



ARUA UKRI Partnership Programme

Impact Evaluation

Final Report: May 2025

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Executive summary

The African Research Universities Alliance (ARUA) and UK Research and Innovation (UKRI) partnership programme was delivered as part of the Global Challenges Research Fund (GCRF). ARUA is an alliance of research-intensive universities across Africa, bringing together 16 leading universities to form 13 Centres of Excellence (CoEs) in nine African countries. The partnership programme provided a unique opportunity for UKRI to directly fund Africa-led research.

The programme provided £14 million funding over three years (2019-2022) to ARUA's CoEs and funded two types of awards: Capacity Building and Research Excellence, across 17 projects. The programme took a 'hub and spoke' approach, whereby a 'centre hub' worked together with 'spoke' universities. Capacity Building (CB) grants aimed to invest in and build capacity at ARUA's 13 CoEs through supporting researchers, workshops, networking, researcher exchange and interactions with research projects. Research Excellence (RE) grants funded four collaborative research projects that built on one or more GCRF awards to UK universities and addressed specific aspects of the United Nations Sustainable Development Goals (UN SDGs). The programme was led and managed by an Africa-based board and secretariat from ARUA, and a Ghana-based programme co-ordinator, who supported the management of UKRI's grants to ARUA CoEs and acted as a middle-point of contact between ARUA and UKRI.

In 2021 the UK Government made significant reductions to the Official Development Assistance (ODA) budget, which together with the restrictions caused by the Covid-19 pandemic, led to some inevitable delays and workplan adaptations across the programme. This had an impact on the start and completion dates of several of the 17 projects. Although two projects were completed by December 2022, most ended between March and December 2023, and five between January and March 2024.

UKRI commissioned Helix Research and Evaluation Limited to undertake an impact evaluation of the programme over 12 months from April 2024 to March 2025. The evaluation aimed to explore the outcomes and early impacts of the programme, with a focus on the programme's design, against its objectives and looking forward to sustainability and the longer-term. The evaluation used a theory-based, mixed methods approach including documentary review of programme-level documentation and analysis of additional primary data collected through interviews and an impact survey.

Key findings of the impact evaluation

Project teams built and strengthened diverse and equitable relationships within and between both African and UK-based organisations

- **Project teams were Africa-led** - nearly three-quarters of the 139 delivery partners were from African countries (73%; n=101), with one-quarter from UK-based organisations (24%; n=33) and a small number of partners from other countries/regions (3%; n=5).

- **Less established partnerships progressed, and new partnerships were developed** – most partnerships (76%) were not well-established before the programme and 39% were newly created in order to deliver the objectives of the programme.
- **One-fifth (19%) of delivery partners were from less research-intensive African universities** (i.e. not currently members of ARUA).
- **Delivery clusters reflected the sub-regional location of each of the 13 ARUA CoEs** – South Africa, Kenya, Uganda, Nigeria and Ghana were most frequently cited as delivery sites for awards, with delivery sites clustered more densely in Western Africa, Eastern Africa and Southern Africa, than in Central and Northern Africa.
- **Partnerships were strengthened through the programme** – 73% of partnerships with African organisations, and 82% of partnerships with UK organisations, were reported by impact survey respondents as greatly/moderately strengthened through delivering ARUA UKRI projects. Examples of activities that strengthened partnerships include formalised learning opportunities, sharing academic resources, exchange programmes and joint proposals.
- **The programme helped to shift the focus to south/south partnerships** – before the programme, many existing research partnerships were with countries in the global north: the ARUA UKRI funding helped to change this through facilitating new, and strengthening existing, partnerships between African researchers and institutions.
- **Ninety-three collaborations and networks for knowledge exchange were built** – 90% of these were completely new, having been developed during the programme (10% pre-dated the programme). Just over half (57%) of all collaboration partners were from 17 different African countries, with highest representation reflecting the location of ARUA CoEs in the Western Eastern and Southern sub-regions.
- **African authorship of publications was high** – 98% of formal publications linked to the programme included at least one Africa-based author and 87% of all first-named authors were Africa-based. However, the prominence of South African-based researchers as both authors and lead authors suggests that publication benefits were mainly vested in South Africa. This is also reflective of the fact that 10 of the 17 projects, including three of the four RE awards, had their hubs at South African-based universities.

The programme built and strengthened research capacity for both African researchers and universities, and to a lesser extent across the wider African research ecosystem

- **Individuals reported significantly enhanced research capacity** – both Africa-based and UK-based researchers reported increased knowledge and skills to develop research partnerships; increased opportunities for partnerships and networking; and more opportunities to apply learning. African researchers (but not UK researchers) also reported significant increases in opportunities for professional recognition; career progression; research productivity; confidence; commitment; and knowledge/skills to conduct and manage research.

- **African universities experienced significant enhancements in research capacity** – including reputation; interdisciplinary working; and opportunities for research training and qualifications. Institutional capacity was moderately enhanced across access to research data; workforce capability; gender equality; systems for managing and coordinating research; leadership; strategic/financial support; and organisational-level achievements (grants, publications, etc.).
- **Institutional-level enhancements in research capacity were more limited for UK universities** – although there was evidence of greatly enhanced interdisciplinary working, including collaborations between and within UK institutions that had not previously existed. Other UK institutional benefits included enhanced and more equitable access to research data from African countries/regions; better organisational-level systems for managing interdisciplinary and international projects; and enhanced organisational reputations.
- **There was some evidence of benefits for the wider research ecosystem in African countries** – most notably through enhanced cross-sector working; enhanced access and availability of research data; more opportunities for research training and qualifications; increased strategic/financial support; and improvements to local, national and continental systems for managing and coordinating research and science.

Projects co-created quality research to address UN SDGs and African development challenges

- **Projects had delivered outputs positioned to achieve real-world outcomes and impacts** – these included peer-reviewed publications which were open access and/or received policy citations; new research tools, methods and models in key research areas; and a wide range of non-formal, creative research outputs including the formation of 10 spin-outs.
- **Programme-linked publications have been cited by others, are accessible to research users and have potential for on-going and sustained impact** – at least 346 formal outputs were published, 39% of which were open access, 53% of which have been cited by others, and 5% of which already show potential for policy impact (in terms of citation in policy documents). Programme-linked publications on average have been cited over three times more frequently in relation to average citations for publications in the same fields of research and of the same age.
- **Non-formal and creative research outputs enabled engagement with stakeholders, with potential to address African development challenges** – the production of at least 390 new research tools, methods, models, spin-outs and other creative outputs demonstrates that stakeholders have been considered, and are engaged in, sharing the results and benefits of projects.

Partnerships and research activities were sustained post-programme, through further funding, and continued collaborations between project teams, ARUA CoEs and other global-level partners within Africa and beyond

- **A high proportion of project delivery partnerships have been sustained in the longer-term** – 84% of delivery partnerships with African organisations, and 74% of partnerships with UK/other country-based organisations have continued to work together in some form since the programme ended. In

addition, 86% of the 93 additional research collaborations developed through the programme were still active in March 2025, at least a year beyond the end of the programme.

- **Many project teams have continued to engage with partners and stakeholders** - through focused activities and networks to develop next steps, including plans for implementation and for gaining further funding to continue their work together.
- **Opportunities for further funding have so far been limited but there have been some successes** – 43% of impact survey respondents said their involvement in the programme had helped them to secure further funding, with over £6.7 million of further funding leveraged currently. However, survey respondents reported that few opportunities were available for similar, large-scale grants and that at least one of these opportunities had been withdrawn due to recent changes in global funding priorities. The lack of opportunity for follow-on funding was further compounded by additional ODA budget reductions by the UK Government in February 2025. This raises questions about the sustainability of research/capacity building projects in the global south and suggests that ongoing focused support is needed to increase individual and institutional capability in developing, writing and securing funding bids.

The key design and delivery elements of the programme both facilitated and limited progress

- **The elements of the programme design most commonly reported as having facilitated impact** were the interdisciplinary and challenge-led approach to research, partnerships and networks, and knowledge of the broader context through working with research users and local communities. The Africa-led nature of the initiative, the hub and spoke model, and equitable approaches to co-creation/co-production of research and capacity building, also proved beneficial for working with partners to address UN SDGs.
- **Broader factors that limited impact were** the Covid-19 pandemic which prevented both travel and face-to-face engagement, the 2021 ODA budget reductions by the UK Government and the lack of available follow-on funding to maintain momentum generated by the programme.
- **The African-led nature of the programme led to** improved cross-institutional partnership working and stronger networks, supported by the ARUA secretariat and the Africa-based coordinator, but challenges were also reported due to navigating complex UKRI systems and requirements. Funding was sent directly to African universities, who took responsibility for managing and distributing that funding themselves. The facility to have non-UK research leadership allowed funding to then reach African universities directly, without the need to include the on-costs of UK institutions and researchers.
- **The hub and spoke model contributed to enhanced equality and inclusion** through for example, empowering awards to select partners, leading to opportunities to collaborate with more African researchers, and consideration of regional contexts and priorities. However, some hubs experienced challenges related to onerous financial and project management responsibilities, and limited involvement from some spoke institutions.

Learning and recommendations to inform design and delivery of future Africa-based investments

- **A long-term approach to funding, including the availability of follow-on funding,** will more likely lead to sustainability of capacity-building benefits and maximise opportunities to deliver impact.
- **Embedding Africa-based programmes within a pan-African organisation or network** will help to engage partners, gain in-depth understanding of current contexts and promote sustainability.
- **Adopting a hub and spoke model for capacity building and research partnerships will promote equality and inclusion,** by ensuring that resources are made available to universities that need more support and enabling awards to take regional priorities into account. However, the administrative burden on the hub may make it difficult for hubs to support and build capacity for the spokes. Future programmes should be prepared to plan for and provide additional support as needed.
- **Continued promotion of African leadership and management of initiatives with direct funding to African institutions will support increased African ownership of research processes and outcomes** and ensure greater relevance to country context, enabling programmes to address the challenges faced by the continent more effectively.
- **Early engagement with key programme stakeholders,** for example UKRI's individual Research Councils and senior-level buy-in at partner institutions, is important to secure and stabilise on-going support and resources and allow linkages to be made with other relevant investments.
- **Planning for future sustainability should be undertaken at an early stage,** to identify possible further funding sources within suitable timeframes to maintain momentum.
- **Holistic support for capacity building and research skills integrated within a challenge-focused research programme** will help to provide a clear focus for capacity building and provide opportunities to embed and sustain learning in the longer term. Opportunities for authorship, alongside a focus on writing for publication, and as a means for seeking further funding, will provide a key foundation for building research capacity amongst African scholars, and as a route to career progression and professional recognition.
- **Institutional capacity building will strengthen financial and research management skills and underpin the achievements of the initiative.** Therefore, adequate support and guidance on UKRI/UK-based financial systems and reporting requirements should be available from programme inception and throughout as required.
- **Evaluation and learning processes should be transparent, embedded within project monitoring and reporting, and built in from the start.** A requirement to report outcomes against programme objectives as part of systematic project reporting will provide clearer evidence of programme learning and achievement, and will allow for responsiveness and flexibility, so that change can be introduced promptly in order to improve delivery.
- **It is worth considering the limitations and benefits of the timing for commissioning independent impact evaluation.** Capturing data on publications and further funding outcomes, as well as real world impacts, is likely to be more insightful if conducted at least three years post-programme.

Abbreviations and acronyms

AAS	African Academy of Sciences
ARUA	African Research Universities Alliance
CaBFoodS Africa	Capacity Building in Food Security - Africa
CB	Capacity Building
CoE	Centre of Excellence
Co-I	Co-Investigator
CoREs	Clusters of Research Excellence
DAC	Development Assistance Committee of the OECD
DELTAS	Developing Excellence in Leadership, Training, and Science in Africa
DSIT	Department for Science, Innovation and Technology
ECR	Early career researcher
EU	European Union
FLAIR	Future Leaders – African Independent Research (FLAIR) Fellowships
FCDO	Foreign Commonwealth and Development Office
FCR	Field Citation Ratio
FSNet-Africa	Food Systems Research Network for Africa
GCRF	Global Challenges Research Fund
GROW	Growing Research Capability
GtR	Gateway to Research
IDRC	International Development Research Center
LMICs	Lower- and middle-income countries
MoU	Memorandum of Understanding
NDC	Nationally Determined Contributions
NCD	Noncommunicable diseases
NGO	Non-Governmental Organisation
NRF	South African National Research Foundation
ODA	Official Development Assistance
PI	Principal Investigator
RE	Research Excellence
RESBEN	Unlocking Resilient Benefits from African Water Resources
R&I	Research and Innovation
RQ+	Research Quality Plus
SGCI	Science Granting Councils Initiative
SFA	The Science for Africa Foundation
TSITICA	Transforming Social Inequalities through Inclusive Climate Action
UKCDR	UK Collaborative for Development Research
UKRI	United Kingdom Research and Innovation
UN FAO	United Nations Food and Agriculture Organization
US	United States

UN SDGs
WHO

United Nations Sustainable Development Goals
World Health Organisation

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1. Background and context

1.1 About the ARUA UKRI partnership programme

The African Research Universities Alliance (ARUA) and UK Research and Innovation (UKRI) partnership programme was delivered as part of the Global Challenges Research Fund (GCRF). GCRF was a £1.5 billion research and innovation (R&I) fund launched in 2016 and overseen by the UK Government's Department for Science, Innovation and Technology (DSIT). It aimed to support pioneering research and innovation in response to a critical need to accelerate progress towards the United Nations Sustainable Development Goals (SDGs), by developing solutions to urgent, complex and evolving global development challenges.

ARUA is an alliance of research-intensive universities across Africa, bringing together 16 leading universities to form 13 Centres of Excellence (CoEs) in nine African countries, with the aim of improving the quality of research conducted in Africa by African researchers. Centres of Excellence are structured around a 'hub and spoke' approach, in which a CoE focuses on a specific area of the UN Sustainable Development Goals (SDGs), is recognised as a 'centre hub', and works together with 'spoke' universities to research and address this area of research. It is a pan-African network centred around bringing research and academic excellence to the fore throughout the region, by developing strong and viable research universities. ARUA builds on the concept that partnerships and networking have become essential arrangements for universities throughout the world to leverage their collective resources for greater impact.

The ARUA UKRI partnership programme initially provided £20 million funding over three years (2019-2022) to ARUA's 13 CoEs, for 17 capacity building and research-based projects. This was later reduced to £14 million as a result of the UK Government's Official Development Assistance (ODA) budget reductions in 2021, ahead of the policy decision to wind down the GCRF by 2025. The ODA budget reductions, together with the restrictions caused by the Covid-19 pandemic, led to some inevitable delays and workplan adaptations. Due to no-cost extensions, projects were completed between the original end date of December 2022 and up to March 2024.

The partnership programme was designed to align with key pillars of the GCRF strategy: to promote challenge-led disciplinary and interdisciplinary research, innovation and knowledge exchange in both the UK and developing countries. The programme also intended to build coherence across GCRF investments for greater impact and to develop new partnerships in order to help the GCRF amplify its reach as well as its effectiveness. It also enabled collaboration and leadership from a pan-African network with the common aim of expanding and enhancing the quality of research carried out in Africa by African researchers. The partnership programme provided a unique opportunity for UKRI to directly fund Africa-led research.

1.2 Programme objectives, design and delivery

The three objectives of the ARUA UKRI partnership programme were to:

- Build significant capacity for science and research across African universities
- Provide opportunities for African research teams and GCRF grant holders to co-create new projects that build on current investments by ARUA and UKRI
- Build equitable collaborations to strengthen capacity for research, innovation and knowledge exchange in both the UK and Africa.

The programme was developed and delivered through two key strands. The **Capacity Building** (CB) strand aimed to invest in and build capacity at ARUA's 13 Centres of Excellence (CoEs) through a hub and spoke model that supports researchers, workshops, networking, researcher exchange and interactions with research projects. The **Research Excellence** (RE) strand funded four collaborative research projects that built on one or more GCRF awards to UK universities and addressed specific aspects of the UN SDGs.

The programme was uniquely led and managed by an African-based board and secretariat from ARUA, and a Ghana-based programme co-ordinator, who supported the management of UKRI's grants to ARUA CoEs and acted as a middle-point of contact between ARUA and UKRI.

All 13 ARUA CoEs were awarded Capacity Building (CB) grants of £600,000 over three years. Of this, 70% was allocated to capacity building (for activities such as organising workshops, mentoring, networking and interactions with research projects); 20% was for scoping studies (to identify challenges in Africa that were specifically related to the UN SDGs, and how research can be used to address this challenge); and 10% for administrative purposes. Details of the 13 funded CB awards are provided in Annex B.

The Research Excellence (RE) strand of the programme supported four research projects linking ARUA CoEs with UK GCRF awards and award holders. Collaborating teams were expected to build on their existing expertise and research activity to develop new work explicitly aligned to addressing aspects of the UN SDGs. The RE awards also included a focus on capacity building. ARUA CoEs were invited to apply directly to UKRI for grants, up to a maximum value of £2 million. UKRI also made an additional £5,000 of funding available to project teams to organise their own training on safeguarding. Further details of the four funded RE awards can be found in Annex B.

1.3 Impact evaluation

UKRI commissioned Helix Research and Evaluation Limited to undertake an impact evaluation of the programme over 12 months from April 2024 to March 2025. The evaluation aimed to document and explore the outcomes and longer-term impacts of the programme with reference to

its pre-established Logic Model (see Annex A). In doing so it sought to answer three evaluation questions:

- What **outcomes and achievements** has the programme realised to date?
- What will the likely **sustainability and longer-term impacts** of the programme be?
- How did the **design and delivery of the programme** support or hinder its ability to deliver against its objectives?

Key evaluation data collection and analysis points were:

- May 2024 – access to Researchfish reporting submitted by awardees up to March 2024¹
- July 2024 – access to completed project final reports, development of evaluation framework and engagement with stakeholders via first evaluation advisory group meeting
- December 2024 – interim reporting and feedback from programme stakeholders via second evaluation advisory group meeting
- January 2025 – online impact survey of award-holders
- February 2025 – interviews conducted with UKRI staff, project personnel, ARUA stakeholders, funders of Africa-based research initiatives, and award-holders (based on opt-in question in the impact survey)
- March 2025 – final reporting and feedback from programme stakeholders via third evaluation advisory group meeting.
- April 2025 – access to Researchfish reporting submitted by awardees up to March 2025, to facilitate inclusion of the latest data on publications, further funding and other metrics as available.

The evaluation used a theory-based, mixed methods approach, including the following components:

- **Documentary review** - we undertook qualitative and quantitative analysis of programme-level documentation, focusing on Gateway to Research (GtR) records for each of the 17 awards and Researchfish reporting submitted by awardees up to March 2025. We also conducted a thematic analysis of award-level documentation, focusing on project reporting, via final reports and evaluation reports, where available.
- **Primary data collection and analysis** - as the programme was based in Africa and promoted African leadership, this evaluation also focused on collecting primary data directly from

¹ The annual submission of research outcomes to UKRI via the online Researchfish system.

stakeholders based in African countries, including award holders, ARUA members and Africa-based funders. Primary data sources included:

- Online impact survey of ARUA UKRI projects to explore the impacts of projects since completion as well as in-progress and potential future impacts - 40 survey responses (response rate of 66%) were received from 14 Principal Investigators (PIs) and 26 Co-Investigators (Co-Is) or other project partners across 15 of the 17 projects. 78% of responses were from Africa-based respondents across nine separate countries, and 22% from UK-based respondents. 2% of respondents described themselves as early-career, 28% as mid-career and 70% as senior level. All responses were from those working in universities or HEIs, of which 45% were from hub-based researchers, 33% from spoke-based researchers, and 22% from UK-based partners.
- Interviews with Africa-based PIs and Co-Is to explore their survey responses in more detail – eight PIs/Co-Is/partners were interviewed across nine CB and RE awards.
- Interviews with UKRI and ARUA stakeholders and funders of other Africa-based research initiatives to gather their insights on programme-level learning – 14 individuals were interviewed.

1.4 Limitations of this impact evaluation

There are a number of limitations relating to the data collected and synthesised for this impact evaluation, as summarised below:

- **Limited coverage of Researchfish reporting** - our analysis of Researchfish data was based on outcomes reported to UKRI from March 2020 up to and including March 2025. Whilst up to date, the 2025 Researchfish dataset was hampered by incomplete, or missing, data, so only partial data was recorded across the programme as a whole. We were able to mitigate this to a limited extent through the online impact survey and interviews with PIs and Co-Is.
- **Comparability and specificity within project reporting** - our analysis of award-level final reports was limited by differences in reporting structure and style across the programme, and the absence of requirement for awards to report against programme objectives in systematic ways. This meant there was low specificity against programme aims and research questions making comparability of documentary evidence challenging for some areas of inquiry. Few award-level evaluation reports were available for analysis. This meant that at programme-level there was limited direct evidence of outcomes for individuals and institutions participating in capacity-strengthening activities.
- **Representation of awards in the online survey and interviews** – the collection of additional primary data via the online impact survey and through interviews with Africa-based PIs and Co-Is was limited by the variable level of participation across ARUA UKRI awards. Fifteen of the 17 awards were represented in the survey dataset, with responses per award ranging from one to

nine. Despite a good response rate (66%) the survey was aimed at those PIs and Co-Is for whom UKRI had contact details. There was very low participation by early-career researchers (2%) which meant that capacity-building outcomes for more junior staff were not as well captured as those for more senior staff. Interviews with Africa-based PIs and Co-Is to capture more detailed information on outputs and impacts were opt-in and despite reminders, only recruited nine of the 17 CB/RE awards. It is likely therefore that some post-programme impacts were not fully captured.

2. Programme outcomes and achievements

This chapter addresses the evaluation question: what **outcomes and achievements** has the programme realised to date? In doing so it focuses on the outcomes achieved during the lifetime of programme, and what projects achieved through their work to deliver the programme's key objectives. The extent to which these outcomes were sustained, and how they have contributed to real-world impacts is discussed in chapter 3.

2.1 Building equitable collaborations for research, innovation and knowledge exchange

Building partnerships to deliver ARUA UKRI awards

The development of **new delivery partnerships** was an essential requirement of the ARUA UKRI programme. The programme encouraged partnership working through a hub and spoke model, whereby award holders (PIs based within ARUA CoEs) would work with ARUA members to reach out to and beyond 'less research-intensive' African universities. Award holders were also expected to forge new relationships, create meaningful and productive linkages and secure synergies between the ARUA Centres of Excellence (CoEs) and UK-based GCRF award holders.

Each of the awards was led by an ARUA CoE (the hub), working together with other African and UK universities (the spokes) and in a few cases with other non-university organisations. **Including the hubs, 139 partners from 101 organisations² were involved across the 17 awards.** Of these:

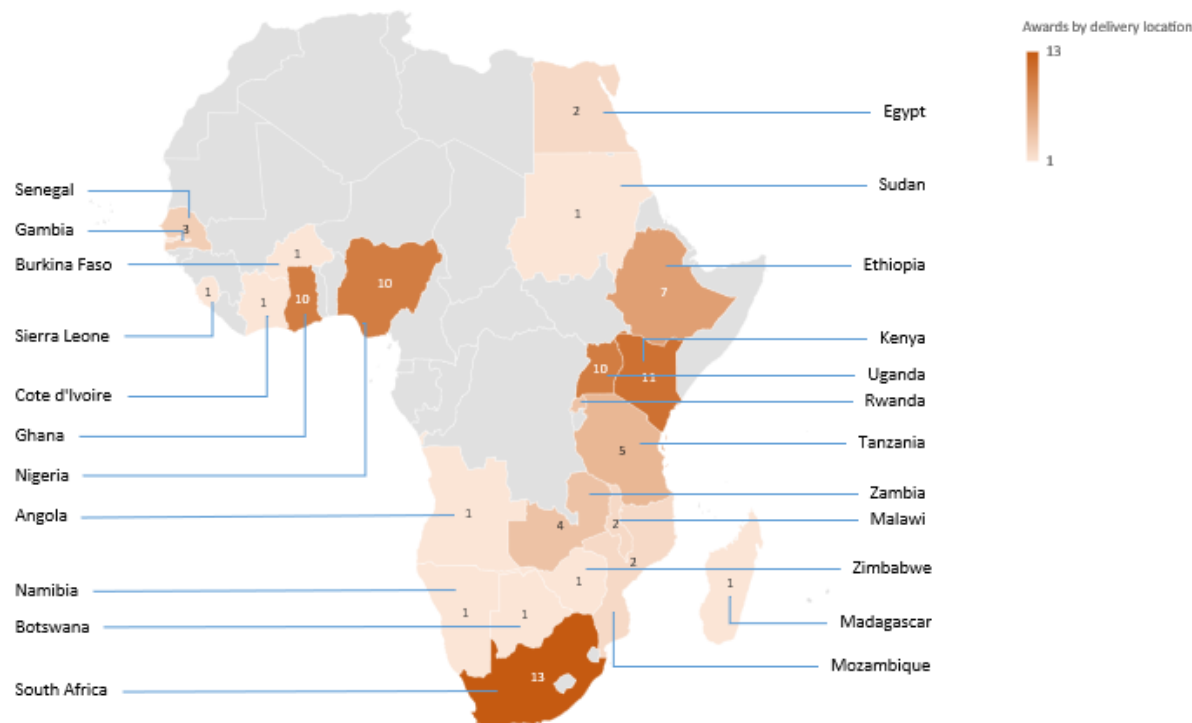
- 73% (n=101) were from African countries
- 24% (n=33) were from UK-based organisations
- 3% (n=5) were from other countries/regions.

The number of partners for each award ranged from four to 22 per project, the average being 11 partners per project. In terms of organisation type, most partners (89%; n=124) were from universities. A small number of partners (11%; n=15) were from outside the university sector, including research-based organisations (such as statistics agencies and funders), charity/non-profit, government and private sectors.

² Several partners were involved in more than one award: for instance the University of Ghana was listed as a partner in nine awards.

Of the 93 African university-based partners (across 40 institutions), 51 were from 31 universities not designated as ARUA CoEs. Of these 31 universities, 22 (representative of 27 partners across the programme) were not currently ARUA members³. **This indicates that 19% of the total 139 delivery partners involved in the programme were from less research-intensive African universities.**

Figure 1: Distribution of awards by delivery location across the African continent



The heat map in Figure 1 shows the distribution of awards by focus country across the African continent. **South Africa was the most frequently cited delivery site** (by 13 awards), followed by Kenya (11 awards), Uganda, Nigeria and Ghana (10 awards per country), Ethiopia (seven awards) and Tanzania (five awards). **We can also see that the delivery sites are clustered most densely in Eastern Africa** (10 countries; 47 project links), Western Africa (seven countries; 27 project links) and Southern Africa (three countries; 15 project links), with less engagement in the Northern (two countries; three project links) and Central (one country; one project link) sub-regions.

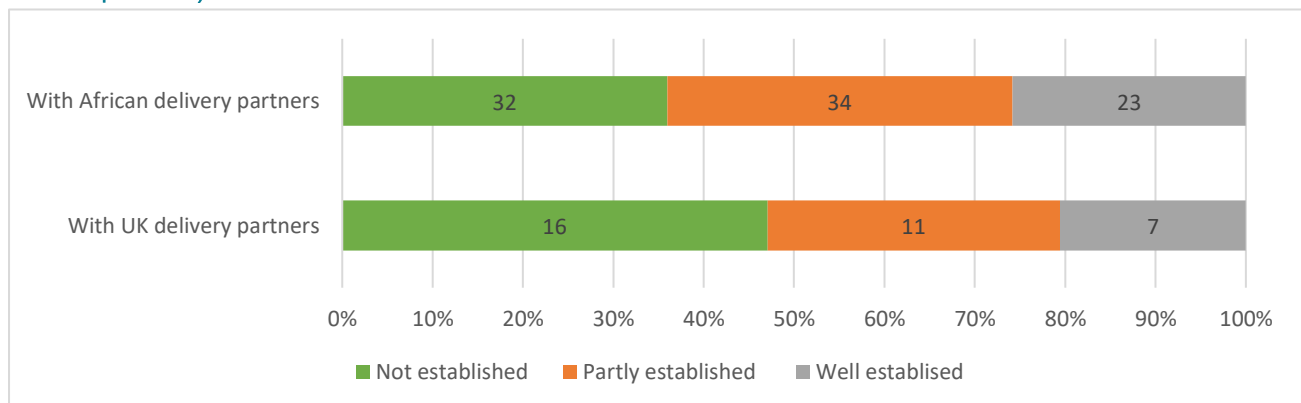
As might be expected, these clusters also reflect the country-based location of each of the 13 ARUA CoEs: South Africa (Climate; Energy; Sustainable Food Systems; Materials, Energy and Nanotechnology; Migration and Mobility; Poverty and Inequality; Water), Ethiopia (Good

³ As listed on the ARUA list of member universities: <https://arua.org/member-universities/>

Governance; Post-Conflict Society), Nigeria (Unemployment and Skills Development; Urbanization and Habitable Cities), Kenya (Non Communicable Diseases), and Uganda (Notions of Identity).

Principal Investigator (PI) respondents to the impact survey were asked about the extent to which relationships with delivery partners were established before the award. PIs provided separate responses relating to each individual delivery partner with whom their project had engaged: amounting to 89 African partners and 34 UK partners. Figure 2 shows that **only 30 of these 123 relationships (24%) were described as well-established before the programme**, and that **76% of all relationships were described as partly established (37%; n=45) or not at all established (39%; n=48)**. Of these, **36% (n=32) of partnerships with African organisations and 47% (n=16) of partnerships with UK organisations did not pre-exist the programme**.

Figure 2: Extent to which relationships were pre-existing between delivery partners (ARUA UKRI partnership programme impact survey: based on responses from 14 PIs in relation to a total of 89 African partners and 34 UK partners)



Where partnerships were described as partly established, PIs explained that in most cases these were informal reciprocal arrangements, such as individuals' contributions as examiners, guest speakers on courses, etc. Survey respondents appreciated the opportunities to formalise and develop these existing, but limited, partnerships and importantly to develop new ones, with new individuals or departments and/or with new institutions.

With regard to University of Glasgow, there was already an existing university wide collaboration in terms of PhD training and those kind of relationships, but not at the level that we eventually developed at the CoE. So strengthening the partnership at the level of CoE was actually new. For the universities in Africa, there wasn't much activity going on before this particular partnership. (PI interview-009-Africa hub)

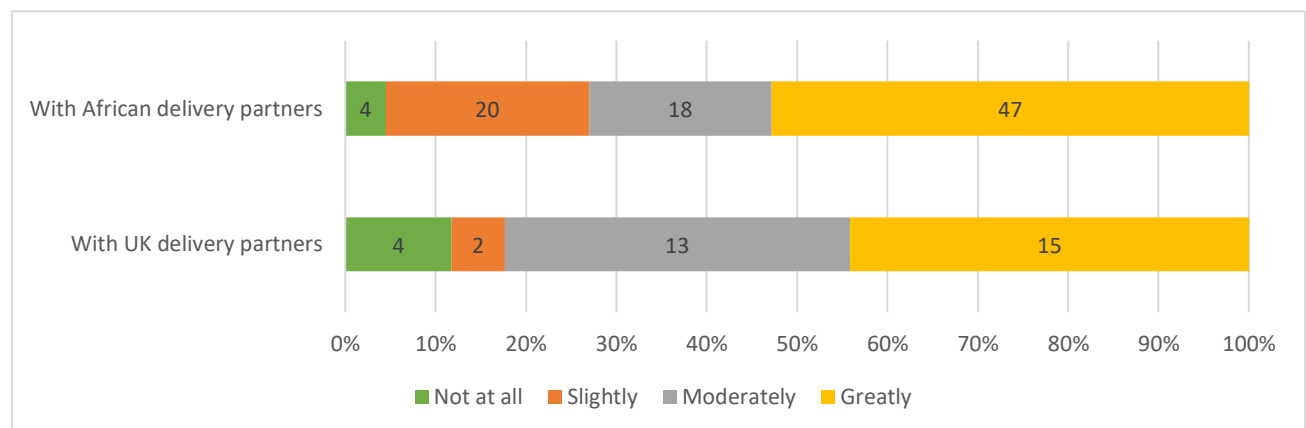
Strengthening delivery partnerships through involvement in the programme

Involvement in the programme strengthened partnerships both between/within African countries and with the UK, enabling partners to learn from each other, share academic resources, engage through exchange programmes, collaborate on joint grant proposals, train, supervise and publish

together, and support each other with professional reviews and editorial services. As Figure 3 shows, respondents to the impact survey felt that:

- 53% (n=47) of their partnerships with African organisations were greatly strengthened, and 20% (n=18) were moderately strengthened through working together to deliver projects
- 44% (n=15) of their delivery partnerships with UK organisations were greatly strengthened, and 38% (n=13) were moderately strengthened.

Figure 3: Extent to which new or pre-existing partnerships were strengthened through project delivery (ARUA UKRI partnership programme impact survey: based on responses from 14 PIs in relation to a total of 89 African partners and 34 UK partners)



There was clear evidence that the programme has supported the development and strengthening of new partnerships between African researchers and institutions, both in-country and more widely across the African continent. It was noted that before the programme, many research partnerships were with countries in the global north, but the ARUA UKRI funding had helped to change this.

One of the greatest successes of the UKRI funding is that it gave me the opportunity to build a platform that brought African researchers together across Africa... the capacity to strengthen research by working together as Africans. Before the grant, most of my partners were in the UK, in Canada, in the US, in Germany. Before the grant, we integrated more with the global north than we collaborated within ourselves in Africa. (PI interview-011-Africa hub)

Stronger delivery partnerships between African institutions also provided a foundation for effective, productive, ongoing and potentially influential African research networks.

The ARUA Water CoE became an effective African water research network entirely because of ARUA UKRI, together with the willingness and generosity of all partners, and an inclusive research ethos and methodology in the CoE lead. (Survey-125-Africa hub)

Several PI respondents highlighted that the programme's explicit requirement for consideration of fairness and equity had enabled more open conversations, the development of a clearer understanding of challenges and inequalities and, subsequently, stronger relationships between partners. One award ran reflection exercises with the project team to facilitate better

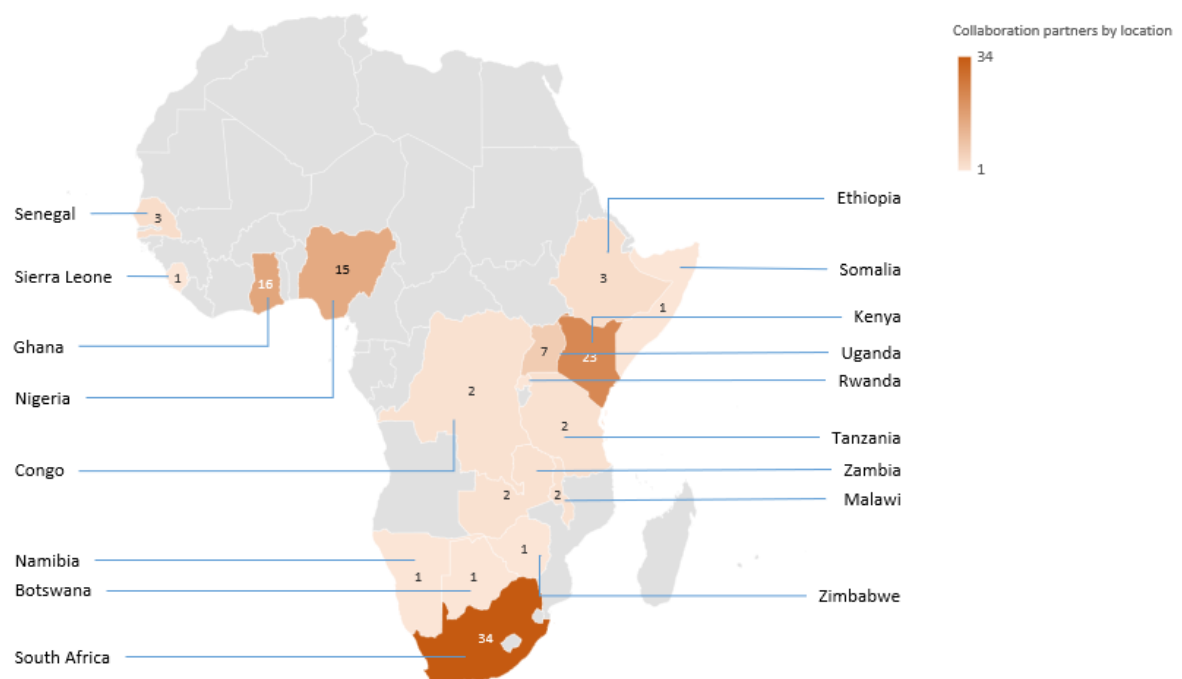
understanding of the local contexts in which researchers from different African countries work. The PI made the point that it was essential to fully understand these challenges and enablers for African academics to better support each other on their research journey, to encourage research leadership, and to improve the quality and quantity of research outputs.

[At the start of the programme] despite a clear and practiced commitment to equality among senior researchers across the hub and nodes, there were inherent inequalities. The hub researchers had principal investigator status, an established theoretical understanding and practical knowledge of the CoE area and ultimate control of the budget. Added to this, the South African base of the hub, and researchers who were mainly white, reinforced the old rubric of established coloniality. As a result, conversations were sometimes polite rather than honest ... The UKRI projects moved us beyond this fractured understanding of each other, to more honest and aware relationships. (Survey-166-Africa hub)

Building new research collaborations for knowledge exchange

A total of 93 collaborations involving 202 partners from 34 global countries/regions (including 115 partners from 17 African countries) were reported via Researchfish data. Of these collaborations, 90% (n=84) were new (having been developed during the programme), with just 10% of collaborations recorded as pre-existing the programme. Moreover, 86% (n=80) of all collaborations were recorded as still active in March 2025, suggesting that the majority of collaborations have been sustained at least a year beyond the end of the programme. Nearly two-thirds (63%; n=58) of the 93 collaborations recorded by projects listed one additional partner. Around a quarter of collaborations (28%; n=26) recorded two to five additional partners, with 10% (n=9) collaborations recording from six to 11 partners working together with project teams.

Figure 4: Distribution of collaboration partners across the African continent



Of the 202 listed collaboration partners, 57% (n=115, across 72 collaborations) were from 17 different African countries, with highest representation again reflecting the local of ARUA CoEs in the Southern Eastern and Western sub-regions. South Africa was involved as a partner in the highest number of collaborations (n=34), followed by Kenya (n=23), Ghana (n=16), Nigeria (n=15) and Uganda (n=7). The remaining 12 nations (Botswana, Democratic Republic of Congo, Ethiopia, Malawi, Namibia, Rwanda, Senegal, Sierra Leone, Somalia, Tanzania, Zambia and Zimbabwe) were involved in three or fewer collaborations each. Of the other partners, 30% (n=60, across 31 collaborations) were from UK-based organisations and 13% (n=26, across 19 collaborations) were from other countries/regions including Asia, South America, Europe, Australasia and the United States.

Collaborative activities included the development of formal research networks, research/data infrastructure, knowledge exchange and informal networking between staff and institutions, and working groups, to deliver research-based scientific, policy or practice outcomes. Around half (n=45) of the collaborations were specifically flagged as being interdisciplinary, but there may be underreporting as most appeared to have a multi-disciplinary focus and to involve partners from more than one disciplinary area.

Outputs and outcomes of collaborations were varied and included datasets, methodologies, publications, training materials, conference papers, funding proposals, workshops/training, start-ups, policy reports, scoping studies, competitions, and more. Knowledge exchange and informal networking between staff included mutual involvement on research or institutional advisory boards, secondments, presenting papers to each other, mentorship, and informal training opportunities.

Collaborations to support African businesses and early startups

- The ARUA CoE for Unemployment and Skills Development at the University of Lagos was involved in 14 different collaborative projects, 13 of which were still active in March 2024. All of these had a range of impacts in different areas and involved partners from the academic, charity/non-profit, public and private sectors.
- Notable impacts to date have included seed funding from African and global north partners for over 50 startup and private/public sector funding to set up a Business Incubation Centre at the University of Lagos which has already supported more than 60 businesses and early startups.

Just over half of the collaborations (n=48 across 11 projects) recorded impacts of their work, which included societal (31% of all impacts cited), policy-related (28%), cultural (21%) and economic (20%) impacts (although many of these are more accurately described/defined as outputs or outcomes, that may lead to impacts in time). For example, two partners from the Food Security CB project (University of Ibadan, Nigeria and Murdoch University, Australia) formed a collaboration to explore the nutrient density and protein quality of African processed meat products. They reported

societal impact in terms of building capacity for chemical analysis of food composition for nutritional use. Food composition data can inform accurate reporting on nutrient intake to underpin the development and implementation of local food and nutrition policies, regulatory measures (including labelling) and health advice. The Water RE project recorded a collaboration between the University of Cape Town and Greenspot Recycling, leading to societal impacts in terms of exchange of waste and installation of experimental controls.

2.2 Equity and fairness in research partnerships and collaborations

The development of equitable partnerships and collaborations was an explicit requirement of the ARUA UKRI partnership programme. With reference to UKRI's guidance on undertaking research in a global setting⁴, these are partnerships which are transparent, based on mutual respect, and have clearly articulated mutual benefits in terms of equitable distribution of resources, responsibilities, efforts and benefits. The programme's Call for Proposals document highlighted the importance of providing opportunities for African-based researchers to link into, build on and add to GCRF awards, and ensuring involvement by and benefits to researchers from spoke universities (less research-intensive African universities). There was also an expectation to address gender equalities both through research projects undertaken through the Research Excellence strand and through encouraging the participation of women in project teams for both strands of the programme. To respond to this, the impact evaluation asked the following questions:

- What processes and procedures were established by project teams for fair and equitable governance and distribution of funding?
- Was there evidence of fair and equitable co-creation and co-delivery by partners/collaborators of capacity building and research activities and increased ownership/buy-in of stakeholders supporting actual implementation?
- To what extent were project outputs co-created, co-owned/authored and disseminated in fair and equitable ways?

Equitable governance and distribution of funding

All of the 17 awards were led by an ARUA CoE-based PI and at least one other Africa-based Co-Investigator (Co-I), with governance oversight from an Advisory Board (AB), including representatives of partner organisations and external experts as relevant.

⁴<https://www.ukri.org/manage-your-award/good-research-resource-hub/research-in-a-global-setting/>

Findings from the impact survey documented that **85% of the 15 projects whose PIs returned data had formal, written agreements (such as MoUs) between hub and spoke universities relating to fairness and equity in governance and financial processes.** Most projects valued the process of deliberate ‘formalisation’ of guiding principles and felt it allowed for fairness and equity to be adequately addressed. However, a few projects found the process was time-consuming and not necessarily valued by all partners. For two projects, this meant that agreements on equity and fairness remained informal or verbal.

Equity and fairness in creation and delivery of capacity building and research activities

In terms of the creation and delivery of activities, the impact survey found that:

- 38% of projects had formal, written agreements in place relating to equity and fairness
- 38% had agreed terms of reference in writing (e.g. as notes or minutes of meetings) but had not formalised these
- 24% had verbal agreements only, with nothing recorded in writing.

As already noted, nearly three-quarters (73%) of the partners involved in delivering projects were from African countries, including good representation of less research-intensive institutions. A similar level of African involvement (61%) was reflected in the research-based collaborations developed during project delivery.

Considering the views and insights of community stakeholders to build trust, understanding and collective capacity

- The Water RE award (RESBEN) implemented a ‘Learning Words’ process with rural village participants, in their home language, before a more formal workshop day. The purpose was to build relationships, trust and collective capabilities of the community group to enable them to participate actively and meaningfully on the second day where the full cohort of stakeholders - including government, NGOs and academics - were convening for more detailed planning.
- The community participants were encouraged to share their knowledge of the complex social-ecological systems in which they lived and derived their livelihood. They in turn learned natural resource management terms previously unfamiliar to them, that they would encounter the following day at the workshop. At the workshop, the confidence of community participants and the willingness of government officials to share, listen and learn was seen to be greater than usual.

In terms of research legitimacy, project teams appeared to have considered the views and insights of stakeholders and engaged with them ethically and equitably to co-create and deliver activities.

Most teams had commissioned safeguarding training which raised awareness of key issues and responsibilities; supported projects to develop vulnerability and risk assessments; explored the various dimensions of harassment; and highlighted the need for ethical considerations in research to avoid any form of harm. There was also evidence from project reporting on the extent to which

activities took account of the insights of intended users and engaged with them ethically and equitably to co-create and deliver the work.

Gender-focused data was less clear: it was not possible to fully assess the nature and extent to which women were part of delivery teams or engaged as project participants across the programme. Whilst all research teams developed gender equality statements⁵, available evidence on gender equality was largely limited to demographics of team members in a range of roles, from ECRs and other researchers through to governance and research management roles. One exception was the Sustainable Food Systems RE award (FSNet-Africa), which provided a detailed assessment of its gender responsiveness, including: training and support to conduct gender-responsive or gender-sensitive research; gender balance in all activities and at all levels of seniority across the partnership; and support for female career development. FSNet-Africa also reported that 80% of its fellows felt they had improved their skills to conduct gender responsive research through involvement in the project and training. At least 78% of the projects implemented by Fellows were assessed to be gender sensitive, and 22% were considered gender responsive.

Fair and equitable co-creation and co-delivery

- The Sustainable Food Systems RE award (FSNet-Africa) reported that its approach of co-creating research with stakeholders resulted in enhanced partnerships with non-academic stakeholders. Fellows exchanged knowledge and expertise with stakeholders, including farmers, policymakers, civil society organisations, and the private sector.
- The Post-Conflict Societies RE award conducted structured stakeholder engagements with key ministries, development partners, city authorities, and civil society organizations, to facilitate policy and action-oriented commitments and strengthen partnerships as a foundation for continued knowledge co-production, co-creation and evidence-based engagement for sustainable urban development in Uganda.
- The Non-Communicable Diseases (NCD) CB award engaged stakeholders and built partnerships with academic institutions, healthcare providers, policymakers, non-governmental organizations, and the patients and caregivers affected by NCDs, to develop a networked response to NCDs, by co-designing and co-producing quality research outputs that benefit the communities they aim to serve.

⁵ A mandatory requirement for all ODA UKRI applicants, stating how they have taken meaningful yet proportionate consideration as to how their project will contribute to reducing gender inequalities, as required under the International Development (Gender Equality) Act.

Equity and fairness in creation, authorship, ownership and dissemination of project outputs

Regarding equity and fairness in authorship and ownership of project outputs (such as formal publications and non-formal research outputs), the impact survey found that:

- 46% of projects had formal, written agreements in place
- 23% had agreed terms of reference in writing (e.g. as notes or minutes of meetings) but had not formalised these
- 8% had verbal agreements only, with nothing recorded in writing
- 23% had no discussion or agreement on this issue between project partners.

Interviews with PIs indicated that many projects had made specific efforts to include all partners in planned outputs, to provide publication opportunities for early and mid-career researchers, including students and to consider the information needs of stakeholders and the wider community. For example, the Water CB project developed a set of 'principles of partnership' including: financial transparency; radical honesty in research; all stages of academic career to be developed; gender sensitive/main streaming; exposure to appropriate skills; work for impact (academic excellence, proposals, PhD bursaries, papers, co-supervisions); course development; priorities in each country linked to community benefit; stakeholder capacity building; and guidance for co-authorship. Authorship was dependent on having made contributions to at least three of five areas: funding, idea, data, analysis, writing. If an individual had made less than three contributions, then they were acknowledged in the publication, rather than included as an author.

The nature and extent of authorship of formal publications can be used as a proxy for equity and fairness in ownership of project outputs. Researchfish data and communication with PIs generated a list of **346 publications across 15 ARUA UKRI projects**. Analysis by Digital Science⁶, using the Dimensions⁷ database, found 234 unique ARUA-linked publications, 224 of which were identified from information provided by Researchfish, and an additional 10 were found through existing links between publications and ARUA awards in Dimensions. For 206 of these 234 publications, location data from Dimensions was supplemented with manually identified location data for each named author, which showed that:

- **98% (n=201) of publications included at least one Africa-based author**
- 68% (n=140) of publications included South African-based authors

⁶ Based on metadata as of 22 April 2025 from Digital Science's Dimensions platform, available at <https://app.dimensions.ai>. Access was granted under license agreement with UKRI.

⁷© 2025 Digital Science & Research Solutions Inc.

- 73% (n=150) of publications included authors from just one African country, of which South Africa was most highly represented (45%; n=92)
- 25% (n=52) of publications included authors from more than one African country, ranging from two countries (37 publications) to six countries (two publications) and including Botswana, Eswatini, Ethiopia, Ghana, Kenya, Malawi, Mozambique, Nigeria, Rwanda, South Africa, Sudan, Tanzania, Uganda and Zimbabwe
- 87% (n=180) of all first-named authors were Africa-based, over half of whom (n=98) were from South Africa
- Locations of other first-named African authors included Nigeria (14%; n=25), Kenya (12%; n=20), Ghana (11%; n=19), Ethiopia (4%; n=8); Uganda (n=3); Rwanda (n=2); Tanzania (n=2); Zimbabwe (n=2).

These findings contrast positively with those of the GCRF portfolio as a whole, where 16% of all publications were associated with LMIC researchers, 6% had an LMIC researcher as first author and 2.5% included researchers from more than one LMIC.⁸ Bibliometric analysis of publications associated with the ARUA UKRI partnership programme show that specific efforts made by projects to prioritise equitable partnerships and fairness of process and benefit sharing have resulted in high levels of LMIC authorship in publications, including as first authors. However, the prominence of South African-based researchers as both authors and lead authors suggests that despite these efforts, publication benefits were mainly vested in South Africa. This is also reflective of the fact that 10 of the 17 projects, including three of the four RE awards, had their hubs at South African-based universities.

2.3 Building capacity for science and research across Africa

The programme built and strengthened capacity for science and research across African researchers, universities, and to a lesser extent across the wider African research ecosystem. There was also a small, but important impact on the capacity of UK partners involved in the programme. Data sources for assessing capacity strengthening outcomes were drawn from analysis of Researchfish data, project reporting, and individual responses to the impact survey.

⁸Carden, F., Vogel, I., Hepworth, C. & Stevenson, C. (2023) Evaluation of the Global Challenges Research Fund: Midpoint Synthesis Report: Assessing quality, impact positioning and early outcomes against GCRF's Theory of Change. Synthesis of the evidence from the assessment of Research Quality plus Positioning for Use plus Results (RQ++) of GCRF awards. Research Paper Number 2024/00. Department for Business, Energy and Industrial Strategy. <https://www.gov.uk/government/publications/evaluation-of-the-global-challenges-research-fund-assessment-of-research-quality-positioning-for-use-and-results>

Capacity strengthening initiatives developed by projects

All of the 17 awards conducted initiatives to build research capacity, through focused training, direct involvement in research, mentoring and mobility/exchange visits. Early career researchers were the main beneficiaries of capacity strengthening initiatives, but most activities also included mid-career and senior researchers. Initiatives included activities to strengthen participants' skills to conduct and manage research alongside increased understanding of award-relevant research areas.

Capacity strengthening outcomes for individuals

Survey respondents' self-assessment pre- and post- programme provided evidence of a wide range of individual-level capacity-building outcomes. **Both Africa-based and UK-based researchers reported the most significant areas of increased capacity were in terms of knowledge and skills to develop research partnerships, more opportunities for partnerships and networking, and increased opportunities to apply learning.** The ability to put training into practice is a strong indicator of strengthened capacity. For instance, following training as part of the Water CB award, participants from spoke universities reported that they had developed stakeholder engagement plans and successfully used these to facilitate engagement meetings in their home countries. Similarly, research fellows trained through the Sustainable Food Systems RE award (FSNet-Africa) implemented many changes to their teaching and research with partner institutions, including integrating gender responsiveness and the use of policy into their teaching.

African researchers (but not UK researchers) also reported increases in opportunities for professional recognition, career progression, research productivity, confidence, commitment, and knowledge/skills to conduct and manage research. Development of research leadership skills within the context of an interdisciplinary team was also key and noted by many respondents in their answers to different questions of the impact survey. **The projects were often African PIs' first opportunities to manage large-scale, international, multi-partner grants.**

The leadership of the project, the networking opportunity as well as the publications expected from the project allow me to progress professionally. (Survey-154-Africa hub)

Being involved in the leadership of such large international grants has greatly elevated my cv, and the possibilities that stem from it. I have just been awarded a promotion to Associate Prof. and other hydrologists consult me as an expert on socio-hydrology and transdisciplinarity... One of our senior researchers who had never been confident enough to go for research leadership before, grew in confidence through the UKRI research, and is now leading an international Erasmus Plus project partnered with UCT and UCAD (Survey-166-Africa hub)

Findings also highlight the **importance of strengthening writing and publication skills as a key foundation for building research capacity amongst African scholars, and as a route to career progression and professional recognition.** This fact was recognised by the Water RE project which, in addition to 12 published papers from Case Studies, developed a successful proposal for an

eight-paper special feature of the journal *Ecology and Society* (impact factor 5.75), providing opportunities for all Co-Is and many early career researchers involved in the grant to co-author papers. The quotation below shows the impact of international publishing as a means for professional recognition.

We were able to publish an edited book and three articles. By the end of the project I was also able to produce a book published by Palgrave in March 2024. I have been selected to be a co-editor in a well-known journal related to my field. Two staff members were also selected as editors in reputable journals. Three staff members were able to be promoted to professorship and one to associate professor, and two more staff will be promoted to professorships in 2025 owing to the publications made under the project. The PI won best researcher award from Addis Ababa University in 2022 owing to the list of publications in the same year. (Survey-164-Africa hub)

Increased opportunities for professional recognition and career progression: experiences of African researchers

- Dr. Innocensia John, a Senior Lecturer in the Department of Economics and Agribusiness at the University of Dar es Salaam, was honoured by the World Food Prize Foundation as one of the 2024 Top Agri-Food Pioneers. This accolade celebrates her significant contributions to sustainable agriculture and youth empowerment in Africa and she attributes this achievement to her participation in FSNet-Africa.
- A Senegalese post-graduate research assistant who worked on the Water RE project, was acknowledged for the quality of his PhD thesis and was awarded an ARUA Carnegie grant to work at the Water CoE at Rhodes University in 2024. He is now on the permanent academic staff at University Cheikh Anta Diop, Senegal, with a number of collaborative grants to his name.

New opportunities for networking, partnerships and learning: the experiences of a UK-based mentor

- A published blog^{A1} by FSNet-Africa Co-I Professor Steve Banwart describes how his involvement as one of three mentors to early career researcher Dr Kadege Fue, had a transformational effect his own career as a UK academic at the University of Leeds.
- Conversations with his fellow mentors from the University of Pretoria and the University of the Western Cape have sparked several new collaborative ventures between the three universities.
- These include a pilot programme to develop online master's level education with the University of Pretoria. Professor Banwart also connected colleagues in Cape Town (who are humanities and social science scholars) with his fellow mentor at the University of the Western Cape (who has expertise in computing, AI and big data).
- He has increased his knowledge and skills in impact-led research co-creation with partners in Africa and gained global collaboration skills for online student education. He has also gained the benefit of learning from African youth leaders and their approach to tackling food system transformation and global inequality.

A1 <https://fsnet africa.com/blog/how-fsnet-africa-transformed-my-career/>

Capacity strengthening outcomes for institutions

The impact survey asked respondents to indicate the extent to which the programme had made any difference to capacity of their institutions in a number of key areas. There was a marked difference in responses from African researchers as opposed to UK researchers, which is reflective of the programme's objectives to build capacity across African universities.

African universities experienced significant enhancements in research capacity in terms of reputation, interdisciplinary working, and opportunities for research training and qualifications.

Institutional capacity was moderately enhanced across access to research data, workforce capability, gender equality, systems for managing and coordinating research, leadership, strategic/financial support, and organisational-level achievements (grants, publications, etc). Africa-based respondents reported less significant outcomes of the programme on institutional research infrastructure (labs, computing, equipment, libraries, etc) which is understandable as the focus of the programme was to increase human capacity rather than infrastructure.

Building interdisciplinary capacity across three African universities

- The Climate and Development RE award (TSITICA) brought two ARUA CoEs and their partners together in the same organisations. The Universities of Cape Town, Ghana and Nairobi each have climate research centres and economics departments. The partnership programme not only brought the three universities closer together but also helped to connect climate scientists and economists in each university.
- The economists now have more understanding of how the Paris agreement works, why it matters and how climate vulnerability unfolds. The climate researchers understand more about how inequalities work, what methods are applied for inequalities research and how the two intersect.
- The project team have submitted a joint application for a PhD programme on climate and inequalities which they say would not have happened without the experience of the TSITICA grant.

Institutional-level enhancements in research capacity were more limited for UK universities, although there was evidence of greatly enhanced interdisciplinary working, including collaborations between and within UK institutions that had not previously existed. Other UK institutional benefits included enhanced and more equitable access to research data from African countries/regions, better organisational-level systems for managing interdisciplinary and international projects and enhanced organisational reputations. More than 75% of UK respondents however reported no difference at all in terms of research infrastructure, workforce and gender equality within their universities.

Focus on the University of Leeds: capacity building outcomes at institutional level

- For the University of Leeds, experiences in working with overseas partners (including those of the FSNet-Africa project) fed into a recent review of organisational systems for managing and supporting interdisciplinary and international projects. Changes have been made in ethics and safeguarding practices, as well as the integration of innovative content into academic curricula.
- The FSNet-Africa fellowship-mentorship programme enhanced training and interdisciplinary working for many Leeds staff who had not worked in Africa or in interdisciplinary teams before.
- In terms of reputational outcomes, FSNet-Africa contributed to the nomination and shortlisting of the University of Leeds/University of Pretoria strategic partnership as a finalist for the Times Higher Education Awards Partnership of the Year 2024. This nomination highlighted the impactful partnership between the two institutions, particularly through the FSNet-Africa initiative, which addresses critical challenges in food security and climate-smart agriculture.

Qualitative feedback from reporting, interviews and UK survey respondents also highlighted other important benefits at institutional level for UK universities, including:

- Enhanced interdisciplinary collaborations between and within UK institutions that had not previously existed
- Enhanced organisational-level systems for managing and supporting interdisciplinary and international projects
- Enhanced and more equitable access to research data from African countries/regions through new research partnerships created through the programme
- Enhanced organisation-level reputations.

Capacity strengthening outcomes at research ecosystem level

The evaluation found evidence of strengthened research capacity at a research ecosystem level, such as outcomes for local stakeholders, or changes to local and national research infrastructure. As reflective of the aim and objectives of the programme, **African respondents were more likely than UK respondents to state that the programme had made a great and/or moderate impact on the wider research ecosystem.**

African survey respondents reported enhanced ecosystem outcomes in the following areas:

- Cross-sector working
- Local and national systems for managing and coordinating science and research.
- Research data
- Research training and qualifications opportunities
- Workforce

- Gender equality
- Research leadership
- Strategic/financial support for science and research
- Research achievements
- Local, regional or national reputation.

African respondents reported less significant outcomes of the programme on the research ecosystem infrastructure (labs, computing, equipment, libraries, etc). In contrast, at least 50% of UK respondents reported only a slight impact, or no impact at all, across most outcome areas, and provided no specific examples of outcomes for the UK research ecosystem.

Projects reported many examples of enhanced access and availability of research data, including:

- An online database containing datasets and publications which can be accessed by partner universities and others worldwide to support research in the peace and security sector (Post-Conflict Societies CB award)
- Work with ARUA and the Guild of European Research-Intensive Universities to develop a bi-partite research initiative for capacity building and sharing of resources (NCD CB award)
- The Climate and Development RE award developed a database on national climate projects and their linkages with poverty and inequality in South Africa, Ghana and Kenya.

Projects also reported more opportunities for research training and qualifications, such as the development of new masters or doctoral programmes:

- A proposal was developed and submitted to the Mastercard Foundation for a new doctoral school starting in January 2026, in which all Water CoE spokes were partners (Water CB award). This initiative was recently withdrawn by the Mastercard Foundation due to changes in funding priorities
- A self-directed online training and resource hub was developed by the project team to support migration scholars (Migration and Mobility CB award)
- The Inequalities CB award at the African Centre of Excellence for Inequality Research has collaborated with climate colleagues from ARUA CoE in Climate and Development to develop a proposal to establish a cross-continental PhD program in Sustainable Development Studies.

There were also examples of increased strategic/financial support and improvements to local, national and continental systems for managing and coordinating research and science. One of the most significant involves **a new partnership between ARUA universities and The Guild (of European Research-Intensive universities) to create 21 Africa-Europe Clusters of Research Excellence**

(CoREs).⁹ Seven senior researchers have drawn on their experience of being involved in the ARUA UKRI partnership programme as PIs/Co-Is to inform their new leadership roles within CoREs.

This is a direct growth from the UKRI grant effectively providing this new and broader opportunity for partnerships, research and networking. I serve as an Academic Co-Lead for our CoRE, an opportunity that I'm excited about. (Survey-173-Africa hub)

ARUA-Guild Africa-Europe Clusters of Research Excellence (CoREs)

- The CoREs are grouped under four cross-cutting areas (public health, green transition, innovation and technology, and capacities for science).
- Most ARUA CoEs are involved in new CoREs, including those on 'Nature-Based Solutions for Climate Change Adaptation and Mitigation', 'Migration and Health', 'Sustainable Food Systems', 'Promoting Impactful Research and Education on Inequalities, Poverty, and Deprivation Across Africa', 'Building Capacities for Interdisciplinary Peace Research', 'Non-Communicable Diseases and Multimorbidity', 'Water Resources Management for a Sustainable and Just Future'.

2.4 Co-creating new projects with potential for impact

In addition to the 13 Capacity Building (CB) awards, four Research Excellence (RE) grants funded collaborative research to address specific aspects of the UN SDGs. Given the small number of research-focused awards, the programme as a whole was not expected to achieve significant research outputs and outcomes, as the prime focus was capacity building outcomes. Nonetheless most projects, including CB awards, delivered research-related outputs which were positioned to achieve real-world outcomes and impacts in relation to the UN SDGs.

Excellence in interdisciplinary research can be evidenced through rigorous and innovative research design and methodologies, new datasets in key research areas, high-quality publications, a wide range of non-formal/creative research outputs, and contributions to practice and policy. In their mid-point evaluation of the GCRF, Carden et al (2023)¹⁰ built on work by Canada's International Development Research Centre (IDRC)¹¹ to assess the research quality of a sample of GCRF projects. Their RQ++ approach frames research excellence as not only having technical merit but

⁹ <https://www.the-guild.eu/africa-europe-core/>

¹⁰ Carden, F., Vogel, I., Hepworth, C. & Stevenson, C. (2023) Evaluation of the Global Challenges Research Fund: Midpoint Synthesis Report: Assessing quality, impact positioning and early outcomes against GCRF's Theory of Change. Synthesis of the evidence from the assessment of Research Quality plus Positioning for Use plus Results (RQ++) of GCRF awards. Research Paper Number 2024/003. Department for Business, Energy and Industrial Strategy. <https://www.gov.uk/government/publications/evaluation-of-the-global-challenges-research-fund-assessment-of-research-quality-positioning-for-use-and-results>

¹¹ IDRC (2022) Research Quality Plus. <https://idrc-crdr.ca/en/rqplus>

also having an integral focus on equity/mutuality in partnerships and working with stakeholders to ensure that findings and outputs are positioned for use and impact. Where relevant we have drawn on elements of this framework for understanding research excellence within the context of the ARUA UKRI partnership programme

Evidence of use and citation of peer-reviewed publications

Evidence of high-quality peer-reviewed work being used and cited by others is a key indicator of quality research.¹² The evaluation found evidence of **346 separate published outputs linked to 16 of the programme's 17 awards** (identified by Researchfish and interviews with PIs), most of which were recorded as journal articles (79%; n=273 across 14 projects). Publications by project ranged from zero to 120, with a mean average of 20 publications per project. Publications linked to each of the four RE awards ranged from six to 23, with the mean average being 14 publications per RE project.

Just over one-third (39%; n=136) of publications were recorded as open access (via Open Aire licensing), making research outputs freely available online to anyone without subscriptions or payment. This is not dissimilar to other GCRF signature investments, for example the Growing Research Capacity (GROW) Programme¹³ which reported 52% of publications being open access. Open access publications can maximise the impact of research by increasing visibility and facilitating collaboration and use, particularly for policymakers and practitioners.

Data provided by Digital Science¹⁴, using its Dimensions¹⁵ database, found 2,087 citations for 234 unique publications (49 of these unique publications were uncited). Citations refer to the number of times that a publication has been cited by other publications in the Dimensions database, which includes research articles, books/chapter, conference proceedings, monographs and pre-prints. This indicates that 53% of all programme outputs recorded as publications in Researchfish had been cited by other publications in Dimensions. By way of comparison with other GCRF investments, 52% of GROW programme-linked publications had been cited by others. Citations are an important indicator of research excellence as they demonstrate credibility, evidence, transparency and verifiability.

¹² See footnotes 10 and 11

¹³ Macadam, M., Townsley, R. and Marriott, SJ. (2025) Global Challenges Research Fund: Growing Research Capability (GROW) Programme: Impact Evaluation. UK Research and Innovation. <https://www.ukri.org/publications/gcrf-growing-research-capability-final-evaluation-report/>

¹⁴ Based on metadata as of 22 April 2025 from Digital Science's Dimensions platform, available at <https://app.dimensions.ai>. Access was granted under license agreement with UKRI.

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The total number of citations for each programme-related unique publication in Dimensions ranged from zero to 106. One-fifth (21%) of all unique publications in Dimensions had no linked citations, 52% had one to 10 citations, and 27% had 11 or more. Two projects (Materials, Energy and Nanotechnology CB award and Unemployment and Skills Development CB award) had more than 500 citations each for their total unique publications output in Dimensions, with average citations across the 15 projects linked to outputs in Dimensions being 144 per project.

Evidence of engagement and potential for impact

Dimensions also tracked online engagement with the publications through Altmetric¹⁶. Altmetric measures activity around academic research outputs drawing on policy documents, mainstream media outlets, blogs, social media, Wikipedia, and more. Digital Science found 46 policy citations for 17 unique publications, indicating that 5% of all programme outputs recorded as publications in Researchfish already had potential for policy impact (in terms of citation and use).

Dimensions calculated the 'Field Citation Ratio' (FCR)¹⁷ for the programme as a whole to be 3.59. This indicates that programme-linked publications on average have received more than three times as many citations relative to the average citations for publications in the same fields of research and of the same age. The mean FCR by project ranged from 1.31 to 11.87, with three awards having FCRs of 7.22, 8.51 and 11.87 respectively, indicating significantly higher than average citations for their published portfolio of work. Thirteen journal articles (across six awards) had FCRs ranging from 10.72 to 35.87, all of which were published in open access sources.

New research tools, methods and models in key research areas

Researchfish annual reporting and project reporting recorded five examples (across three projects) of new research tools and methods, and five examples (across three projects) of new research datasets, databases and models. This is reflective of the balance of CB/RE projects and possibly also suggestive of under-reporting. Examples include:

- Notions of Identity CB award developed a new tool for systematic literature review and data extraction. This enabled the project team to identify 8,589 articles about motherhood, fatherhood and parenting in Africa pertaining to the five participating countries (Uganda, Kenya,

¹⁶<https://www.altmetric.com/>

¹⁷The FCR is a citation-based measure of scientific influence; a value greater than 1 indicates a publication has been cited more than average for its field of research. FCR metrics are calculated for publications which are at least two years old, and which must be classified in a 4-digit Field of Research code that contains at least 500 publications from the same publication year. More information on how an FCR is calculated can be found here: <https://dimensions.freshdesk.com/support/solutions/articles/23000018848-what-is-the-fcr-how-is-it-calculated->

Nigeria, Rwanda and South Africa). The tool highlighted the lack of research in this area and is being appraised for the development of a final database which will then be published.

- The Water RE award created two new methodologies and a new dataset supporting future engaged research with stakeholders. Thirteen journal articles have been published, and further papers have been drafted reporting this work, all of which are in the process of peer-review in advance of publication.
- The Food Security CB award worked in partnership with stakeholders to develop a database of 220 technologies and practices that are applicable at various stages of fruit and vegetable value chains, including evidence-based recommendations to facilitate their adoption.
- The Climate and Development RE award contributed to evidence on current processes in Ghana, South Africa and Kenya for formulating Nationally Determined Contributions (NDCs) to the Paris Agreement for the planning period 2031-2035. The project's research expanded the datasets and models to support the next NDC processes in both the policy and technical work.

Non-formal and creative research outputs including spinouts

Creation and dissemination of non-formal and creative research outputs that respond to the needs of stakeholders is evidence that equity and fairness has been considered in sharing the results and benefits of projects.

Engaging stakeholders and wider communities through creative and non-formal research outputs

- FSNet-Africa research fellows created a range of outputs, including visual summaries, of their 18 projects to communicate their work to public communities in an accessible way. Five film/animation outputs on different FSNet-Africa projects were produced, five arts-based workshops were held and an FSNet documentary has also been released, highlighting the academic and socially responsive achievements of the project. Fellows translated their findings into practical solutions, like creating nutritious recipes and a recipe book, hosting cooking demonstrations and developing a mobile app to optimise fertiliser use for farmers.
- A researcher from the ARUA Water CoE was interviewed for the podcast series 'What about water?', aired in 2023 and available on Apple, Spotify and other platforms. She discussed piped water networks in developed and developing countries and how advanced technologies like robots might improve their operation.
- The Uganda node of the Water RE/CB project produced a calendar where each month has a project photograph, text and a 'prevent water pollution' message, which was widely distributed.
- Researchers from the African Research Network for Urbanization and Habitable Cities delivered a masterclass to over 500 affordable housing developers at the Africa International Housing Show in 2023. It offered an accessible platform for exploring research findings and featured presentations from practising researchers on affordable housing approaches, with time for discussion focused on solving specific issues raised by the participants.

Across the programme, **15 projects recorded 390 examples of non-formal outputs designed for research engagement, use and impact.** These included the following:

- Artistic and creative outputs such as artworks, creative writing and films/videos (n=25 outputs)
- Broadcasts including TV, radio and podcasts (n=10)
- Articles in magazines, newsletters or online publications (n=5)
- Press releases, press conferences and responses to media enquiries or interviews (n=15)
- Talks or presentations (n=48)
- Engagement focused website, blog, or social media channel (n=20)
- Formal working groups, expert panels or dialogues (n=70)
- Workshops, open days and visits to research institutions (n=187)
- Spinouts (n=10).

Building capacity for entrepreneurship amongst African young people

- The Unemployment and Skills Development CB award recorded the formation of 10 spinouts:
 - Godfather – a new digital marketplace for insurance products
 - Greenolt – end-of-life recycling solutions for plastic bottles
 - Fihankra ComTech - personal security and safety innovations, products, services and training
 - Raytreat Technologies – affordable phototherapy devices for hospitals
 - AgroPristine ASPR - solar-powered refrigeration systems built for the Sub-Saharan climate.
 - Bs Building Blocks - recycling plastic waste into sustainable pavement blocks and tiles
 - Acceede - simplifying school fees payment through digital payment via mobile app
 - Cycle AI – an AI model that sorts by plastic type and colour at the recycling points
 - AbleMe Solutions - Manufacturing of assistive devices for the disabled people
 - TAWI Health – A web-based app which remotely connects patients to doctors.
- The PI has also spearheaded the creation of:
 - MSc and PhD Programs in Entrepreneurship Development and Innovation Management, to encourage University of Lagos students to consider creating start-ups after they graduate.
 - A university-wide programme – EIBIC (the Entrepreneurship, Innovation and Business Incubation Certificate) – which is open to all students and aims to equip them with basic skills in business, enterprise and entrepreneurship. In 2024, 11,000 students undertook the programme and it is hoped that another 15,000 students will complete the EIBIC in 2025.

Outputs were designed for a wide variety of different audiences, with most outputs aimed at professionals/practitioners (34% of outputs), public groups (19% of outputs), postgraduate students (13%) and policy makers/politicians (12%). Other audience groups included industry/business, media as a channel to the public, patients and carers, schools, study participants, undergraduates and third sector organisations. **Most outputs were described as having international reach (59% all outputs), with reach described as national for 16%, regional 13%, or local 12% for the remaining outputs.** The most frequently cited output type with international reach was workshops (n=108 across 15 awards), showing the success of the programme in engaging with global stakeholders and in raising recognition of African research and contribution to knowledge.

Impacts of creative and non-formal research-based outputs

- Three researchers from the Post-Conflict Societies RE project took part in a workshop with policy makers and professional practitioners to discuss how to address displacement in urban settings in Africa. Input from participants enabled the project team to refine their policy recommendations and increased the appetite of those involved to further engage on the planned co-production of a compendium bringing together policy relevant findings on urban displacement.
- The Notions of Identity project team held talks with third sector organisations responsible for gender, children's welfare and family relations to help embed research findings within their work, resulting in further meetings with these non-academic partners.
- Researchers from the Food Security CB award took part in a side event at the UN 2021 Food Systems Summit, leading to a new theoretical framing of the nexus of indigenous knowledge and science being developed, within the context of sustainable and inclusive food systems.

Many creative and non-formal research-based outputs had already resulted in some form of on-going use or impact for research users and stakeholders including the following engagement impacts (n=290 recorded across 15 projects):

- Increased requests for further information about the project or research findings (32% of all impacts recorded)
- Plans made for further related activity (32%)
- Changes to the views, opinions or behaviours of stakeholders engaging with the outputs (18%)
- Increased requests for further participation in the project (10%)
- Leading to a decision made or influenced (8%).

The extensive use and evidence of impact of non-formal and creative research-based outputs by project teams shows they had strong connections with stakeholders and good understanding of the societal and political context for their work. Through these outputs, the **awards connected fairly, accessibly and effectively with the varied non-academic audiences and potential users of their research, in formats which met their information needs.**

3. Likely sustainability and longer-term impacts

This chapter addresses the evaluation question: what will the **likely sustainability and longer-term impacts** of the programme be? It focuses on the extent to which research partnerships, activities and outputs have been sustained since the end of the programme; and how these have contributed to real-world impacts in African countries to date.

Evaluation evidence in previous chapters shows that **the programme has been successful in developing strong and productive partnerships across Africa, extending to less research-intensive African universities and leading to a more integrated and equitable approach to tackling development challenges**. Evidence from the impact survey, discussed in more detail in section 3.1 below, shows that a high proportion of project delivery partnerships have been sustained in the longer-term.

Sustained partnerships have led to continued collaborative research activities including the development of proposals for further funding, new funded projects, publications and other outputs. Gaining further funding to support continued collaborations is key to sustaining partnerships and research activities in the longer-term: 43% of impact survey respondents said their involvement in ARUA UKRI projects had helped them to secure further funding beyond the end of programme. Twenty-nine new grants across 12 awards were reported, amounting to a sterling equivalent of over **£6.7 million of funding leveraged through the programme**. Examples of further funding and continued collaborations are discussed further in 3.2 below.

The programme has led to the development of quality research addressing development challenges in Africa and in relation to the UN Sustainable Development Goals (SDGs). Evidence shows that all ARUA UKRI projects have successfully contributed towards the UN SDGs, reporting **multiple responses to Africa's and global challenges**. The data sources available offered a time-limited snapshot of early impacts and a tentative indication of their likely sustainability. It is well-acknowledged that impacts of research can take many years to develop and that some enablers and barriers to impact are difficult to control or foresee, such as pandemics, severe weather events, political instability, and conflict. Against this context, it is important to acknowledge the steps made towards impact, evidence of impacts-in-progress, and contributions towards impacts made by research teams. Detailed examples of these are provided in section 3.3 below, as well as in the Case Studies in Annex C.

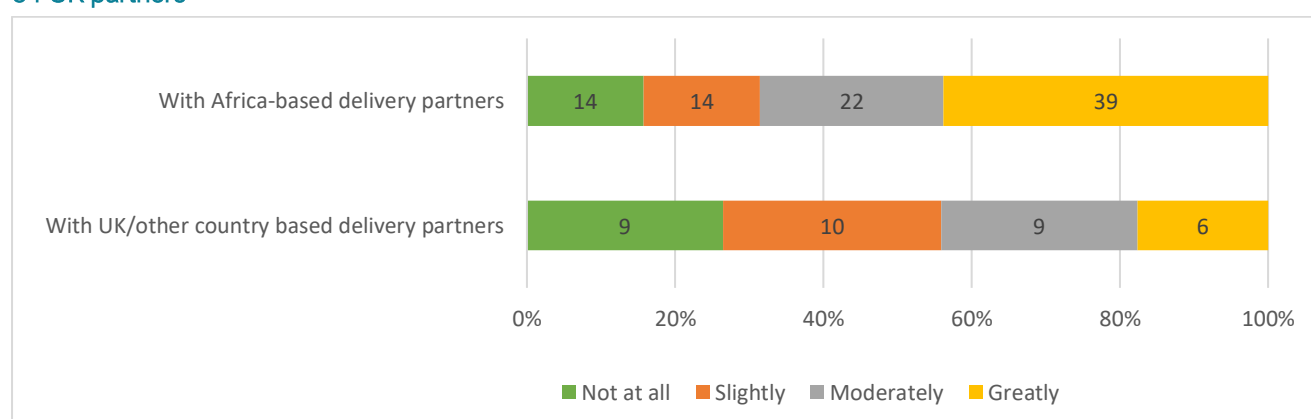
3.1 Sustaining delivery partnerships and research collaborations

Evaluation evidence shows that the **programme has been successful in developing strong and productive partnerships across Africa, extending to less research-intensive African universities and leading to a more integrated and equitable approach to tackling development challenges.**

Evidence from the impact survey (January 2025) shows that a high proportion of project delivery partnerships have been sustained in the longer-term. Project PIs reported that **84% of partnerships with African organisations and 74% of partnerships with UK/other country-based organisations have continued to work together** in some form since the programme ended (see Figure 5).

The survey findings equate with Researchfish data which shows that 86% (n=80) of the 93 additional research collaborations developed through the ARUA UKRI partnership programme were still active in March 2025, at least a year beyond the end of the programme. As most projects (n=12) had completed by March 2024 and all (n=17) had completed by January 2025, this shows that a very high number of the interdisciplinary partnerships formed through the programme have continued to work together.

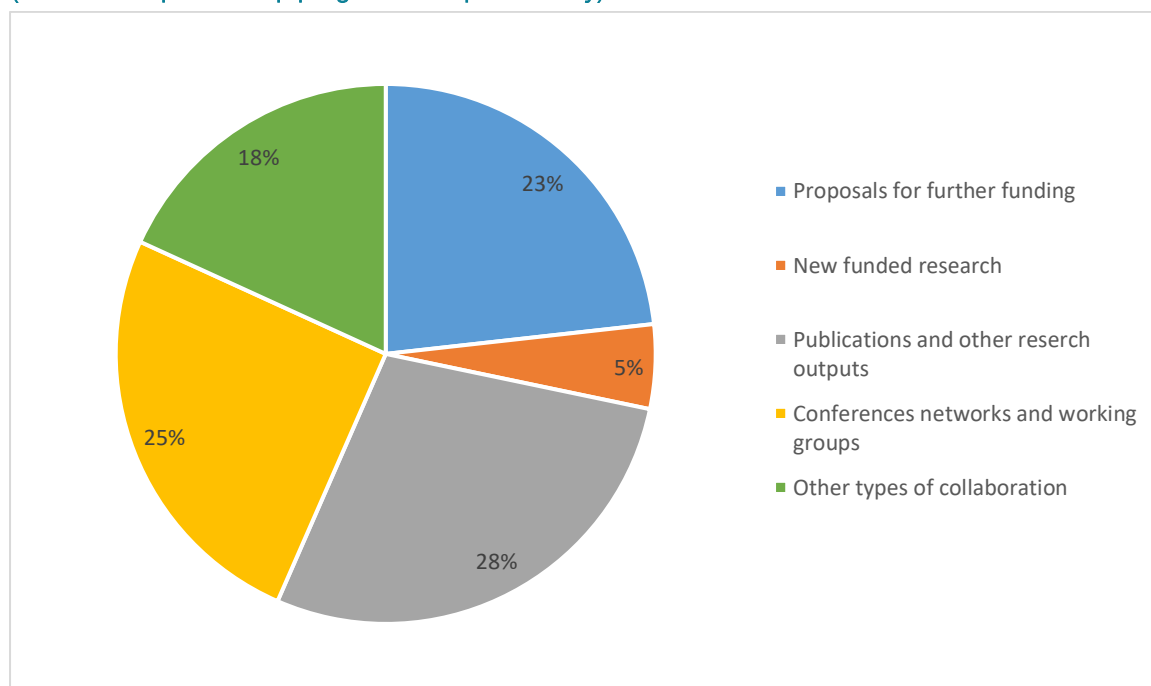
Figure 5: Extent to which delivery partnerships were sustained post-programme (ARUA UKRI partnership programme impact survey; based on responses from 14 PIs in relation to a total of 89 African partners and 34 UK partners)



3.2 Sustaining research activities and outputs

Sustained partnerships have led to continued collaborative research activities including the development of proposals for further funding, new funded projects, publications and other outputs, as shown by survey findings in Figure 6. Researchfish data on collaborations and engagements also shows that **many project teams have continued to engage with partners and stakeholders** through focused activities and networks to develop next steps, including plans for implementation and gaining further funding to continue their work together.

Figure 6: Focus of continued collaborations between research partners created through the programme (ARUA UKRI partnership programme impact survey)



Gaining further funding to support continued collaborations is key to sustaining partnerships and research activities in the longer-term. 43% of impact survey respondents said their involvement in ARUA UKRI projects had helped them to secure further funding beyond the end of programme. Twenty-nine new grants across 12 awards were recorded, amounting to a sterling equivalent of over **£6.7 million of funding leveraged through the ARUA UKRI partnership programme**. Twenty of the new grants (totalling £5.6 million) were leveraged by researchers working on nine of the 13 CB projects, and nine (totalling £1.1 million) were secured by researchers involved with three of the four RE projects.

Most of the further funding was for research grants (83%; n=24), whilst four grants were funding for individual Fellowships and one for a Studentship. For example the FSNet-Africa award, through funding from the University of Leeds International Strategy Fund, continued to support five research fellows to continue their work until September 2024.

Seventeen grants had been secured during the lifetime of the programme (up to end of December 2022), for example the ARUA Water CoE gained £215,000 sterling equivalent of funding over 15 months from the German Federal Ministry of Education and Research to develop work at one of the Water CB/RE award's learning sites on nature engineered urban design for water recycling. The Urbanization and Habitable Cities CB project team received a grant from the UK Arts and Humanities Research Council to conduct a study of Covid-19 adaptation strategies for residents of multi-tenanted housing in Lagos, Nigeria (July 2020-Jan 2021).

Twelve grants had been awarded since the programme ended, including funded work by the Energy CB project to develop a resilient water-energy-agriculture plan for the City of Cape Town through predictive simulations, funded by the Water Research Commission of South Africa (£75,000); and two significant three-year Erasmus Plus awards from the European Union, for capacity building in the field of higher education: one to the Water CoE for £687,997 (Feb 2024-Jan 2027) and one to the Materials, Energy and Nanotechnology Research CoE for £681,728 (March 2023-Feb 2026).

The project made a significant contribution that enabled my research team to develop our research site ... as a living lab, attracting further funding and advancing the research experiments and stakeholder engagement. This is now a long-term development that has adopted a stronger social focus due to the project. The project attracted further research awards, which secured the investment of an extensive array of solar panels and inverters. The site is entirely independent of the national grid energy supply. (Survey-141-Africa spoke)

The Africa Europe Clusters of Research Excellence (CoREs)¹⁸ have also provided a sustainable pathway for continued research collaboration for many of the partners involved in the ARUA UKRI programme, particularly where other opportunities for working together have been unsuccessful¹⁹. It is worth noting that although the CoREs initiative was launched in October 2024, there was no evidence of further funding outcomes associated with the CoREs within the 2025 Researchfish data, nor any funding details currently available in the public domain, so any leveraged funding has not been included in the figures given above.

We collaborated in a UKRI call with five CoE partners. The proposal was rated 9/10 but was not funded. It was a competitive call with ratings of 10/10 not funded. However I feel it is unfortunate UKRI did not see deepening and continuing the ARUA partnership as a strategic priority. Selected partners also collaborated in a Mastercard Foundation proposal which collapsed as a result of Mastercard processes. Partners have continued as CoRE partners in a EU-funded GUILD programme. There are three UK Universities who are members of the Guild, none of whom we have had a previous partnership with. Through this initiative we are starting new collaborations with Warwick University and University of Glasgow. (Survey-125-Africa hub)

In addition, and by way of extra context, 15 of the 17 projects had completed between March 2023 and March 2024, suggesting that insufficient time may have elapsed for further funding outcomes to have either crystallised, or been reported. Moreover, survey respondents reported that few opportunities were available for similar, large-scale grants, and that at least one of these opportunities had been withdrawn due to a recent change in global funding priorities. The lack of

¹⁸ <https://www.the-guild.eu/africa-europe-core/>

¹⁹ For example: a proposal was developed and submitted to the Mastercard Foundation for a new doctoral school starting in January 2026, in which all Water CoE spokes were partners (Water CB award). This initiative was recently withdrawn by the Mastercard Foundation due to changes in funding priorities

opportunity for follow-on funding was further compounded by additional ODA budget reductions by the UK Government in February 2025. These points raise questions about the feasibility of sustainability for UK-funded research/capacity building projects in the global south and suggests that ongoing focused support and input is needed to increase individual and institutional capability in developing, writing and securing funding bids.

Other sustained collaborations include the following examples:

- Continued partnership working between the Unemployment and Skills Development CB award and the University of Basel regarding collaboration with the AIT SWISS African and Business Innovators Program, a multidisciplinary and multicounty network. **22 African startups from Nigeria, Rwanda, South Africa, Uganda have been incubated through the network** and attended a meeting in Switzerland in 2024 with other colleagues in the network.
- The continued development of Water Quality Testing Fellowships in collaboration with Uganda Junior Rangers and the Conrad N Hilton Foundation, whereby students are trained in water quality testing and data collection using modules developed by the Water CB award.
- Collaborative work between the Food Security CB project, the Global Research Alliance on Agricultural Greenhouse Gases and the Ministry for Primary Industries to jointly fund a position to advance a regional programme of work to promote innovation and research on shared challenges in the agricultural sector, including issues such as sustainable agriculture, indigenous development and climate change.
- The Migration and Mobility CB project's continuing collaboration with the GEMMS network, a global health research group on disrupting the cycle of gendered violence and poor mental health among migrants in precarious situations. The network is currently producing research-based outputs together.
- Continued collaboration between the Water RE award and the UK network of N8²⁰ universities in terms of grant proposals, knowledge exchange and informal networking between staff and institutions.
- FSNet-Africa (Sustainable Food Systems RE award) project partners developed a synthesis paper that proposes a set of priorities for an African food systems research agenda. This paper was circulated to the network for inputs and submitted to a journal in late 2024.

²⁰ The N8 Research Partnership is a collaboration of the eight most research intensive universities in the north of England: Durham, Lancaster, Leeds, Liverpool, Manchester, Newcastle, Sheffield and York.

3.3 Longer-term impacts and impacts-in-progress

The programme has led to the development of quality research addressing development challenges in Africa and in relation to the UN Sustainable Development Goals (SDGs). Survey, interview and reporting evidence shows that all projects had successfully contributed towards the UN SDGs, reporting multiple responses to challenges both in Africa and globally, most frequently in terms of addressing poverty (SDG 1), good health and well-being (SDG 3), quality education (SDG 4), gender equality (SDG 5), inequality (SDG 10), and peace and justice (SDG 16). Project teams highlighted the interconnected nature of the different impact types in responding to global challenges and the UN SDGs, with most awards identifying impacts for their projects that related to more than one SDG (ranging from two to 10 SDGs). For example, the Sustainable Food Systems RE project's impacts on food security policy responded to four interconnected SDGs (zero hunger, clean water and sanitation, responsible consumption and production, and life on land), as discussed in the boxed text below.

Although it is too soon to fully assess the longer-term and more global impacts of the ARUA UKRI partnership programme, the examples presented in this section are illustrative of the range of early impacts and impacts-in-progress already achieved.

No poverty (SDG 1)

The most frequently cited ways in which projects had made contributions towards SDG 1 (end poverty in all its forms everywhere) were through economic-focused activities and by finding effective solutions to societal issues that contribute to poverty. Examples included:

- Student start-ups funded through the Unemployment and Skills CB project have already created new jobs within communities (although numbers are not clear from the data), and for the student entrepreneurs themselves, so positioning innovation and entrepreneurship as a solution to reducing poverty in Africa (See Case Study 3 in Annex C for further details)
- The Climate CB/RE projects delivered research and policy outreach on interlinkages between inequality and climate action and contributed to the debate on how to integrate inequality considerations into climate response. This enabled successful engagement with public sector institutions working directly on climate change and broadened their views of how climate change adaptation interventions can also support poverty alleviation, so transforming delivery at various levels of local, regional and national government.

Zero hunger (SDG 2)

Responses to SDG 2 (end hunger, achieve food security and improved nutrition and promote sustainable agriculture) included improving environmental sustainability and effective solutions to societal issues that contribute to food insecurity. For example:

- Research by the Climate CB/RE projects generated evidence on how climate adaptation and mitigation policies can be used to increase food production and consumption. The team worked with public officials to develop effective solutions for increasing supplies to those in poverty in situations of natural disasters, like floods.
- Research conducted by the fellows in the Sustainable Food Systems RE project focused on building sustainable food systems on the African continent and developing effective solutions to issues of nutrition, sustainable agriculture and food system transformation. FSNet-Africa fellows have investigated the role of underutilised crops in meeting nutrition challenges and how to support consumer uptake of these foods. (See Case Study 1 in Annex C for further details).

Impacts on African food security practice and policy: responding to multiple SDGs

- Fellows funded by the Sustainable Food Systems RE project (FSNet-Africa) engaged with stakeholders in multiple ways to raise awareness of their research findings. A dialogue event in October 2023 engaged farmers, practitioners, policymakers and other food systems stakeholders and raised awareness of key issues relating to food security (SDG 2).
- Many of the stakeholders made commitments to take up the work of the project into policy and practice. Malawi's Department of Environmental Affairs made a commitment to ensure that research findings on pollinators would be included in Malawi's biodiversity policy (SDG 15). Other impact-ready outputs include a mobile application for farmers to measure fertiliser application to improve soil health and reduce water pollution (SDG 6) and new work on using food waste as animal feed (SDG 12).

(See Case Study 1 in Annex C for further details)

Good health and well-being (SDG 3)

Changes to public attitudes, improved educational skill level of workforce and improved accessibility of public services were ways in which impacts for good health and well-being were achieved. Examples are outlined below (see also Case Studies 1, 2 and 5 in Annex C for further details):

- One Sustainable Food Systems RE (FSNet-Africa) fellow raised awareness through research interviews with South African farmers of the benefits of including moringa in chicken feed, as opposed to using antibiotics. It was reported that farmers had requested more information on the approach indicating impact-in-progress. The fellow's work was featured on the programme Living Land, a television series in South Africa that features innovations related to agriculture.
- Another FSNet-Africa fellow, Dr Abena Boakye, developed a range of products to improve the nutrient quality of food. The products included a recipe book, an infant porridge and a biscuit, all made from indigenous crops and ingredients that are readily available to the community. Through additional funding provided by the University of Leeds and the University of Pretoria,

Dr Boakye hosted a series of cooking demonstrations to show women how to prepare the recipes. She is also approaching stakeholders to identify markets for the porridge and biscuits she developed.

- The Water CB/RE research led to direct improvements to water quality and therefore to public health. Three of the RE case studies focused on water pollution and established community involvement and action. For example, in Uganda the project connected government officials with residents at the Ggaba landing site, Lake Victoria, Kampala, to investigate urban pollution. Many local households, including those with young children, contend with diseases such as typhoid, diarrhea, and cholera. Together the project team and residents identified barriers to community and government participation, barriers to pollution management, and the actions needed to progress solutions, indicating impacts-in-progress in this area.

Improving education and skills to enable better care for people with NCDs and their caregivers

- Through training initiatives for medical students and mini grants to early career researchers, the Non-Communicative Diseases CB project has enabled a range of research and develop work with policy makers, patient groups and local communities around NCDs. This had led to greater recognition of the social and emotional support needs of patients and caregivers by students, religious groups and health workers in communities in Kenya and across Africa through the project's delivery partnerships.
- New funding from Global Affairs Canada and the IDRC in 2024, to develop a national NCD caregivers policy, has already raised public awareness. The project team of 20 researchers is engaging with community health workers, patient/caregiver groups and voluntary organisations across four partner counties, and with policy makers and stakeholders to inform work on policy development at both sub-national and national government level. When developed, this will be the first ever national NCD policy for caregivers not only in Kenya, but across the whole of sub-Saharan Africa.

(See Case Study 5 in Annex C for further details)

Quality education (SDG 4)

The main way that projects responded to SDG 4 was through actions to improve the educational and skill level of workforces, including through their own capacity building initiatives for students and researchers. These included impacts already noted relating to improved training to write and publish academic outputs and policy briefs, platforms to develop skills for engagement with policymakers and opportunities for interdisciplinary working. A small number of projects also noted education impacts-in-progress for stakeholders. For instance, the Water CB/RE project supported volunteers from the University of Lagos to teach science subjects in local community secondary schools, with the eventual aim that quality of science education would be improved.

Gender equality (SDG 5)

Projects cited improved workforce knowledge and skills, and changes to public attitudes as mechanisms for contributing to impacts in gender equality. As previously discussed in chapter 2, evidence provided related mainly to impacts of CB initiatives on gender responsiveness and gender equality within project teams and partner institutions. Broader examples of societal impacts and impacts-in progress included (See Case Studies 1, 2 and 5 for further details):

- The Water CB/RE project team worked with communities affected by water scarcity and pollution in seven African countries, and in each case study they encouraged and ensured active participation by the (sometimes few) women representatives. Girl-children were prominent in a Lagos community water play produced by a school located on a waste site.
- The Non-Communicative Diseases CB project team are working on a new project to develop a national NCD policy for caregivers. The primary beneficiaries of this work will be women and girls who are over-represented as informal caregivers.
- Sustainable Food Systems RE (FSNet-Africa) fellow Selorm Dorvlo has published a policy brief on solutions for small-holder rice mechanisation in Ghana, which focuses on the impact of different options of machinery-ownership for gender transformative small-holder work.

Responses from in-country teams involved in the Water CB/RE project give an indication of the scale of the issues faced around gender responsiveness and equality in Africa.

We actively worked to have good female representation when working with stakeholders, as well as in our team. [But] challenges in terms of the stakeholders included:
 Ethiopia team report: "The role of women is highly respected in the management of households, but the public representation is that of a male". "Gender proportionality is a problem due to farmers/ household heads being males. Most of the Committee members which are often present are mostly males and our invitations are mostly inviting committee members." Senegal team report: "Senegal is in the process to change their law to defend equality between men and women, but cultural barriers make the process slow. The involvement of women is slow." (Survey-166-Africa hub)

Clean water and sanitation (SDG 6)

Changes to public attitudes and improved environmental sustainability were the areas of impact most highly cited in relation to SDG 6: ensuring availability and sustainable management of water and sanitation for all. The Water CB/RE projects provided most examples, largely achieved through its Adaptive Systemic Approach (ASA), which provides a framework for sustainability research, with the goal of driving positive change toward better ecological health and social justice (See Case Study 2 in Annex C for further details):

- All case studies (Ethiopia, Tanzania, Uganda, Rwanda, Senegal, Nigeria and South Africa) included in the Water RE (RESBEN) project worked with communities to help them understand water scarcity and pollution in their local area and to develop local partnerships and solutions. All case study sites recorded changes in stakeholder attitudes. In Rwanda, these changes were

particularly significant in moving towards establishing active participatory water resources governance.

- The Water RE case study site in Nigeria was Lagos, a city built on polluted ground water. RESBEN assessed water quality: firstly in ground water at two dump sites where the water is not fit for drinking and poses a serious threat to human health and the environment; and secondly in surface water at the University of Lagos (Unilag) Lagoon Front and Somolu Drainage Canal. The project team recorded indiscriminate waste disposal, open defecation, high E. coli, high nitrates and heavy metals (iron, cadmium, lead), and malaria carrying mosquito larvae. They used participatory approaches and digital storytelling techniques to engage with local government officials, public groups and industry stakeholders on pollution risks and management. Their work improved local understanding of the health benefits of lower pollution exposure and how effective pollution management reduces water treatment costs and stimulates economies. Stakeholders made contributions to the development of the Lagos State 'Water, Sanitation and Hygiene' (WASH) policy²¹ and have made progress in helping to reduce indiscriminate waste disposal, so enhancing local community fishing and fish selling, and improving access to clean water.
- The Water RE case study site in Senegal, on Lake Guiers, supplies Dakar with water and supports large- and small-scale agriculture, livestock breeding, and fishing. Extraction and pollution threaten environmental health and livelihoods. RESBEN established a Lake stakeholder WhatsApp group connecting stakeholders to each other and to an accessible database. The project team also built a systemic model that identifies what is working, and what needs to be established, maintained, and how.

Affordable and clean energy (SDG 7)

The Water CB/RE project responded to SDG 7: ensuring access to affordable, reliable, sustainable and modern energy for all, through its case study site in Franschhoek (near Cape Town, South Africa). The site has developed since the end of the programme to become as 'living lab', bringing further funding, including investment for an array of solar panels and inverters to ensure the research site is entirely independent of the national grid. (See Case Study 2 in Annex C for further details)

Decent work and economic growth (SDG 8)

The NCD CoE and the Unemployment and Skills CB project responded to SDG 8: promoting sustained, inclusive and sustainable economic growth, full and productive employment and decent

²¹ <https://moelagos.gov.ng/lagos-unveils-water-sanitation-and-hygiene-wash-policy-and-implementation-plan/>

work for all, through improving the regulatory environment and creating decent work opportunities. For example, the NCD CoE's new project to develop a national NCD policy for caregivers is raising public awareness on the need to support NCD caregivers, thus focusing on recognition, redistribution and reducing the burden of care work. The Unemployment and Skills CB project noted the potential for future impact in terms of decent work and economic growth, as a result of 10 seed-funded start-up projects across South African, Kenya, Nigeria and Ghana. Lack of sustained funding for these projects, however, has limited this potential for future impact. (See Case Studies 3 and 5 in Annex C for further details).

When you look at Goal 8, when we are talking about economy and production, all the nine teams that were seed funded in South Africa, in Kenya, in Nigeria, in Ghana, all of them were into production, every one of them, all the things that they were doing as solutions could have become the Google of tomorrow, the Amazon of tomorrow. All we needed to do was to give them a platform to showcase their interest, to open them up to the world, and open them up to their country, open them up to the life of possibility, to appreciate what they've done and for them to go and start to use that, to support themselves. (PI-011-Africa hub)

Industry, innovation and infrastructure (SDG 9)

In response to SDG 9: building resilient infrastructure, promoting inclusive and sustainable industrialisation and fostering innovation, the Unemployment and Skills Development CB project has created a learning infrastructure across the University of Lagos for promoting enterprise, innovation and entrepreneurship. During and after his involvement in the ARUA UKRI programme, the PI has set up new MSc, PhD and undergraduate programmes to encourage University of Lagos students to identify opportunities for business innovation. In addition, the project team have played an important role in influencing Nigerian policy on employment and skills (See boxed text below and Case Study 3 in Annex C for further details).

Effective solutions to societal problems: impact on employment and skills in Nigeria

- The Unemployment and Skills Development CB project conference in December 2020 on deepening youth unemployment in Africa included input from a special adviser to the President of the Federal Republic of Nigeria. The project team noticed that immediately after the conference, the attitude of the Presidency changed positively towards the youth development project and focus within Nigeria. This was evidenced by a three-minute segment focused on the issue of youth and entrepreneurship in the President's new year speech of January 1st, 2021.
- During 2021 and 2022 the project team was active in publicising the issue of entrepreneurship and innovation as a pathway to youth employment, through articles in high profile publications and through contributions to the national consultation and review on this topic, including input into the drafting of the Nigeria Startup Bill. On 19th October 2022 the Bill received presidential assent for law as the Nigeria Startup Act.

(See Case Study 3 in Annex C for further details):

Reduced inequalities (SDG 10)

Providing effective solutions to societal problems was the main way in which projects responded to SDG 10: reducing inequality within and among countries. No specific impacts were noted as yet, but projects had begun to contribute to thinking and debates in the area of inequalities, particularly in relation to climate response. For instance, the Climate and Development CB/RE project delivered research and policy outreach on interlinkages between inequality and climate action and contributed to the debate on how to integrate inequality considerations into climate response (e.g. Nationally Determined Contributions). The project team were able map out 'those involved and those left out' in a way that triggered new thinking by government institutions and improved understanding of multi-dimensional inequality and climate vulnerability.

Responsible consumption and production (SDG 12)

The Sustainable Food Systems RE project responded to SDG 12: ensuring sustainable consumption and production patterns, firstly by investigating solutions for implementing climate-smart agriculture with smallholder farmers, highlighting the important role of farmers in developing and evaluating interventions. Secondly, a FSNet-Africa fellow had developed the use of fruit-peel waste in Ghana to create more nutritious silage-based food for ruminant goats. This work also linked to impacts in terms of health and well-being (SDG 3) as the quality of the meat is better; and to decent work and economic growth (SDG 8) as work is created for people to collect, deliver and process the fruit-peel waste into silage. (See Case Study 1 in Annex C for further details):

Climate action (SDG 13)

Finding effective solutions to societal problems and seeking ways to change public attitudes were the areas of impact that led to contributions by projects to SDG 13: taking urgent action to combat climate change and its impacts. Three projects reported key impacts or impacts-in-progress in these areas (See Case Studies 1 and 2 in Annex C for further details):

- The Water CB/RE projects noted significant improvement in water quality treatment across many of their study sites, using nature-based processes/solutions to enhance the safety of water reuse and discharge of polluted water back to the environment. Improvements in the landscape, such as better vegetation cover, reduced soil erosion, and increased rainwater percolation into deeper soil layers, have raised groundwater levels. This has made it possible to obtain water from hand-dug wells instead of relying on streams. The establishment of communal bylaws for managing the environment and ensuring fair resource distribution has fostered social stability and strengthened respect for shared environmental assets and resources. Further funding from Erasmus+ for the ARUA Water CoE and its partners is focusing on nature based solutions for climate resilience in Africa and will support these impacts to be further embedded and sustained.

- The Sustainable Food Systems RE project ensured that all of its work was designed with a climate resilience building dimension. For example, FSNet-Africa fellows have investigated climate-smart agriculture as a response to climate change in smallholder farmers.
- The Climate and Development CB/RE projects and their impacts on poverty and inequality have now been used to support the NDC (Nationally Determined Contributions) processes in case study countries. The team's work has been acknowledged as aiding understanding of what climate change adaptation should look like, and why it needs to go beyond just addressing climate hazards.

Life below water (SDG 14)

In response to SDG 14: to conserve and sustainably use the oceans, seas and marine resources for sustainable development, the Water RE project conducted research on the application of aquatic macroinvertebrates in water quality assessment of the Nyabarongo and Akagera Rivers in Rwanda. Findings indicated the levels of pollution of the two rivers and led to recommendations for effective environmental conservation planning. (See Case Study 2 in Annex C for further details)

Life on land (SDG 15)

The Water RE project provided evidence of the team's response to SDG 15: to protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss, achieved largely through work to change public attitudes and promote environmental sustainability. Firstly, they explained that their work on water catchments helped to place water in a landscape context for local communities: they recorded findings of attitude change and movement towards improved catchment sustainability. Secondly, work to improve vegetation cover in two Ethiopian watersheds, the extensive terrace bands that help retain soil and water, and the increased motivation among the people to enhance their environmental rehabilitation efforts have set the stage for a better future. These actions have contributed to reducing the feared siltation of the Ethiopian Great Renaissance Dam and ensuring a regulated flow of water to neighbouring counties.

Peace, justice and strong institutions (SDG 16)

Several projects offered examples of responses to SDG 16: promoting peaceful and inclusive societies for sustainable development, providing access to justice for all and building effective, accountable and inclusive institutions at all levels. These actions involved changes to efficiency and effectiveness of public services, finding effective solutions to societal problems, and supporting improvement to the regulatory environment. Examples included (See case study 4 in Annex C for further details):

- The Climate and Development CB/RE project engaged with stakeholders to support better understanding of participation, procedural and recognitional justice in representation in climate policy and the associated processes.

- Research by the Good Governance CB project highlighted the importance of inclusive political and economic systems in maintaining peace and social harmony. The project team created and shared short policy briefs based on their research outputs and provided associated training to senior policy makers in Ethiopia, South Sudan and Somalia. They also contributed to consultations and drafting of new legislation (in Amharic and in English) on rights and protections for minority groups in Ethiopia. The draft law is still in parliament but once approved, the safety and security situation of minority groups in Ethiopia will get better protection by the new institutions established by the law.
- The Post-Conflict Societies CB/RE team developed a digital platform for e-participation to parliamentary reform processes. It was initially adopted by the Ethiopian House of People's Representatives but due to technical issues was not maintained as a platform by the federal government. However, one of Ethiopia's regional governments has bought-in to the platform and is now using it at regional parliament level.

4. Design and delivery of the programme

The ARUA UKRI partnership programme provided a new and unique opportunity for UKRI to both partner with a pan-African organisation and to directly fund Africa-led research. This chapter addresses the question: How did the **design and delivery** of the ARUA UKRI partnership programme support or hinder its ability to deliver against its objectives? To do this, we draw on survey and interview data to examine the extent to which the design and delivery features of the programme facilitated and limited impacts (see 4.1 and 4.2). The chapter also discusses the benefits and challenges of two of the features of the ARUA UKRI programme: the hub and spoke model and the African leadership of the programme (see 4.3 and 4.4). Finally, in section 4.5 we examine evidence on the design and delivery of a selection of other Africa-based research and capacity building programmes to provide points of comparison for the ARUA UKRI partnership programme.

4.1 Facilitating factors: what made sustained impact possible?

As shown in Figure 7 below, the elements of the programme design most commonly reported as having greatly or moderately facilitated impacts were the interdisciplinary and challenge-led approaches to research, partnerships and networks, and knowledge of the broader context through working with research users and local communities, for example:

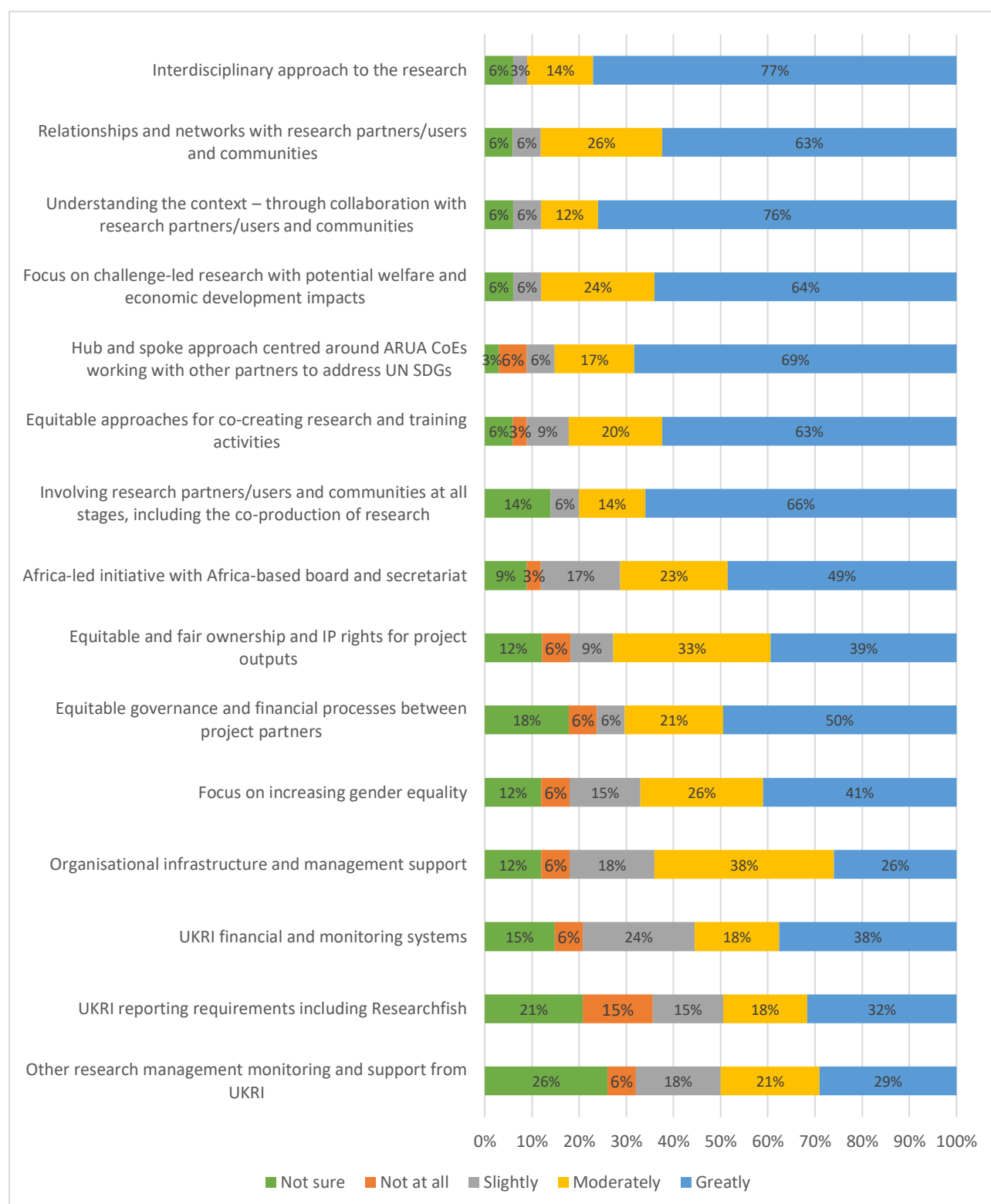
What really helped was to be one of several networks (in different discipline mixtures) who were trying to reach very similar goals and with similar problems. (Survey-121-Africa hub)

The most important factor was possibly the collaboration between the three African Universities who in turn relied on existing networks to ensure research progress and outcomes. The contribution across disciplines was significant. (Survey-167-Africa spoke)

The academic network's relationships ... are extremely strong, and through the slow building up of these relationships, we have developed a comprehensive understanding of the numerous contexts we all live and work in, which are very different. This understanding is instrumental in taking the network forward successfully in the future. (Survey-166-Africa hub)

The Africa-led nature of the initiative, the hub and spoke model (see 4.3 and 4.4 below), and equitable approaches to co-creation/co-production of research and capacity building, also proved beneficial for working with partners to address UN SDGs.

Figure 7: Extent to which factors had facilitated the outcomes and impacts of ARUA UKRI award (ARUA UKRI partnership programme impact survey: n=40)



4.2 Limiting factors: What were the barriers to impact?

Survey respondents also reported on the extent to which specific factors had hindered the impacts of their awards. As shown in Figure 8, the factors most commonly reported as having greatly or moderately hindered impacts were:

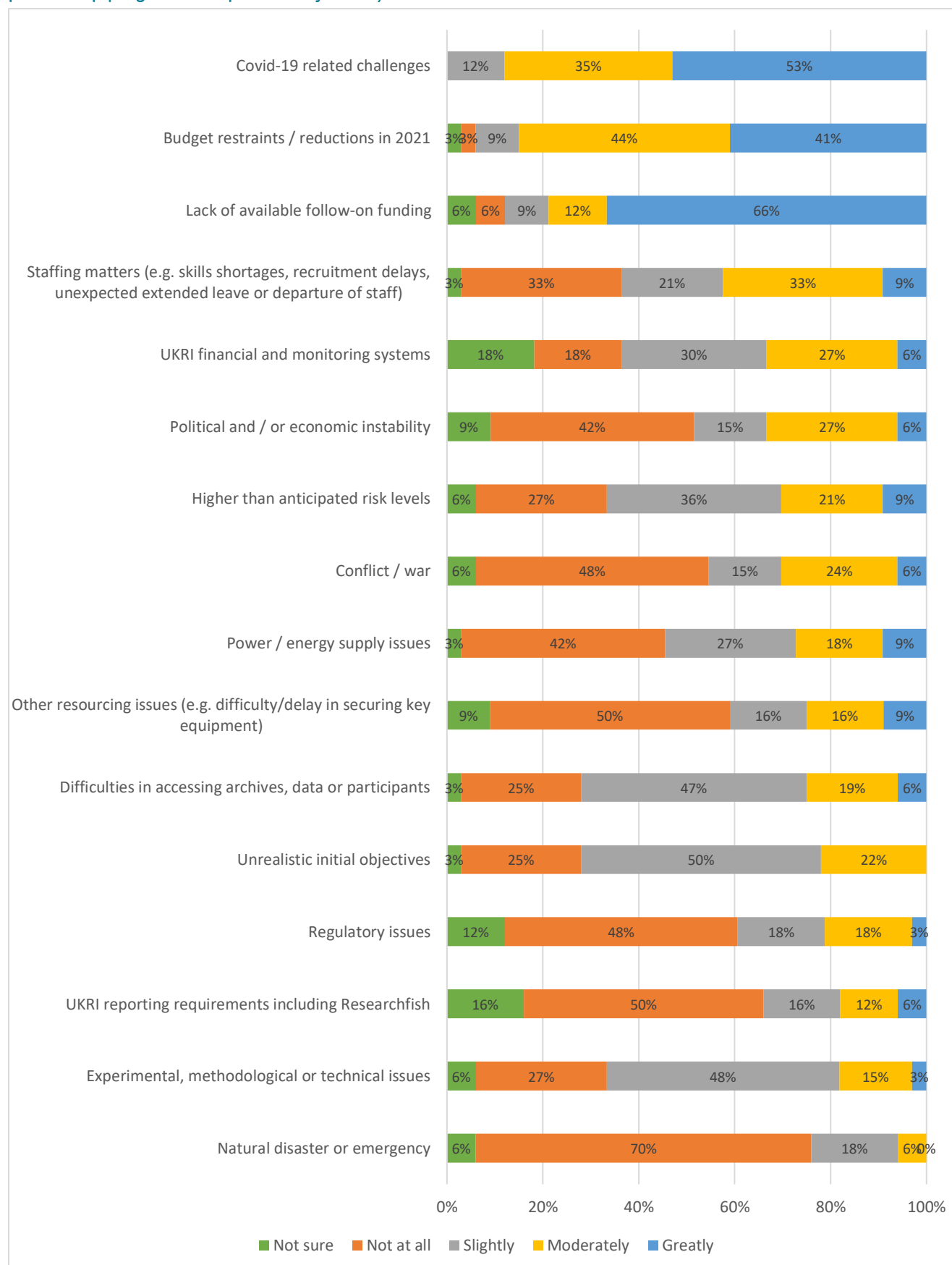
- Covid-19 pandemic-related challenges (88% of respondents)
- Changing landscape of research programme (85% of respondents)
- Lack of available follow-on funding (78% of respondents)
- Staffing matters (e.g. skills shortages, recruitment delays, unexpected extended leave or departure of staff) (42% of respondents).

Covid-19 pandemic restrictions prevented both travel and face-to-face engagement, impacting delivery timescales and the extent to which all goals could be met. The UK Government's 2021 ODA budget reductions also led to significant disruptions and limited awards' ability to maximise impacts from their awards. There was disappointment that the programme ended before further work could be undertaken, and that there was not a dedicated opportunity for follow-on funding to maintain the momentum generated, to sustain the successes, and to be able to attract other grants, for example:

What was lacking, however, as I mentioned, was looking into the future in terms of what happens to this success. I think UKRI was not quite clear, or ARUA itself was not quite clear about what happens after creating all these success and expectations. ... Seed funding would actually have helped us to sustain the work for the success we got in the first phase, and also serve a seed money to be able to attract other grants (PI interview–009-Africa hub)

It is also worth noting the additional barriers to impact posed by a range of social and political challenges within Africa. Between a quarter and a third of survey respondents reported that political/economic instability, higher than anticipated risk levels, conflict/war and power/energy supply issues had moderately or greatly limited impacts for their awards.

Figure 8: Extent to which factors limited the outcomes and impacts of ARUA UKRI award (ARUA UKRI partnership programme impact survey: n=40)



4.3 African leadership

The following section examines the benefits and challenges of a key design element of the programme: the Africa-led nature of the initiative with an Africa-based board and secretariat.

Benefits of the Africa-led initiative

Nearly three quarters of survey respondents agreed that the Africa-led initiative with Africa-based board and secretariat had greatly (49%) or moderately (23%) facilitated the outcomes and impacts from their ARUA UKRI awards.

Ownership and control

According to ARUA award holders and key informants, the Africa-led and managed nature of the programme had resulted in increased ownership of research processes and outcomes, resulting in more equitable partnerships. There had been greater control over choice of leadership, partners and research priorities, based on their knowledge of relevant contexts and networks, and how best to engage with their communities.

*It was really important that the research, and the project as a whole, was African led with UK researchers in a supporting and facilitating role. This funding really provided that opportunity.
(Survey-143-UK partner)*

Funding was sent directly to African universities, who took responsibility for managing and distributing that funding themselves. The facility to have non-UK research leadership allowed funding to then reach African universities directly, without the need to include the on-costs of UK institutions and researchers.

*It made a huge difference to have non-UK research leadership - especially as UK salaries and on-costs from UK universities are so high. The funds really reached African universities
(Survey-125-Africa hub)*

Enhanced strategic commitment in Africa

The involvement of ARUA in the partnership programme was thought to have promoted greater strategic commitment within African universities, including financial contributions and support for the governance of the awards, with senior-level representation on awards' Advisory Boards.

Greater relevance to country context

African ownership and control of the programme meant that awards were able to focus on the challenges as understood by the continent, not by researchers or funders from the global north. Award-holders had in-depth knowledge of the contexts they were operating in and worked according to their own understanding of the challenges, in ways that were appropriate to these contexts. Award-holders were able to establish stronger connections with their communities and with industry and policy stakeholders to enhance their ability to make a difference to real life problems.

There was enough space for the partners to work according to their own understanding of the challenges and to do the research in ways that are appropriate to the context (Survey-150-Africa hub)

Improved cross-institutional partnership working

UKRI's collaboration with ARUA rather than individual universities encouraged cross-institutional partnership working. The support and commitment from the ARUA secretariat, including an Africa-based co-ordinator for the programme, strengthened networks and helped institutions to work together. The programme design supported the establishment of strong, collaborative and long-term productive partnerships across different institutions in Africa.

An African-led project with an emphasis on co-production with multiple stakeholders was central to the project's success. (Survey-122-UK partner)

Challenges of complying with UK-based requirements as an Africa-led initiative

Survey and interview respondents also commented on the challenges associated with leading the programme from Africa whilst having to comply with UK based financial and administrative systems. Some award-holders found UKRI systems to be enormously complex, difficult to navigate, and administratively onerous.

There wasn't very clear guidance, because they've never had to provide it before, and there are things that are automatic to them that were completely opaque to us (PI interview-013-Africa hub)

UKRI stakeholders acknowledged the challenges, noting that the lack of a lead UK university put pressure on African universities that had neither the experience nor the resources to deal with UKRI, and therefore UK Government, requirements. Survey respondents raised similar concerns, particularly for less well-resourced institutions.

UKRI financial and monitoring systems were extremely difficult and time consuming for us to work out. (There was) very little support for managing complex projects. This was a missed opportunity to assist the various CoEs with large grant management and capacity building. For our project (relatively well-resourced institution) we battled along alone doing our best to adhere to all the UKRI rules but our failures (with budget management, project management etc.) regretfully impacted more vulnerable researchers located at less supportive and resourced institutions. (Survey-166-Africa hub)

4.4 Hub and spoke model

The following section examines the benefits and challenges of the hub and spoke model used by the ARUA UKRI programme. Comments from survey respondents (PIs and Co-Is), along with findings from interviews with key informants (PIs/Co-Is, ARUA/UKRI stakeholders and other funders of Africa-led initiatives) provided insights on the nature and extent of the benefits of this design element.

Benefits of the hub and spoke model

The vast majority of survey respondents thought that the hub and spoke model (centred around ARUA Centres of Excellence (CoEs) working with other partners to address UN SDGs) had greatly (69%) or moderately (17%) facilitated the outcomes and impacts from their awards. Findings related to the following main themes:

- Enhanced equality and inclusion
- Supported collaboration and created new networks
- Access to local networks and resources
- Importance of central coordination through the hub.

Enhanced equality and inclusion

The hub and spoke design empowered awards to identify the best networks to work with, and to bring people and institutions together. Awards were able to enhance equality and inclusion by promoting ownership amongst the award partners, and providing opportunities for all partners to participate effectively, by ensuring that resources were made available to spoke universities that needed more support.

In terms of resources, we're not all resourced the same way. And so I think it was beneficial for those other universities who are part of the spokes to interact with [the hub] and the funding.... It opened up access for people who ordinarily it will be difficult for them to find those opportunities. (ARUA interview-012-Africa hub)

So for example, an early career fellow from [a spoke] can also work with scholars and researchers in the team that they normally would not have access to in their own university, because some universities don't have the same resources or even the same experience amongst different staff. With hub and spoke, it does gives you access to a pool, a network of people that you can work with, supervisors, peers, who can also help you with mentorship in different areas. (ARUA interview-014-Africa hub)

Supported collaboration and created new networks

The hub and spoke model provided awards with the opportunity to recruit and collaborate with more African researchers, bringing a wide variety of diverse people and viewpoints together. It was seen as a great model to mobilise research partnerships around an issue of mutual interest. and to create new local networks.

Access to local networks and resources

Working with a network of universities across the African continent enabled awards to take regional contexts and priorities into account when defining their research agenda. The hub and spoke approach expanded the reach of the award, providing access to networks and resources beyond borders, and increasing the potential for wider impact. Researchers worked with local stakeholder

organisations and with people who already understood how local systems worked, which was seen as a great advantage.

Spokes provided staff support, training support, access to facilities and equipment. The hub and spoke design allowed projects to benefit from already established partnerships and networks and to work with communities that otherwise they might have struggled to gain access to.

Importance of central coordination through the hub

Strong central coordination and support from the hub to the partners were seen as critical to the effective management of the awards and the delivery of successful outcomes. Hubs focused on communication, linking and co-development, organised training and meetings to plan for project implementation, mentoring of young researchers and collaboration with other governmental and non-governmental organisations. The hubs undertook learning around UKRI procedures and compliance, whilst taking on responsibilities to disseminate funding out to the spokes, and work with partners to manage grants and staff.

Challenges of the hub and spoke model

Survey and interview respondents also commented on the challenges associated with the model, relating mainly to demands placed on hubs and the need for more involvement from spoke institutions.

The central role for the hub institution regarding financial and project management responsibilities, was reported as onerous at times, with increased risk burdens and micro-management impacting equitable partnerships.

It is a wonderful vision but in practice very difficult to navigate. Without formal responsibility on spoke partners, the hub institution carries all the risk for reporting e.g. disbursing funds, activities not completed, etc. Whilst formal agreements are in place to facilitate such systems, lack of delivery or reporting are very challenging to manage as the 'hub' ends up having to 'micro-manage' colleagues in spoke institutions. Ultimately, it means that the hub becomes a grant manager rather than an implementer with negative impacts on the development of equitable partnerships. (Survey-176-Africa hub)

Additionally, some award-holder survey and interview respondents thought that the hub institutions' central coordinating role may have limited input and engagement from spoke institutions.

The main issue we have found with the hub and spoke model, is that the hub drives everything. We have so far been unable to mobilise support that has not been driven by the hub. ... It is not sustainable for one institution to be driving the support for the wider network. (Survey-166-Africa hub)

It is a great model, but sometimes it results with the resources (human and financial) lying more with one institution ... Sometimes as a result of this distribution of resources the hub seems to end up/take on the responsibility of doing most of the driving of the work. Maybe a rotating model could work. (Survey-174-Africa hub)

Award holders noted that engagement with spoke institutions had been limited by the Covid-19 pandemic which had restricted in-person collaboration. Online engagement was also hampered by unreliable connectivity.

The pandemic was really disruptive, we could have done a lot more to get hub and spoke to work through actual engagements, connectivity is really still a big issue in Africa. These things don't work well online, people need at least one opportunity to meet and build the necessary trust. (Survey-150-Africa hub)

4.5 Learning from other Africa-based programmes

Feedback was sought from funders of other Africa-based research and capacity building initiatives (“funder stakeholders”) to provide points of comparison with the ARUA UKRI partnership programme in relation to its design and delivery. Insights from funder stakeholders associated with the Developing Excellence in Leadership, Training, and Science in Africa (DELTAS)²² programme, the OR Tambo Africa Chairs Initiative²³ and the Future Leaders – African Independent Research (FLAIR) Fellowships²⁴ are summarised below. Details of the approaches taken by these initiatives are also included in the blue boxes below.

Developing Excellence in Leadership, Training, and Science in Africa: DELTAS Africa

DELTAS Africa is a long-term, multimillion dollar programme launched in 2015 to support collaborative Africa-led research consortia. DELTAS supports researchers to undertake locally relevant and high-quality health research that contributes to impacts on science, policy, practice health and development in Africa and globally. The Science for Africa Foundation (SFA Foundation) is leading the second phase of the initiative, DELTAS Africa II, 2023-2026 with the support from Wellcome and the UK Foreign Commonwealth and Development Office (FCDO). This second phase has been running since 2023 with 14 consortia led from eight African countries with partnerships across 35 countries and 71 institutions in Africa and globally.

²² <https://scienceforafrica.foundation/deltas-africa>

²³ <https://idrc-crdd.ca/en/what-we-do/projects-we-support/project/or-tambo-research-chairs-sub-saharan-africa>

²⁴ <https://royalsociety.org/grants/flair/>

OR Tambo Africa Research Chairs Initiative

The OR Tambo Africa Research Chairs initiative supports Research Chairs to undertake world-class research in priority areas, to expand research and innovation capacities in sub-Saharan Africa. The initiative is led by the South African National Research Foundation (NRF) working with funding partners the International Development Research Center (IDRC) and the Science Granting Councils Initiative (SGCI). Funders provided baseline funding for 10 Chairs in seven SGCI partner countries, whilst host institutions guaranteed the salaries of Chairholders, who were also required to leverage additional resources. Sustainability was supported by the long-term nature of the investment: each research Chair was funded for a minimum of five years with the possibility of funding extension to 15 years. Universities and Chairholders are required to align their research topics to national, regional and continental priorities, to produce knowledge that is of direct relevance to the most urgent challenges across the continent. The Chairs focus on training graduate students and postdoctoral fellows as the next generation of research leaders in sub-Saharan Africa.

FLAIR (Future Leaders – African Independent Research) Fellowships

FLAIR Fellowships were for talented African early career researchers who had the potential to become leaders in their field, providing the opportunity to build an independent research career in a sub-Saharan African institution and to undertake cutting-edge scientific research to address global challenges facing developing countries. FLAIR was a partnership between the African Academy of Sciences (AAS) and the Royal Society, funded by the Global Challenges Research Fund (GCRF) as one of its signature investments. The scheme was led from Africa with funding awarded directly to research fellows. The scheme provided funding for the Fellow's salary, research expenses and institutional overhead. It also provided a programme of support and development, including mentoring, training courses, opportunities for international collaboration and networking opportunities regionally and internationally.

Funder perspectives on design and delivery: African leadership

Comments from funder stakeholders provided insights on the ways in which African leadership had facilitated effective delivery of their funded initiatives. Findings aligned very closely with those raised above in connection with the ARUA UKRI programme, and related to the same main themes:

- Ownership and control
- Strategic commitment in Africa
- Relevance to country context
- Networks and collaboration.

Ownership and control

African leadership of the capacity building and research initiatives was seen by funder stakeholders as having promoted the ownership of research challenges and emerging results. Increased ownership had built trust and empowered researchers to engage with other funders and act as champions for their work.

Strategic commitment within Africa

Funder stakeholders also highlighted the importance of strategic commitment from partners within Africa to support the effective delivery and achievements of their initiatives. This strategic commitment brought expertise to partnerships in terms of the knowledge of the needs in region, as well across the continent. Involvement and inclusion of African partners at all levels and stages was critical and included co-creating theories of change for programmes and jointly developing strategic and operational partnerships both at staffing and governance levels. The strategic buy-in from senior stakeholders (Vice Chancellors/Deputy Vice Chancellor) at participating institutions had also been important from the start, to ensure that programmes were integrated into these institutions.

Understanding of country context

Funder stakeholders noted that the deep understanding of context had allowed the African-based researchers supported by their initiatives to undertake research that addressed local needs in line with UN Sustainable Development Goals (SDGs). A focus on national priorities had enhanced opportunities for further investment from national governments, enabling work to be continued. Initiatives had also aligned to wider agendas (e.g. the African Union agenda 2063), so that they fed into the challenges of the whole continent as well as national challenges. Understanding of local contexts had also facilitated appropriate research design, tailored to meet local needs.

Networks and collaboration

Funder stakeholders thought that African leadership of their funded initiatives had provided opportunities for networking and collaboration, convening networks and events both across Africa and between Africa and the UK. Additional funding had been made available to promote new south-south research collaborations, as well as south-north partnerships, for example by providing additional grants to initiate new research collaborations.

Funder perspectives on design and delivery: hub and spoke model

Where hub and spoke (or similar) models had been adopted, funder stakeholders provided insights on the ways in which these models had facilitated effective delivery. Findings aligned very closely with two of the themes raised above by award holders and UKRI stakeholders:

- Enhanced equality and inclusion
- Importance of central coordination through the hub.

Enhanced equality and inclusion

Funder stakeholders commented that hub and spoke models had promoted equitable partnerships and skill development through democratic leadership. Lead PIs had been supported by Co-Is from other participating countries, with mutual co-learning and enhancement of leadership skills.

Researchers from spoke institutions with fewer resources and less experience had been able to develop their own skills through inclusion in teams based in well-established institutions elsewhere in Africa. Inclusion had been expanded further when spoke researchers shared their skills within their home countries which enhanced the potential for attracting further funding and possibly acting as hub institutions themselves.

Funder stakeholders commented that a hub and spoke approach had also allowed spoke institutions and the individual scientists within them to become better known. Participation in the initiatives had enabled spoke scientists to leverage new funding and deliver new science, increasing the reputation of these African researchers and research organisations. The requirement for stronger institutions to support less experienced spokes meant that funding was directed to countries which had previously found it challenging to attract and secure resources. It was also noted that the hub and spoke approach had elevated these universities and promoted the science happening within them. For example:

This approach has shown that actually there's great science happening everywhere. It's just a matter of the support that you give them. (Funder stakeholder)

Importance of resources to manage the hub and spoke approach

Where hub and spoke models were used, funder stakeholders noted that the hub institutions needed to have the available capacity and resources to manage the spokes. It was important to budget for specific support functions, including monitoring and evaluation, finance, communication, project management. The amount of work required to effectively manage the spokes was extensive, leading some to cap the number of spokes in line with available resources.

5. Conclusions and recommendations

5.1 Did the ARUA UKRI partnership programme achieve its objectives?

This impact evaluation has found extensive evidence of the ARUA UKRI partnership programme's success in achieving its objectives to:

- Build equitable collaborations in both Africa and the UK
- Build capacity for science and research across African universities
- Provide opportunities for the co-creation of new projects.

Project teams working in the ARUA UKRI partnership programme have succeeded in building and strengthening diverse and equitable relationships within and between both African and UK-based organisations. The programme and project teams were Africa-led, helping to shift the focus from north/south to south/south partnerships. Less established partnerships progressed, and new partnerships were developed, with one-fifth of delivery partners involved in the programme coming from less research-intensive African universities. Partnerships were strengthened through more formalised opportunities for learning, sharing resources, and collaborating on research projects, grant proposals and publications. African authorship of publications was high and 93 collaborations and networks for knowledge exchange were built. Most projects had made specific efforts to ensure equity and fairness in their research partnerships and collaborations. These included formal agreements, or agreed terms of reference in writing, for governance and financial processes, delivery of capacity building and research activities, and authorship/ownership of project outputs.

The programme has successfully built and enhanced research capacity for both African researchers and universities, but there is less evidence of strengthened capacity at the research ecosystem level. Both Africa-based and UK-based researchers reported increased capacity in knowledge and skills to develop research partnerships, more opportunities for partnerships and networking, and increased opportunities to apply learning - a strong indicator of strengthened capacity. African researchers (but not UK researchers) also reported increases in opportunities for professional recognition, career progression, research productivity, confidence, commitment, and knowledge/skills to conduct and manage research. The evaluation findings highlight the importance of strengthening writing and publication skills as a key foundation for building research capacity amongst African scholars, and as a route to career progression and professional recognition. African universities experienced significant enhancements in research capacity in terms of reputation, interdisciplinary working, and opportunities for research training and qualifications. There was some evidence of benefits for the wider research ecosystem in African countries - most notably through enhanced cross-sector working, enhanced access and availability of research data.

The programme has successfully facilitated the development of quality research addressing development challenges in Africa and against the SDGs. Through the 17 delivery partnerships (across 13 CB and four RE awards) and 93 research collaborations created through the programme, the programme provided opportunities for co-creation of quality research to address UN SDGs and African development challenges, so building on current investments by GCRF. **Most projects had recorded the delivery of outputs positioned to achieve real-world outcomes and impacts.** Programme-linked publications were cited by others, accessible to research users and have potential for on-going and sustained impact. **Programme-linked publications on average have been cited over three times more frequently in relation to average citations for publications in the same fields of research and of the same age.** Non-formal and creative research outputs enabled engagement with stakeholders, with potential to address African development challenges - demonstrating that stakeholders have been considered and are engaged in sharing the results and benefits of projects.

Award-holders' perceptions of the programme's success in achieving its goals clearly align with our findings outlined above. As detailed in Figure 9, the majority of award holders agreed that the programme's key intended impacts (as set out in the programme's logic model and below) had been greatly or moderately achieved:

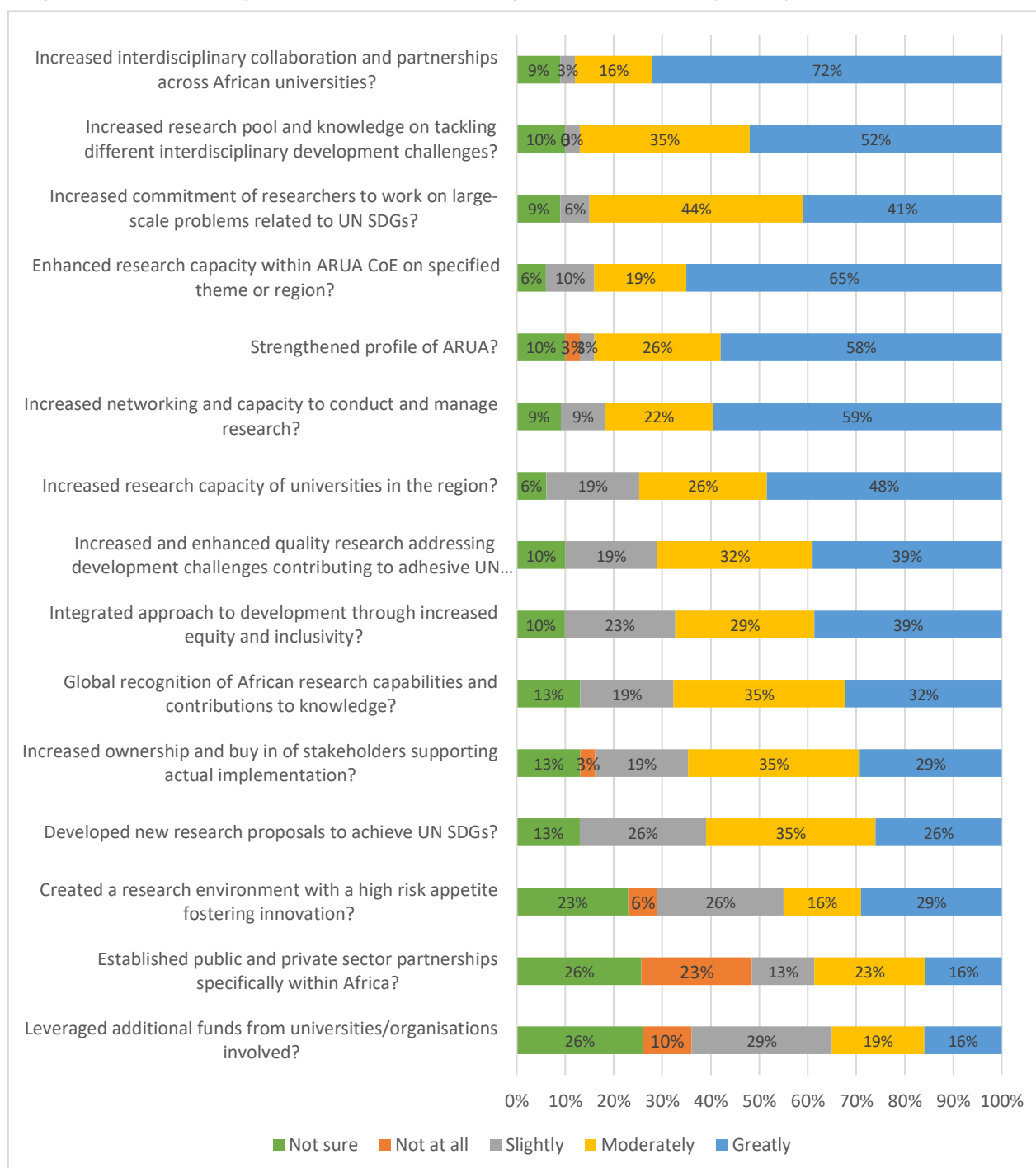
- Increased interdisciplinary collaboration and partnerships across African universities
- Increased research pool and knowledge on tackling different interdisciplinary development challenges
- Increased commitment of researchers to work on large-scale problems related to UN SDGs
- Enhanced research capacity within ARUA CoEs on specified themes or regions
- Strengthened profile of ARUA
- Increased networking and capacity to conduct and manage research
- Increased research capacity of universities in the region
- Increased and enhanced quality research addressing development challenges contributing to achievement of UN SDGs
- Encouraged an integrated approach to development through increased equity and inclusivity
- Supported global recognition of African research capabilities and contributions to knowledge
- Increased ownership and buy-in of stakeholders supporting actual implementation
- Development of new research proposals to achieve the UN SDGs.

Overall the programme was thought to have been less successful in the following areas:

- Creating a research environment with a high-risk appetite fostering innovation

- Establishing public and private sector partnerships specifically within Africa
- Leveraging additional funds from universities and other organisations.

Figure 9: To what extent do you feel the ARUA UKRI partnership programme goals have been met by the programme as a whole? (ARUA UKRI partnership programme impact survey: n=40)



5.2 What will the likely legacy and/or long-term impacts be?

Partnerships and research activities have been sustained in the longer-term, with continuing partnerships leading to on-going collaborative activities, including the development of publications, proposals for further funding, and new funded projects. There is evidence of sustained research and outputs to address the UN SDGs, through further funding, and continued collaborations between project teams, ARUA CoEs and other global-level partners within Africa and beyond. A high proportion of project delivery partnerships have been sustained in the longer-term, with many project teams continuing to engage with partners and stakeholders. 84% of delivery partnerships with African organisations, and 74% of partnerships with UK/other country-based organisations have continued to work together in some form since the programme ended. In addition, 86% of the 93 additional research collaborations were still active in March 2025, at least a year beyond the end of the programme.

Gaining further funding to support continued collaborations is key to sustaining partnerships and research activities in the longer-term. Opportunities for further funding have been limited but there have been some successes including over £6.7 million of funding leveraged through the ARUA UKRI partnership programme for 29 new grants across 12 awards. Given that 15 of the 17 projects had completed more recently (i.e. between March 2023 and March 2024), it is possible that insufficient time has elapsed for further funding outcomes. Moreover, survey respondents reported that few opportunities were available for similar, large-scale grants, and that at least one of these opportunities had been withdrawn due to recent changes in global funding priorities. The lack of opportunity for follow-on funding was further compounded by additional ODA budget reductions by the UK Government in February 2025. This raises questions about the feasibility of sustainability for UK-funded research/capacity building projects in the global south and suggests that ongoing focused support and input is needed to increase individual and institutional capability in developing, writing and securing funding bids.

The programme has led to the development of quality research addressing development challenges in Africa and in relation to the UN Sustainable Development Goals (SDGs). All projects have successfully contributed towards the UN SDGs, reporting multiple responses to challenges both in Africa and globally. The data sources available to the evaluation team at the time of writing offered a time-limited snapshot of early impacts and a tentative indication of their likely sustainability. It is well-acknowledged that impacts of research can take many years to develop and that some enablers and barriers to impact are very difficult to control or foresee, such as pandemics, severe weather events, political instability, and conflict. Against this context, it is important to acknowledge the steps made towards impact, evidence of impacts-in-progress, and contributions towards impacts made by research teams, as documented in chapter 3 and in the Case Studies in Annex C. In addition, it is worth noting that from the perspective of award holders

See 5.1 above), the programme has been largely successful in achieving its goals as set out in its Logic Model (see Annex A).

5.3 How did the design and delivery of the programme support or hinder its ability to deliver against its objectives?

The elements of the programme design most commonly cited as facilitating impacts were the interdisciplinary and challenge-led approach to research, partnerships and networks, and knowledge of the broader contexts through working with research users and local communities. The Africa-led nature of the initiative, the hub and spoke model and equitable approaches to co-creation/co-production of research and capacity building also proved beneficial for working with partners to address UN SDGs. **Broader factors that limited impact were** the Covid-19 pandemic which prevented both travel and face-to-face engagement, the 2021 ODA budget reductions by the UK Government and the lack of available follow-on funding to maintain momentum generated by the programme.

The African-led nature of the programme led to improved cross-institutional partnership working and stronger networks, supported by the ARUA secretariat and the Africa-based coordinator but challenges were also reported due to navigating complex UKRI systems and requirements. **The hub and spoke model contributed to enhanced equality and inclusion** through for example, empowering awards to select partners, leading to opportunities to collaborate with more African researchers, and consideration of regional contexts and priorities. However, some hubs experienced challenges related to onerous financial and project management responsibilities, and limited involvement from some spoke institutions. These findings align with those identified by other Africa-based initiatives.

The impact evaluation of another GCRF investment – the Growing Research Capacity (GROW) Programme²⁵ also reported that design and delivery features including a focus on interdisciplinary and challenge-led research, building equitable relationships between project partners, and working with research users and communities to understand local contexts and priorities had facilitated GROW's ability to deliver against its objectives and achieve successes and early impacts. Similarly, the GROW process evaluation²⁶ reported on the transformative value of interdisciplinary research for many of those involved in the GROW programme. The wider GCRF evaluation of its signature

²⁵ <https://www.ukri.org/publications/gcrf-growing-research-capability-final-evaluation-report/>

²⁶ Izzi, V., Sullivan, C., and Wawire, S. (2024) GCRF Process Evaluation Report, Stage 1b. GROW Process Evaluation.

investments²⁷ (including the GROW programme and the FLAIR Fellowship²⁸ initiative) also highlighted the importance of engagement with stakeholder partners to support early uptake and use of research. The DELTAS²⁹ programme and the OR Tambo Africa Research Chairs Initiative³⁰ both note the importance of aligning research to national, regional or African priorities, to produce knowledge that is of direct relevance to African challenges.

5.4 Recommendations for UKRI for the design and delivery of future Africa-based programmes

As part of this impact evaluation, feedback and insights were collected from ARUA UKRI award holders, stakeholders and from funders of other Africa-based initiatives, to highlight learning and recommendations for UKRI, when developing future sustainable research initiatives in Africa. These insights have been integrated with learning from the broader evaluation findings, to inform our recommendations as follows:

Programme design

- **Holistic support for capacity building and research skills integrated within a challenge-focused research programme** will help to provide a clear focus for capacity building and provide opportunities to embed and sustain learning in the longer term.
- **Embedding Africa-based programmes within a pan-African organisation or network** will help to engage partners, gain in-depth understanding of current contexts and promote sustainability.
- **Adopting a hub and spoke model for capacity building and research partnerships will promote equality and inclusion**, by ensuring that resources are made available to universities that need more support and enabling awards to take regional priorities into account. However, the administrative burden on the hub may make it difficult for hubs to support and build capacity for the spokes. Future programmes should be prepared to plan for and provide additional support as needed.
- **Continued promotion of African leadership and management of initiatives with direct funding to African institutions will support increased African ownership of research processes and**

²⁷ Vogel, I., Guthrie, S and Hepworth, C. (2022) Evaluation of the Global Challenges Research Fund: Stage 1b Synthesis report. https://assets.publishing.service.gov.uk/media/65b24937f2718c000dfb1d4f/evaluation_of_the_gcrf_stage_1b_synthesis_report_annex.pdf

²⁸ <https://royalsociety.org/grants/flair/>

²⁹ <https://scienceforafrica.foundation/deltas-africa>

³⁰ <https://www.nrf.ac.za/the-o-r-tambo-africa-research-chairs-initiative-utilising-frugal-funding-mechanisms-for-long-term-strategic-research-investments/>

outcomes and ensure greater relevance to country context, enabling programmes to address the challenges faced by the continent more effectively.

- **Early engagement with key programme stakeholders**, for example UKRI's individual Research Councils and senior-level buy-in at partner institutions, is important to secure and stabilise on-going support and resources and allow linkages to be made with other relevant investments.
- Future design of similar programmes should consider the following delivery-level success factors:
 - Institutional strategic and financial commitment from the organisations involved in a programme will provide initiatives with visibility, stability and on-going support. Senior-level involvement in Advisory Boards, or other forms of research leadership can help to facilitate the commitment needed.
 - Research capacity building should encompass institutional-level activities in addition to providing initiatives to build research capacity for individuals.
 - At individual level, opportunities should be offered to build capacity in all areas of research and partnership development, including strengthening writing and publication skills as a key foundation for building research capacity amongst African scholars, and as a route to career progression and professional recognition.
 - At institutional level, key areas of focus for capacity building should include interdisciplinary working, building new opportunities for research training and qualifications, improving access to research data, gender responsiveness and gender equality, systems for managing and coordinating research, strategic/financial support, and organisational-level achievements (grants, publications, etc).
 - Partnerships with non-academic stakeholders and research users should be encouraged to maximise opportunities for real-world outcomes and ensure outputs are accessible and positioned for impact.
 - Continue to promote equity and fairness, through specific measures to formalise equitable collaborative working in terms of governance and financial processes, delivery co-creation of activities and authorship/ownership of project outputs; and through specific monitoring/metrics to systemically understand how a project is meeting the intent set out in gender equality statements.
 - Consider specific measures to ensure that all geographical areas of the African continent are included in future Africa-led programmes, and that sufficient numbers of non-ARUA members/less research-intensive African universities benefit from similar future initiatives.

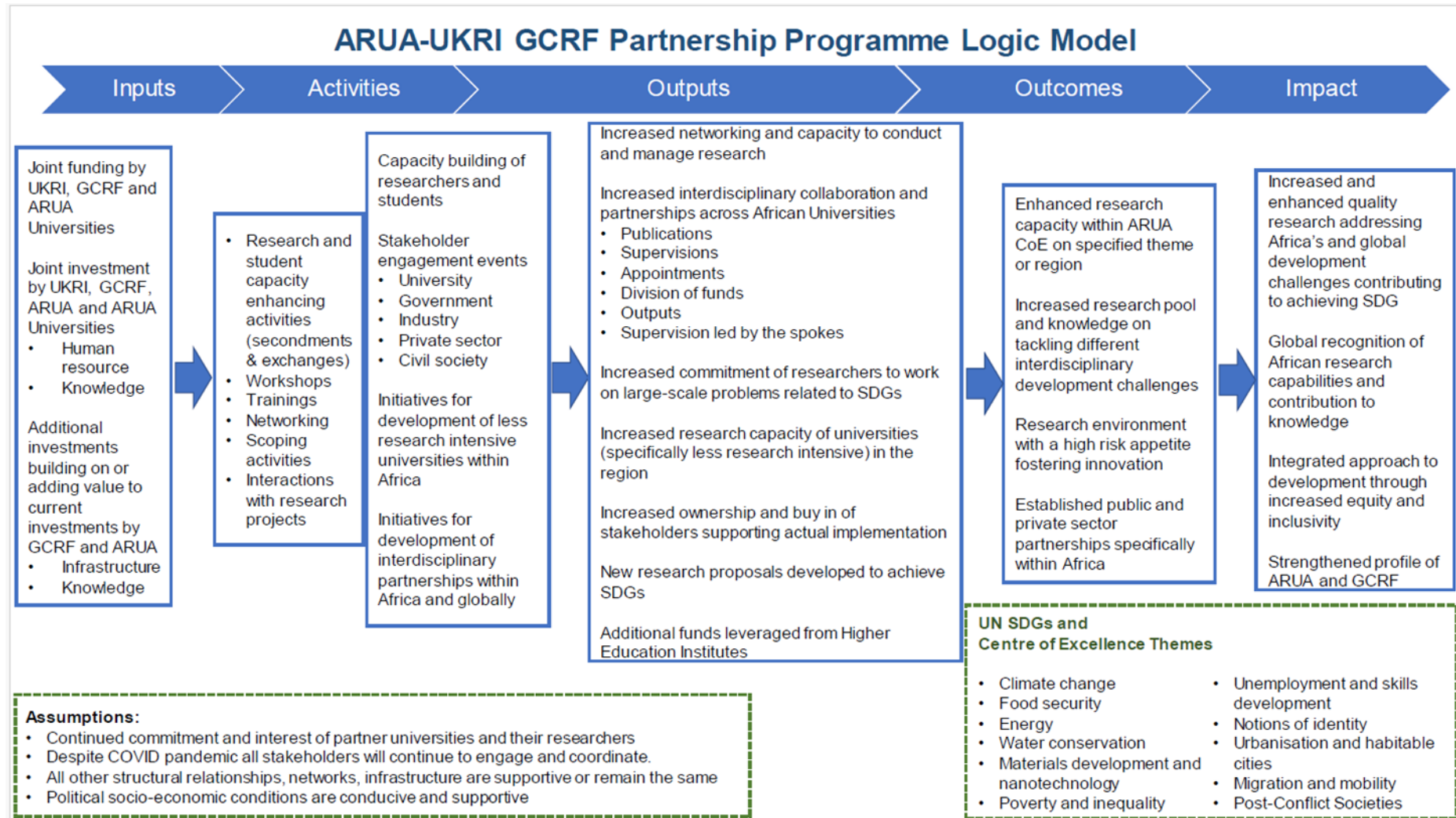
Programme-level support and evaluation

- On-going support for network development will strengthen and maintain capacity building outcomes.
- Support and guidance are needed on UKRI financial systems and reporting requirements and should be embedded from the start of the programme, especially where award holders have limited financial management experience and resources.
- Build in robust and measurable monitoring processes from the start of the programme – a requirement to report outcomes against programme objectives as part of systematic project reporting will provide clearer evidence of programme learning and achievement.
- Consider the limitations and benefits of the timing for commissioning independent impact evaluation – capturing data on publications and further funding outcomes, as well as real world impacts is likely to be more insightful if conducted at least three years post-programme.

Funding and timescales

- Time-frames for programme delivery need to be commensurate with the outputs and outcomes that are expected, and to allow sufficient opportunity for these to be positioned for impact.
- Sufficient time is needed at the commissioning stage to facilitate the development of partnerships and networks that can best respond to programme objectives, and to avoid over-reliance on pre-existing relationships. Providing opportunities for potential partners to meet and network at the proposal development stage can support this.
- Sustained commitment by funders to support successful projects, including the availability of funding for follow-on work or spin-outs, will embed capacity building benefits and maximise impact opportunities.
- Support for planning for future sustainability should be undertaken at an early stage, to identify possible funding sources and support effective fundraising within suitable timeframes. Developing research leaders' skills to plan for sustainability will promote independence and increase potential for securing further funding.

Annex A: Programme-level Logic Model



Annex B: Overview of the 17 ARUA UKRI projects

A total of 17 grants were made as part of the ARUA UKRI partnership programme across 13 ARUA Centres of Excellence (CoEs), including:

- Thirteen 'Capacity Building' (CB) grants of up to £600,000 over three years
- Four 'Research Excellence' (RE) grants of up to £2 million over three years.

ARUA CoE & project reference/title	Hub university	African project partners	UK/other country project partners
Climate and Development CB grant - ES/T003820/1 ARUA-CD: Building African Capacity for Climate and Development Challenges RE grant - ES/T015446/1 Transforming Social Inequalities through Inclusive Climate Action (TSITICA)	University of Cape Town – South Africa	University of Ghana University of Nairobi - Kenya	London School of Economics and Political Science University of Bristol University of East Anglia University of Manchester French Development Agency
Sustainable Food Systems CB grant - ES/T003871/1 Capacity Building in Food security for Africa - CaBFoodS-Africa RE grant - ES/T015128/1 Food Systems Research Network for Africa (FSNet-Africa)	University of Pretoria – South Africa	University of Nairobi - Kenya University of Ghana FANRPAN – South Africa Malawi University of Science and Technology University of Zambia University of the Western Cape – South Africa Kwame Nkrumah Uni of Science and Technology Sokoine University of Agriculture University of Dar es Salaam - Tanzania Lilongwe Uni of Agri and Nat Resources	University of Leeds University of York

ARUA CoE & project reference/title	Hub university	African project partners	UK/other country project partners
Water CB grant - ES/T003731/1 ARUA Water Centre of Excellence Development: "Water for African SDGs" RE grant - ES/T015330/1 Unlocking resilient benefits from African water resources	Rhodes University – South Africa	University of Cape Town - South Africa University of KwaZulu-Natal - South Africa Makerere University – Uganda University of Dar es Salaam – Tanzania University of Rwanda Addis Ababa University – Ethiopia Cheikh Anta Diop University – Senegal University of Lagos – Nigeria	N8 Universities (Durham, Lancaster, Leeds, Liverpool, Manchester, Newcastle, Sheffield, York) Coventry University Cardiff University
Post-Conflict Societies CB grant - ES/T014903/1 Capacity Building for the ARUA's COE on Post Conflict Societies RE grant - ES/T01542X/1 Migration, Urbanization and Conflict in Africa (MUCA)	Addis Ababa University - Ethiopia	Africa University - Zimbabwe Haramaya University – Ethiopia Obafemi Awolowo University – Nigeria Protestant University of Central Africa – Cameroon University of Hargeisa – Somalia Makerere University – Uganda University of Lagos - Nigeria Hawassa University - Ethiopia University of Jos - Nigeria	University of Manchester University of Sheffield
Materials, Energy & Nanotechnology CB grant - ES/T003812/1 ARUA CoE in Materials, Energy & Nanotechnology Research	University of the Witwatersrand – South Africa	University of Ghana University of Nairobi - Kenya University of Pretoria - South Africa Nelson Mandela University - South Africa University of Johannesburg, -South Africa Makerere University - Uganda	Coventry University University of Birmingham University of Leicester University of Southampton Loughborough University Open University University of Bath University of Oxford

ARUA CoE & project reference/title	Hub university	African project partners	UK/other country project partners
Migration and Mobility CB grant - ES/T003839/1 The Academy for African Migration Research (AAMR): supporting the development of the next generation of African migration scholars	University of the Witwatersrand – South Africa	Addis Ababa University – Ethiopia Eduardo Mondlane University - Mozambique Makerere University – Uganda Organisation for Social Science Research in Eastern and Southern Africa - Ethiopia University of Cape Town - South Africa University of Ghana University of the Western Cape - South Africa	None stated
Inequalities Research CB grant - ES/T004215/1 African Centre of Excellence for Inequality Research: Partnerships and Capacity Building for Economic Development	University of Cape Town - South Africa	University of Ghana University of Nairobi - Kenya Statistics South Africa Kenya National Bureau of Statistics	London School of Economics and Political Science (University of London) University of Bristol French Development Agency
Unemployment and Skills Development CB grant - ES/T003790/1 Partnership, Research and Capacity-Building for Youth Unemployment Solutions in Africa (PRAC 4 YUSA)	University of Lagos - Nigeria	Government of South Africa National Universities Commission – Nigeria Platform Capital – Nigeria U.S. Consulate General, Lagos – Nigeria Bank of Industry – Nigeria University of Cape Town - South Africa University of Ghana American University in Cairo – Egypt Carnegie Mellon University Africa – Rwanda Copperbelt University – Zambia University of KwaZulu-Natal - South Africa University of Nairobi – Kenya Kenyatta University – Kenya	Coventry University Lancaster University University of Derby Envirofly Consulting Group University of Strathclyde Carleton University – Canada University of Iowa - United States

ARUA CoE & project reference/title	Hub university	African project partners	UK/other country project partners
Urbanization and Habitable Cities CB grant - ES/T003804/1 African Research Network for Urbanization and Habitable Cities	University of Lagos - Nigeria	Njala University - Sierra Leone Federal University of Technology - Nigeria Uganda Martyrs University American International University - Gambia Obafemi Awolowo University - Nigeria University of Cape Town – South Africa University of Zambia University of Nairobi - Kenya University of Ghana	Heriot-Watt University University of Birmingham University of Stirling International Growth Centre
Energy CB grant - ES/T014962/1 ARUA Centre of Excellence in Energy: UKRI GCRF Partnership Programme for Capacity Building	Stellenbosch University – South Africa	Addis Ababa University – Ethiopia Makerere University – Uganda Rhodes University - South Africa Strathmore University – Kenya University of Cape Town - South Africa University of Dar es Salaam – Tanzania University of Ghana University of Ibadan – Nigeria University of KwaZulu-Natal - South Africa University of Lagos – Nigeria University of Rwanda Usmanu Danfodiyo University – Nigeria	None stated
Good Governance CB grant - ES/T014946/1 Partnership Programme for Capacity Building Centre of Excellence in Good Governance	Addis Ababa University - Ethiopia	Strathmore University – Kenya University of Pretoria - South Africa University of the Western Cape - South Africa	University of Aberdeen University of Fribourg, Switzerland
Non-Communicable Diseases CB grant - ES/T014954/1	University of Nairobi - Kenya	Makerere University - Uganda University of Ghana	University of Leicester University of Glasgow

ARUA CoE & project reference/title	Hub university	African project partners	UK/other country project partners
Africa Research Universities Alliance, Centre of Excellence for Non-Communicable Diseases		University of the Witwatersrand – South Africa University of Lagos - Nigeria University of Ibadan - Nigeria	
Notions of Identity CB grant - ES/T01492X/1 Strengthening Capacity for Research and Policy Engagement in Shifting Notions of Motherhood and Fatherhood for Improved Children's Wellbeing in Africa	Makerere University - Uganda	Moi University – Kenya University of the Western Cape - South Africa University of the Witwatersrand - South Africa University of Ibadan - Nigeria University of Rwanda	None stated

Annex C: ARUA UKRI Impact Case Studies

Impact case study number and award name
1. Sustainable Food Systems CB grant - ES/T003871/1: Capacity Building in Food Security for Africa - CaBFoodS-Africa RE grant - ES/T015128/1: Food Systems Research Network for Africa (FSNet-Africa)
2. Water CB grant - ES/T003731/1: ARUA Water Centre of Excellence Development: 'Water for African SDGs' RE grant - ES/T015330/1: Unlocking resilient benefits from African water resources
3. Unemployment and Skills Development CB grant - ES/T003790/1: Partnership, Research and Capacity-Building for Youth Unemployment Solutions in Africa (PRAC 4 YUSA)
4. Good Governance CB grant - ES/T014946/1: Partnership Programme for Capacity Building Centre of Excellence in Good Governance
5. Non-Communicable Diseases CB grant - ES/T014954/1 Africa Research Universities Alliance, Centre of Excellence for Non-Communicable Diseases

ARUA UKRI Impact Case Study 1: Sustainable Food Systems

The Sustainable Food Systems RE award (FSNet-Africa) was designed to strengthen research capabilities and translate evidence into actionable policy solutions, with a particular focus on climate-smart, nutrition-sensitive and poverty-reducing food systems solutions. The University of Pretoria acted as project hub, with nine African Universities as the spokes and two UK partner Universities. The Food Security CB award (CaBFoodS) was also led by the University of Pretoria, working with a consortium of African and international partners. Sustainable Food Systems RE partners undertook research focused on building sustainable food systems on the African continent and developing effective solutions to issues of nutrition, sustainable agriculture and food system transformation. Research also investigated the role of underutilised crops in meeting nutrition challenges and how to support consumer uptake of these foods.

An evaluation³¹ of the FSNet-Africa award concluded that its training had significantly enhanced the capacity of participating fellows and project participants, for example, in data collection technologies, proposal writing and funding acquisition. The evaluation found increased enthusiasm for and commitment to on-going participation in transdisciplinary research collaborations. Many fellows continue to work with mentors and stakeholders, including through the development of joint funding proposals. Several fellows received promotions within their institutions, signalling the value of their contributions. Some fellows have received prestigious awards, such as Dr. Innocensia John from the University of Dar es Salaam, who was named one of the Top Agri-Food Pioneers by the World Food Prize Foundation. This accolade celebrated her significant contributions to sustainable agriculture and youth empowerment in Africa and she attributes this achievement to her participation in FSNet-Africa.

At the institutional level, the award influenced changes in ethics and safeguarding practices, as well as the integration of innovative content into academic curricula. In terms of reputational outcomes, FSNet-Africa contributed to the nomination and shortlisting of the University of Leeds/University of Pretoria strategic partnership as a finalist for the Times Higher Education Awards Partnership of the Year 2024.

FSNet-Africa reported that its approach of co-creating research with stakeholders resulted in enhanced partnerships with non-academic stakeholders. Fellows exchanged knowledge and expertise with stakeholders, including farmers, policymakers, civil society organisations, and the private sector. Impact-ready outputs from FSNet-Africa include a mobile application for farmers to measure fertiliser application to improve soil health and reduce water pollution (SDG 6). FSNet-Africa fellow, Dr Abena Boakye, developed a range of products to improve the nutrient quality of food. The products included a recipe book, an infant porridge and a biscuit, all made from indigenous crops and ingredients that are readily available to the community. Through additional funding provided by the University of Leeds and the University of Pretoria, the Fellow hosted a series of cooking demonstrations to show women how to prepare the recipes and is approaching stakeholders to identify markets for the porridge and biscuits she developed. A FSNet-Africa fellow had developed the use of fruit-peel waste in Ghana to create more nutritious silage-based food for ruminant goats.

As a result of engaging with FSNet-Africa's research, Malawi's Department of Environmental Affairs made a commitment to ensure that research findings on pollinators would be included in Malawi's biodiversity policy (SDG 15). At a global level, researchers from the Food Security CB award took

³¹ Food Systems Research Network for Africa Fellowship Programme – Evaluation Report (2023) (unpublished internal document)

part in a side event at the UN 2021 Food Systems Summit, leading to a new theoretical framing of the nexus of indigenous knowledge and science being developed, within the context of sustainable and inclusive food systems. The FSNet-Africa model has been showcased in the UN **Food and Agriculture Organisation's draft guidelines on strengthening national policy-science interfaces for agrifood systems**³², which aims to inform food systems policy across the globe.

The University of Pretoria and the University of Leeds committed institutional funds for 2024 to continue with five FSNet-Africa projects until September 2024. One of these fellows was awarded an ARUA-ECR Fellowship by the ARUA and Carnegie Corporation of New York. The FSNet-Africa model and approach informed the development of a proposal for a Centre of Excellence in Sustainable Food Systems and Data Science – which is being funded for the next five years by the German Academic Exchange Service (DAAD).

The Food Security CB project is continuing to collaborate with the Global Research Alliance on Agricultural Greenhouse Gases and the Ministry for Primary Industries to jointly fund a position to advance a regional programme of work to promote innovation and research on shared challenges in the agricultural sector, including issues such as sustainable agriculture, indigenous development and climate change.

African and UK partners from FSNet-Africa are continuing to collaborate through the European Guild's new Africa-Europe Cluster of Research Excellence (CoRE), for at least the next 10 years. Plans include the development of a joint PhD within the cluster of research excellence, to be built on the curriculum and the capacity building elements of FSNet-Africa.

ARUA UKRI Impact Case Study 2: Water

The ARUA Centre of Excellence (CoE) for Water hosted the Research Excellence award: RESBEN (Unlocking Resilient Benefits from African Water Resources), which focused on improving water quality in African cities, and the management of water resources use and development across several large river catchments in Africa. The Institute for Water Research (IWR) at Rhodes University acted as project hub, with eight African universities as the spokes and two UK partner universities.

The associated Water Capacity Building award supported the Research Excellence grant by supporting students, research assistants and early career researchers to develop practical skills

³² <https://www.fao.org/fsnforum/consultation/guidance-strengthening-national-science-policy-interfaces-agrifood-systems-draft>

required for academic excellence and to build a collaborative network of researchers from Africa and beyond. A Senegalese post-graduate research assistant from the Water RE project team subsequently graduated with the best PhD thesis in Senegal in his year of graduation and was subsequently awarded the prestigious Falkenmark award for best PhD thesis from the International Association of Hydrological Sciences. He was awarded an ARUA Carnegie grant to work at the IWR (Rhodes University) in 2024 and is now on the permanent academic staff at University Cheikh Anta Diop, Senegal, with a number of collaborative grants to his name.

The Water RE award (RESBEN) focused on developing the participatory capacity of stakeholders as a first step towards equitable participation in research and water resources management. Theoretical and practical training was carried out with the hub and spoke teams to ensure inclusivity, respect, and diversity in stakeholder engagement. The Water CB/RE projects' Adaptive Systemic Approach (ASA) developed an innovative framework for sustainability research, with the goal of driving positive change toward better ecological health and social justice. The conceptual impact of this approach was recently recognised by a certificate of achievement from the publisher Wiley: a paper about the ASA authored by members of the project team was among the 10 most-cited papers published in the journal 'River Research and Applications' in 2023.

All case studies (Ethiopia, Tanzania, Uganda, Rwanda, Senegal, Nigeria and South Africa) included in the Water RE (RESBEN) project worked with communities to help them understand water scarcity and pollution in their local area and to develop local partnerships and solutions. All case study sites recorded changes in stakeholder attitudes: in Rwanda, these changes were particularly significant in moving towards establishing active participatory water resources governance.

The Water RE case study site in Nigeria was Lagos, a city built on polluted ground water. RESBEN assessed water quality: firstly, in ground water at two dump sites where the water is not fit for drinking and poses a serious threat to human health and the environment; and secondly in surface water at University of Lagos (Unilag) Lagoon Front and Somolu Drainage Canal. Stakeholders made contributions to the development of the Lagos State Water Sanitation and Hygiene (WASH) policy³³ and have made progress in helping to reduce indiscriminate waste disposal, so enhancing local community fishing and fish selling, and improving access to clean water. Three of the RE case studies focused on water pollution and established community involvement and action. For example, in Uganda the project connected government officials with residents at the Ggaba landing site, Lake Victoria, Kampala, to investigate urban pollution. Many local households, including those with young children, contend with diseases such as typhoid, diarrhoea, and cholera. Together the

³³ <https://moelagos.gov.ng/lagos-unveils-water-sanitation-and-hygiene-wash-policy-and-implementation-plan/>

project team and residents identified barriers to community and government participation, barriers to pollution management, and the actions needed to progress solutions, indicating impacts-in-progress in this area.

The Water CB/RE projects noted significant improvement in water quality treatment across many of their study sites, for example using nature-based processes/solutions to enhance the safety of water reuse and discharge of polluted water back to the environment. Improvements in the landscape, such as better vegetation cover, reduced soil erosion, and increased rainwater percolation into deeper soil layers, have raised groundwater levels. This has made it possible to obtain water from hand-dug wells instead of relying on streams. The establishment of communal bylaws for managing the environment and ensuring fair resource distribution has fostered social stability and strengthened respect for shared environmental assets and resources.

The Water RE project conducted research on the application of aquatic macroinvertebrates in water quality assessment of the Nyabarongo and Akagera Rivers in Rwanda. Findings indicated the levels of pollution of the two rivers and led to recommendations for effective environmental conservation planning.

The ARUA Water CoE and its partners were successful in obtaining a competitive Erasmus + Capacity Building for Higher Education grant of £687,997, focusing on nature-based solutions for climate resilience in Africa. The award will provide funding for ARUA Water CoE members University Cheikh Anta Diop, Senegal and the University of Cape Town, South Africa, alongside the Ecole Polytechnique of Thies, Senegal, and three partners in the EU (the Netherlands and France). ARUA Water CoE also gained 15 months of funding (£215,000) from the German Federal Ministry of Education and Research to develop work at one of the Water CB/RE award's learning sites on nature engineered urban design for water recycling.

The Water RE award noted continuing collaboration with the UK network of N8³⁴ universities in terms of grant proposals, knowledge exchange and informal networking between staff and institutions. The ARUA Water CoE is also collaborating on Water Quality Testing Fellowships with Uganda Junior Rangers and the Conrad N Hilton Foundation, whereby students are trained in water quality testing and data collection using modules developed by the Water CB award.

³⁴ The N8 Research Partnership is a collaboration of the eight most research intensive universities in the north of England: Durham, Lancaster, Leeds, Liverpool, Manchester, Newcastle, Sheffield and York.

ARUA has partnered with the European Guild of Research-Intensive Universities to form 21 Africa Europe Clusters of Research Excellence (CoRE). The ARUA Water CoE was awarded a CoRE in water resource management for a sustainable and just future. This CoRE is co-led by the University of Ljubljana, Slovenia.

ARUA UKRI Impact Case Study 3: Unemployment and Skills Development

The goal of the Unemployment and Skills CB project was to build significant research capacity across African universities to help reduce youth unemployment in African countries. The project was led from the University of Lagos in Nigeria and brought together stakeholders from government, academia, industry and youth communities. The project worked with eight spoke universities in Egypt, Ghana, Kenya, Rwanda, South Africa and Zambia, five UK university/organisational partners, and two other partners in Canada and the US.

The Unemployment and Skills CB project created a train-the-trainers capacity building programme in Nigeria and Kenya: the Entrepreneurship and Innovation Mentorship Education Certification (EIMEC) to develop the skills of Faculty members to integrate entrepreneurship into the teaching and mentorship of their students. The project also developed the 'Youth Business and Innovation Challenge' (YoBIC), to inspire creativity, innovation and entrepreneurship amongst African youth. The six winning YoBIC teams received seed funding of £10,500 to pursue their innovations and business ideas, leading to the formation of 10 separate spin-out companies. These included, for example:

- Raytreat Services Ltd was established to produce affordable phototherapy devices for public and private hospitals in order to counter out-sourcing of supply to non-African countries. The device is designed to solve the problems of the high infant mortality rate in Nigeria by providing rapid treatment for the six in 10 Babies in Nigeria who are born with jaundice.
- AgroPristine ASPR is a youth-led business offering automatic solar-powered refrigeration systems built for the Sub-Saharan climate, creating jobs and reducing post-harvest losses using scientific intervention before, during, and after harvesting.
- Bs Building Blocks is a company that gathers plastic wastes from the environment and use them as raw materials or binding agent in addition to sand and other components in making sustainable pavement blocks and tiles. The company was registered after winning 3rd position in YoBIC and went ahead to win the 2nd edition of the Ghana Youth Camp to further push forward its Waste to Wealth Agenda.
- Fihankra ComTech Limited is a company that develops personal security and safety innovations, products, services and training for people taking into consideration the differences and challenges faced within each area.
- Greenolt is a sustainability organization which transforms plastic waste into usable everyday items to tackle global challenges by providing the end-of life solution for the PET bottle. The

company facilitates communication between collectors and recyclers and uses the plastic waste collected to make 3D printed products from recycled PET bottles.

Student start-ups funded through the Unemployment and Skills CB project have already created new jobs within communities, and for the student entrepreneurs themselves, so positioning innovation and entrepreneurship as a solution to reducing poverty in Africa. The project also played an important role in influencing Nigerian policy on employment and skills. The team's engagement with a special adviser to the President of the Federal Republic of Nigeria led to increased focus on the issue of youth and entrepreneurship in the President's new year speech in 2021. Further engagement from the project team including contributions to the national consultation and review on this topic influenced the drafting of the Nigeria Startup Act in 2022.

During and after involvement in the Unemployment and Skills Development CB, the PI created MSc and PhD programmes in Entrepreneurship Development and Innovation Management, to encourage University of Lagos students to identify opportunities for business innovation. The PI went on to create a university-wide Entrepreneurship, Innovation and Business Incubation Certificate to equip students with business and enterprise skills. In 2024 11,000 students undertook the programme, and in 2025 15,000 students are expected to complete it.

Throughout the programme, the ARUA CoE for Unemployment and Skills Development at the University of Lagos was involved in 14 different collaborative projects, 13 of which were still active in March 2024. Notable impacts to date have included seed funding from African and global north partners for over 50 startups, and private/public sector funding to set up a Business Incubation Centre at the University of Lagos which has already supported more than 60 businesses and early startups.

Since the programme ended, there has also been continued partnership working between the CoE and the University of Basel regarding collaboration with the AIT SWISS African and Business Innovators Program, a multidisciplinary and multicounty network. Twenty-two African startups from Nigeria, Rwanda, South Africa, Uganda have been incubated through this network and attended a meeting in Switzerland in 2024 with other colleagues in the network.

ARUA UKRI Impact Case Study 4: Good Governance

The Good Governance CB project aimed to build the capacity and capability of Centre of Excellence (CoE) partner institutions on issues of governance affecting the Horn of Africa through engaging in teaching, annual seminars, research and supervision of MA and PhD students at the CoE. The project established a master's programme in 2021 followed by a doctoral programme in 2002, both of which are open to students from any part of the African continent. The project also provided a series of short-term training programmes that built the capacity of political actors and civil society groups from the Horn to address the crisis of governance in the Horn of Africa

(Ethiopia, Somalia, South Sudan, and Kenya). The project was led by the University of Addis Ababa in Ethiopia (the hub) in collaboration with spoke universities in Kenya (Strathmore University) and South Africa (University of Pretoria and University of the Western Cape), and partners from the UK (University of Aberdeen) and Switzerland (University of Fribourg).

Research by the Good Governance CB project highlighted the importance of inclusive political and economic systems in maintaining peace and social harmony. The project team created and shared short policy briefs based on their research outputs and provided associated training to senior policy makers in Ethiopia, South Sudan and Somalia. They also contributed to consultations and drafting of new legislation (in Amharic and in English) on rights and protections for minority groups in Ethiopia. The draft law is still in parliament but once approved, the safety and security situation of minority groups in Ethiopia will get better protection by the new institutions established by the law.

Post-programme, the Good Governance CoE has built on partnerships developed with the two South African universities involved in the project, and through new partnerships with universities in Nigeria, Morocco and Uganda to draft a proposal to the Mastercard Foundation for a pan-African doctoral programme in Governance. If accepted, the programme would start in 2026 with funding for 10 years.

Publications arising from the CB award led to the offer of a leadership position at the Journal of Regional and Federal studies, with the PI being invited to represent Africa as a co-editor for the Journal. More recently (since January 2025), the Good Governance CoE has taken over the position of editorship for the journal and is running the applications for publication review process. Two staff members from the CoE have been promoted to a professorship as a result of their work for the CoE. The PI's book published with the support of the project has enabled him to be invited as guest speaker on Federalism, Devolution and Cleavages in Africa in the USA (University of Miami, School of Humanities- October 2025) and East China University of Political Science and Law (Shanghai, China), April 2025.

ARUA UKRI Impact Case Study 5: Non-Communicable Diseases

The Non-Communicable Diseases (NCD) CB award, based at the ARUA NCD Centre of Excellence (CoE), engaged stakeholders and built partnerships to strengthen the response to NCDs in sub-Saharan Africa. The University of Nairobi in Kenya acted as hub for the award, in collaboration with five spoke universities in Ghana, Nigeria, Uganda and South Africa, and working in partnership with two UK university partners. The project enabled the University of Nairobi to establish and launch the CoE, provided training initiatives for medical students, mini grants to early career researchers from across disciplines, and engagement with policy makers, patient groups and local communities around NCDs, leading to greater recognition of the social and emotional support needs of NCD patients and caregivers.

Following on from the work of the NCD CB project, the ARUA NCD Centre of Excellence (CoE) received the sterling equivalent of £162,000 from Global Affairs Canada and IDRC to develop a national NCD caregivers' policy. This three-year project is part of the wider 'Scaling Care Innovations in Africa' partnership, a five-year initiative aimed at redressing gender inequalities in unpaid care work in sub-Saharan Africa. Women and girls in Kenya providing unpaid care for persons living with NCDs take on a disproportionate amount of care responsibilities, which can affect women's education and career growth. The ARUA NCD project is engaging with community health workers, patient/caregiver groups and voluntary organisations across four partner counties, and with policy makers and stakeholders, to inform work on policy development at both sub-national and national government level. When developed, this will be the first ever national NCD policy for caregivers not only in Kenya, but across the whole of sub-Saharan Africa.

Partner universities at the ARUA NCD CoE are working with the Guild of European Research-Intensive Universities to co-lead the Cluster of Research Excellence (CoRE) on NCDs and Multimorbidity. The initiative will undertake joint research projects, share best practices, and foster interdisciplinary collaborations to tackle the burden of NCDs in Africa. The NCD CoRE is preparing to host post-doctoral fellows supported by the Master Card Foundation and the Carnegie Foundation five year programme. In addition, the ARUA NCD CoE has joined the International Collaboration and Exchange Programme (ICEP), whose goal is to help improve global healthcare by preparing future leaders through international networking, collaboration, and exchange.

