



**KENYA INNOVATION
OUTLOOK STUDY**

2022

EXECUTIVE SUMMARY



1. EXECUTIVE SUMMARY

Context and Rationale

Kenya is currently riding on innovation as a key vehicle for economic growth, but there is no single consolidated platform in the country where innovation activities and progress can be updated and accessed; i.e., a real-time one-stop shop for key information on Kenya's current innovation status and outlook. Such a platform enhances the ability of the government, local stakeholders, and foreign investors to make rapid and evidence-based decisions regarding investments in innovation-related initiatives across the economy. Most importantly, the Kenyan innovation performance has been assessed, mainly, through the Science, Technology, and Innovation lens with the aim of international comparison based on global standards and indicators. There have been limited efforts to domesticate the indicators to make them more relevant, relatable, understandable, and usable by local decision-makers. Innovation is quite a big concept that would take a huge effort to unpack. The danger is in taking a narrow view of it and missing the broader dimensions. The report at hand does indeed take in this broader angle, but inevitably emphasis differs for the various issues it discusses. Far too many social problems are crying out for solutions, and creative approaches are needed to deal with them. Innovation, therefore, must be seen as a vehicle for the transformation of society for the attainment of better standards of life and more dignified involvements by the productive population in the economy.

The definition offered, *"a process that involves the conception of ideas through to translation into products and impacts"* is broad enough but care must be taken not to understate the impacts in favor of products. Innovative outcomes will be manifested not just in products that then go to market, showcasing the main technological breakthrough, but also in societal impacts that contribute to the quality of life in whichever way.

This inaugural Kenya Innovation Outlook (KIO) study is a step towards co-developing (i.e., with a broad spectrum of stakeholders) a contextual framework and suitable indicators for measuring innovation performance. The KIO provides a template that can be used and regularly improved in assessing the country's innovation. The study was funded by the Foreign, Commonwealth & Development Office (FCDO) and technically led by the Africa Research and Impact Network (ARIN), in close consultations with the Kenya National Innovation Agency (KeNIA).

Study Framework

The study design is anchored on the understanding that innovation systems and associated indicators are embedded in a process that involves the conception of ideas through to their translation into goods, services, business models and impacts on the economy and society.

The KIO 2022 is sub-divided into six domains that capture Kenya's innovation status and opportunities for investments:

1. *National and Global Policy and Economic Context*: defines how innovation is aligned to Kenya's development and policy context.
2. *Innovation life cycle/value chain*: includes platforms and activities that directly drive the progression of innovation, from conceptualization, development, commercializing, uptake, and impact realization.
3. *Investments*: includes financial and infrastructural investments from both state and non-state actors.
4. *Incentives*: includes economic and legal initiatives (incentives) that the government and other players have established specifically to enhance innovations (e.g., tax breaks or credits).
5. *Impacts*: includes resultant economic, social, ecological, and political impacts of innovations.
6. *Impediments*: includes barriers to the value chain, including cheap imports that price out local innovations from the market.

Key Highlights

The “National and Global Economic and Policy Outlook” domain, include six (6) prioritized indicators (e.g., extent of Citation/consideration of innovations in economic blueprints, presence of a dedicated innovation Agency, Availability and effectiveness of coordination mechanisms, among others). Indicators related to innovation policy were prioritized as key to understanding the innovation process and strengthening innovation supporting activities. Innovation is highlighted in Kenya’s Vision 2030 and other blueprints even though there is no consolidated visibility of the innovation agenda in these blueprints. The country is making good progress in the innovation policy domain anchored on the ST&I Act of 2013, but most policies and plans are regulatory rather than facilitative. More effort is required towards strengthening a balanced mix of framework conditions for innovation (e.g., research performance and commercialization policies and/or strategies that facilitate marketization of research outputs especially in the informal sector since this study focused more on market-driven innovation). Kenya is part of regional and continental strategies such as the STISA 2024 and Agenda 2063, to name a few examples, but there are no clear guidelines to evaluate national progress in implementing these frameworks in line with national development plans. The country’s innovation governance is strengthened by the presence of a dedicated agency mandated to promote innovation, the Kenya National Innovation Agency (KeNIA). There are other agencies, but our findings show that the governance structures are mostly focused on the regulatory functions and less on the facilitative functions (e.g., marketization, funding, etc.).

The “Innovation Life Cycle/Value chain” domain includes twenty-eight (28) prioritized indicators (e.g., number of innovation knowledge platforms, source of funding (private or government), number of Science, Technology, Engineering and Mathematics programmes (by level), number of publications and patents, and number of commercialized knowledge products. The indicators related to knowledge commercialization were prioritized as key for assessing the translation of knowledge and technology into usable or marketable goods, services, and business models. The findings show that Kenya’s knowledge-producing platforms are not limited to Universities and TVETS, but also other government and private research institutions that support innovation are increasing in number and associated enrolments. This has increased the number of research outputs/publications and patents and hence the innovative ideas. Platforms for commercializing these ideas are becoming prominent, more so, in the enterprise sector (e.g., start-ups and incubation centres) but remain relatively weak in the academic sector.

There have been efforts to support the establishment of Technology Transfer Units (TTU) in Universities and Research Institutions through the Kenya Industrial and Property Institute (KIPI) and KeNIA, as a route to commercialization. However, most of the existing TTUs are not operationalized and are relatively under-skilled and characterised by low sensitization, especially among researchers who lack information on patenting and Intellectual Property (IP) rights. Compared to the TTUs, start-ups and incubators appear to accelerate commercialization owing to their stronger interactions with the external market environment. Several efforts toward strengthening commercialization are emerging including the Innovation Bridge platform established by KeNIA, aimed at exposing research innovations to the market. Uptake and awareness creation platforms such as Innovation Weeks and other digital platforms in the ICT and other sectors are increasingly becoming important in linking innovative ideas and products to potential markets.

The “Investments” domain included prioritized indicators (e.g., share of GDP invested in R&D, amount of private sector funding and amount of foreign direct investments supporting innovation, among others). The study shows that the national budgetary allocation to ST&I remains low. However, there is increasing infrastructure investments in the country, especially in digitization and electricity connectivity, which are key enablers, but the lack of adequate funding means that this infrastructure cannot be adequately accessed and used by various segments of the society especially rural dwellers and other disadvantaged social groups. While Kenya has put in place special funds such as women and youth funds, the extent to which innovation is mainstreamed in these funds is unclear. However, findings show that there is increasing foreign investments and funding of hubs and start-ups in Kenya, an opportunity that could be enhanced by creating a safe business environment for foreign and local investors. Kenya has made efforts in easing the establishment of business through the e-citizen platform. However, political stability remains a threat to business growth.

The “incentives” domain included twelve (12) prioritized indicators (e.g., innovation awards and special economic zones, among others). While the country has put in place various incentive schemes such as innovation awards, incentives related to facilitating business processes were highlighted as key in creating wider impacts, especially on commercialization and enterprise development. Additionally, innovation awards have been established, even though these are small in scale, to spur the development of innovative ideas, but their impacts remain unclear and untracked. There is a need to develop an incentives strategy such as financial incentives, tax credits and intellectual property incentives, with clear budgetary allocation, coordination, and impact tracking system.

The “impacts” domain included eleven (11) prioritized indicators (e.g., number of jobs created, ecological impacts on carbon footprints, among others). Findings show that currently, there is no framework for measuring the impacts of innovation. The “economic impacts” subdomain was prioritized especially the role of innovations in job creation and economic growth. On the other hand, there are multiple social and ecological impacts (e.g., reduced carbon footprints through cleaner production) but they are often overlooked due to the focus on economic impacts.

Finally, the “impediments to innovation” domain included six (6) prioritized indicators (e.g., structural inefficiencies such as corruption, incompetence, and cultural barriers such as beliefs and traditions, among others.)

Indicators related to “structural inefficiencies” were highlighted as they pose significant challenges to innovation performance in the country. Findings show that structural inefficiencies especially incompetence and corruption are key impediments to innovation, resulting in poor management of ideas supportive to innovation and ushering in counterfeit products.

Recommendations

Based on stakeholder prioritization and ranking, frontier sub-domains were identified in each of the domains. These form the basis for the following recommendations:

A well-articulated innovation policy is highlighted as key to understanding and catalyzing innovation supporting activities. There is an opportunity to transform the country's innovation capacity through establishing more facilitative policies (e.g., commercialization guidelines, strategies etc). This study recommends the **development of a long term National Multi-Sectoral Innovation Masterplan and an effective framework for various innovation financing schemes.**

An elaborate mechanism should be developed to effectively manage ideas supportive of innovation, execution of ideas and utilization and/or commercialization of results. Kenya has an opportunity to turn huge amounts of research results into market products that could spur economic growth and job creation. Enhancing funding and capacity development for the various **commercialization units such as TTOs and incubation centres (within academic and research platforms) is a strategic investment.**

Funding is a critical part of Kenya's innovation outlook. **There is need to increase public funding for knowledge generation and use for innovation supporting activities through models such as outcomes-based funding focused on specific deliverables. Further, establishing university-led enterprises could enhance the private sector uptake of innovative research outputs.**

Incentivising business processes, for example, the ease of doing business, is important for Kenya's Innovation Outlook. **There is need to develop an institutionalized business incentive strategy with clear budgetary allocation, coordination, and impact tracking system.**

Economic impact of innovation remains key in linking innovation to the country's development goals. Nonetheless, there are no frameworks to track economic impacts of innovations. **There is need to align or strengthen the innovation outlook with the national economic outlook to establish clearer connections.**

Structural inefficiencies such as corruption and incompetence are key impediments to innovation in Kenya. **There is need for effective government institutions and governing systems with a clear legal and institutional framework and implementation of certain systemic reforms, including those that deal with infringers and protects innovations from piracy and counterfeits.**

Conclusion and next steps

Kenya's innovation outlook is relatively complex and still requires continuous coordination and consolidation. It is worth stressing that the scope of this study as well as its empirical basis is limited, as the findings are based on national level indicators with limited in-depth sectoral analysis. The study has nonetheless succeeded in working with stakeholders to develop an inaugural contextual framework and foundational indicators which Kenyan decision makers and stakeholders can further develop and apply in tracking innovation progress and decisions. This report provides a useful initial template for assessing, understanding, and coordinating Kenya's innovation activities.

Some of the next steps to take include:

1

Further development of granular economic sub-sector innovation performance data collection methods (particularly, digital) and updating of the missing data for different domains.

2

Deep-dive analytics profiles for specific sub-sectors at municipal, county, and national levels in the context of the identified critical sub-domains.

3

Future innovation outlooks might focus on specific areas especially the critical (sub) domains identified in this study to generate a deeper understanding of innovation dynamics, challenges, and investment opportunities.

4

·Linking the outlook study with the Innovation Bridge initiative to help continuously update data on innovations and showcase innovation as a mechanism for creating socio-economic value in the country and data.

5

Collection of data to measure innovation in the informal sector and of social innovation not amenable to classical R&D indicators remains a challenge and there is need for a longer and well-resourced study to populate this facet of the innovation outlook.