

Policy Support Facility

Guidelines for strengthening commercialisation in universities and research institutes in **KENYA**



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OACPS R&I PSF

Guidelines for strengthening commercialisation in universities and research institutes in **KENYA**

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List of Abbreviations

ACIH	Association of Country-wide Innovation Hubs	RIs	Research institutes
ACTS	African Centre for Technology Studies	R&I	Research and innovation
ATIP	Africa Technology and Innovation Partnerships	SDGs	Sustainable Development Goals
CEO	Chief Executive Officer	SME	Small and medium-sized enterprise
CUE	Commission for University Education	STI	Science, technology and innovation
EU	European Union	TAU	Technical Assistance Unit
GDP	Gross domestic product	TTO	Technology transfer office
HEIs	Higher education	TVET	Technical and vocational education and training
ICT	Information and communications technology	UKAid	United Kingdom Department for International Development
IP	Intellectual property	UNCTAD	United Nations Conference on Trade and Development
IPO	Intellectual property office	UNDP	United Nations Development Programme
IS	Institutional commercialisation support	WIPO	World Intellectual Property Organization
KeNIA	Kenya National Innovation Agency		
KIPI	Kenya Industrial Property Institute		
KIRDI	Kenya Industrial Research and Development Institute		
KOTDA	Konza Technopolis Development Authority		
MSME	Micro, small and medium-sized enterprise		
NACOSTI	National Commission for Science, Technology and Innovation		
NRF	National Research Fund		
OACPS	Organisation of African, Caribbean and Pacific States		
PSF	Policy Support Facility		
R&D	Research and development		

Definitions of Terminologies

Assignment

An agreement by the holder of intellectual property (IP) rights for the transfer of title and interest in the IP to another party..

Commercialisation

The process by which any IP assets may be adapted or used for any purpose that may provide any benefit to society or commercial use on reasonable terms. It includes assignment, licensing, and establishment of spin-offs to offer IP as a product or service.

Confidential information

Any IP, information, or data of a confidential nature, including all oral and visual information or data, and all information or data recorded in writing or in any other medium or by any other method, and all IP, information and data which a university is under obligation, whether contractual or otherwise, not to divulge.

Copyright

An original work of authorship which has been fixed in any tangible medium of expression from which it can be perceived, reproduced, or otherwise communicated, either directly or with the aid of a machine or device, such as books, articles, journals, software, computer programmes, musical works, dramatic works, videos, multimedia products, sound recordings, paintings, pictorial, sculpture or graphical works.

Creator/inventor

Any person, who creates, conceives, reduces to practice, authors, or otherwise makes a substantive intellectual contribution to the creation of IP and who meets the definition of "inventor" as implied in Kenyan Industrial Property Act 2001. The definition of "author" as generally applied in Copyright Law.

Equity

Shares of stock or securities including, but not limited to, stock options, warrants or any other rights to purchase stock or securities. For the purpose of these guidelines, equity means shares owned by the university and its inventors in joint venture companies or other entities arising from commercialisation of the university's IP rights.

Gross revenues

All income received by the university arising from the commercialisation of IP rights.

Industrial design

Industrial design refers to the right granted to protect the original, ornamental and non-functional features of a product that result from design activity. The right concerns merely the appearance (the 'design') of a product, not the product itself. An industrial design has a term of protection of five years. It can be renewed for two consecutive periods of five years.

Innovation

An idea that has been transformed into practical reality. This means doing something new that improves a product, process, or service. Many innovations can be protected through IP rights. Innovations have been introduced into the market or diffused throughout society.

Innovator

A person who transforms ideas into practical reality in the form of products, processes or services.

Intellectual property

All outputs of creative endeavour in any field for which proprietary rights may be obtained or enforced pursuant to any laws and including, but not limited to: inventions (whether patentable or not), all forms of copyrighted works, designs (whether registered or unregistered), patents, new plant varieties, traditional knowledge, trademarks, know-how, trade secrets, domain names, information, data, discoveries, mathematical formulae, specifications, diagrams, expertise, techniques, research results, computer software, programming code, algorithms, compositions of matter and devices, techniques, processes, procedures, systems, formulations, databases and compilations of information, laboratory notebooks, business and research methods, the name of the university, badge and other marks associated with the university, tangible research property, and such other property as may be specified by the university in writing.

Invention

The creation of new, useful, and non-obvious ideas and/or their reduction to practice that result in, but are not limited to, new products, devices, processes, and/or methods of producing new and/or useful industrial operations and materials, any article useful in trade or any composition of matter that is industrially useful or that has commercial potential. In order for an invention to be patentable, it must be novel, non-obvious and industrially applicable. An invention has not yet been introduced commercially or diffused in society.

Invention disclosure

The written submission to the Authorised Office such as Intellectual Property Office (IPO) on the standard or prescribed invention or innovation disclosure forms available from the IPO, of a written description of any invention that an innovator claims he or she has made.

Inventor

A person who discovers, invents, develops, designs, or breeds new technologies or prototype.

Know-how

Any methods, techniques, processes, discoveries, inventions, innovations, tacit processes, specifications, recipes, formulae, designs, plans, documentation, drawings, data and other technical information and actual human artistic or technical skills derived from experience in working a certain art or technology.

Material transfer agreement

A contract covering the transfer of physical possession and use of tangible research material into or out of the university.

Net revenue

Gross revenue received less expenses incurred in protecting or promoting or commercialising the innovation or invention.

Non-disclosure agreement

An agreement or section of an agreement that prevents parties to the agreement releasing knowledge or information without the other's permission.

Patent

An exclusive right granted for an invention which provides the inventor with the exclusive right to prevent others from possessing, using, selling, manufacturing and importing the patented invention or offering to do any of these things within a definite geographical area. In Kenya, a patent is granted by the Kenya Industrial Property Institute for a period of 20 years from the filing date of application.

Plant varieties

Comprise of given genotype or combination of genotypes distinguished from any other plant groupings by at least one characteristic. To be protected as IP, the plant varieties must be new, distinct, uniform or stable.

Publications

Books, textbooks, journal articles, booklets, bulletins, circulars, pamphlets, reports, information releases, exhibits, demonstrations, and other scholarly or popular writings regardless of medium.

Royalties

Revenue received by a university from a third party that is exploiting university IP rights under a licensing agreement.

Start-ups

These are companies created based on innovations developed by people outside universities and research institutes.

Spinoff

These are companies established based on research results from a university and research organisation by the people within universities.

Tangible research property

Research results that are in a tangible form and have a physical embodiment. Examples of tangible research property include cell lines, software, devices, compositions of matter, biological materials, engineering drawings, integrated circuit chips, prototype devices, circuit diagrams, and equipment irrespective of whether or not protectable under any IP regime. Tangible research property may be distributed without securing IP protection by using some form of contractual agreement, such as a formal contract, loan agreement, letter agreement, or user license.

Trademark

Any word, phrase, logo, name, symbol, device, sign or any combination thereof, used by a person or which a person has a bona fide intention to use in commerce and uses or applies to register, to identify and distinguish his goods from those of others, including the container of the products or the packaging.

Technology transfer

This is the process of converting scientific findings into products or services that are useful to society. It may also mean the transfer of know-how, innovation, and skills from the owners to the users.

Trade secret

Any device or confidential data, information or compilations used in research, business, commerce, and industry which are not generally known or accessible and confer competitive advantage on the one having the right to use it. The information has commercial value because it is secret or confidential. Trade secret protection requires the owner to take reasonable steps to protect the secret, such as limiting access to the secret. Trade secret may last indefinitely but will be lost when the information becomes generally known. No filing or registration is required for trade secret protection.

Traditional knowledge or indigenous knowledge

Refers to the knowledge encompassing a wide variety of areas held by traditional, indigenous, or local groups or communities or knowledge acquired in a non-systematic way which has significance and relevance not only to its holders but also to the rest of humanity.

Utility model

An invention that is new and industrially applicable and is usually sought for technically less complex inventions or for inventions that have a short commercial life and normally do not meet the patentability criteria. A utility model has a term of protection of seven years, which cannot be renewed.

Executive Summary

These guidelines on strengthening commercialisation at universities and research institutes have been prepared in the framework of the OACPS R&I Policy Support Facility (PSF). This support resulted from a request by the Kenya National Innovation Agency (KeNIA), which is the national agency responsible for coordination, promotion, and regulation of the national innovation ecosystem, which includes, among others, skills development, policy implementation, monitoring and evaluation, dissemination, funding, and promotion.

The purpose of these guidelines is to address the challenges that face technology transfer and commercialisation in Kenya to enable the country to get good returns on its investments in R&D activities. Kenyan universities, research institutes and businesses are missing out on opportunities to commercialise research outputs in ways that benefit the economy and society. Challenges have been identified at three levels – national, institutional, and individual. At the national level, the challenges facing commercialisation include lack of the following: national innovation and commercialisation policy, national innovation fund, national commercialisation strategy, national IP management policy, and a framework for academia-industry collaboration. At the institutional level, the challenges include ineffective and inadequately resourced TTOs, lack of institutional commercialisation strategies, ineffective implementation of IP policies, inadequate focus by senior management on commercialisation, low level of IP applications and grants, low funding of commercialisation, and lack of clarity on how universities can establish and manage spinoffs. At the researcher(individual)level, the key challenges include low IP awareness and skills, low level

of IP training and education, limited support for IP protection and commercialisation, and a lack of adequate incentives for IP protection and commercialisation.

These guidelines provide suggestions and recommendations on how these challenges can be addressed. At the national level, the guidelines recommend putting in place the various policies that are lacking. However, it is also recognised that policy formulation is long-term. Therefore, the guidelines also make suggestions on the interventions that can be made in the short term under the leadership of KeNIA to promote commercialisation. Most of the commercialisation challenges at the institutional and researcher levels can be addressed in the short term, and these become useful entry points for interventions by KeNIA in close collaboration with universities and research institutes as well as other stakeholders.

The guidelines identify the responsibilities of KeNIA, senior managers at universities and research institutes, managers of TTOs and individual researchers in strengthening commercialisation.

1 Introduction

1.1 OACPS RESEARCH AND INNOVATION POLICY SUPPORT FACILITY

These guidelines on strengthening commercialisation at universities and research institutes have been prepared within the framework of the OACPS R&I Policy Support Facility (PSF).

The PSF was launched by the Organisation of African, Caribbean and Pacific States (OACPS), with funding from the European Union (EU), within the framework of the OACPS Research and Innovation (R&I) Programme (oacps-ri.eu). The objective of the PSF is to support OACPS member countries in enhancing the quality and efficiency of their R&I policies and systems. The PSF is a demand-driven policy support

tool that responds to requests for national R&I policy reforms and adaptations from high-level authorities from OACPS member countries. Through a coherent and systematic approach, it offers tailor-made services that are based on country needs and are impact-oriented and evidence-based. High level international experts with expertise in relevant R&I fields and peers from (mainly) OACPS and EU countries are mobilised to carry out the services and formulate concrete advice and recommendations to design, implement or evaluate reforms in the field of R&I at the level of policy programme or the entire R&I system.

1.2 THE PSF SERVICE IN KENYA

The Kenya National Innovation Agency (KeNIA) is the national agency responsible for coordination, promotion, and regulation of the national innovation ecosystem, which includes, among others, skills development, policy implementation, monitoring and evaluation, dissemination, funding, and promotion. There is tremendous research that is going on at research centres, universities, and other higher learning institutions in Kenya, with typical outputs such as research papers, policy papers, publications, graduating students, institutional

and individual consulting services and in some cases prototypes. However, the development and management process of innovation commercialisation in essence is extremely weak.

Therefore, KeNIA requested the support of the OACPS Secretariat in the development of a framework to effectively guide and enable universities, research institutes and other higher learning institutions in Kenya on innovation commercialisation models.

1.3 THE KENYA NATIONAL INNOVATION AGENCY (KENIA)

Vision 2030, which is Kenya's economic blueprint that aims to transform Kenya into a globally competitive and newly industrialised middle-income country by 2030, has identified, science, technology, and innovation (STI) as one of the key foundations for the realisation of the goals and objectives of the Vision. In achieving a transformative country, the STI sector has an overarching theme of "Accelerating the Transition to an Innovation-led and Knowledge-based Economy". To express its commitments to STI, through the Vision's first medium-term plan (2008-2012), Kenya's STI Act was enacted by parliament in January 2013. The Act was developed to facilitate coordination and regulation of the progress of STI, to assign priority to the development of STI and entrench it in the national production system. The STI Act (2013) established three STI bodies - the National Commission for Science, Technology, and Innovation (NACOSTI, responsible for STI policy and research priority setting), the National Research Fund (NRF, responsible for funding of STI) and KeNIA (responsible for technology transfer and the translation of research outputs into products and businesses). These three have since been set up and operating since 2014.

The STI Act (2013) has recognised innovation commercialisation as a necessary step for the business success of innovations from start-up ventures or public and private research efforts. KeNIA is the national agency responsible for coordination, promotion, and regulation of the national innovation ecosystem, which includes, among others, skills development,

policy implementation, monitoring and evaluation, dissemination, funding, and promotion. Regionally, Kenya is performing relatively well in most innovation indices (for example Global Start-up Ecosystem Index 2022; Global Innovation Index 2021; UNCTAD's 2021 Technology and Innovation Report; and Cisco Digital Readiness Index 2019). However, globally, the country is lagging in key areas of the innovation ecosystem which include talent and skills, access to finance, technology infrastructure, start-up environment as well as technology transfer/adoption (commercialisation). Interventions that address some of these challenges are needed to strengthen the Kenyan innovation ecosystem.

KeNIA, which is mandated to drive technology transfer and commercialisation of R&D outputs, is undertaking a three-pronged approach to address research commercialisation – at (a) national, (b) institutional, and (c) individual levels.

1.4 JUSTIFICATION AND OBJECTIVES OF THE GUIDELINES

These guidelines focus on addressing challenges that face technology transfer and commercialisation at Kenyan universities and research institutes. Kenya deserves a better return on investment in its R&D activities. It happens too frequently in Kenya that research outputs are not taken further down the pipeline to production. Therefore, Kenyan universities, research institutes and businesses are missing out on opportunities to commercialise Kenyan research in ways that benefit the economy and address societal challenges. Links between innovation, economic growth and productivity being globally documented, evidence reveals that science and innovation are receiving greater policy attention across countries globally. All major theories and all empirical analyses of economic development treat innovation as the key explanatory factor in growth. Hence, it is important that Kenya attains an innovation support framework that is suitable for the changing needs of its universities, research and industry, which is accessible, cost-effective, visible and well-coordinated.

An action plan should be aligned with national priorities, with focused investment in sectors (agriculture, micro, small and medium-sized enterprises, housing and settlement, healthcare, digital superhighway and creative economy) where Kenya can build scale and have a real impact. The increase in the rate of commercialisation of intellectual property at universities and research globally has important performance and policy implications. Universities and research must play a bigger role in the economy, by increasing collaboration with industry to develop the next generation of Kenyan products.

These guidelines lay out a comprehensive set of reforms to boost collaboration between universities and industry and to drive commercial returns. This will be achieved through new initiatives, complimented by government support, which will act as catalysts for change. It will also be driven by changes within the current systems to ensure that incentives and indicators are all appropriately aligned.

1.5 METHODOLOGY FOR DEVELOPMENT OF GUIDELINES

The expert panel of this PSF service undertook a comprehensive desk review (international benchmarks and locally) and face-to-face consultations with key stakeholders, including senior officials from universities and research institutes, technology transfer managers, as well as researchers. The team engaged with 71 key informants in face-to-face interviews and focus group discussions during the PSF mission, and over 24 institutes were represented. The panels also talked to innovators, managers of innovations hubs as well as associations of innovation hubs. Senior officials at ministries responsible for higher education, research institutes, STI, trade and industry were consulted. The findings from these efforts were used to prepare these guidelines.

The expert panel has also held different meetings and reviews of the draft report with the PSF team and the KeNIA, the national team and other national stakeholders. Input has been incorporated into this report.

The preparation of these guidelines also benefited from the findings of several reports that were prepared from various studies undertaken on the Kenyan innovation ecosystem between 2021 and 2022:

- i. **NACOSTI/WIPO Survey (2021):** the National Commission for Science and Technology (NACOSTI) in collaboration with the World Intellectual Property Institutes (WIPO), undertook a survey which investigated the status of intellectual property policies at Kenyan universities and the level of technology transfer and commercialisation of R&D outputs.
- ii. **Institutional Commercialisation Support (IS) Project (2022):** in early 2022, through the support of UK Aid's Africa Technology and Innovation Partnership (ATIP) Programme, KeNIA launched the IS Project to spearhead commercialisation interventions at institutional level. The project undertook a baseline survey at eight universities on the status of technology transfer and commercialisation.
- iii. **Mapping of the Innovation Ecosystem in Kenya (2022):** from January to July 2022, the UNDP, in collaboration with the Konza Technopolis Development Authority (KOTDA), the Association of Countrywide Innovation Hubs (ACIH) and the African Centre for Technology Studies (ACTS), undertook a comprehensive mapping of the Kenyan innovation ecosystem, to identify opportunities and challenges.

2 issues and challenges

The guidelines address several issues and challenges for technology transfer and commercialisation at Kenyan universities and research institutes. These are presented at three levels – national, institutional, and individual:

2.1 NATIONAL LEVEL

At the national level, the following four issues have been prioritised:

- a. National innovation and commercialisation policy:** Currently there is no national innovation and commercialisation policy and strategy. A draft National Science, Technology, and Innovation Policy (2021) emphasised technology transfer and commercialisation of R&D outputs, but not all aspects of innovation, start-ups and innovation hubs were covered.
- b. National innovation/commercialisation fund:** Currently there is no dedicated fund for innovation and commercialisation. The STI Act 2013 stipulates that at least 2% of GDP should be allocated to R&D, but the funding level is currently at around 0.8%. However, the prevailing funding practice focuses more on funding research than funding technology transfer and commercialisation of research outputs. Traditionally, the funders consider research to be completed when new knowledge is generated and the necessary (or promised) outputs such as reports, and publications are realised. The funding structure does not support early-stage ideation activities such as piloting and testing for the commercialisation activities required to translate research outputs into business. It is incorrectly assumed that this stage should be

financed by the private sector or development partners.

- c. Coordination of the various agencies responsible for innovation and commercialisation:** Currently there is inadequate coordination of universities, research institutes and government agencies responsible for technology transfer and commercialisation. The STI Act (2013) has provided for the establishment of three agencies (NACOSTI, NRF and KeNIA) to spearhead science, technology, and innovation in Kenya. However, these are at the early stage of being set up and have not yet built adequate human and financial resources to deliver on their mandates. Furthermore, there is inadequate collaboration between these three with other agencies, such as those under the ministries responsible for ICT, youth as well as trade, industrialisation, and enterprise development.
- d. National intellectual property policy:** Kenya remains a country without a national IP policy, despite being the regional leader in innovation. Several past attempts have been made to develop an IP policy, but have remained at draft level ever since.

2.2 INSTITUTIONAL LEVEL

The following are the issues and challenges affecting technology transfer and commercialisation at Kenyan universities and research institutes:

- a. Technology transfer offices:** not all universities and research institutes have technology transfer offices (TTOs). Furthermore, where they exist, most of the TTOs are deemed inefficient due to the following: (i) unclear mission and mandate (ii) insufficient skillset and manpower; (iii) lack of clear career path for technology transfer managers; (iv) low visibility and recognition; (v) low funding; (vi) unclear placement within the university RD&I structure. Furthermore, it is not a requirement by the Commission for University Education (CUE) and NACOSTI that universities and research institutes have TTOs for the purpose of IP management, registration, commercialisation and accreditation.
- b. Commercialisation strategy:** most universities and research institutes do not have processes and procedures in place to manage innovation commercialisation or to inform researchers and other stakeholders on goals and targets. There is need for a strategy to guide the coordination of the commercialisation efforts of the different departments, laboratories and centres.
- c. Priority of technology transfer and commercialisation:** currently technology transfer and

commercialisation are not recognised as a priority by senior management at universities and research institutes. The current focus is primarily on research and publications, which is directly linked to the reward system that awards publication and fails to provide incentives for commercialisation. Recently, a few universities have begun recognising IP applicants and patents for the purpose of promotion; a practice not widespread within academia. Furthermore, current internal research is funded by universities and research institutions, with little or no resources allocated to commercialisation. There needs to be specific incentives that reward commercialisation. Additionally, this should form part of the staff promotion policy criteria.

- d. Intellectual property policies:** only a few universities and research institutes have IP policies. An IP policy is an important tool for promoting technology transfer and commercialisation. Of the few policies in existence, many are not effective and staff and students are unaware of them. The incentive structure is rarely implemented even where revenue has been generated. While existing IP policies provide for equity distribution, no guidelines exist on establishing spin-offs/start-ups or the role of the researcher. Clarity on benefit sharing policies will set the benchmark for positive outcomes. A strategy to convert students' projects into products and business is evidently absent.

e. Framework for university-industry linkages:

linkages: there is currently no framework to strengthen the linkage between academia and industry. The weak university-industry linkage is cited as one of the reasons for the low level of technology transfer and commercialisation of R&D outputs. This may be as a result of the following: (i) research activities do not meet market demand; (ii) industry requirement for commercial potential not realised; (iii) absorptive capacity for new innovation absent; iv) weak industrial base and the informal nature of local industries; (iv) lack of tax incentive for industry and potential investors; (v) low level of staff mobility between industry and academia for skills transfer. Current funds for universities are based on the number of students registered or

graduated and research outputs, with main focus on publication. Innovation indicators such as patents granted, commercialised, spinoffs created and technology transferred require some attention.

f. Screening of publications for innovations:

innovations: Most universities and research institutes do not have a policy on research proposal screening for possible IP emanating from research with potential for protection and commercialisation. As a result, there is a loss of potential third stream income generation.

g. Grants for intellectual property rights:

Although the number of applications has been steadily increasing, the conversion rate of these applications to actual grants is extremely low.

2.3 INDIVIDUAL (RESEARCHER) LEVEL

At individual (researcher) level, the following are the issues and challenges affecting technology transfer and commercialisation at Kenyan universities and research institutions:

- a. Awareness on intellectual property:** the level of IP awareness and appreciation amongst the research community is low.
- b. IP training and education:** inadequate skills available to promote IP generation, protection, and commercialisation. Only a small percentage of researchers are exposed to IP awareness. Staff and students are largely unaware of the importance of IP rights. A large number of graduates have no knowledge of IP. Supporting skills such as IP valuation, negotiation, technology licensing and incubation, and patent drafting is absent.
- c. Support to researchers on commercialisation:** there is limited support given to researchers and students on commercialisation.

Talented researchers are motivated to conduct research, with low or no inclination towards commercialisation. Hence, successful commercialisation cannot be realised without the active involvement of the researcher. Furthermore, researchers lack capacity to package research information in a manner for appropriate absorption. Balancing of time between research, teaching and commercialisation is challenging for researchers, given their inexperience at commercialisation activities.

- d. Documenting success stories:** due to poor documenting of success stories on commercialisation and the benefit individuals derived, there are few local benchmarks for motivation. Researchers need to be informed about other researchers who have generated large revenue based on commercialised innovation.

3 Recommendations

3.1 AREAS OF FOCUS OF THE GUIDELINES

To address **Section 2**, the guidelines will focus on the three levels as indicated below:

NATIONAL LEVEL

- ❖ National innovation and commercialisation policy and strategy;
- ❖ National intellectual property policy;
- ❖ Coordination of government agencies responsible for innovation and commercialisation.

INSTITUTIONAL LEVEL

- ❖ Institutional framework for technology transfer and commercialisation;
- ❖ Policy framework for technology and commercialisation;
- ❖ Strengthening public-private partnerships in research and commercialisation.

RESEARCHER LEVEL

- ❖ IP awareness creation and outreach strategy;
- ❖ Training and education on intellectual property rights;
- ❖ Support to researchers on commercialisation;
- ❖ Success stories and visibility of commercialisation;
- ❖ Incentives to strengthen academia-industry linkages to foster commercialisation.

3.2 PROMOTION OF COMMERCIALISATION AT NATIONAL LEVEL

3.2.1 National Innovation Commercialisation Policy and Strategy

The STI Act 2013 mandates KeNIA to develop a national innovation commercialisation policy. Therefore, KeNIA in collaboration with universities, research institutes and other stakeholders, will initiate the development of a National Innovation Commercialisation Policy and Strategy to provide a framework for the development of the Kenyan innovation ecosystem. The policy will cover, amongst others:

- a.** providing funding mechanisms for technology transfer and commercialisation;
- b.** supporting the growth of the venture capital industry;
- c.** enhancing access to government procurement by innovators;
- d.** enhancing access to relevant information by innovators.

To meet the above goals, the following interventions are proposed.

1. FUNDING MECHANISMS FOR COMMERCIALISATION

- ❖ **Commercialisation acceleration programme:** to provide financial and technical support along the entire innovation value chain and use different financing products and services based on the need and technology's potential for commercialisation.
- ❖ **Grassroots innovation programme:** to support individuals who have embarked on innovative efforts to meet localised challenges using local resources and capabilities in order to help uplift disadvantaged communities and develop rural and township economies.
- ❖ **IP fund:** to provide financial assistance and legal advice for IP protection to the broader stakeholder group: MSMEs, indigenous knowledge holders and other innovators. To provide a rebate of up to 50% on all patent and prosecution costs incurred by HEIs and research institutions.
- ❖ **Innovation services vouchers:** these permit inventors and entrepreneurs to access subsidised services provided by research and higher education institutions including service providers from the private sector. These services include technology and market research, venture assessment, IP evaluation, design studies, design engineering, prototype construction, and product testing for quality assurance.

- ❖ **Tax incentive:** for the acquisition of equipment and machinery, with more generous deductions for the acquisition of locally-developed technologies.
- ❖ **Co-funding mechanisms:** investment in grants and pre-seed accelerator funds should be modelled on a partner co-funding basis. In future policy design, the government, through KeNIA and NRF, should consider models that provide for the repayment of a proportion of a grant where the funded project has led to commercial success, to allow for reinvestment back into the investment fund.
- ❖ **Inclusivity:** there should be deliberate efforts to ensure gender equality and inclusivity, and that youth and marginalised groups are mainstreamed in all commercialisation programmes.

2. SUPPORT THE GROWTH OF VENTURE CAPITAL FOR COMMERCIALISATION

- ❖ **Angel investors:** to provide for the creation of an angel investor network with the support of the public sector, leading to public-private partnerships with a clear geographic focus as well as establishing a separate tax incentive for angel investors.
- ❖ **Create a venture capital fund:** to provide for the establishment of a venture capital fund to attract emergent investors and private sector funding to expand the available financial resources. The focus for this fund will be to provide equity capital for commercialising locally-developed technologies and for adapting imported technologies for wider domestic applications. This model involves the government establishing an overarching investment instrument which co-invests in existing or new private VC funds.
- ❖ **Link start-ups with venture capital investments:** private incubators and accelerators act as intermediaries to venture capitalists. Emphasis on rapid scaling up to sell shares once the start-up has been established. Getting additional venture capitalists on board for co-investment is an important strategy to increase the value of the start-ups.
- ❖ **Create crowd investing platforms:** this consists of large networks of potential investors. The investors provide investments in the form of a subordinated loan to the start-up and then participate in the success of the business.

3. ACCESS TO PUBLIC PROCUREMENT BY INNOVATORS AND START-UPS

Market access is one of the biggest commercialisation challenges. By means of procurement policies, regulations and other mechanisms, the government can create an environment that enables increased market access for locally-developed technologies. The guidelines make the following recommendations:

- ❖ **Establish an innovation scheme** that provides MSMEs with advantages and preferences in terms of financial and non-financial support, procurement programmes, and soft loans.
- ❖ **Provide preferential government procurement** to local innovative MSMEs and enterprises that have partnered with universities and research institutions or other MSMEs to develop their products.
- ❖ **Initiate procurement programmes** that strive to promote locally-developed technology-based solutions to government problems (including state-owned companies) by setting targets for locally-developed technologies to be procured by the government.

4. ACCESS TO INNOVATION INFORMATION

KeNIA, in collaboration with other partners, should set up a central platform containing key information on technology commercialisation opportunities and support:

- ❖ Available funding based on the innovation Technology Readiness Levels.
- ❖ Available facilities such as laboratories, testing facilities, and incubators, based on the organisation, industry sector, and location.
- ❖ MSME experts by areas of specialisation, sector, location, and type of organisation.
- ❖ A database of government-funded technologies ought to include universities, research institutions, science councils, and other potential collaboration, financing, and business venture opportunities. This ought to include a scoreboard system indicating the technology commercialisation stage achieved along the innovation value chain.
- ❖ A centralised and widely accessible database on research fields and technology transfer, providing opportunities in universities and research institutions for knowledge sharing, linkages between research and industry, and successful commercialisation.
- ❖ Establishing a one-stop website for MSMEs including information on access to: financing, infrastructure, technology, international markets, and an MSME business directory based on the industry sector, locations, and type of products.

3.2.2 National Intellectual Property Policy

In the short-term, this guideline suggests that the three STI agencies (NACOSTI, NRF, and KeNIA) in collaboration with the Kenya Industrial Property Institute, should mobilise resources to update the existing draft National IP Policy and finalise its development. The policy should, amongst others:

- Make it mandatory for universities, research institutes and TVETs to have an institutional intellectual property policy.
- Provide support to researchers, innovators and inventors with IP related protection fees.
- Make it mandatory that innovation arising from government-funded projects must be protected, and those with commercial potential are to be commercialised by universities and

research institutes, failing which they will be taken up by KeNIA on behalf of the government.

- All innovations generated by the universities and research institutes must be reported annually to the Kenya National Innovation Agency.

3.2.3 Coordination of Agencies Responsible for Innovation and Commercialisation

- The innovation policy and strategy should provide a clear framework for effective coordination of all agencies responsible for innovation in Kenya.
- The planned National Research Priorities (2022-2026) should provide for a coordination mechanism for funded research priorities as well as commercialisation of output to ensure maximum impact to priority sectors.

3.3 PROMOTING COMMERCIALISATION AT THE INSTITUTIONAL LEVEL

3.3.1 Institutional Framework for Technology Transfer and Commercialisation

The framework for technology transfer and commercialisation guidelines should focus on technology transfer offices, by providing clarity and direction on matters such as:

- A. Legal requirements for their establishment;
- B. Mandate;
- C. Functions;
- D. Performance indicators;
- E. Placement within the institutions' structure;
- F. Training of commercialisation professionals;
- G. Career progression guidelines;
- H. Minimum staffing and skills;
- I. Job description of commercialisation professionals;
- J. Virtual TTOs.

A. Mandatory TTO with IP Policy

- The CUE should consider reviewing its minimum requirements for registrations and functioning of universities to include TTO and IP policies.
- Similarly, NACOSTI should consider reviewing its minimum requirements for registrations and functioning of research institutes to include TTO and IP policies.

B. Mandate of Technology Transfer Offices

- Mission oriented: provide support to universities and research institutes with skills for effective technology transfer and knowledge, thereby contributing towards the country's socio-economic development.
- Income generation: generate additional revenue to supplement grants from the government and other donors. Generated revenue will be distributed in accordance with existing IP policy.

C. Function of Technology Transfer Office

With dual mandates, TTOs are expected to pursue both revenue generating and non-revenue generating functions. The actual function will vary from one organisation to another, taking into consideration unique contexts. The functions of TTOs may include the following:

- IP policy: TTO to spearhead the development and implementation of the IP policy.
- IP disclosure and protection: manage IP disclosures, protection process where necessary, drafting of IP protection applications, filing for protection,

management of renewals and maintenance thereof.

- IP commercialisation: includes developing and implementing a strategy for commercialisation and technology transfer, as well as ensuring a transparent revenue sharing model as guided by the existing IP policy.
- IP training: develop and implement an IP training plan, firstly for staff of TTO's and secondly to include the research community.
- IP awareness: develop and implement an IP outreach programme to increase IP awareness amongst the research community.
- Consultancy: market the capacity of the university and research institutes for consultancy services to manage projects where required.
- Laboratory services: market the capacity of the university and research institutes to provide specialised laboratory services to industry and the public.
- Other services: offer a range of integrated guidance and support services for innovators' and researchers' projects which ought to include commercialisation services, IPR services, gap funding applications, access to testing, accreditation and incubation facilities, and access to private funding, angel investors and crowd funding.
- Point of contact: provide contact for industry partners, guiding internal and external marketing, forming networks and partnerships for consistent advertising and marketing of technologies.

D. Performance Indicators for Technology Transfer Office

Suggested indicators for performance measurement:

- Number of patent applications filed;
- Number of applications granted;
- Number of technologies licensed;
- Number of spinoffs established;
- Number of staff trained;
- Percentage increase in IP awareness;
- Number of consultancy projects brokered;
- Number of laboratory services brokered;
- Level of awareness of research community on IP policy;
- Amount of revenue generated.

E. University Organigram with TTO Placement

- Need to consolidate functions related to IP management, commercialisation, and technology transfer, irrespective of the name assigned to it. The advantage of centralised functions is having undivided attention at institution level, thereby achieving cost-effectiveness in terms of resources.
- For uniformity, offices undertaking these functions should be named technology transfer offices.
- As a start, IP management should be the minimum function for a technology transfer office. With time, the TTOs can expand functions to other areas to strengthen capacity.

- Universities - the office of the deputy vice chancellor responsible for research, innovation, outreach and extension services, is the ideal reporting line for a TTO.
- Research institutes – the office of the director responsible for innovation, outreach and extension services is the ideal reporting line for a TTO.

F. Training of Professionals for IP Protection and Commercialisation

- The Kenya National Innovation Agency should develop training programmes for managers with the aim of developing future staff to fill current gaps.
- To make such training affordable and easily accessible, KeNIA should establish a hybrid approach with a physical and virtual academy to offer these training courses.
- To enhance the reputation of the training, KeNIA, in collaboration with the global Association of Technology Transfer Managers and other partners, should develop a certification for technology transfer managers.
- To address the low level of patent application conversion to grants, the Kenya National Innovation Agency in collaboration with other partners, including the WIPO, should develop a training programme on patent drafting and capacity building for TTO managers.

G. Career Progression Guidelines for Commercialisation Professionals

KeNIA, in collaboration with universities and research institutes, should develop a

generic career progression guideline for technology transfer professionals.

H. Minimum Staffing of TTOs

- Director – who may be appointed from amongst the lecturers/researchers in the same way that other heads and directors of academic departments are appointed. This person would initially spend 20-30% of his/her time working at the TTO and 70-80% on teaching and research. This person would be entitled to allowances in the same way as heads of departments and directors and should be a member of the senate. Some universities in Kenya are already practicing this.
- IP management officer – this should be a person with good training in intellectual property rights, who is capable of undertaking functions related to IP disclosure and protection.
- Commercialisation officer – this should be a person with in-depth IP knowledge and experience in translating innovation into products and businesses.
- Ideally, the IP management officer and commercialisation officer should be full-time positions.

I. Job Description of Commercialisation Professionals

The portfolio of the commercialisation officer should include the following tasks:

- Facilitating collaboration between academia and industry.
- Interacting with academic and industry partners to find solutions that meet the needs of both.

- Forging successful relationships with academics, faculty members, industry players, investors, entrepreneurs and legal professionals and facilitating relations between stakeholders.
- Acting as an alliance manager for maintaining collaboration and facilitating efficient exchange of technology and ideas between the two parties.
- Assessing the commercial potential of innovations.
- Advertising and promoting scientific invention to the public, to ensure success in commercialisation.
- Conducting competitive analysis to understand the value or advantage of an innovation over existing technologies.

J. Virtual Technology Transfer Offices

- It is appreciated that, given the different development levels of the universities and research institutes, not all will have in place all the skills required for a fully functional TTO. Furthermore, the current level of patenting of most universities may not make it cost-effective to establish and manage fully functional TTOs. Therefore, there is need for such institutes to be supported to access skills externally as and when needs arise.
- The Kenya National Innovation Agency should establish a data bank of existing IP and Commercialisation experts (IP drafting, IP valuation, IP auditing, IP licensing, IP marketing, technology brokerage) in the country and within the region and sign service agreements

with them. These experts can be made accessible to universities and research institutes at a fee for technology transfer services.

3.3.2 Institutional Policies and Strategies for Technology Transfer and Commercialisation

On policy framework for technology transfer and commercialisation, the following guidelines are provided:

- A. Innovation and commercialisation strategies/masterplans;
- B. Intellectual property policies;
- C. Policy on screening of IP prior to publication.

A. Commercialisation strategies/ masterplans

- In the long-term, KeNIA, in collaboration with other stakeholders, will develop a National Commercialisation Strategy focusing on universities, research institutes and TVETs.
- All universities, research institutes and TVETs to develop and implement

commercialisation strategies. KeNIA will develop a methodology of support.

- Each university and research institute is encouraged to have in place a strategy/masterplan to support a coordinated and goal-oriented approach to commercialisation. The strategy will inform the coordination of various commercialisation efforts for departments, laboratories, and centres. The strategy/masterplan should also include a framework for the following:
 - Modalities for universities establishing spinoff companies and allowing the researchers to participate in ownership of such companies;
 - Modalities for universities entering into joint venture agreements with the private sector to commercialise innovation developed in the universities;
 - Modalities for universities to licensing their IP rights to private sector actors.
- The process of developing such a strategy will involve the following steps:

STEPS FOR DEVELOPING COMMERCIALISATION STRATEGIES

1. Situation analysis to identify the opportunities and challenges in the organisation with respect to commercialisation. These will include documenting the current performance of the organisation based on the indicators outlined in **section 3.3** above.
2. Validate the findings in an internal workshop consisting of key stakeholders including university management, heads of department, deans, and researchers.

3. Formulate a strategy guided by the desired level of performance within the organisation in terms of commercialisation indicators.
4. Validate the strategy in an internal workshop consisting of key stakeholders including university management, heads of department, deans, and researchers.
5. The developed commercialisation strategy/master plan should have a strong monitoring and evaluation framework and should provide a basis for collecting data quarterly for reporting to the senate (by the director) and to KeNIA (by the head of the organisation).

B. Development and Implementation of IP Policy

NACOSTI, in collaboration with KeNIA, NRF and KIPI, should:

- Provide support to develop or review existing IP Policies. Ensure adequate attention is paid to the standardisation of innovation commercialisation, with minimal focus on individual acceptations, for the distribution of a uniform funding mechanism.
- Ensure that universities and research institutes implement the benefit sharing mechanism as provided by policy.
- Support TVETs to develop and implement IP policies.
- TTO managers should ensure that newly developed IP policies have an implementation plan and budget. The plan should have a section on communication and publicity.

Coverage of IP policy

NACOSTI, in collaboration with KeNIA, NRF and KIPI, should support the development of a template for developing generic IP policies. At minimum, the guidelines

suggest that the template should include the following:

- Objectives of the policy;
- Target audience for the policy;
- IP rights covered (patents, utility model, industrial design, trademark, copyright and related rights, plant breeders' rights, traditional knowledge, genetic resources);
- What will be protected and what not;
- Ownership of IP rights from publicly funded research;
- Ownership of IP rights from privately funded research;
- Ownership of IP rights from collaboratively funded research;
- Maintenance of protected IP rights;
- Commercialisation pathways of IP rights and innovation;
- Benefit sharing and related incentives;
- Conflict of interest and commitment;
- Responsibilities and obligations;
- Review of the policy;
- Policy implementation structure.

C. Policy on Screening of Research Projects and Publications for Innovations

To reduce possible loss of innovation and technologies and enhance the conversion ratio of research outputs into IP applications and grants:

- Universities should include in research and/or IP policies the requirement of screening publications and dissertations for technologies and innovations before they are uploaded to virtual libraries.
- The Kenya National Innovation Agency, in collaboration with the Kenya Industrial Research and Development Institute should develop a training programme on technology mining and build the capacity of TTOs.
- Universities should put in place a system for screening students' final year projects for commercial potential and supporting incubation. Part of the internal funding should be directed towards commercialisation.

3.3.3 Strengthening Public-Private Partnerships

Guideline to strengthen PPP:

- A. PPP framework, funding of innovation;
- B. Funding of PPP;
- C. Enhancing access of industry to innovations in academia;
- D. Linking research to the needs of the industries;
- E. Industry access to specialised university laboratory resources;
- F. Key performance indicators for PPP projects funded by government;
- G. Commitment of top management at universities and research institutes to promote PPP.

A. PPP Frameworks and Structures

- KeNIA, in collaboration with universities, research institutes and other stakeholders, develops a framework for academia-industry collaboration.
- KeNIA, universities and the Kenya Industrial Research and Development Institute, will develop a framework for improving MSME performance and productivity and to enhance the technical and managerial skills of employees of MSMEs through a consultative approach by university graduate students in collaboration with their supervisors.
- KeNIA, in collaboration with NRF, universities, research institutes and other strategic partners, will develop and implement a Technology Readiness Level framework, to assist in identifying technologies and innovations at universities and research institutes to be supported with seed funds before being passed over to the private sector for investment.
- KeNIA, in collaboration with NRF, universities, and research institutes, will promote co-authorship of scientific publications between universities and industry to encourage long-lasting research collaborations.
- KeNIA, in collaboration with other partners, should strive to create clusters to promote collaboration and encourage the establishment of shared facilities such as clean rooms, incubation, testing and small-scale manufacturing plants.
- KeNIA, in collaboration with other stakeholders, will lobby for the creation

of tax concessions to companies collaborating with universities and research institutes using local technologies and innovations.

- KeNIA, in collaboration with other stakeholders, will lobby for the setting up of industrial parks near universities and research institutes to promote staff interactions through the involvement of industry employees in academic programmes and regular visits by researchers to industry.
- KeNIA and NRF will work with the Universities Funding Board to implement a new funding criterion for universities and research institutes that includes performance indicators such as the number of applications and grants for intellectual property rights, the number of start-ups and spinoffs, patent license income as well as the number of prototypes developed and rolled out into the market.

B. Funding PPP for Commercialisation of Innovation

- The three agencies established by the STI Act (2013) – NACOSTI, NRF and the Kenya National Innovation Agency, should develop an R&D funding framework to ensure that at least 30% of the available R&D funds projects that involve industries as follows:
 - a. Funding MSc and PhD research programmes that are industry-based, co-funded, and jointly supervised by the academic and industry partner.
 - b. Piloting technology transfer partnership projects that involve industry, academics and graduate students.

c. Putting emphasis on the uptake of research outputs from previously funded projects that are ready for commercialisation.

- d. Establishing and funding research consortia consisting of universities-research institutes and industry that require matching funding by government and industry. For example, two RI and two industries submitting a joint proposal under a competitive process, on projects initiated by industry partners. An associated IP commercialisation framework would be designed to incentivise industry to participate.
- Universities and research institutes should strive to set aside up to 30% of their research budget for innovation commercialisation.
- Researchers should strive to ensure that, when preparing proposals for external research funding, that at least 30% of their budget should fund activities related to innovation commercialisation. Researchers should ensure, where relevant, to include budget lines for protection of intellectual property and prototype development, when developing proposals for funding by international and regional institutes.

C. Enhancing Industry Access to Academia Innovations

Universities and research institutes should, on a yearly basis, generate information on innovation and submit this information to KeNIA. In turn, KeNIA should create a one-stop-shop innovation platform where this information can be made accessible to local industries and the public.

D. Linking Research to Industry Needs

- KeNIA, in collaboration with the NRF, Kenya Association of Manufacturers, and the Kenya Private Sector Alliance, undertakes to carry out, on an annual basis, a technology needs assessment to inform research programmes at universities and research institutes in specific sectors.
- Universities and RI reorienting research programmes as follows:
 - a. Increasing focus on industry needs, rather than blue-skies research;
 - b. Emphasising more on innovation than research, by creating significant links between universities, RI and industry;
 - c. Engaging more on market needs;
 - d. Emphasising on the establishment of technology start-up companies.

E. Industry Access to Specialised University Laboratory Resources

- Universities and research institutes should make existing facilities and resources for product testing and development available to industries and SMEs at affordable rates.
- Similarly, NACOSTI and NRF should document specialised laboratory resources for use by industry and SMEs at reasonable rates for product testing and development for commercialisation.

F. Performance Indicators for Government-funded PPP Projects

The key performance indicators for projects supported by government in collaboration

with the private and public sectors, would include:

- Revenue growth and export market development of project partner companies.
- Employment growth in existing companies or in new companies that are created through university–industry partnerships.
- New product launch stemming from project partnerships with industry stakeholders and or the private/public sectors.
- The total new foreign investment secured by companies attributed to project partnerships.

G. University and RI Commitment to promote PPP

Top management at universities and research institutes should commit themselves to the following to promote PPP:

- Prioritising commercialisation and technology transfer, not only for the purpose of generating additional income to supplement grants from the exchequer, but also contributing to the realisation of their mandate of using research for economic development and thereby enhancing their relevance to society.
- Keenly following the progress and implementation of developed commercialisation strategies and regularly demanding to be informed on progress made. Mandatory reports on commercialisation progress should be reported to top management as each phase is achieved.

- Investing in publicising all achievements made and success stories related to IP management and commercialisation of innovations:
 - a. TTOs to constantly showcase R&D competency and innovation prospects between universities, research institutes and industry sectors;
 - b. Escalate the profile- and awareness-raising of successful business–industry partnerships
- and technology commercialisation from research output, to motivate institutes to increase their forward-thinking innovation culture.
- To set aside up to 30% of research budgets for innovations, commercialisation.
- To develop and implement an industry engagement strategy.
- To set aside a fund for IP protection in their annual budgets.

3.4 PROMOTING COMMERCIALISATION AT THE RESEARCHER LEVEL

3.4.1 IP Awareness and Outreach Strategy

Creating IP awareness amongst various stakeholders and decision makers is one of the most important strategies for strengthening the management of intellectual property assets. Enhanced IP awareness will increase innovation and creative activities, raise the number of applications of IP rights, improve the commercialisation of IP rights and strengthen their enforcement. Improved IP awareness amongst decision makers (heads of department, deans, directors, deputy vice chancellors, and vice chancellors) will enable them to prioritise issues to do with intellectual property and commercialisation. The same applies to research institutes. There is therefore the need for universities to develop and implement an IP awareness outreach programme to help raise the level of awareness of the research community. This will involve the following four steps:

STEPS FOR THE DEVELOPMENT AND IMPLEMENTATION OF A STRATEGY ON IP AWARENESS CREATION AND OUTREACH

1. Undertaking assessment of the level of IP awareness amongst key stakeholders. These should be differentiated as follows – students, researchers/lecturers, technologists and technicians, managers of production as well as other income generating units.
2. Developing an awareness creation programme, with targeted programmes and indicators of success for each category.
3. Mobilising resources and implementing the programme.
4. Undertaking an annual assessment to monitor progress.

3.4.2 IP Training and Education

IP training and education is key to the realisation of capacity building programmes. Through IP training and education, the required IP professional service providers can be developed. More importantly, basic knowledge of IP can be imparted to students, who are potential generators and users of IP. The service providers that are required to support IP generation include technology transfer managers, IP attorneys, drafters, and examiners. IP professionals are also required to support commercialisation activities such as IP valuation, auditing, and licensing. IP education and training is also required by IP enforcement officers, such as judges, lawyers, police and custom officials. Therefore:

- KeNIA, in collaboration with KIPI and TTO managers, should prepare short courses on IP that can be implemented at respective universities. These courses should target students, lecturers, and managers of laboratories, production units, and libraries.
- Universities should consider expanding IP education within their curricula.

3.4.3 Supporting Researchers on Commercialisation Issues

- TTOs should provide a mechanism for screening research proposals during their development, to identify potential intellectual property assets and provide specific support to the researcher for possible commercialisation.
- TTOs should estimate the commercial potential of innovation in a timely fashion, in order to decide on whether to register protection or not.
- TTOs should engage the researchers throughout the commercialisation process.

- Universities and research institutes should review their promotion criteria to include IP generation, protection and commercialisation.
- Universities and research institutes should develop and implement a framework that encourages the establishment of spin-offs by researchers, scientists, and engineers that produce tangible outcomes.

3.4.4 Documenting and Publicising Success Stories on Commercialisation

- TTOs should strive to document and publicise milestones reached by individual researchers on commercialisation.
- The Kenya National Innovation Agency should populate a database for documenting success stories on commercialisation, by interviewing researchers to capture their experiences.

3.4.5 Incentives to Strengthen Academia-Industry Linkages

Recommended incentives to strengthen academia-industry linkages:

- Develop and implement a consultancy policy that allows staff to consult with industry and private institutes.
- The planned commercialisation strategy should include work integrated learning for both university and industry researchers alike.
- Existing policies on sabbaticals should be reviewed to accommodate time spent in the industrial sector.
- Develop a strategy for mature researchers to be used to improve university-industry linkages.

4 Conclusion: Support for basic research and commercialisation

Kenya has made great strides in the development of core basic research competences in science and technology. A new generation of skilled scientists and engineers have been introduced to society. Now is the time to direct attention to deliver tangible economic returns from these efforts and to enhance and expand commercialisation endeavours at public research institutions. However, while these guidelines have provided a number of recommendations that support the commercialisation of basic research, it is also imperative to continue to support basic research.

Commercialisation is critical for economic development, but the government should also encourage new modes of research, especially through an open access platform. Open science and open scholarship approaches can support the availability and sharing of scientific and social science research with all sections of the R&I community. Open platforms can deliver the following advantages:

- i. New forms of local and national collaboration with key partners;
- ii. Publicly funded research will remain in the public domain;
- iii. New knowledge will be replicated by providing more researchers with greater access to data.

The term, “as open as possible as close as necessary” reflects the important link between knowledge dissemination to the widest possible audience and the imperative to protect and provide incentives to inventors/ innovators. Finding the right balance is crucial to ensure basic research and commercialisation contribute towards the R&I ecosystem.

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