



Understanding knowledge systems and what works to promote science technology and innovation in Kenya, Tanzania and Rwanda – insights from the Knowledge Systems Innovation Project (KSI)

Policy Brief for Kenya

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POLICY OPTIONS FOR ENABLING INVESTMENTS IN SCIENCE TECHNOLOGY AND INNOVATION IN KENYA INSIGHTS FROM THE KNOWLEDGE SYSTEMS INNOVATION RESEARCH: Policy Brief

SUMMARY

Science, Technology and Innovation (STI) plays a critical role in catalyzing Kenya's development pursuit under the Vision 2030 and the Big 4 Agendas through promoting effective health management, innovative processes useful for manufacturing and job creation as well as enhancing capabilities for innovative business ideas. Most importantly, a pursuit for STI could furnish Kenya with useful information for risk preparedness and cushion its development achievements from being eroded by emergencies such as the COVID-19. This ambition resonates with the aspirations of African Union Agenda 2063, the STISA 2024 framework 'knowledge driven economies and the Sustainable Development Goals (SDGs).

So far Kenya is making efforts to build STI systems including establishing enabling institutional arrangements. The establishment of the National Commission for Science and Technology (NACOSTI) and its affiliate agencies such as the Kenya National Research Fund and the National Innovation Agency have placed the country's strategic potential to define and align its knowledge needs and mobilize resources for impactful outcomes. While there is general agreement and political goodwill that STI is a critical part of the way forward, the country still needs to understand how best to proceed towards effective actions and investments in ST&I. There are also concerns on how to adopt various STI frameworks and best practices that supports both economic growth, social inclusion and environmental goals.

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In order to help address these challenges, the United Kingdom Government's Foreign, Commonwealth and Development Office (FCDO) through the East Africa Research and Innovation Hub (EARIH), funded a pilot study to develop a practical approach to capacity development and investment in knowledge systems, in three East African countries; Kenya, Rwanda and Tanzania. The study sought to gather evidence on the current STI environment including identifying opportunities for investment to support sustainable development. This policy brief aims to tie the findings of the mapping work and provide policy insights that can strengthen investments in STI for socio and economic growth.

RESEARCH APPROACH AND INSIGHTS

The study is based on dialogue and co-production of insights through stakeholders' interactions and review of secondary literature that supported evidence gathering on the current STI environment and identification of opportunities. Specific targeted interviews with key government and non-governmental institutions provided examples of what is working well or not and how opportunities could be pursued. Two case studies were conducted to provide a better understanding of the opportunities and challenges for delivering for sustainable growth. The study also relied on the feedback and validations from the wider African research community via discussions engaging the broader Science Granting Council activities. Study insights and recommendations were further validated through national and regional advisory committees- comprising experts and technocrats with long standing experience in formal and informal knowledge management.

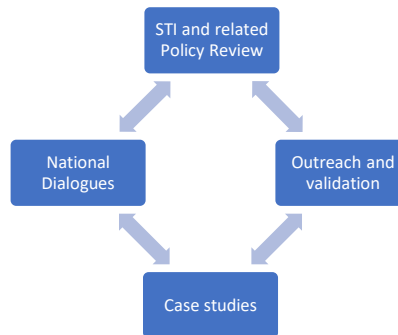


Figure 1 Schematic representation of the methodological approach

Mapping STI context in Kenya

Current STI policy focuses on investments in R&D and capacity development in education supported by formal knowledge production systems in the health and agricultural sectors.

The policy focus for STI investments are in capacity support in education and R&D. Driving the development of the Kenyan STI ecosystem are efforts to create effective policy frameworks through the establishment of three sets of institutions to ensure promotion, coordination and regulation of the STI process, quality, funding and advisory linkage mandates. The open knowledge production system with potential for inclusion of an array of actors and partnerships has supported this STI

ecosystem. Both state and non-state actors dominate knowledge production and are organized around formal education and research systems and informal systems such as the Technical Vocational Education Training Systems (TVETS). Formal systems such as universities and public research institutions have supported knowledge production in various STI areas particularly agriculture and health. The wider cadre of non-state actors such as think tanks, international and regional research centers have also contributed to this knowledge pool.

There are attempts emerging for policy to align to SDG relevant agenda but there is need for sustained funding for their sustainability.

With regard to our analysis on explicit mechanisms to link to SDG relevant agenda impact networks and platforms such as Linking Industry with Academia (LIWA) are a great opportunity but requires sustained funding for sustainability. This is reflected in the case study of Kenya's Utafiti Sera: a platform for research evidence into policy use and uptake and represents one of a

number of recent initiatives in Kenya to build research-impact network in the social science discipline. The study demonstrated that promotion and coordination of research into use initiatives requires champions to promote research evidence into policy use. There is potential to replicate such models across other SDG areas, but this will need stronger coordination and the development of more consultative platforms for learning and knowledge use.

Why should the country widen its approach to STI investments?

In Kenya the expansion of TVET institutions, managed by decentralised county level governments, has been very significant in widening access to practical skills training and bridging formal and informal sectors. The importance of indigenous knowledge is also beginning to be recognized and the Kenya Resource Centre for Indigenous Knowledge (KENRIK) and the Centre for Biological Diversity (CBD) are engaged in documenting, preserving and disseminating indigenous knowledge held by different communities across Kenya. Also, a number of private and public business incubators are focused on supporting green businesses including the NETFUND program and the Kenya Climate Innovation Centre. These and business incubators such as Nailab, IMB research in Nairobi and @iLabAfrica at Strathmore University have shown signs of success in building strong links with industry and with local communities and generating new businesses.

Diversity of approaches exist with promising SDG intent such as TVET institutions, the informal sector e.g. *Juakali*, and university industry partnerships that can support stronger linkages with the industry, formal knowledge sector, local communities and the wider knowledge ecosystem.

There is a significant informal sector knowledge activity e.g the '*Juakali*' sector (informal engineering and manufacturing) that builds on peoples' capabilities (e.g. entrepreneurship skills, needs and aspirations), making them able to serve and empower people better. Although highly relevant to the local communities and the SDGs, they would benefit from better links to the formal sector resource, knowledge and opportunities, and by being monitored and recognized as an important part of the knowledge ecosystem.

The informal sector has been key in recent innovations. It has supported mobile-based finance innovations like *M-Pesa*, *Airtel Money* to thrive including mobile apps like *iCow* and *M-Farm* designed to support small-scale farmers and the development of community cryptocurrencies in slums. However, there is very little support in public policy for strengthening formal-informal sector links. Further, the high cost of registration and high tax burden on small businesses actively discourages informal businesses from formalizing, limiting opportunities such as financial access to catapult the sector.

University-industry partnerships have also emerged in addressing some of the SDGs. A number of lessons are derived from the case study on University-Industry linkages in different organizational settings, focusing on JKUAT, a public university and Strathmore, a private university. While JKUAT was set up with a specific focus on smallholder agriculture and supporting local communities, partnering with devolved county governments on local development priorities, it has recently established the Sion Africa Centre for promoting Indigenous, ethno-botanical knowledge. On the other hand, Strathmore University has tried to explicitly blend business and community interests through the various centres established. The Kenya Climate innovation Centre, for example, has a strong focus on supporting SME's launching climate smart innovation as well as other relevant specialized centers focusing on issues related to sustainability such as the Energy Research Centre.

Collective approach to STI Investments

Stakeholders from the policy domain of STI proposed the need for **investments** that support **proper coordination** of the various funding schemes available in the country to target more the informal sector. They called for the establishment of a body to oversee and coordinate the various funds that exist (Uwezo fund, youth fund, women enterprise fund). They also suggested establishing a glue fund within NRF, a fund to support the development of the informal sector, who often struggled to formalize due to tax burden that hinders their registration thus blocking access to certain funding sources. Current proposals by NRF include creating a commercialization fund to get research findings into usable products. Kenyan stakeholders emphasized the need for mentorship programmes steered by academia to support the *Juakali* sector not only to scale but also link them to formal processes. The 4 policy insights are presented.

4 areas identified by stakeholders along with series of policy-related insights that could be considered

1. Facilitating formal informal interactions through the mechanisms outlined below:

- *Focus new investments on linking the formal and informal sector where specific opportunities exist to align with the SDGs. Also, in the process, focus on building and sustaining these capacities and capabilities.*
- *Set up a business investment fund specifically targeting informal sector innovation-led business opportunities including government oversight body to oversee investments such investments.*
- *Indigenous knowledge resource centres are valuable, but pretty isolated. Examination of how to leverage knowledge repositories for actual impact should be undertaken and an assessment of how they can influence research agendas in the main stream.*
- *Investments in the informal sector should make deliberate attempts to understand and invest in the key enablers required to facilitate the informal linkages.*

2. Investment in research and data for decision making;

- *More analytical studies that provides detailed data and information regarding these incubations/innovation hubs to attract possible investments and partnerships.*
- *Invest in strengthening efforts in the existing accountability measures for tracing /tracking investments returns in various sectors. Invest in data or platforms within national agencies where current or previous investments and progress towards some of these investments can be viewed.*

3. Investments in knowledge exchange platforms

- *Investments in knowledge exchange platforms are a potentially powerful way of leveraging impact from research investments. However complementary investments need to be made in governance structures to ensure inclusiveness of process and direction.*

4. Investments in knowledge intermediaries/champions and frameworks to support knowledge brokerage

- *Invest in knowledge brokerage including enhancing their capabilities and support over a long period of time. There is potential to replicate the research into use model of promoting stakeholder conversations to enhance research use across other SDG areas but with proper coordination and building more consultative platforms for learning and knowledge use.*

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