

Recommendations for strengthening health sciences research in Africa - Policy brief for national stakeholders with mandates and roles in research

Key Messages:

- Support national ownership and governance of health sciences research through equitable partnership agreements that promote leadership of African experts and benefit the national health research system.
- Invest in research infrastructure (institutions, technical platforms, data management systems) to create a conducive regulatory environment and coordinate research activities.
- Cultivate a national culture of research, which promotes research leaders as advocates and advisors of national policies, and create pathways to attract, train, and retain skilled researchers.

Health sciences research: an urgent agenda for African decision-makers

Improving health sciences research capacity has been identified as “one of the most powerful, cost-effective, and sustainable means of advancing health and development” in low- and middle-income countries.¹ However, less than 1% of scientific articles published worldwide each year include at least one author based at an African institution.² As countries transition to knowledge-based economies, having strong capacity, infrastructure, and a conducive regulatory environment to support health sciences research and innovation can be instrumental to advance health, development, and economic priorities—including national plans related to the Sustainable Development Goals. Strengthening national health research systems is vital to create conditions for health sciences research to improve health systems and public health, for example, by producing and using evidence for universal health coverage³ or response to epidemics⁴.

Research-based recommendations on national health research systems

A strong national health research system (NHRS) is vital to ensuring that funding and knowledge benefit communities. Health sciences research (HSR)⁵ is often driven by external funder priorities and interests, and thus frequently lacks careful attention to research needs in context and recognition of the value of producing and using data locally.

Results from LSE’s *Building the case for Health Sciences Research in Africa* identified key elements and processes that strengthen a NHRS and enable a vibrant and sustained national culture of research. At its core, political will to prioritise HSR with a commitment to understanding and serving local needs, combined with policies, laws, and institutions to support HSR regulation and governance, were seen to be critical to establish an enabling environment for HSR. NHRS are dynamic and continuously evolving systems, and changes occur incrementally when policymakers and research leaders take advantage of windows of opportunity to make progress. The recommendations from this research are aimed at African stakeholders in government, those working

We should not see funding health in isolation from [funding] research. It should be part of it.

Decision-maker (Botswana)

How do you foster that scientific mindset? Right from the beginning - create ideas and opportunities to use science to solve problems. Researcher (Kenya)

in research or academia, and international donors and research funders. They fall under three areas: ***local ownership; infrastructure and capacity; and research culture.***

¹ Commission on Health Research for Development. *Health Research: Essential Link to Equity in Development*. New York: Oxford University Press; 1990.

² Duermeijer, C., Amir, M., & Schoombee, L. Africa generates less than 1% of the world’s research; data analytics can change that. Elsevier Connect. 2018.

³ Nabyonga-Orem J, Okeibunor J. Towards universal health coverage: can national health research systems deliver contextualised evidence to guide progress in Africa? *BMJ Global Health* 2019;4:e001910.

⁴ Yazdizadeh B, Majdzadeh R, Ahmadi A, Mesgarpour B. Health research system resilience: lesson learned from the COVID-19 crisis. *Health Research Policy and Systems*. 2020;18(1):136.

⁵ *Health sciences research* (HSR) refers to the basic, clinical, applied, and social science on human health and well-being and the determinants, prevention, detection, treatment, and management of disease.

Recommendation Area 1: Support local ownership and governance of HSR.

Political will, alignment and prioritisation processes, and equitable **international partnerships** are key to ensuring that HSR benefits the populations of African countries. It is important that partnerships include capacity strengthening objectives, building HSR infrastructure and activities led by African scientists. Political priority of regulation and domestic financing can attract investment in HSR activities. Research priority-setting processes incorporating national stakeholders can realise opportunities to support local communities.

The role of partnerships in HSR capacity building in Botswana

The HIV/AIDS crisis in Botswana sparked international partnerships that were transformed into long-term collaborations. The Botswana Harvard AIDS Institute Partnership and the Botswana-UPenn Partnership are research and training initiatives which explicitly focus on capacity-building as a central mission for trainees. These partnerships are responsible for a significant amount of HSR produced in-country, which has helped to shape public health policies, clinical knowledge, and action on HIV/AIDS in Botswana and elsewhere. However, it is difficult to ensure that benefits of such partnerships are distributed equitably between external and local partners, with a limited spill-over effect on infrastructure to improve the overall NHRS in the long-term and implications for local ownership of HSR. While international collaboration has increased post-graduate HSR training opportunities (human capacity), they remain limited, and insufficient institutional capacity means research specimens are often taken out of the country for analysis.

The partnerships within the ecosystem are very important, maintaining and respecting the partnerships. But it is time for us to develop people-centred initiatives, where people are leaders, where communities front and retain their knowledge. We should not come into communities and expect and suggest that we know better than they do. Researcher (Botswana)

1.1 Define terms and conditions of partnership that secure local benefits.

There is a need to establish protocols to ensure HSR international collaborations achieve local benefits – both addressing health needs and improving NHRS. Jointly designed leadership and governance structures can ensure local actors take responsibility and authority for HSR. Achieving this requires involvement of senior government officials (with high-level political support) and firm commitment from international partners, with transparent partnership terms.

1.2 HSR international collaborations must have explicit objectives to strengthen local capacity.

It is critical to involve local researchers and staff at all levels of collaboration, especially as criteria for competitive grants from global, regional, or national research funding bodies. Partnerships should have clear pathways to establish local Principal Investigators (PIs) leading research projects to ensure that the intellectual leadership, core decisions and responsibilities, and data and results are nationally owned. Long-term consideration of how HSR partnerships can support the strategic development of health research hubs and institutions is a key strategy for local capacity building.

1.3 Establish formal collaboration mechanisms and arrangements between sectors for HSR.

Governing HSR requires coordination across multiple sectors – in particular, higher education, health, and science-technology-innovation. However, decision-makers in HSR are often working in silos, and resources for coordination across sectors are overlooked. Joined up stakeholder working, can create opportunities to share lessons between decision-makers and to work toward the harmonisation of HSR policies and priorities. Increasing awareness and knowledge of HSR among those responsible for its governance is vital to build capacity of policy and decision-makers to regulate, coordinate, and use HSR. Governments and partners should consider investing in mechanisms that enable coordination and continuous opportunities for collective learning.

Recommendation Area 2: Build local infrastructure for HSR – including regulatory bodies, ethics committees, technical platforms, laboratories, and data management systems.

Successful NHRS have robust **regulatory environments** and government institutions dedicated to promoting, governing, coordinating, and regulating HSR. These institutions must be designed around the local needs and contexts of implementing countries and grounded in both formal legislation and strong support from individual research advocates and political leaders. **Innovation** processes can connect the NHRS with other key sectors, such as agriculture, environment, and energy, and are widely seen as an important step as countries transition to knowledge-based economies to meet development goals.

2.1. Invest in national research institutions and improving technical platforms for HSR.

Strong, well-equipped research institutions are essential to producing HSR that also supports the development and training of a critical mass of African researchers to work on problems of local, national, and regional relevance. These investments are crucial to the functioning of NHRS, and they can promote ownership of data collection, storage, and analysis equipment. Research partners can also support national efforts to develop infrastructure through technology transfer and other investments.

2.2 Strengthen resources and capacity for ethical review of HSR.

National ethics review boards provide the oversight, leadership, and guidance for Institutional Review Boards of universities, hospitals, or private organisations. Ethics committees need a wide variety of specialist expertise (for clinical, quantitative, and qualitative research) to ensure that research is carried out with respect for local ethical frameworks, includes local knowledge and networks, and protects communities and participating individuals. Governments and donors can invest in efforts to strengthen HSR governance structures within the NHRS, as well as to support regional efforts (e.g. the Africa Ethics Excellence Network or Network of West African Ethics Committees).

Tunisian investment in innovation as a driver of HSR

Tunisia offers insight into how advocacy efforts and political will can strengthen innovation and promote local ownership of HSR over time. Senior officials at the Ministry of Higher Education and Scientific Research engage in ongoing advocacy to convince the Ministry of Finance and policymakers in the executive branch to honour legislative commitments. Advocates highlight the involvement of diverse stakeholders to define national research priorities; the transparent processes for evaluating research structures and funding; and the return on investment generated by innovation processes. The government encourages innovation by incentivising links between researchers and industry, along with strategies to promote commercialisation of local research. Political will for socio-economic development supports the alignment of research and innovation.

National projects are related to innovation... one is obliged to have a partner from the private (business) sector to be eligible for these funds, and the project must show impact of the research to solve a problem for it to be financed. In addition, interface structures in universities and research centres, which are developing over time, have a mission to accompany researchers to support their reflection on how the research results can be used for innovation and new products and technologies. Decision-Maker (Tunisia)

2.3 Centralised national repositories can track funding, investments, partners, projects, data and results.

Many countries lack an accessible national research database, to show who is doing what, where, with whom, and with what resources and results. In the absence of clear HSR coordination responsibilities, consolidating and updating this information is a challenge. In the short term, partners and researchers need to discuss how to expand and formalise data sharing networks. In the medium to long-term, governments and research institutions could look to build a permanent inventory of HSR activities.

Recommendation Area 3: Cultivate a scientific research culture and HSR career pathways.

Nurturing a **culture of research**, with local **research leadership**, can significantly improve sustainable, independent HSR capacity locally and promote stakeholder engagement in research activities. Through mentorship, scientific associations, and engagement, local researchers can become trusted leaders for external collaborators, local institutions, and train the next generation of researchers. Local scientific conferences can strategically build research culture. A strong research culture fosters an environment for research leaders to advocate for HSR to be high on national agendas, for sustainable funding, and for the development and implementation of policies, legislation, and institutional frameworks. **Advocacy** efforts between stakeholders across government sectors thus play an important role in generating demand for and awareness of HSR and developing national priorities to achieve NHRS objectives.

The 2014 West African Ebola outbreak as a catalyst for change in Liberia

Research leadership and advocacy in Liberia, catalysed in response to the 2014 Ebola outbreak, has generated momentum to strengthen the national HSR environment and create a national culture of research. International consortia focused on infectious diseases, which initially responded to Ebola, have created valuable opportunities for researchers to share knowledge and experience, develop joint research projects, and mobilise interest around HSR while advocating for support from decision-makers. A snowball effect has emerged, whereby capacity is built as more research is conducted. Through mobilisation of national interest, Liberian research leaders have successfully advocated for education policy reforms to include science tracks in secondary education and establishment of an MPH at the University of Liberia.

You need locally grown and trained scientists, instead of scientists coming from outside, who will embrace this whole concept of research. We see it is beginning to happen, more and more young people graduating in the sciences and becoming research oriented. These are positive things that will help to change the whole paradigm. Decision-maker (Liberia)

improve policies to support research as part of the expectations for professional advancement and faculty promotion. Improving career development pathways within research institutions can catalyse growth of HSR by creating an environment where research and capacity building are mutually supportive.

3.3 Local research leaders can advocate for HSR political prioritisation and funding commitments.

Research leaders can expand their advocacy networks to partner with scientific societies, professional associations, NGOs, and other researchers to increase their reach and strengthen more formal networks behind shared objectives. Individual researchers and bureaucrats, particularly those who are in positions of seniority, can explore opportunities to engage in advocacy within and outside their ministries or sectors. While this falls outside of bureaucrats' daily expected duties, such leadership has been shown to be effective and essential to convey arguments to decision-makers about prioritising HSR.

3.1 Local knowledge exchange platforms can share results and create demand for HSR.

Creating more formal knowledge translation systems is necessary given the current reliance on ad-hoc activities and personal networks for information sharing. Researchers and decision-makers often lack training in how to identify the implications of HSR results and apply those to changes in programmes. Since most research is funded by international partners, knowledge translation and use are rarely addressed outside of academia. Partnerships between government and the research sector can institutionalise knowledge exchange, build a research advisory system to link discussions to policy priorities, and strengthen capacity of researchers and policy-makers to apply research to policy and practice.

3.2 Encourage, equip, and mentor high-quality, skilled health sciences researchers.

Ministries of (Higher) Education can work with educators to develop scientific streams and specialisation trajectories within secondary and tertiary education curricula. In collaboration with university leadership, faculties of medicine, faculties of health sciences, and schools of public health can review and



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