



**KENYA INNOVATION
OUTLOOK STUDY**

2022

THE SCOREBOARD



6 THE SCOREBOARD

6.1 THE SCOREBOARD INDICATORS

Drawing on the framework, over 170 indicators have been identified from various databases out of which stakeholders prioritized about 75. The indicators are mainly identified at national level and can be adjusted depending on context and relevance and emerging knowledge. It is important to note that developing contextual indicators and expected by stakeholders is a relatively complex process and can be subjective. Data availability is also an issue that will need to be addressed in subsequent outlooks. Out of the identified indicators, data could be retrieved for about 60% even though more work would be needed to verify data credibility alongside refining the indicators.

Table 5: Indicators for various domains of the KIO 2022

Domain	Subdomain	No of indicators identified	Prioritised Indicators
Domain 1: National and Global Economic Context , which defines innovation context. The recognition of innovation in national and global economic contexts is critical in legitimising and allocating resources to the innovation agenda.	National blueprints	6	<ul style="list-style-type: none"> Extent of Citation/consideration of innovations in economic blueprints
	Innovation governance	7	<ul style="list-style-type: none"> Presence of a dedicated innovation Agency, Government entities dedicated to ST&I Availability of coordination mechanism No of staff and qualifications in STI Agencies
	Innovation policies	8	<ul style="list-style-type: none"> Presence of innovation relevant policies Availability of long-term innovation plans No and type of treaties Kenya has signed Availability of domestic implementation
Domain 2: Innovation life cycle/value chain , which consists of the platforms and activities that directly drive the progression of innovation, from conceptualization through development commercializing, uptake, and impact.	Discovery phase/Knowledge generation	28	Academic/Research <ul style="list-style-type: none"> No of institutions, source of funding (private or government; focus) No. of enrolled and graduated students No. of STEM programmes (by level) Presence of distinct innovation support office/directorate No. of publications No. of patents registered Publication impact factor Possession of explicit research/innovation strategy and policies Non-academic platforms (SMEs, CBOs etc) No of organisations (by type) with dedicated R&D infrastructure New process/products generated

	Development /Commercial isation	21	<p>Academic- Universities- TTOs/commercialisation departments</p> <ul style="list-style-type: none"> • Availability of operational TTOs/Commercialisation units • Funding of commercialisation units • Average No of staff in the TTOs by gender • Share of staff with research/innovation skills/background • No. and nature of research- industry partnerships • Availability of policy • Share of publications with patent applications • Number/share of patents developed into market products <p>Non-academic</p> <ul style="list-style-type: none"> • Number and scale of incubation/accelerator platforms • Access to financial services • Ownership of accelerator platforms (local/international) • Access and affordability of financial services • Share of manufacturing firms that engaged in in-house R&D • No of staff dedicated to R&D by sex
	Diffusion and uptake	9	<ul style="list-style-type: none"> • Value of sales; no of; no of units sold from commercialised products; units • Number and scale of National and sub-national Innovation weeks • Number and scale of annual innovation discussion forum • Number of Skills and training platforms/Initiatives
Domain 3: Investments- Includes financial and infrastructural investments from both state and non-state sources.	Funding	13	<ul style="list-style-type: none"> • Budgetary allocation for STI from public sources • Funding from non-state sources differentiated by private and non-profit sources • FDI net inflows, % GDP (focusing on the innovation agenda) • Availability and scale of special funds (e.g., youth fund) • Diversity and nature of funding instruments (loans, grants, bonds etc.) • Share of funds with equity mechanisms in distribution

	Infrastructure/ICT	15	<ul style="list-style-type: none"> • Availability, nature and scale of digital platforms • Share of population above 18 years with access to internet • Share of population above 18 years connected to internet. • No of internet suppliers against population • Geographic coverage of 3G,4G,5G", cost per 1MB of data compared to other Africa and global averages
<p>Domain 4_ Incentives: constitute the economic and legal initiatives (incentives) that the government and other players have established specifically to enhance innovations (for example, tax-breaks) by reducing costs and bureaucratic barriers to scaling up and commercialisation. These also include innovation awards aimed at encouraging innovations among others.</p>	Fiscal Incentives	5	<ul style="list-style-type: none"> • Number of Innovation-oriented fiscal instruments • No and scale of tax incentives targeting innovations
	Policy incentives	8	<ul style="list-style-type: none"> • Availability of special economic zones • Presence of innovation driven policies on value addition, procurement policies
	Business process incentives	7	<ul style="list-style-type: none"> • No of days needed to acquire a business licence • Process and duration of processing patent application • Ease of access to credits • Average interest rates • Protection of intellectual Property rights
	Awards	9	<ul style="list-style-type: none"> • Availability and nature of innovation awards at (sub)national platforms • Monetary/social/economic value of products. • Impact of awards - new products or businesses due to the awards

<p>Domain 5: Impacts - constitute the resultant impacts of innovations. Such impacts can be social, economic, political, environmental, or cultural occurring across sectors (health, agriculture etc.)</p>	Social impacts	6	<ul style="list-style-type: none"> • Number of social networks created by particular innovation case • Number of women and girls involved in particular innovation case • Key lessons on the impact journey
	Economic Impact	6	<ul style="list-style-type: none"> • No. of jobs resulting from innovation case • Contribution of innovation case to the GDP value • No of PPPs resulting from an innovation case • Key lessons on the impact journey
	Political impact	6	<ul style="list-style-type: none"> • Efficiency in service delivery • Rate of political Information sharing (e.g. decisions, peace building etc., conflict resolution) • Key lessons on the impact journey
	Environmental impacts	4	<ul style="list-style-type: none"> • Percent reduction in carbon footprints attributable to innovation case • Key lessons on the impact journey
<p>Domain 6: Impediments- constitute barriers to the value chain including cheap imports that price out local innovations from the market</p>	Structural inefficiencies	8	<ul style="list-style-type: none"> • Corruption index • Incompetence • Rate of political instabilities
	Cultural barriers	4	<ul style="list-style-type: none"> • Traditions and cultural beliefs
	Economic Barriers	2	<ul style="list-style-type: none"> • Limited government funding for innovation actions • Infiltration of Counterfeit goods and services
TOTALS		172	77

6.2 DIGITAL SCOREBOARD

A web platform is designed to visualize and provide info graphs in real-time that connect to the data collection database, using a RESTful API interface that fetch data collected online using the questionnaire platform developed on the ODK platform, indicator scorecard, innovation platform tracker. The platform contains information of different user categories, each with its secure access level and a public user to view summarized STI data collected without logging into the system. For the public-facing part of the web application, graphs and maps is preferred to visualize STI pre-sourced from different scoreboards and countries repositories and allow the user to interact with the data by selecting data from different categories. The database schema is constructed using the available and normalized process: First Normal Form (1NF), Second Normal Form (2NF), Third Normal Form (3NF), BCNF, Fourth Normal Form (4NF), this included: using the dashboard to visualize the tables generated, and indicators developed and established their relationship according to rules designed both to protect the data and to make the database more flexible by eliminating redundancy and inconsistent dependency and allow data query (<http://kio-sti.arin-africa.org/>). The configuration and user rights will be managed by KeNIA after commissioning the platform.

6.3 Frontier subdomains and recommendations

From the scoreboard, four main frontier subdomains were identified through stakeholder ranking of relevance (also see Annex 2). The frontier sub-domains provide opportunities for interventions.

6.3.1 Innovation policy

Innovation policy is a frontier sub-domain under the “National and Global Policy and Economic context”. Kenya has mainstreamed innovation in its national blueprint, but this can only be operationalized through effective policies. Currently, the ST&I Act of 2013 presented a critical juncture in Kenya’s innovation journey by establishing a dedicated national Agency to promote innovation ideas and creating a national fund supportive to innovative research ideas. While stakeholders view policies as key, there is a huge opportunity to transform the country’s innovation through establishing more facilitative policies that are less restrictive, e.g., commercialization guidelines, strategies etc.

There is need to create consolidated visibility of innovation agenda in the country’s development blueprints through a long term National Multi-sectoral Innovation Masterplan.

6.3.2 Commercialization

Commercialization is a frontier sub-domain under the “Innovation Life Cycle” domain. There is general agreement that Kenya’s knowledge production outlook is relatively progressive following investments in various knowledge production platforms such as Universities and Research Institutions. However, the country is experiencing a major challenge in translating the increasing amounts of research outputs into commercial products. This has created a notion around weak research impact and subsequent low public and private investments in R&D. While Kenya is attracting domestic and foreign investments towards establishing platforms for commercializing especially outside academic platforms, e.g., start-ups and incubation hubs, investments in commercialization in academic platforms remain weak.

Strengthening commercialization units, e.g., TTOs, incubation centres within academic platforms through capacity, funding etc. presents a huge opportunity to turn huge amounts of research lying on the shelves into market products that could spur economic growth and job creation.

6.3.3 Funding

Funding is a frontier sub-domain of Kenya's Innovation Outlook under the "Investment " domain. Funding was identified to be a major gap across all the KIO 2022 domains, from the innovation conceptualization and development/commercialization to impact. Generally, funding for the ST&I sector remains low (as discussed in section 3.4) while there seems to be some progress in funding start-ups and enterprises, especially from Foreign Direct Investments and special funds such as women and youth funds.

There is need to connect the enterprise/start-up funding to university research through establishing University-led enterprises or strengthening University-enterprise linkages that directly draw from the various publications.

6.3.4 Business process incentives

Incentivising business processes, i.e., ease of doing business is a frontier sub-domain of Kenya's Innovation Outlook under the "Incentives " domain. Incentives on business process are prioritised because they could impact on wider spectrum of innovators. Various incentives exist but are relatively small scale to spur development of innovation ideas, but the impacts of these incentives are unclear and untracked.

There is need to develop an institutionalised incentive scheme strategy with clear budgetary allocation, coordination, and impact tracking system.

6.3.5 Economic impacts

Economic impact of innovation is a frontier sub-domain of Kenya's Innovation Outlook under the "Incentives " domain. Economic impacts of innovation activities are central to the country's development blueprints. The policy support towards innovation is widely hinged on economic results such as job creation, contribution to GDP as well as poverty alleviation. More specifically, innovation as a sector can contribute to enhancing the local production capacity of manufacturing firms by exploiting opportunities that have been afforded by the pandemic, such as production of hospital beds and ventilators, masks, disinfectants, protective personal equipment (PPEs) and sanitizers; mapping of micro-enterprises in manufacturing engaged in production of essential goods (such as PPEs) and other innovations in response to COVID-19. Nonetheless, there are no clear framework to track economic impacts of innovations.

There is need to align or strengthen the innovation outlook (led by KeNIA) with the national economic outlook (led by KIPPRA) to establish clearer connections.

6.3.6 Structural inefficiencies

Structural inefficiencies are a frontier sub-domain of Kenya's Innovation Outlook under the "Impediments " domain. Structural barriers especially incompetence and corruption are key impediments to innovation resulting in loss of innovation ideas as well as ushering in counterfeit products that outrun and demoralize innovation.

There is a need for certain systemic reforms, including those that deal with infringers and protects innovations from piracy and counterfeits.