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Strengthening national health research systems in Africa

Key findings from comparative analysis of nine case studies

Investments to improve health sciences research capacity and to increase research output in the African region are critical to reduce significant intra-regional and inter-regional disparities in research and development. These disparities pose major challenges to knowledge generation and use tailored to Africa's health needs.[1]

Figure 1: Countries where the research was conducted

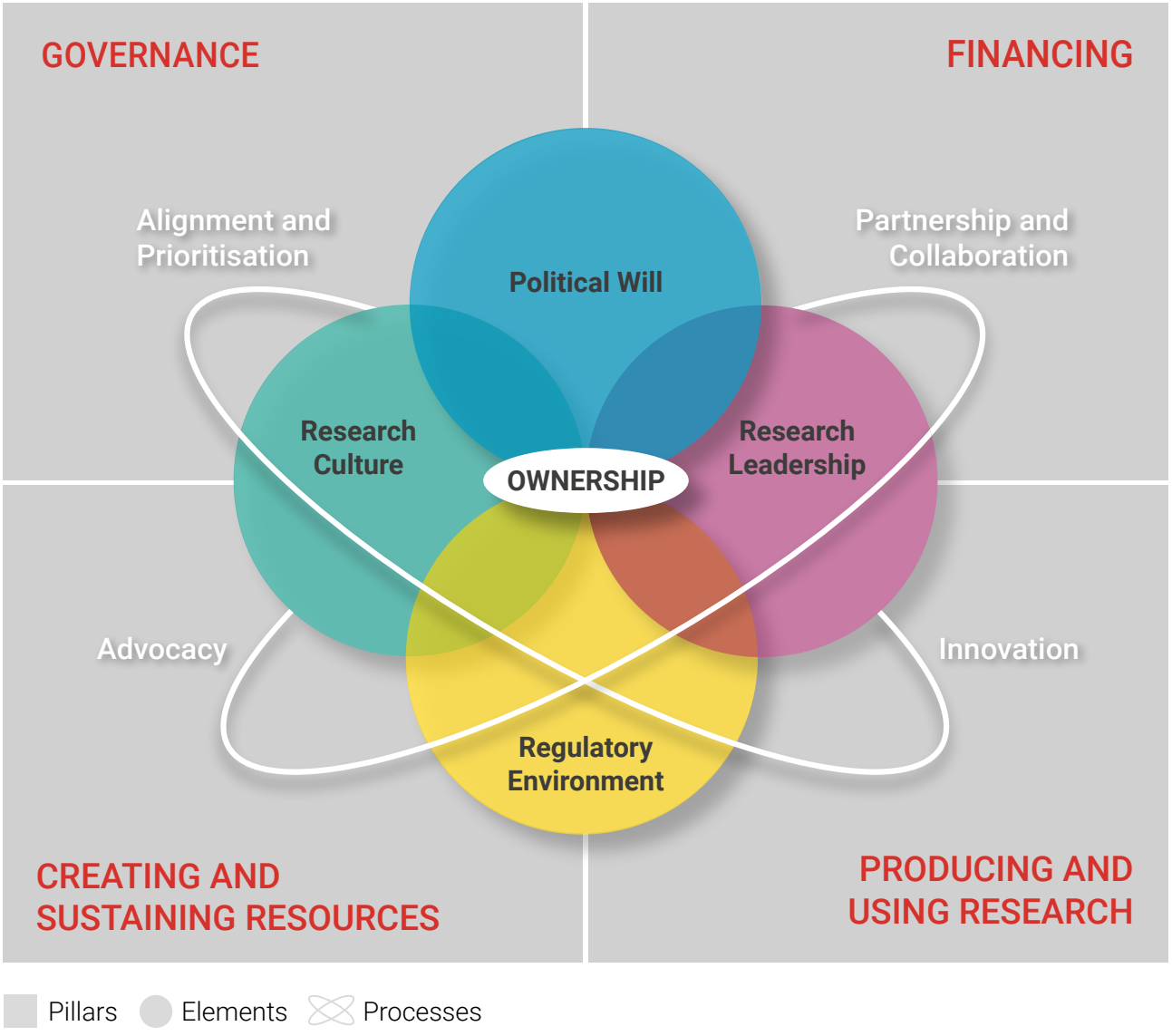
Strong national health research systems are needed to effectively regulate, build capacity, and set priorities for the local production and application of health sciences research that can respond to the needs of decision-makers, practitioners, and communities to improve services and outcomes and reduce inequalities. A national health research system (NHRS) is *the people, institutions, and activities whose primary purpose is to generate high-quality knowledge that can be used to promote, restore, and/or maintain the health status of populations.*[2]

There is scientific consensus, including from the World Health Organization, on the core pillars of a national health research system: *governance, financing, creating and sustaining resources,* and *producing and using research*. However, most knowledge about national health research systems describes and explains how equipped they are to fulfil these functions, with little exploration about how local stakeholders build and strengthen those pillars.

This project explored what influences the development and supports the core functions of national health research systems. Studying experiences from across the African continent (Figure 1), our research identified a range of supporting elements and ongoing, dynamic processes that are critical to reinforcing the core pillars and establishing strong national health research systems, although with variation in how they operate in different national settings.

This representation of a national health research system (Figure 2) is an empirically based framework from our findings about how these systems emerge, grow, and flourish. The framework recognises that the presence of the four pillars is necessary but insufficient to capture the essence of a national health research system and comprehensively understand its development. Our approach therefore took into account the interdependence of people, institutions, and activities within the system and identified interrelationships between the pillars, the elements that support them, and the ongoing processes which influence and reinforce the system as a whole.

Figure 2: National Health Research System (NHRS) framework



This research highlights the various combinations of supportive elements and ongoing processes that have been influential in shaping NHRS trajectories, whilst recognising that there is no universal approach for strengthening these systems that can be reproduced in different contexts. Long-term, deliberate, sustained processes may not yield desired results in the short term, but they critically contribute to incremental change and create conditions to seize windows of opportunity when they arise.

Pillars: core NHRS functions that enable countries to produce and use scientific knowledge for achieving health and development goals

FINANCING

- None of the cases met the African Union's target of 1 per cent GDP investment in research and development.
- Burdensome administrative and political restraints make it difficult for researchers to access funds. Although limited, most funds are distributed through Ministries of Education or Health, rather than funding delivery mechanisms for competitive grants administered by National Research Councils.
- Limited political will means that decision-makers do not consider health sciences research as a national priority.
- Health sciences research competes with urgent health, economic, and infrastructure demands on national budgets. In the absence of domestic funding, priorities are often determined by external partners and may be misaligned with local needs.

CREATING AND SUSTAINING RESOURCES

- Human capacity, characterised by national human resource availability, quality, and strength, remains concentrated in major urban areas.
- In many cases, there is tension between resource needs for research and available specialised human resources in country. Some countries cannot absorb excess capacity of highly trained workers in their institutions, while others do not have enough human capacity to support institutional development.
- Regardless of individual labour capacity to conduct, manage, or translate research, systems require strong, well-resourced, operational institutions to be successful.
- Many research institutions lack professional development opportunities, incentives, and policies to support career advancement, which hinders researchers' growth and progress as independent scientists.

PRODUCING AND USING RESEARCH

- Knowledge translation is not prioritised in training of researchers or decision-makers (for example, in the Ministries of Health).
- There is an absence of formalised knowledge translation platforms to promote research outputs, translate them for appropriate audiences, and encourage research use among stakeholders.
- Individual researchers and local champions play an integral role in elevating health sciences research outputs and advocating for use of research in programmes and policies.
- Limited public availability of and access to data and research results hinders the use of health sciences research.

> We should have a platform where we can share research. Besides disseminating a report, it's not always available for other people to use, and that's unfortunate.

Researcher, Madagascar

GOVERNANCE

- Policy and legal frameworks for governing health science research, when combined with strong regulation and political will, can foster an enabling environment within NHRS. However, many governments lack a strategic vision for the NHRS and future of health sciences research.
- Governance of health sciences research requires coordination across multiple sectors, such as health, education, and science and innovation. Without robust coordinating mechanisms and institutional mandates, ad-hoc coordination is inefficient and often neglected.
- National Health Research Authorities are promising institutional models for integrating coordination roles into the mandated function for a national governing body for health sciences research.
- Ethical review is conducted within Institutional Review Boards of universities, hospitals, or private organisations. Ministries of Health are tasked with oversight and guidance when national ethics review boards do not exist. There are limited resources to develop specialist capacity, to support the administration of committees, and to compensate the time of members.

Elements: features that serve a relational role to connect the pillars and processes of a NHRS and support efforts to strengthen it.

Regulatory Environments

- Robust regulatory environments and government institutions dedicated to promoting, governing, coordinating, and regulating health sciences research strengthen NHRS. These institutions must be designed around the local needs and contexts of implementing countries.
- Formal legislation can support governance and financing pillars, by embedding and protecting institutional mandates and securing delivery of funding for health sciences research.
- Supportive and cooperative arrangements between regulatory institutions must be in place (including across the Science, Technology, and Innovation institutions) to advance, represent and serve the specific needs of health sciences research.

> Whereas people give money for research, very few people give money for regulatory development.

Decision-maker, Uganda

Research Culture

- Establishing and nurturing a culture of research can significantly improve capacity-building efforts for health sciences research professionals, while also promoting stakeholder engagement in research activities.
- Scientific conferences, mentorship, scientific associations, regional networks, and political engagement help foster a strong culture of research.
- Health crises can also create important inflection points at which health issues generate large-scale public attention, draw local populations into dialogue with researchers or decision-makers, and increase the demand for and awareness of health sciences research.

> We have to encourage the culture of research. All of us should see research as the only way we can prepare future generations to keep improving our knowledge and skills, to understand our environment and what we are all about.

Decision-maker, Liberia

Political Will

- Political will, or high-level commitment from politicians to fund, regulate, and build capacity, is needed to make health sciences research a national priority.
- Beyond investment in research institutions and human resources, strong political will is essential to developing, implementing, and maintaining effective policies and governance mechanisms to strengthen and monitor health sciences research.
- Through local government involvement, policymakers can help shape external funding contributions to benefit local health research needs and priorities.
- When political will supports key processes (see below), this can lead to institutionalisation and strengthening of the NHRS as a whole.

> Leadership within the government is obviously very important – that they have the knowledge and interest to ask different questions and to seek support from their partners to dig into these questions.

Donor, Liberia

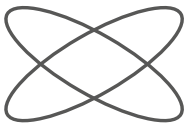
Research Leadership

- Research leadership is tied closely to other supporting elements and processes such as political will, advocacy, culture of research and partnership and collaboration.
- Through relationships cultivated in regional networks and international collaborations, research leaders build social capital that supports them to become trusted contacts for external collaborators and national agencies.
- Strong research leaders can be powerful advocates in support of legislation and institution building, and additionally help influence levels of awareness and appreciation for health sciences research among the public and key decision-makers.
- Research leadership strengthens local ownership when scientific leaders advocate and negotiate for partnerships tailored to local needs and also participate in governance of those projects.

> We cannot retain people who have ambition to set up projects and innovate, without giving them at least a minimum means to develop their ideas.

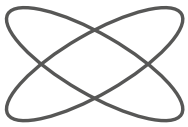
Decision-maker, Tunisia

Processes: ongoing methods, practices, and activities within an NHRS that are integral to its development, organisation, learning, and adaptation.



International partnership and collaboration

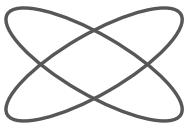
- International partnerships and collaborations, supported through a variety of arrangements, are primary tools for investing in health sciences research production in African countries and for contributing to research capacity strengthening.
- Successful partnerships can help improve local infrastructure through technology transfer and other investments, such as laboratories, for use by local scientists in-country.
- Health crises, such as HIV/AIDS or Ebola, create windows of opportunity for collaboration on health sciences research due to the increased political attention, needs for capacity and training of personnel, and the urgency for local infrastructure to support activities.
- Regional and local partnerships are particularly supportive for strengthening the research culture, building research leadership, and promoting ownership of health sciences research, with goals aligned to local needs.



Advocacy

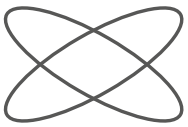
- Researchers play a key role as advocates in developing NHRS in Africa. With sustained efforts, advocacy can foster awareness and appreciation of health sciences research among national governments.
- Influence of research leaders extends beyond Ministries of Health to reach decision-makers across a range of government stakeholders and sectors.
- Both formal and informal networks between government officials, elites, and researchers can support advocacy processes for NHRS objectives.
- Given high turnover of individuals in government positions, successful systems are built slowly with support from individual research advocates and leaders with gains cemented through formal structures, such as policies and legislation.

> Research leaders and policy-makers who are champions and who have seen the need for sustained funding – they have been very vocal to make sure this happened. I think that has helped.
>
> **Donor, Kenya**



Alignment and prioritisation

- In the absence of political prioritisation, health sciences research priorities will likely not be funded, implemented, and used to guide decision-making.
- Broad local stakeholder engagement is critical for ongoing and systematic processes for priority-setting that considers a range of perspectives and local needs for health sciences research.
- Continuous advocacy and political engagement is necessary to maintain buy-in among decision-makers for programming and policy change.
- Governments can improve NHRS by strengthening the mandate for health sciences research governing institutions to include prioritisation and alignment processes and coordinating across sectors, provided funding and staffing are commensurate.



Innovation

- Innovation processes connect the NHRS with other key sectors and research systems, which are important steps as countries transition to knowledge-based economies to meet development goals.
- National Centres of Excellence have been successful institutional mechanisms though which to incubate innovation, within a supportive environment that links research and industry sectors.
- These links can improve innovation processes within the NHRS by incentivising commercialisation of health science research results and supporting research institutions to develop industry partnerships.
- The potential economic benefits of innovation are useful arguments to encourage political prioritisation of health sciences research.

> For us to be vibrant, is to be your own. You need to execute based on priorities that are not getting influenced by partners.

Decision-maker, Ethiopia

OWNERSHIP

Ownership of health research agendas, institutions, capacity, results, and use must be the starting principle at the centre of NHRS. Elements and processes should help embed the NHRS in local needs, resources, expertise, and power to develop and fulfil its functions in appropriate ways that serve, benefit and are accountable to the local population.

About this research

In collaboration with African partners and researchers, this project investigated how health sciences research capacity can be improved on the African continent. These key findings are based on comparative analysis of data collected from document review and interviews with 189 key informants (decision-makers, researchers, and funders) in Botswana, Côte d'Ivoire, Ethiopia, Liberia, Kenya, Madagascar, Tunisia, Uganda, Zambia between 2018 and 2020. The analysis focused on understanding what actors and institutions in African states are doing to strengthen NHRS and the challenges they face in doing so.

The mixed methods research project involved two other phases of work to map indicators of health sciences research performance for all 54 African countries, and to engage with decision-makers in health, education, and science policy sectors from the nine case countries. This engagement included workshops for decision-makers to share their goals and strategies and collectively reflect on solutions to improve and strengthen NHRS across the African continent.

For more information on the project and to access the final report:
https://www.lse.ac.uk/lse-health/research/projects/research-capacity-in-africa-2

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1 Simpkin V, Namubiru-Mwaura E, Clarke L, *et al*. Investing in health R&D: where we are, what limits us, and how to make progress in Africa. *BMJ Global Health* 2019;4:e001047.

2 Pang T et al. Knowledge for better health: a conceptual framework and foundation for health research systems. Bull World Health Organ 2003;81(11):815–20.

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