will need to find a balance between the objectives of European external action and development policy towards Africa and the competitive nature of R&I programme, in particular through better synergies between Horizon Europe and the proposed NDICI. Programming will also be an opportunity to set the balance between national tailoring and regional approaches.¹⁵

Fourth, our previous research shows how unaccomplished a renewed partnership approach looks when seen from African eyes. Some of it depends on the conditions of African countries themselves – something the EU cannot change alone but also cannot ignore (EC 2018d). But, in an unequal world, a narrative of equal partnerships can be counterproductive as much as assistance can set a patronising tone for relationships. On the one hand, there are systemic and structural challenges that affect Africa's ability to tap into cooperation opportunities with the EU and the rest of the world (Barugahara and Tostensen 2018). Actions like network support, capacity development and strengthening national innovation systems will need to remain part of future cooperation. On the other hand, focusing on those only would miss Africa's innovations and excellences. The CAAST-Net Plus project (Coordination and Advancement of sub-

¹⁴ Authors' analysis of national indicative programmes and association agreements for the 2014–2020 period. By visible, we mean a mention in these documents. R&I could also be a component of projects not mentioned in these documents.

¹⁵ This will also be the case for global action, which is not the focus of this paper.

Saharan Africa-EU Science & Technology Cooperation Network) offers some lessons on how to stimulate equality of participation (Kramer-Mbula et al. 2018).

A more competitive international environment carries the risk that African countries will ultimately prioritise other relationships over their ties with Europe, including to the advantage of more dynamic powers. The Horizon Europe proposal does not interrogate the role of science diplomacy to strategically advance Europe's broader international interests. This is a quite controversial idea that does not seem to fly in the case of EU institutions (Higgott et al. 2019). The authors still emphasise the need for progressive thinking to refresh the EU's R&I approach to Africa and, more broadly, its relationships, jointly with evidence of impact on sustainable development challenges. R&I seems to be an area less politically loaded than others and where genuine interest in collaboration exists. The long history of the EU's framework programmes offers Europe a strategic advantage in this domain, but Horizon Europe, not only DEVCO programmes, needs to pay attention to the continent. Cooperation on R&I is much larger between EU member states and African countries and harnessing the opportunities of coordination would help to build a more comprehensive and integrated action with an EU-wide breadth.

Finally, strengthening the profile of Africa on R&I requires African policy-makers and societies to take the lead on this agenda and identify the added value of those investments to the continent. There is some demand for it, in both Europe and Africa, although this needs a clear articulation of the added value of such collaboration and the interests and objectives it sustains. While there are commitments at the high level, honouring them seems to be more challenging. The commitment of AU's member states to spend 1% of their national GDP on STI remains unmet. The EU could help to raise the profile of R&I among African policy-makers, giving visibility to EU–Africa collaboration beyond the JAES space, showcasing successes and the contribution to such work to progress in Africa and beyond. The risk is that this will come across as yet one more North–South cooperation programme, which it probably is despite all good intentions, rather than a joint initiative. This is unavoidable until Africa co-invests in R&I and co-leads in framing the agenda. There is a lot of ambiguity on how EU–Africa relations will feature in the future, also due to delays in negotiations of a post-Cotonou agreement. The next Africa–EU summit may not put fresh EU money on the table or clarify the big picture, but it is still one of the spaces where strong messages on EU and Africa working together on R&I could be sent.

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