



TRANSFORMING LIVES THROUGH SCIENCE FOR THE AFRICA WE WANT: PERSPECTIVES OF THE AFRICAN ACADEMY OF SCIENCES

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ABOUT THE AFRICAN ACADEMY OF SCIENCES

VISION-Transformed lives through science



MISSION- Leverage resources through research excellence and thought leadership for sustainable development



Tripartite mandate

Recognise excellence

Advisory and think tank functions

Implementing key STI programmes

CORE VALUES

Our core values and ethic commitments are the guiding and shared principles that unite all staff , Governing Council and General Assembly and are important for the way we work and behave:

1. Integrity

- Our actions and decisions are guided by honesty fairness and transparency and to remain impartial and unbiased in the performance of our functions

2. Excellence/professionalism

- We sustain and invest in AAS mission and , proactively seeking opportunities to contribute to AAS within and beyond our professional roles and exercising careful judgements in meeting day-to-day challenges

3. Respect for diversity

- We treat all individuals with respect and dignity regardless of their differences, embrace and build upon the unique richness of AAS and promote gender equality

AAS GOVERNANCE STRUCTURE



GENERAL ASSEMBLY (GA)

THE GENERAL ASSEMBLY (GA)
Highest decision-making body of the Academy
Appoints the Governing Council and oversees the election of Fellows.
Approves long-term plans for the Academy.



GOVERNING COUNCIL CHAIRMAN

THE GOVERNING COUNCIL (GC)

- It is the AAS Board of Directors, consisting of 11 members elected by the GA
- The President of the GA is the Chairman of the GC
- The GC exercises oversight on the AAS Secretariat directly, as well as through its sub-committees; Finance Risk and Audit, and Compliance (FRACC), Programmes, Governance & Nominations, Gender and Education



SECRETARIAT EXECUTIVE DIRECTOR

THE SECRETARIAT

- Headed by an Executive Director at its headquarters in Nairobi, Kenya and supported by a Management team.
- It implements the activities of the African Academy of Sciences.

CELEBRATING AFRICA'S BEST TALENT

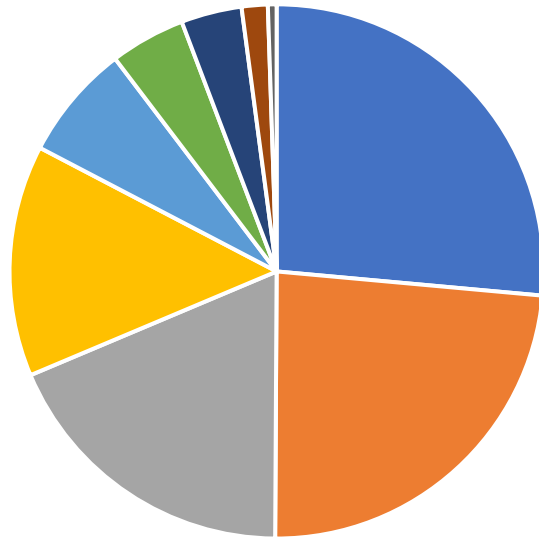


In our efforts to recognise excellence, we have:

- **The AAS Fellowship**- African and non-African scientists who have contributed to the development of science on the continent are eligible for election as AAS Fellows. Election to the Fellowship is based on achievements such as publication record, innovation, leadership roles and policy contributions.
 - **Associate Fellows** are non-African scientists who have contributed to the development of science on the continent.
 - **Honorary Fellows** are eminent members of society who have contributed to the achievement of the Academy's goals.
- **The AAS Affiliates programme** seeks to mentor and develop young scientists into research leaders.
 - Selects five Affiliates each year from each region (Eastern, Southern, Central, Middle East & Northern Africa)
 - Must have a PhD and be under the age of 40.
 - Must work in an academic or research institution.
- **The Olusegun Obasanjo Prize** for Scientific Discovery and Technological Innovation, which is given every two years and carries a cash prize, gold medal and certificate.

Fellows per Region

Categories of Fellows Per region



- West Africa ■ Eastern Africa ■ Southern Africa
- Northern Africa ■ Central Africa ■ Europe
- Asia ■ North America ■ Oceania



- 1. Algeria 20. Madagascar
- 2. Angola 21. Malawi
- 3. Benin 22. Mali
- 4. Botswana 23. Mauritania
- 5. Burundi 24. Mauritius
- 6. Burkina Faso 25. Morocco
- 7. Cameroon 26. Mozambique
- 8. Central African Republic 27. Nigeria
- 9. Chad 28. Rwanda
- 10. Congo 29. Senegal
- 11. Cote d'Ivoire 30. Sierra Leone
- 12. DRC 31. Somalia
- 13. Egypt 32. South Africa
- 14. Eritrea 33. Sudan
- 15. Ethiopia 34. Swaziland
- 16. Gambia 35. Tanzania
- 17. Ghana 36. Togo
- 18. Kenya 37. Tunisia
- 19. Lesotho 38. Uganda
- 39. Zimbabwe
- 40. Zambia

AAS Programmes Business Plan

Shifting the centre of gravity of African science to Africa



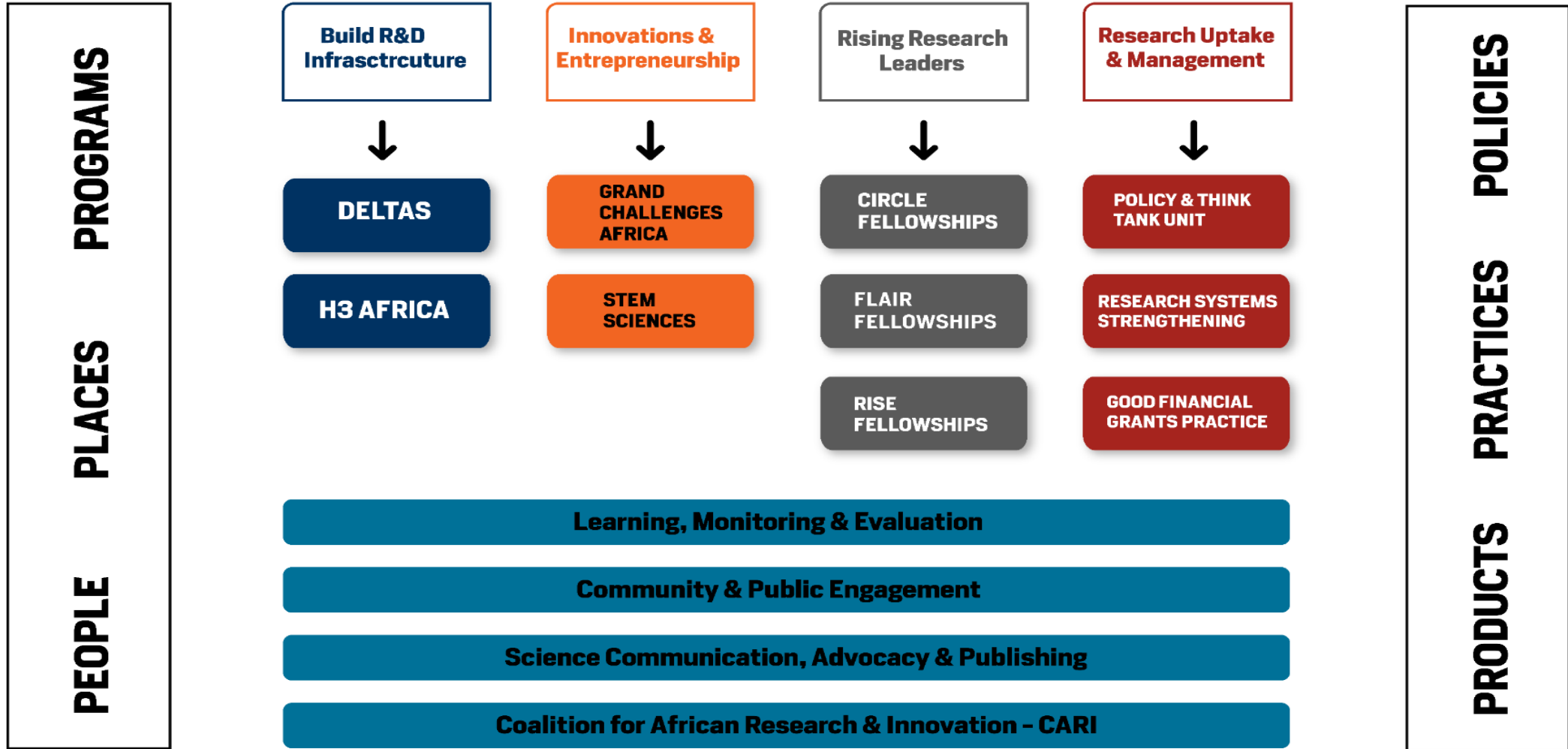
AAS Thematic Programme Areas



Africa Union Mandate for AESA Platform

RECALLING decision Assembly/AU/Dec. 563 (XXIV) adopted by the Assembly during its 24th Ordinary Session held in Addis Ababa, Ethiopia in January 2015 which requested the NEPAD Planning and Coordination Agency in partnership with the African Academy of Sciences to establish and operationalize the **Alliance for Accelerating Excellence in Science in Africa (AESA)** as a platform to stimulate breakthrough innovations to improve the livelihoods of marginalized and stigmatized Communities





Developing Excellence In Leadership Training In Science (DELTA Africa)

This was a US\$100 million programme that supported African-led development of world-class researchers and scientific leaders in Africa.

Objective: To produce researchers with the capacity to publish and lead locally relevant and high-quality research to impact health science, policy, and practice in Africa.

Funder

Wellcome Trust and the UK's Department for International Development (DFID) and the New Partnership for Africa's Development (NEPAD)

DELTA Africa 1 program outcome



DELTA Africa awardees

£5.5 million

MALI

- Developing Excellence in Leadership and Genetic Training for Malaria Elimination in Sub-Saharan Africa (DELGEME)



USTT Bamako

£7.3 million

SENEGAL

- Malaria Research Capacity Development in West and Central Africa



Universite Cheikh Anta Diop de Dakar

£7.3 million

COTE D'IVOIRE

- Afrique One- African Science Partnership for Intervention Research Excellence (Afrique One-ASPIRE)



£6.3 million

Centre Suisse Recherche Scientifique

GHANA

- WACCIP-Wellcome Trust DELTAS Programme



£5.1 million

University of Ghana

SOUTH AFRICA

- Sub-Saharan African Network for TB/HIV research Excellence (SANTHE)
- Sub-Saharan Africa Advanced Training Programme for Leadership and Excellence in Biostatistics



University of KwaZulu-Natal

£4.6 million



KENYA

- Initiative to Develop African Research Leaders (IDeAL)
- Consortium for Advanced Research Training in Africa+ (CARTA+)

KEMRI Wellcome TRP & APHRC

£4.8 million

UGANDA

- Makerere University UVRI Centre of Excellence for Infection & Immunity Research and Training (MUII-plus)
- THRIVE to Research Excellence (THRIVE-2)



Makerere University

£8 million



£6.4 million

£4.1 million

ZIMBABWE

- AMARI: African Mental Health Research Initiative

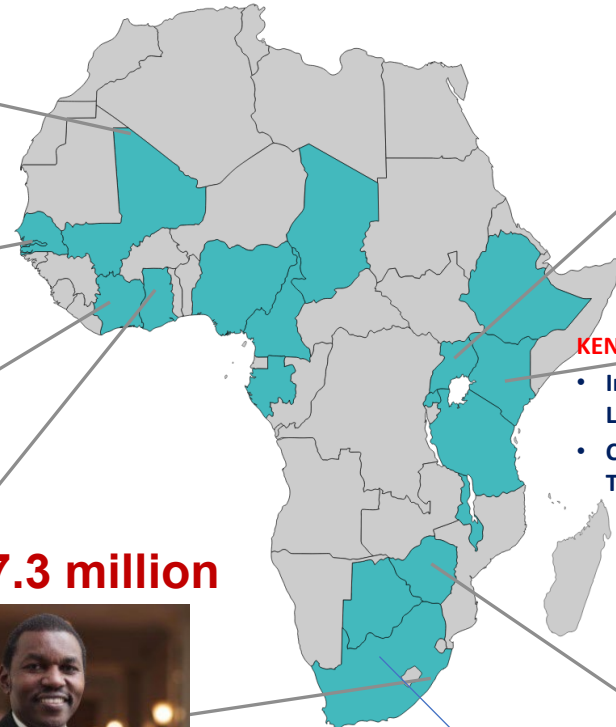


University of Zimbabwe

£3.5 million

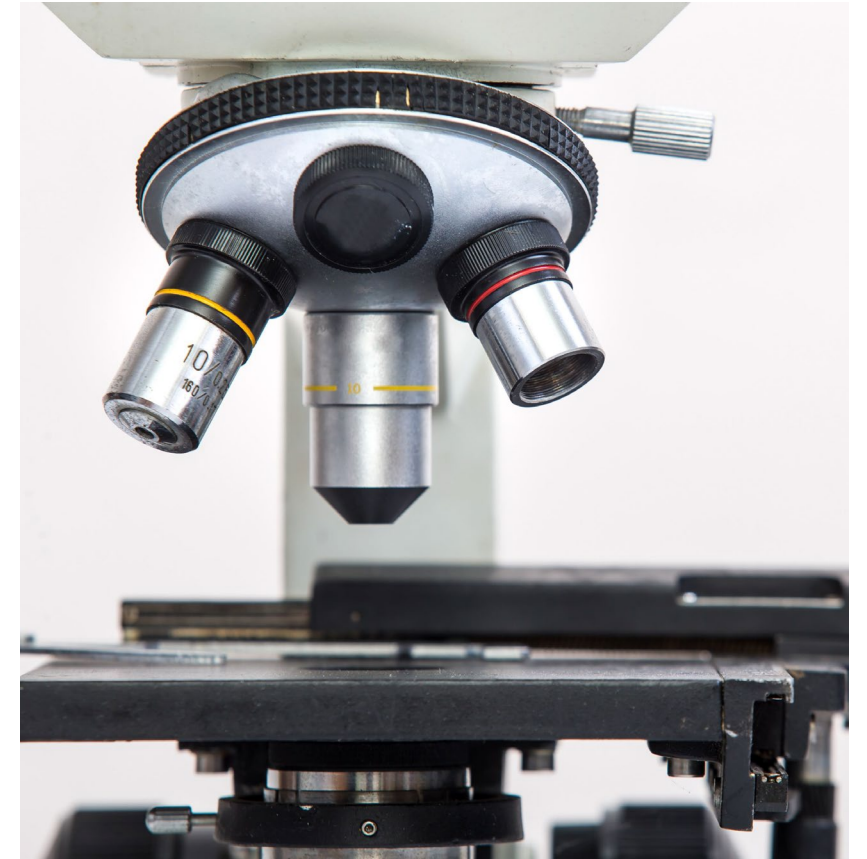


University of Witwatersrand



Africa Post Doctoral Training Initiative (APTI)

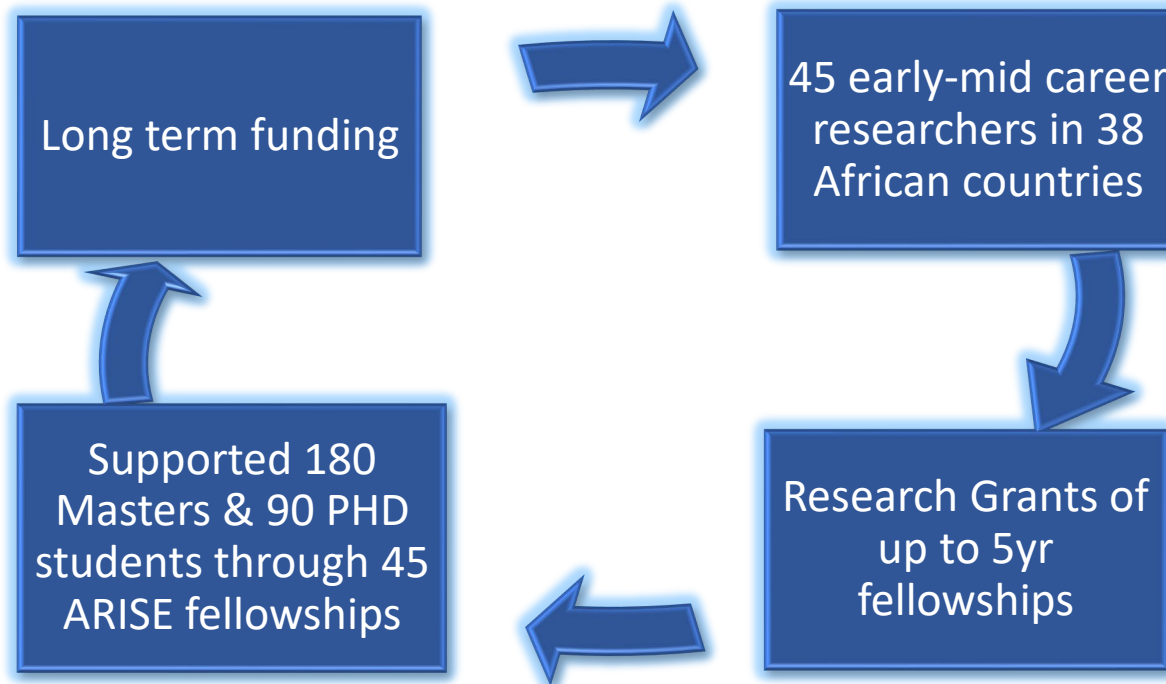
- **Objective:** broaden and strengthen Africa's public health science
- Co-implemented by the AAS and the US National Institutes of Health (NIH) in two phases
 - Phase I: A 2-year postdoctoral fellowship placement at the NIH
 - Phase II: 2-year research fellowship grants of up to USD 226,800 at the home institution in Africa
- Phase II is funded by the Gates Foundation, currently at about USD 10 million
- 2 Active cohorts (19 active researchers; 13 male, 6 female, hosted in 9 African countries)
- Cohort 3 currently under recruitment



AESA RISE POST DOCTORAL FELLOWSHIP (ARPDF)

Objective: To broaden and strengthen Africa's science base in contribution to the transformation of Africa into a knowledge-based and innovation-led continent.

Overview



The African Research Initiative for Scientific Excellence (ARISE) Programme

“Scientific Research in Africa: Status and Trends”



African Research Initiative for Scientific Excellence (ARISE): Prioritising Early/Mid Researcher

Guiding Principle

Broaden and strengthen Africa's science base through open and direct funding for young African researchers to contribute to knowledge-based and innovation-led continental transformation of Africa.

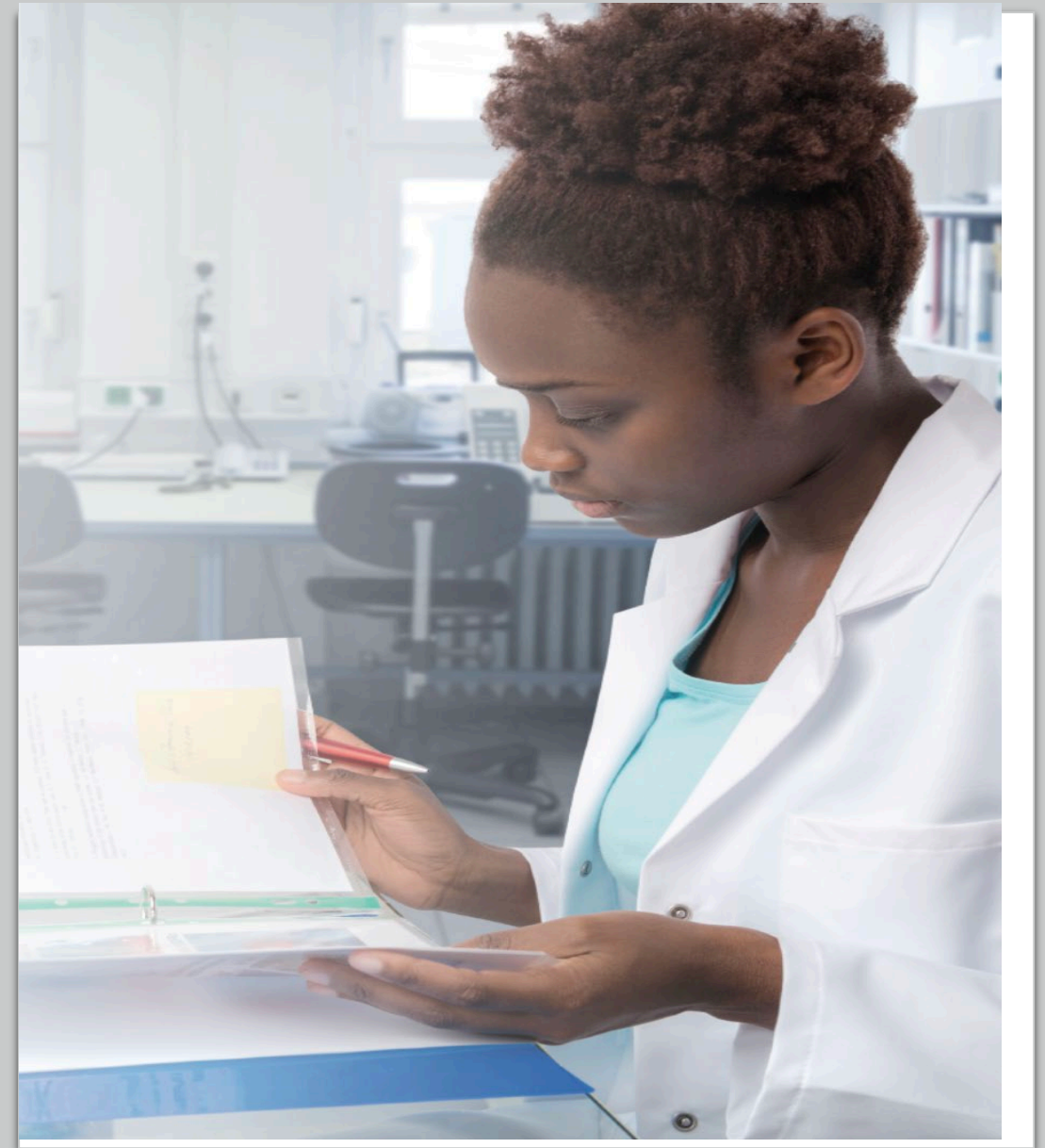
Specific objectives:

- Enhance the capabilities of emerging African research leaders committed to a research and teaching career in Africa.
- Strengthen institutional research management and support systems to enable pan-African research to thrive.
- Support the generation of cutting-edge research in contribution to the transformation of Africa into a knowledge-based and innovation-led continent and towards the transformation of lives in African through science.

Background

African Research Initiative for Scientific Excellence (ARISE)

- 7-year programme (2021-2027)
- Funded by European Commission
- Implemented by African Academy of Sciences
- Has strategic guidance of the European Union and the African Union
- The programme seeks to boost and unlock Africa's potential for innovation by supporting the next generation of scientific leaders



ARISE Programme Focus Areas

Research under the ARISE programme aligns with priorities of the AU-EU High Level Policy Dialogue (HLPD) on Science, Technology and Innovation and the AU Agenda 2063

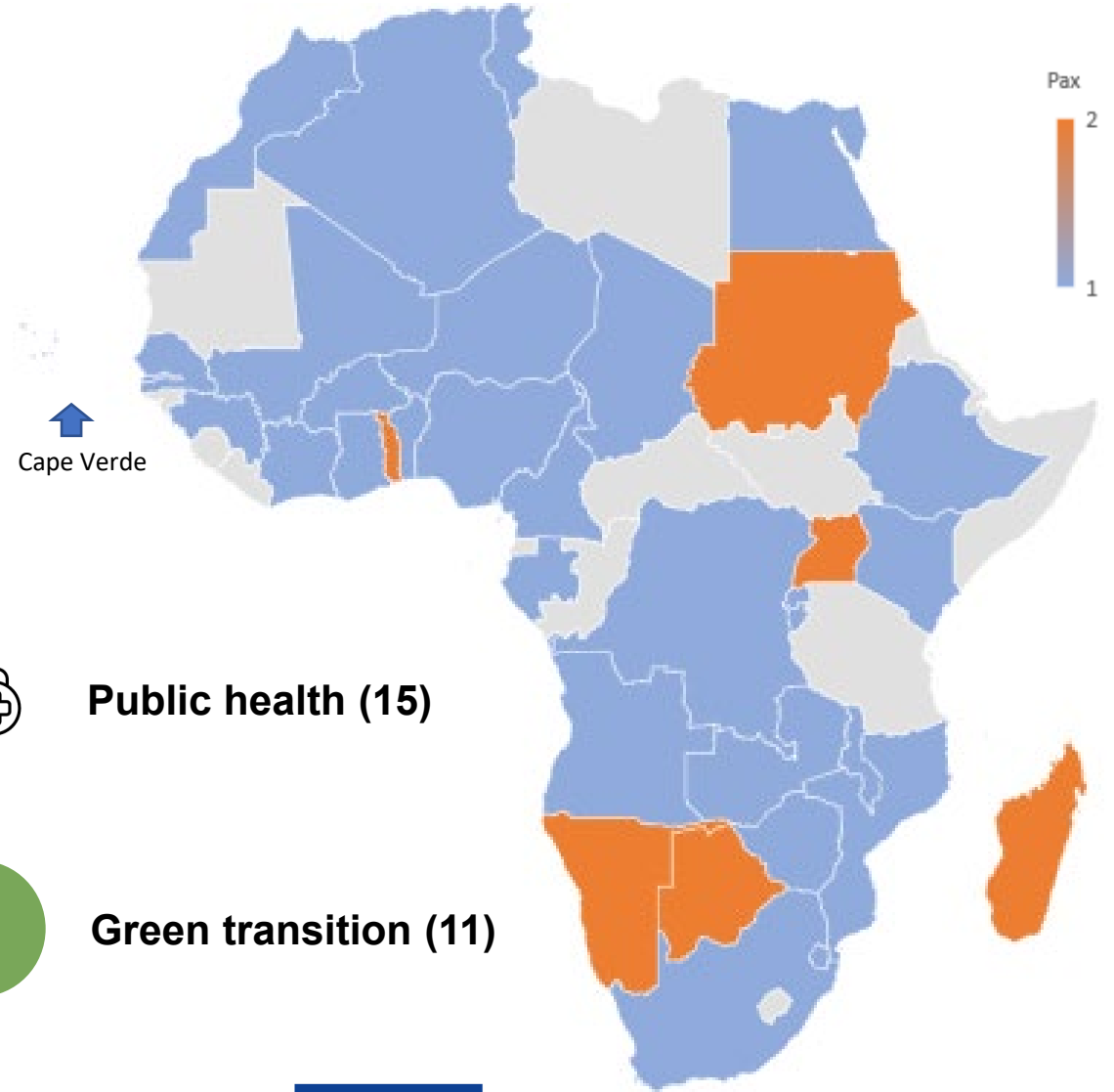
- Public Health
- Green Transition
- Innovation and Technology
- Capacities for science and higher education



Research trends in ARISE unique to the African context

- Supports 45 African early career researchers from 38 African countries
- Programme supports researchers from all scientific dimensions of life science, natural sciences, material and social sciences
- Supports research institutions and higher institutions of learning through training on good financial grant practices – currently supports 38 African research institutions
- Provides access to research funding – successful applicants awarded up to €500,000 for 60-month research period
- Gender in science – ARISE programme supports 38% female African researchers in the current cohort
- Alignment to SDGs 1, 3, 4, 5, 6, 7,9,13,17
- Scientific knowledge data and information sharing is one of the hallmarks of ARISE-PP

ARISE-PP Researchers




28 (62%)	17 (38%)
>90 PhDs >180 MScs	

 **Cap. for Science & Higher Education (13)**

 **Public health (15)**

 **Innovation & technology (6)**

 **Green transition (11)**

 Project: **€25 million**
Grants: **€500k/group**
Period: **5 yrs**





WHY OPEN SCIENCE AT ACADEMY OF SCIENCES

- Increase the quality and reproducibility science
- Makes scientific knowledge more accessible
- Increase visibility of the African research
- Increase transparency of scientific process
- Strengthens connections with indigenous knowledge and society
- Create a repository for scientific data



INNOVATIVE AAS OPEN RESEARCH PLATFORM



- AAS Open Research is an innovative open access platform to enable African Academy of Sciences funded and affiliated researchers to publish immediately without barriers and with the benefit of transparent peer review.
- Powered by F1000, AAS Open Research seeks to reinforce African research on a global stage promoting the engagement of researchers worldwide.
- Promote joint research publication through the connecting minds initiative
- **African Journal of Natural and Human sciences**
- <https://www.aasciences.Africa/aas-open>

AAS implementation of Open Science for the Africa we want?

- Awareness raising with its members as ambassadors of open science
- Capacity building on open science
- Promotion of collaboration in the spirit of open science
- Valorise Africans innovation on the open science platform
- Working with updating the African Platform on Open Science
- Promoting open science as a tool for innovation and technology transfer for transforming lives through science in Africa



**THE 14TH AFRICAN
ACADEMY OF
SCIENCES GENERAL
ASSEMBLY**

Science for social justice

4-6 December, 2022
Cape Town, South Africa

 The African Academy of Sciences

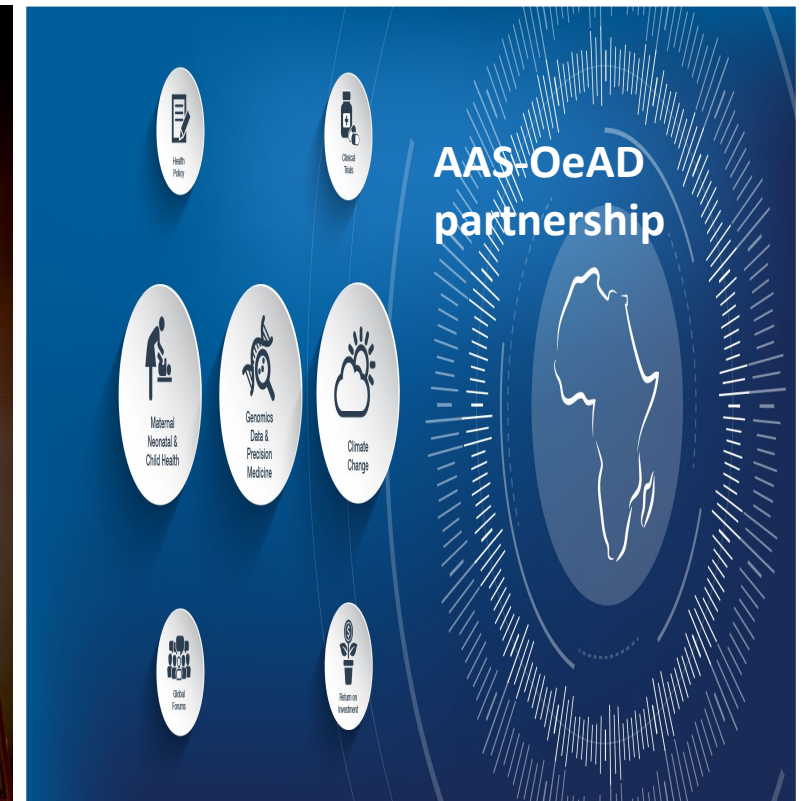
 science & technology
Department of Science and Technology
REPUBLIC OF SOUTH AFRICA

 WORLD SCIENCE FORUM
SOUTH AFRICA

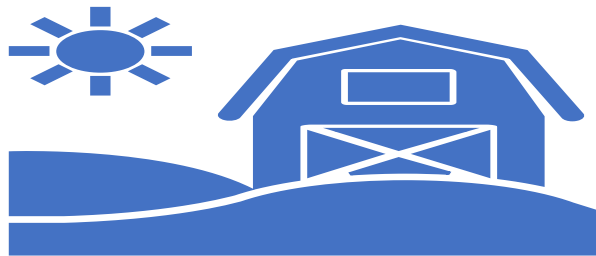
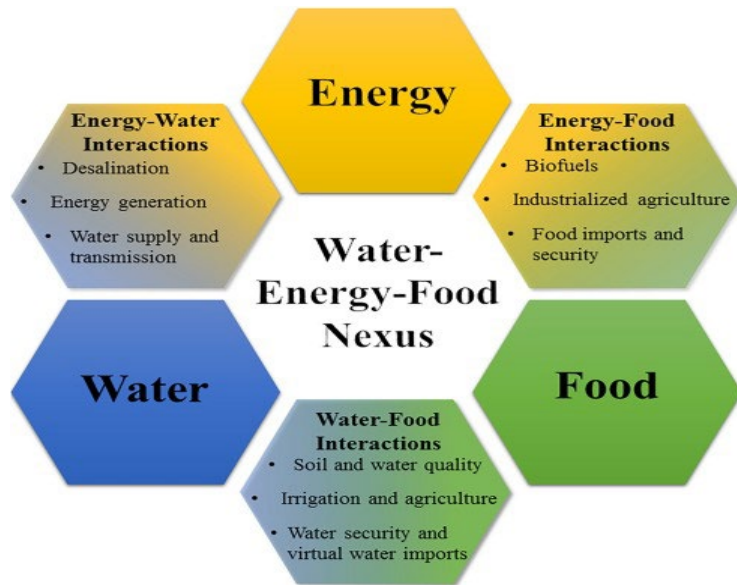


AAS - Austrian Academy of Sciences working to accelerate science for transforming Africa

- Create platform for symposia to discuss exciting advances and opportunities in science and engineering
- Encourage scientific dialogue and exchanges among young researchers in Africa and Austria and the EU
- Collaborative research in capacity building in cutting edge scientific research and innovation in the spirit of equal partnership and respect for diversity
- Strengthen scientific collaborations and transfer of techniques and approaches across disciplines within Africa and beyond the continent
- Encourage young researchers to assume leadership roles and focus on advances in Artificial intelligence, material sciences and nanotechnology, biodiversity, climate change and food security and infectious diseases.
- Promoting open science as a tool for innovation and technology transfer for transforming lives through science in Africa



Food-Water-Energy nexus: Climate Change



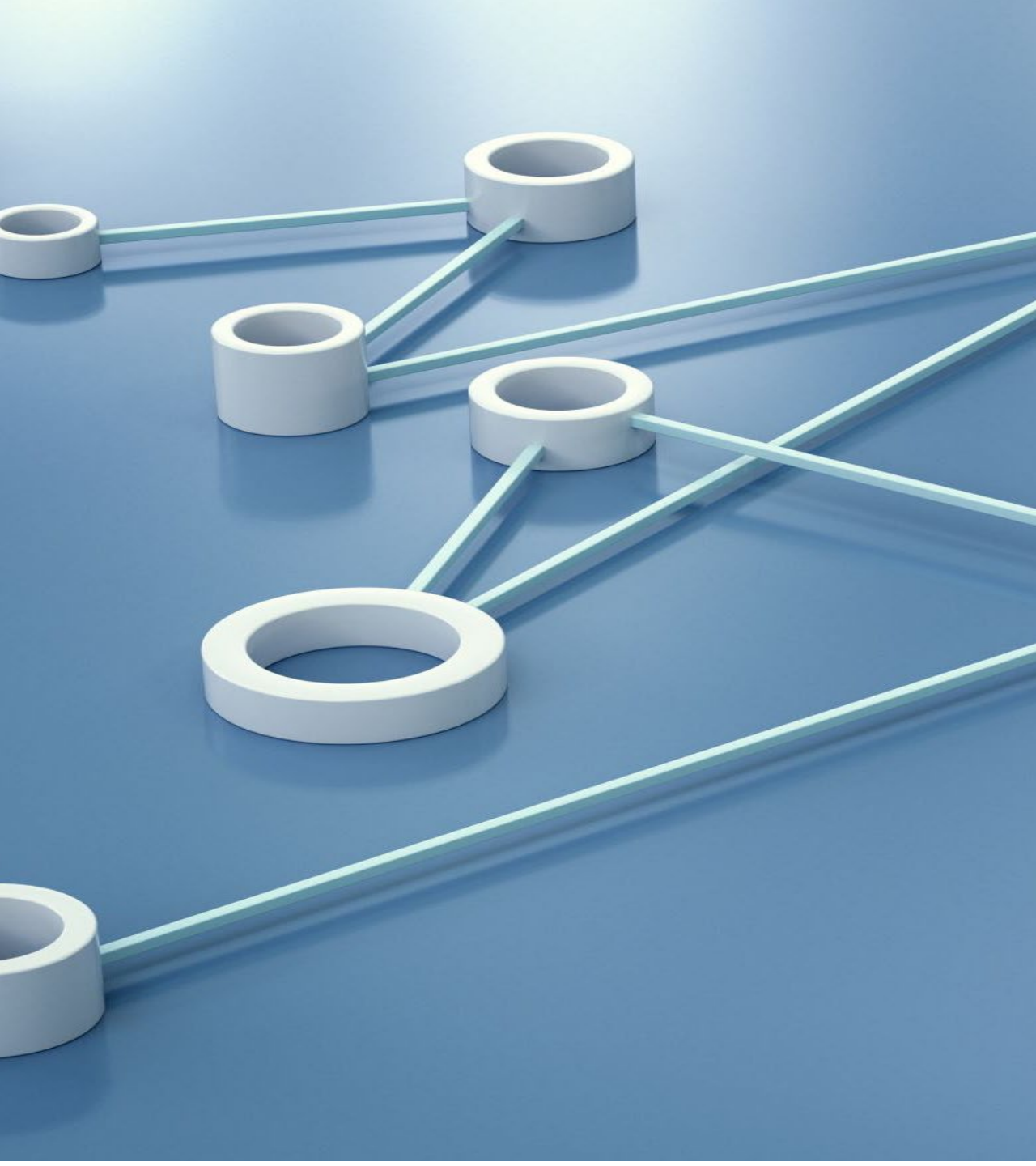
Importance of integration

- **Understanding the Nexus:** The Water-Food-Energy Nexus represents the interconnected relationship between three critical sectors: water, food, and energy.
- It recognizes that changes or decisions made in one sector can have significant and often unanticipated impacts on the others.
- This concept emphasizes the need for a holistic approach to resource management that considers the interactions and trade-offs between these sectors
- **Importance of Integration:** Crucial to address these sectors together - they are inherently interconnected. Agriculture produces food and the largest consumer of the global freshwater and a significant energy user of 25% (FAO). Similarly, energy production can have significant water requirements.
- By addressing them together, we can achieve **resource efficiency, minimize trade-offs, and promote sustainability**. Failure to do so can lead to negative consequences for food security, energy access, and water availability



Impact of Climate Change

- **Biodiversity Interplay:**
 - Climate change affects the demand and supply patterns of the water, food, and energy sectors in the nexus ([Wu et al., 2022](#)). For instance, prolonged and more frequent droughts may minimize availability of freshwater resources for agriculture and energy production. This may result in conflicts such as the one currently being experienced between Egypt and Ethiopia over a dam being constructed by Ethiopia on the Blue Nile.



Challenges Hindering Nexus Optimization

- Knowledge gaps in understanding the dynamics around the water-food-energy nexus.
- Systemic, conceptual, and socio-cultural limitations which are exacerbated by climatic and environmental changes.
- Together we can make science work for Africa and develop knowledge products through research

Climate Change Financing

- In the period from 2018 to 2022, Africa received limited climate finance support, with only 11.7% of the funding directed towards adaptation efforts.
- This stark imbalance in funding allocation is a significant concern. While we appreciate the support given to mitigation, it's vital to recognize that adaptation is equally crucial, especially for a continent like Africa, which faces unique climate challenges.
- Countries in Africa may be determined to limit climate change effects but we cannot achieve them without addressing **the funding gap in adaptation efforts**. At AAS, we firmly believe that with support from the government and global donor community and support by **Academies** we can make significant strides in securing our future against the impacts of climate change.
- Time to consider investing in climate change financing to take advantage of all the global funding opportunities. We must access these initiatives.
- AAS and OeAD can work together with policy makers, scientists, community leaders to mobilize funds for this climate change mitigation and adaptation in Africa. **Together we can!**



Climate Change Research

1. Enhanced investment in research and innovation to enhance resilience and adaptive capacity of communities and systems affected by the nexus and climate change.

- *This is where the AAS comes in. For instance, the AAS has partnered with the African Union and the European Union to implement the African Research Initiative for Scientific Excellence (ARISE). ARISE, which is supporting researchers in **38 countries across Africa** and in a wide range of disciplines, advances Africa's Research and Innovation agenda.*
- *Additionally, the AAS has been part of initiatives such as the **Climate Research for Development (CR4D)** - in partnership with the African Climate Policy Centre, UNECA, and FCDO – aimed at generating the evidence of change to inform climate change adaptation and sustainable development*

2. Science diplomacy to minimize conflicts and enhance sustainability

- *Academies such as the AAS have a unique convening advantage that should be used to solve conflicts around the **water-food-energy nexus**. For instance, the AAS is working on a project to engage scientists in the Nile basin to discuss and provide solutions to the issues around the transboundary resources of the basin.*

3. The role of Academies in transforming lives in Africa is underestimated.

African Governments must invest in science technology and innovation (STI) and enhance the capacity of Academies to provide oversight and champion research and innovation in Africa . We can learn from the Austrian Academy of Sciences

Conclusion and Recommendations

- **Research partnership:** Foster research collaborations between universities, research institutions, community, policy makers and scientists in Austria and Africa.
- These partnerships can focus on key areas such as Health, Climate change Food security, Renewable energy, environmental conservation, Material Science, Artificial Intelligence, Digitization, Higher education.
- **Joint Research projects:** Fund and support joint research projects that address pressing issues in Africa. These projects can leverage on the expertise and resources of both Austria, Africa and EU countries.
- **Technology Transfer:** Facilitate transfer of technology innovation and know-how within and between Africa and Austria in different sectors of mutual interest for win-win outcome and impact.
- **And Together we can make science work for sustainable development for Africa we want**

Africa UniNet 2023, 3rd General Assembly



Photo credits: Nina Zuckerstätter



Past & present funding partners of AAS



Republic of Kenya



Federal Republic of Nigeria



Republic of Botswana



BILL & MELINDA
GATES foundation



USAID
FROM THE AMERICAN PEOPLE



UK Research
and Innovation





Thank you

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