

Delivering on Africa's Most Needed Scientific Priorities

To achieve the Sustainable Development Goals (SDGs), Africa must overcome numerous developmental challenges utilizing the limited resources and technical expertise available; this makes prioritization vital. The African Academy of Sciences and the African Union Development Agency (AUDA-NEPAD) supported by key partners led by the Bill & Melinda Gates Foundation are coordinating a five-year pan-African exercise involving African experts who will deliberate, document and disseminate key priority areas for immediate investment with the goal of achieving SDGs sooner.

Why Scientific Priority-Setting?

As we enter the last decade to achieve the [Sustainable Development Goals \(SDGs\)](#), African countries continue to have the farthest to go to meet targets for health and wellbeing. For African countries, time and resources are limited, it is thus essential to prioritize and focus on the areas that offer the greatest opportunity for impact. An initiative coordinated by the [African Academy of Sciences \(AAS\)](#) and the [African Union Development Agency \(AUDA-NEPAD\)](#) seeks to convene the leading African scientific leaders to review the scientific priorities set by the SDGs, along with the [African Union's Agenda 2063](#), the [Science Technology and Innovation Strat-](#)

This far, nine broad priority areas have been identified. African governments and international partners are encouraged to adopt and support recommended priority areas of interest by either scaling up existing solutions or developing new solutions. Success achieved so far include funding Calls under Grand Challenges Africa in Maternal and Neonatal Child Health (funded by the Gates Foundation and the German government) and in Food Security and Nutrition (funded by SIDA) as well as a call for research proposals on COVID-19 (funded by Wellcome, Gates foundation and SIDA).

[egy for Africa \(STISA 2024\)](#) and National Development Plans (NDPs), which lay out a huge number of research and development priorities for countries to tackle in pursuit of those targets. The exercise will help build consensus around which top 10-15 scientific priorities will give African countries the greatest return on investment. Ultimately, the aim is to direct investments towards discovering, developing and delivering game-changing interventions in priority areas that will help the most people lead better lives, sooner.

The Process

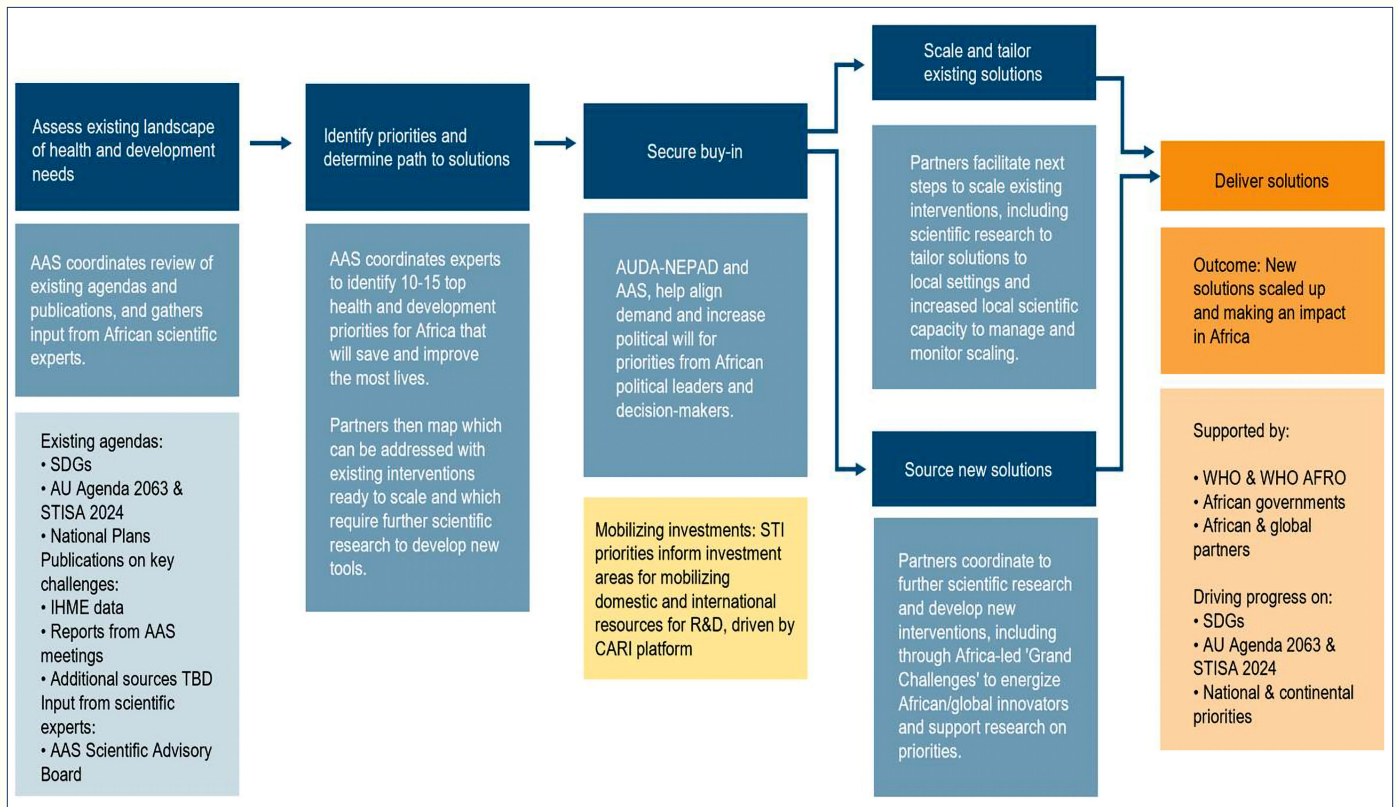
AAS and AUDA-NEPAD are coordinating a rigorous prioritization process. Initially, it involves convening scientific leaders across the continent to review relevant frameworks and key literature in various fields to develop broad priority investment areas for rapid impact (Fig 1). An African Scientific Advisory Board (ASAB) set up by the AAS provides support and advice to the implementing team. Thereafter, Expert Committees (ECs) hold a series of deliberations on the identified priority areas to further define three to five sub-priorities, which African governments and global partners should urgently prioritize for investment over the next five years.

These sub-priorities may include research to source new tools, actions to adapt and scale existing tools, or policy instruments to accelerate research and practice. The outcome of the deliberations is crafted into tailored policy papers and briefs for audiences including African governments, regional bodies and global funders to provide evidence for decision-making, secure buy-in and motivate action.

Key Stakeholders

- ❖ **African Academy of Sciences (AAS)** is the lead coordinator and convener of the scientific prioritization activities.
- ❖ **African Union Development Agency (AUDA-NEPAD)** is the lead convener of policy engagement and advocacy activities, working closely with the AAS to disseminate the Calls to Action to African governments, regional bodies, continental leadership and secure buy in.
- ❖ **The Coalition for African Research and Innovation (CARI)** is the key partner in resource mobilization aimed at building a highly coordinated, well-funded and African-led platform to improve systemic collaborations and scale up resources for African STI.
- ❖ **International partners:** Providing financial support to the initiative and subsequent investments, including the Bill & Melinda Gates Foundation, UK Academy of Medical Sciences, Swedish International Development Cooperation Agency among others.

Fig 1: The ongoing process of scientific prioritization by the AAS and AUDA-NEPAD



Progress to-Date

As of June 2020, the first nine broad priorities have been identified: Maternal, Neonatal & Child Health (MNCH); Climate Change; Genomics and Precision Medicine; Data and Biospecimen Governance; Mental Health, Food Security and Nutrition; Fourth Industrial Revolution and Epidemic Preparedness/Global Health Security.

First wave of scientific priorities

Maternal, Neonatal & Child Health

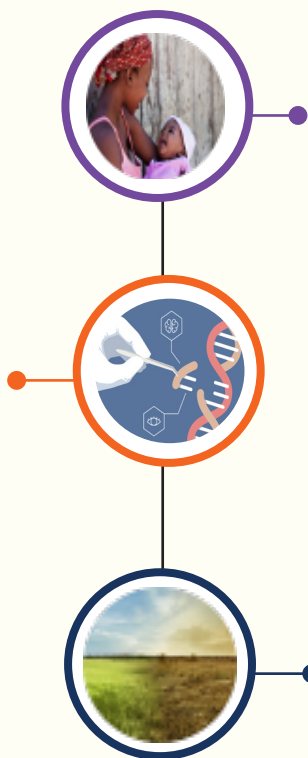
The AAS' Grand Challenges Africa programme, in partnership with the Academy of Medical Sciences and the BMGF, convened key scientists, policymakers and stakeholders to participate in the process for research priority setting for Maternal, Neonatal and Child Health (MNCH). The convening discussed MNCH leadership in Africa and explored opportunities for translation of research to policy. The outcome document from these deliberations included the report '[From minding the gap to closing the gap – science to transform maternal and newborn survival and stillbirths in sub-Saharan Africa in the SDG era](#)' and a [journey on setting MNH African research priorities](#) disseminated during the 2019 Grand Challenges Annual Meeting. The team has published a blog on [AAS Open Research](#) highlighting four priority areas: *better care during pregnancy; better care at birth; better postnatal care for women and their new-borns; and better hospital care of sick new-borns*. They are also finalizing a research paper on the prioritization exercise and thereafter will produce a policy paper and brief.

Climate Change

In July 2019, the AAS in coordination with Intergovernmental Panel on Climate Change (IPCC) Africa Desk and the United Nations University Institute for Natural Resource in Africa (UNU-INRA) convened the EC to deliberate on the limited contribution of African experts to IPCC processes and identify evidence-based actions to address the issues raised by IPCC SR1.5. An outcome document from this meeting [has been published](#) and the subsequent policy paper following extensive evidence synthesis by the EC is currently ongoing external review. One of the experts has also [published a blog](#) on the prioritization exercise.

Genomics & Precision Medicine

Through the Human Heredity and Health in Africa (H3Africa) consortium, AAS convened a group of expert scientists in 2019 to define a framework and recommendations for genomic medicine delivery in Africa. Following the expert meeting, the EC conducted in-depth evidence synthesis and has written a comprehensive policy paper on genomics and precision medicine for Africa. The paper has undergone external review and is being prepared for **review by ASAB in August 2020**. The EC has also **developed a policy brief** with one member drafting a blog both of which are to be published in August 2020.



Second wave of scientific priorities

Data and Biospecimen Governance

A team of scientists was convened by **AAS in June 2019** to review gaps in governance of the use and re-use of data and biospecimens originating from African sources. A policy paper resulting from these deliberations has undergone external review and awaits approval by the ASAB for publication in **August 2020**. A **policy brief has also been drafted and will be published by August 2020**.

Epidemic Preparedness & Global Health Security

Since March 2020, the AAS has engaged in a series of activities towards identifying research and development priorities for COVID-19. The AAS convenes weekly meetings on COVID-19 covering research priorities, ongoing research in Africa, communication, policy engagement, relevant research experts, and emerging investment opportunities. The outcomes of these convenings [published as a report](#) in partnership with AUDA/NEPAD have been shared with Africa CDC, WHO AFRO, and the African Union STC on Education, Science and Technology to initiate the process of engaging key stakeholders on epidemic preparedness and response. An associated policy paper and policy brief are currently being drafted. Additional collaborative work supported by DFID East Africa Research Fund on physical distancing was conducted with the report and policy brief [published in May 2020](#). [Through this work](#), the AAS mobilized about USD 3M from Wellcome, BMGF and Sida, to support the African scientific community response to COVID-19 through a competitive call for research proposals.

Food & Nutrition Security

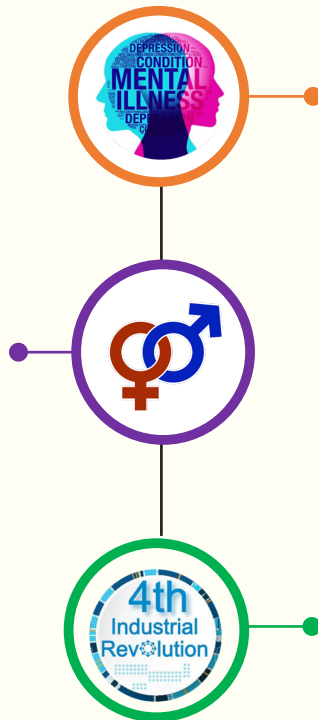
The AAS has flagged food security and nutrition (FSN) as one of the thematic areas in the strategic plan and intends to steer multisectoral interventions in order to achieve the targets set by the AU and the SDG targets. An experts consultation was **held in June 2020** of which the outcomes informed a continental scale prioritization survey that helped weight the pre-identified research questions. This is coupled with in-depth evidence synthesis to elaborate on the priority areas that will inform a Grand Challenges Africa Innovation Call on FSN, and eventually a policy paper and brief for policy engagement.



Third wave of scientific priorities

Gender and Science

Recognizing the challenges with enhancing gender equity in STI (see [AAS Women in STEM report](#)) the AAS has been putting in place measures to address gender disparities not just within its programmes but also in the scientific field. The prioritization exercise will focus on the priority programmatic and policy measures that should be institutionalized to safeguard gender equity in order to achieve Africa's scientific agenda. The first consultation was held in July 2020 after which an outcome document will inform a second consultation in September, evidence synthesis, and eventual policy paper and brief.



Mental Health

The prioritization exercise commenced in August 2020 building on a number of initiatives under the [AAS-AESA Platform](#) (such as AMARI and Afrique One-ASPIRE covering Zimbabwe, Ethiopia, South Africa, Malawi, Kenya, Ghana, and Côte d'Ivoire) and the initiative of AAS Fellows' Working Group on Mental Health. The aim is to bring together expert voices from across Africa to identify innovative approaches that generate data and knowledge to drive the mental health agenda in Africa.

Fourth Industrial Revolution

Between August and October 2020, diverse groups of experts will be convened by the AAS with the aim of articulating African R&D priorities in/for the fourth industrial revolution. The outcome of these multidisciplinary dialogues, and the in-depth synthesis of trans-disciplinary literature, will produce a policy paper and brief on African priorities in 4IR R&D and recommend specific roles of varied stakeholders (R&D institutes, universities, technical colleges, science academies, policy executive offices and the funding community) to help address/focus on the identified priorities. The two roundtables shall be held on **14th August 2020** and on **24th September 2020**.

Looking Ahead – Stakeholder Engagement

Identifying and setting scientific priorities can only have the intended influence if they are presented within the right context, with political endorsement of the process and willingness to accept, adopt, commit and allocate resources toward implementation. To help achieve this policy environment, AAS and AUDA-NEPAD will use the prioritization outputs to advocate for coordinated and targeted investments. AUDA-NEPAD is orchestrating opportunities where the outputs of the scientific prioritization activities are presented, deliberated and adopted in decision making by African policy makers convened under AUDA and AU platforms.

For priorities where promising interventions exist, coordination by global funders and African governments will be needed to support delivery and impact. Additionally, further scientific research and strengthened scientific capacity may be needed to tailor and scale

interventions to address local needs. For cases in which solutions are not yet available, efforts will focus on funding researchers and innovators to develop and test new solutions.

Communicating the prioritization framework being followed by the AAS in this initiative is key to informing and encouraging ownership of the scientific agenda on the continent. The AAS is investing in documenting all the processes involved in identifying and setting these scientific priorities and communicating them to varied audiences. This shall be in form of the virtual data hub comprising of outcome documents, blogs, Op-eds, policy papers, policy briefs and infographics and other audio-visual materials. Ultimately, by motivating coordinated action against the most pressing scientific challenges, the exercise hopes to save, improve and empower more African lives, sooner.