



# **KENYA INNOVATION OUTLOOK STUDY**

2022

## **CONCEPTS AND DEFINITIONS**

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#### 3.1 DEFINING INNOVATIONS

The definition of innovation for measurement purposes is anchored on “new improved products/processes” introduced on the market or put to use, but in the Kenyan context, the emphasis is largely on interventions, with disruptive positive effects on the economy, i.e., jobs, markets, and poverty reduction. Developing a robust and functional innovation outlook requires an understanding of what innovation entails (both front-end and back-end) and why innovation is a key factor in supporting the economic development of countries (Hall et al. 2020). Despite the claims of innovation at all socio-economic levels from national, sectoral, institutional, and individual levels, there is no universal definition of innovation because it is relatively contextual and dependent on interpretation by different actors; academia, manufacturing, service providers, community-oriented organizations, and artists, among others. The varied definition of innovation and the need to have share understanding what innovation entails for Kenya, inspired this outlook. The first steps of the outlook are intended to contextualize innovation and the associated indicators to encourage a deeper understanding and mechanisms for effective utilization among different actors, decision-makers, and investors, to name a few examples.

Nonetheless, the Oslo Manual for collecting, reporting, and using data on innovation (OECD/Eurostat, 2018) defines innovation as “*new or significantly improved product (good or service), or process, a new marketing method, or a new organizational method in business practices, workplace organization or external relations*”. Some literature review, for instance, Taylor et al., (2017), provides an in-depth review of the evolution of the term innovation, which contrasts with imitation and provides a composite definition of innovation as “the creative process whereby new or improved ideas are successfully developed and applied to produce outcomes that are practical and of value”. These definitions have elicited debates about whether an “innovation” is primarily associated with novelty and dramatic technological breakthroughs. The notion of dramatic change led to the perception that innovation only happens through formal knowledge, technological, or market processes and may not include informal processes that are increasingly driving economic development. Given the dynamic economic environment, the need to diversify sources of income, and recover from the effects of the COVID-19 pandemic, countries are moving towards a more holistic view of innovation to focus on both formal and informal products and processes.

In the Kenyan context, the 2013 ST&I Act provides a more inclusive framing of innovation succinctly captured in five parts: “(a) a technovation model, utility model, or industrial design within the meaning of the Industrial Property Act, 2001 (Cap. 509); (b) a product, process, service or idea which is novel; (c) an improved use of a new product, service or method in the industry, business or society; or (d) indigenous or traditional knowledge by the community of beneficial properties of land, natural resources, including plant and animal resources and the environment; (e) any other non-patentable creations or improvements which may be deemed as deserving promotion and protection or sui generis intellectual property rights and “innovator” shall be construed accordingly”. Through this definition, Kenya aspires not just to pursue innovative ideas and technologies but ensure that these innovations respond to the country’s economic growth and poverty reduction as also stressed by Hall et al., (2003).

Innovation can also be categorized into different typologies based on the focus. Three typologies have widely been used in previous assessments:

- **Process innovation** defined as the implementation of a new and novel approach /method in a firm or institution, e.g., co-creating an idea with consumers to enhance market uptake;
- **Product innovation** which involves the creation of a new product brand or improving an existing brand to enhance utility and respond to consumer needs in an impactful way, e.g., smartphones or even a vaccine; and
- **Organizational innovation** which is synonymous to institutional innovation and involves new organizational structures and policies that enhance effective management and satisfactory service delivery to consumers/stakeholders. These forms of innovations can occur on different platforms including outside firms, in public spaces, and in educational spheres, and generate development and create wealth (GoK, 2012).

For the Kenya Innovation Outlook (KIO), we have therefore drawn from the various definitions described above (also see Figure 4) to propose a definition of innovation that is context relevant: “Creation of new or distinct improvement of products and processes in the formal and informal sector that have disruptive positive effects on the economy, and the social well-being of the citizens”.

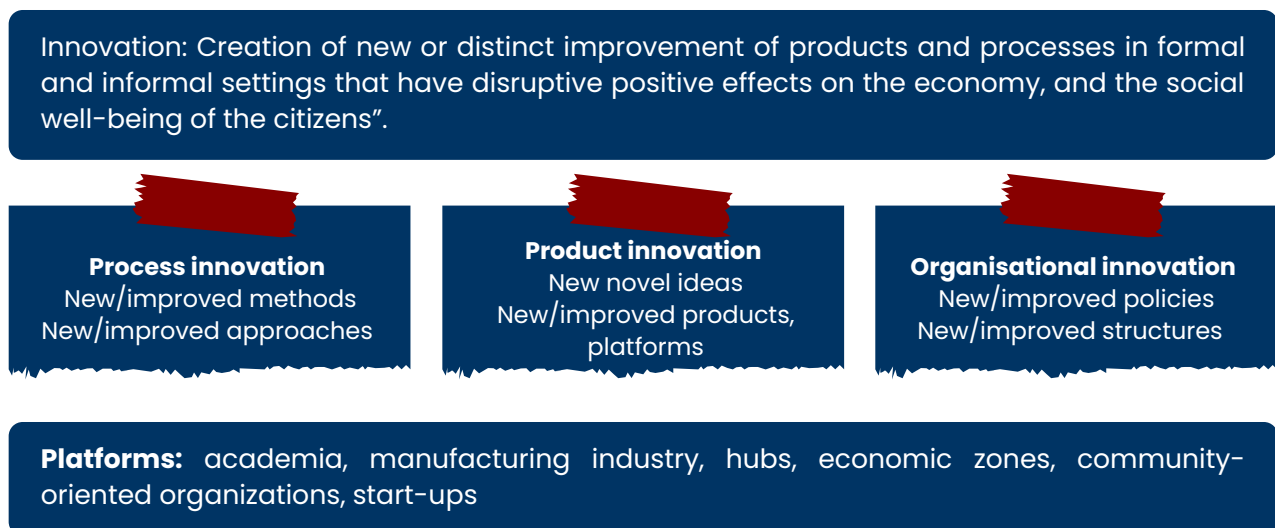


Figure 4: Definition of innovation for the KIO 2022

### 3.2 DEFINING NATIONAL INNOVATION SYSTEMS (NIS)

Innovation is not a linear process, but a more complex system that requires a clear understanding of the actors and associated processes involved including inputs, outputs, enablers, impacts, and associated strategic niches. The interactions between different actors and processes that underpin innovations are encapsulated in the National Innovation Systems (NIS). While the conception of innovative ideas is normally the exercise of individuals or discrete teams, innovation does not happen in isolation but is rather facilitated through and impacted by a multi-scale, complex, and dynamic network of social, legal, political, and economic factors. Furthermore, innovation as a non-linear systemic process requires feedback loops and multiple linkages across various policy, technological and market interventions at various levels and within relatively complex social-economic contexts (Leach et al., 2012). This intricate network collectively constitutes an innovation system that can be demarcated at increasingly wider and more complex scales ranging from local, national, and regional to a global scale; thus, allowing comparisons across systems (Rudskaia et al., 2018).

The use of the term “national innovation system” started gaining traction in development discourses in the 1980s. As is the case with the term “innovation”, multiple definitions of NIS have emerged over time. A common definition from literature is that the NIS *“is a network or a system of interacting government and private companies (large and small), universities, government bodies whose activities and relations lead to the emergence, import, perfection, and spread of new technologies within national borders”*. The cooperation of these organizations can be technical, commercial, legal, social, and financial, while the goal is the development, security, financing, and regulation of new areas of knowledge and technology. The key point in this definition is the relationships and interactions among institutions and resultant impacts.

### 3.3 Evaluating National Innovation Systems

The urge to evaluate any NIS is driven by both internal and external utility demands. Internally, countries need to constantly monitor the outcome and impact of their innovation activities on socio-economic development. The evidence from tracking progress informs the establishment of innovation governance structures, formulation of policies, and budgetary allocation to maximize benefits from the investments within their NIS. Externally, the evidence informs the ranking of countries on the global innovation index, which is also a measure of the countries’ economic competitiveness. This in turn provides potential investors with a basis for selecting countries and sectors to invest in and is, therefore, a major booster for both internal and foreign direct investment.

To facilitate comparison between NIS across the globe, several international assessment tools have been adopted. The first attempt to provide harmonized indicators for measuring NIS was done in 1962 by the Organisation for Economic Co-operation and Development (OECD) Working Party of National Experts on Science and Technology Indicators. The series of statistical manuals they generated are popularly known as the “Frascati family” of manuals, in reference to the Italian town where they were first developed. Of these manuals, the Oslo Manual has been the international standard of reference for conceptualizing and measuring innovation since 1992. It has since been revised on three occasions to account for growing levels of understanding and adoption, the emergence of innovation frontiers, and to address evolving user needs.

Several previous innovation assessments in Kenya and elsewhere in Africa, including the third generation Africa Continent Innovation Outlook 2019, the Kenyan Innovation outlook Report 2012, and the Kenyan innovation Survey 2015, have all applied the Oslo Manual. Prior to 2018, the innovation surveys according to the Oslo manual mainly focused on collecting data from the formal business sector.

However, the revised Oslo Manual (2018) provides guidelines for measuring innovation in all sectors of the economy including the public sector and households. Countries should develop innovation data collection instruments that cover sectors of the economy such as government ministries (departments and agencies), education institutions, health institutions (e.g., clinics, hospitals, etc.), research institutions, consumers/Individuals, and groups not acting as a firm, social interest groups, and professional interest groups. Given that innovation is embedded in formal and informal platforms with local markets, social, technological, governance, and organizational processes, all form key parts of an innovation system. It is recommended that these international manuals be adapted to the local context. Our approach, therefore, expands the delineation of the innovation space to include formal and informal innovation platforms and processes. Overall, the term innovation is nuanced with multiple terms and concepts that can be well understood as the concept becomes more practical. Some of the key terms that underpin innovation are outlined in Text Box 1.

*Textbox 1: Glossary of Terms (OSLO MANUAL 2018 @ OECD/EUROPEAN UNION 2018; UNHCR)*

- **Innovators:** People who are able to see how a new idea, or an existing idea or invention could be exploited into an outcome that creates value for people.
- **Innovation:** The implementation of a new or significantly improved product (good or service), process, a new marketing method, or a new organisational method in business practices, workplace organisation or external relations.
- **Innovation ecosystem:** Complex network of people, organisations, institutions, government policy and regulations that support and promote innovation. It includes the interactions between people in order to take an idea and turn it into a marketable process, product or service.
- **Technology:** Is the state of knowledge on how to convert resources into outputs. This includes the practical use and application to business processes or products of technical methods, systems, devices, skills, and practices.
- **Intellectual property (IP):** Creations of the mind such as inventions; literary and artistic works; and symbols, names and images used in commerce.
- **Intellectual property rights (IPRs):** Legal rights over intellectual property.
- **Accelerator:** An effort to develop a business idea, test that idea, and essentially treat the idea as a new business startup, pursuing the idea or ideas over the course of a few months.
- **Incubator:** Help start-ups in their infancy succeed by providing workspace, seed funding, mentoring, and training.
- **Startup accelerator:** An organization that offers mentorship, capital, and connections to investors and business partners. Its is designed for select startups with promising minimum viable products (MVPs) and founders, as a way to rapidly scale growth.
- **Innovation lab:** Also known as hubs, incubators, or accelerators (a co-working space), both virtual and physical, in which new ideas can be explored, in which hands-on project management takes place, and in which lessons learned are documented and shared with the co-owning Division (UNHCR). Innovation Labs are also a space from which the scaling of good practices can emerge.
- **Prototype:** A small-scale, tangible representation of an idea or solution (or part of it) that people can directly experience. Prototyping allows you to communicate your idea or solution to others in an interactive way, try ideas out quickly and gather feedback easily. The prototype is tested to make sure it is fit for the purpose and users' need. Based on the feedback, the prototype is improved and tested again.
- **A startup:** Newly formed business with particular momentum behind it based on perceived demand for it.

## 7 CONCLUSION AND NEXT STEPS

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The primary purpose of this study was to provide a foundational framework upon which Kenya's innovation assessment can be drawn. Overall, Kenya's innovation outlook is relatively complex and still requires better coordination and consolidation. It is therefore 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 beyond the national scope. It is, therefore, work in progress and may benefit from further targeted analysis especially around some of the frontier indicators or domains identified by stakeholders. The study has nonetheless succeeded in working with stakeholders to develop an inaugural contextual framework and indicators which Kenyan decision makers and stakeholders can relate with and apply in tracking innovation progress. The report, therefore, provides a template that can be enhanced and improved for assessing and coordinating Kenya's innovation activities on a regular basis. Some of the next steps to steps that could be considered include:

- ➔ Collecting and updating different domains with data that is missing. Further work in coming up with methodologies for collecting specific information/data for the different domains and subdomains is necessary to affirm the indicators.
- ➔ Need for deep drive into particular frontier sub-domains targeting the sector specific and county level analysis. Stakeholders' engagement could further help in developing the various subdomains and piloting this across Counties as a way of documenting County innovation processes and activities.
- ➔ Future outlooks might focus on specific areas especially the frontier (sub) domains identified in this study to generate detailed understanding of innovation dynamics and investment opportunities.
- ➔ Linking with the Innovation Bridge initiative. The study has highlighted the need to continuously showcase innovations in the country and data maybe updated periodically through linkages with the Innovation Bridge Initiative.
- ➔ A guideline document needs to be developed, that would seek to educate and inform those in charge of town planning on the method of harnessing the potentials within the community. The production of such a paper may well be the way the agency (KeNIA) can assist in this matter.
- ➔ 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

The process of innovation has a spatial dimension. It is manifested in our urban centres and in the relationships that result from positive proximity and the dynamics through which we get involved in the economy. These forces are a great resource when channeled to the processes of creating a culture and solving our problems.

A common vision can be developed for the nation through a national charter or working paper with the support of KeNIA.