

SCHOLARSHIP AND TEACHING OF INTELLECTUAL PROPERTY AND INNOVATION IN KENYA AND AFRICA: CURRICULUM CONTENT, METHODOLOGY AND REFORMS

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ABSTRACT

I advance a three-pronged argument in this essay. First, scholarship and teaching of intellectual property (IP) need to be reconceptualized to cover IP, innovation, transfer of technology (ToT) and licensing as well as topics that are relevant to Kenya's and Africa's sustainable development including socio-economic, cultural and political development. Second, IP scholarship and teaching in Kenyan and African universities should be interdisciplinary and inter-sectoral and should also be integrated with sub-national (or county), national, sub-regional and Africa-wide frameworks on research, science, technology, and innovation (RSTI). Third, there is need to reform the objectives, agenda and curricula on university scholarship and teaching so that IP, innovation, ToT and licensing law should be offered in all universities. Moreover, they should be offered to non-law students and staff leading to awareness or sensitization at certificate, diploma as well degree, master's and PhD qualifications.

1. BACKGROUND TO SCHOLARSHIP AND TEACHING OF INTELLECTUAL PROPERTY AND INNOVATION IN KENYA AND AFRICA

Scholarship and teaching of intellectual property (IP) need to be reconceptualized to cover IP, innovation, transfer of technology (ToT) and licensing as well as topics that are relevant to Kenya's and Africa's sustainable development including socio-economic, cultural and political development. This is because IP is an interdisciplinary field as it covers all sectors of the economy including the legal, business, medical, agricultural, industrial, and education fields. IP scholarship and teaching in Kenyan and African universities should be inter-disciplinary and inter-sectoral and should also be integrated with sub-national (or county), national, sub-regional and Africa-wide frameworks on research, science, technology, and innovation (RSTI). The arts, humanities and social sciences are sites of innovation or creativity as well as contributors to the analysis, debates, prescription, and reform of innovation policies. There are important interdisciplinary contributions in literature, sociology, anthropology, cultural studies, political science, history and economics.

IP has become an increasingly important generator of economic, social and cultural growth and development.¹ This has led to the need for a clear understanding of IP and the enhancing IP scholarship, teaching and education in order to meet the growing need for informed and effective personnel trained in the field.² For these reasons, there is need to reform the objectives, agenda and curricula on university scholarship and teaching of IP, innovation, ToT and licensing.

This study focuses on the role that various Kenyan and African institutions have taken in enhancing scholarship and teaching of IP.

2. METHODOLOGY ON IP, INNOVATION AND TECHNOLOGY TRANSFER SCHOLARSHIP, RESEARCH AND TEACHING IN AFRICA

"Scholarship" has been conceptualized in various ways. Some have focused on the "product" of scholarly, professional, and creative work in conceptual scholarship while others have focused on the "process." In this essay we focus on IP scholarship as the creation, development and maintenance of the intellectual architecture of IP subjects and disciplines in forms such as journal articles, books, monographs, encyclopedia, dictionaries, catalogues and contributions to major research databases.³

IP scholarship in Kenya and Africa is supported by universities, colleges, research institutes or centers, libraries, archives, publishers and scholarly consortia or communities.⁴ These are mainly institutions that promote learning and education. These institutions give scholars and students the freedom to conduct research and to express their ideas in their works. Scholars and students are therefore able to publish their work and make it available to others.

With the development of IP and its fast-rising popularity, various scholars have taken up the mantle to research and develop African IP literature through books and articles. While this is a positive step in the promotion of IP scholarship, research and learning in Africa, there is still a lot more that is needed to be done.

Most of the IP scholarship in Africa is based on the review of Constitutions, and national and international laws and policies and most of the literature on IP is by western scholars from the US and UK. There is need for African scholars to develop literature relevant and authentic to

* Ben Sihanya, 'Intellectual Property and Innovation Audit, Valuation, and Commercialisation in Kenya' (2018) A paper presented at the University of Nairobi 2018 Innovation Research Symposium. Cf. Ben Sihanya, *Intellectual Property and Innovation Law in Kenya and Africa: Cases and Materials* (Sihanya Mentoring and Innovative Lawyering, Nairobi & Siaya, forthcoming 2018).

¹ Yo Takagi, Larry Allman, and Mpazi A. Sinjela, *Teaching of Intellectual Property* (Cambridge University Press, Cambridge, New York, 2011).

² *ibid.*

³ Ben Sihanya, 'Reflections on Open Scholarship Modalities and the Copyright Environment in Kenya' in Jeremy De Beer, Chris Armstrong, Chidi Oguamanam & Tobias Schonwetter *Innovation & Intellectual Property: Collaborative Dynamics in Africa* (UCT Press, Cape Town, 2014).

⁴ *ibid.*

the African situations. This will help develop an IP curriculum that is relevant to African students. This will reduce the over reliance on western materials in IP teaching and scholarship in Africa.

For all these to be achieved there is need for cooperation among universities and institutions of higher learning and their respective governments. Without governmental support, it is very hard for these institutions to singlehandedly tackle all these challenges. It is for this reason that RSTI institutes are important. Their main aim is to ensure they support and promote RSTI in all sectors of the economy while also involving public and private institutions in key discussions and decisions involving RSTI. Governmental support and corporation are therefore key in ensuring that IP teaching and training is conducted at a national strategic perspective in order to facilitate national debate and policy formulation. This will in turn lead to the establishment of institutional bases such as IP research centres and promote more effective mechanisms on the collection and dissemination of current and relevant documentation of IP education and research.

3. RESEARCH SCIENCE TECHNOLOGY AND INNOVATION INSTITUTES IN KENYA AND AFRICA

IP scholarship and teaching in Kenya and Africa in universities are key in securing sustainable development, including socio-economic, cultural and political development. Thus, IP scholarship and teaching should be inter-disciplinary and inter-sectoral and should also be integrated with sub-national (or county), national, sub-regional and Africa-wide frameworks on research, science, technology, and innovation (RSTI). And have sciences including the arts, humanities and social sciences.

3.1 Legal and Policy Framework on Research Science Technology and Innovation Institutes in Kenya and Africa

RSTI institutes or organisations are part of the society and general framework or architecture on the research scholarship, research, training and teaching of IP, innovation and ToT. RSTI plays a crucial role in socio-economic growth and development, (global) competitiveness, and meaningful employment creation

while playing as a key component of social integration, sustainable development and poverty eradication based on equity, freedom, justice, governance, peace and prosperity.⁵ In Kenya and other African countries, RSTIs are recognized as essential and key components to strengthened governance and management at sectoral and institutional levels and further to ensure financial sustainability.⁶

RSTI in Kenya is provided for by the Science, Technology and Innovation Act No 28 of 2013.⁷ The Act aims to facilitate the promotion, co-ordination, and regulation of the progress of research, science, technology and innovation.⁸ The Act establishes three key institutions that play a critical role in the coordination of important projects and tasks in all sector ministries, universities and research institutes and centres with respect to RSTI.⁹ These are the National Commission for Science, Technology and Innovation (NACOSTI), the Kenya National Innovation Agency (KENIA) and the National Research Fund (NRF).¹⁰

3.2 Institutional Framework on Research, Science, Technology and Innovation Institutes in Kenya and Africa

Research, science, technology and innovation (RSTI) institutes play an important role in Kenya and Africa in promoting research and development (R&D). the main mandate of RSTI institutes is usually to carry out research, coordinate and cooperate with other research organisations and institutions of higher learning on relevant matters of research and training.

3.2.1 National Commission for Science, Technology and Innovation (NACOSTI)

The National Commission for science, technology and innovation (NACOSTI) is established by section 3 of the Science, Technology and Innovation Act No 28 of 2013 (STI Act), which repealed the Science and Technology Act Cap 250,¹¹ as a body corporate. NACOSTI's main mandate is establishing RSTI offices in every county,¹² communicating research and development (R&D) issues to the National Government, promoting RSTI in all

⁵ See Republic of Kenya, 'A Policy Framework for Science, Technology and Innovation' (2012) Ministry of Higher Education Science and Technology Sessional Paper < https://www.strathmore.edu/wp-content/uploads/2016/10/sti_final_policy_draft-1.pdf> accessed 18 June 2018.

⁶ See Kenya's Vision 2030 and Millennium Development Goals.

⁷ Kenya's Science, Technology and Innovation Act No 28 of 2013

⁸ Preamble of Kenya's Science, Technology and Innovation Act No 28 of 2013

⁹ Republic of Kenya, 'A Policy Framework for Science, Technology and Innovation' (2012) Ministry of Higher Education

Science and Technology Sessional Paper < https://www.strathmore.edu/wp-content/uploads/2016/10/sti_final_policy_draft-1.pdf> accessed 18 June 2018.

¹⁰ Kenya's Science, Technology and Innovation Act No 28 of 2013.

¹¹ National Commission for Science, Technology, and Innovation website < <https://www.nacosti.go.ke/about-us/history>> accessed 18 June 2018.

¹² There are 47 counties in Kenya under the First Schedule of the Constitution 2010. See the Kenyan County Government Act 2012.

counties, forming partnerships with local industries and institutions of learning, among others.¹³

3.2.2 Kenya National Innovation Agency (KENIA)

The Kenya National Innovation Agency (KENIA) is a body corporate established by section 28 of the STI Act under the Ministry of Education.¹⁴ Its core mandate is to develop and manage Kenya's National Innovation System as well as the co-ordination, promotion and regulation of the national innovation ecosystem.

3.2.3 National Research Fund (NRF)

Section 32 of the STI Act establishes the NRF. The main purpose of this research endowment fund is to support the advancement of scientific research, inventions, and innovations and to build capacity in the RSTI sector for national development.¹⁵ The fund is supposed to target multi-institutional and multi-disciplinary research from public and private institutions in Kenya.¹⁶

3.2.4 Consolidated Research and Development Institutions

The Kenyan Science and Technology Act, Cap 250 (now repealed) had established six (6) R&D institutes.¹⁷ It was replaced by the STI Act. These R&D institutes were retained under the STI Act to continue to operate as they had been accredited under the Science and Technology Act, Cap 250.¹⁸ The purpose of these institutions is to promote RSTI in Kenya. These institutions include the Kenya Industrial Research and Development Institute (KIRDI), the Kenya Agricultural Research Institute (KARI), the Kenya Forest Research Institute (KEFRI), the Kenya Medical Research Institute (KEMRI), and the Kenya Trypanosomiasis Research institute (KETRI). Some of these have been merged and others have been restructured.¹⁹

3.2.4.1 The Kenya Industrial Research and Development Institute (KIRDI)

The Kenya Industrial Research and Development Institute (KIRDI) is a state corporation under the Ministry of Industry, Trade and Cooperatives²⁰ and is mandated to

undertake multidisciplinary R&D in industrial and allied technologies including: mechanical, electrical & electronics, chemical, ceramics and building materials, food, leather, textile, ICT, environment and energy.²¹ The technologies developed are to be transferred to Micro, Small and Medium Enterprises (MSMEs) and large industries to enhance their competitiveness and productivity.²²

3.2.4.2 Kenya Agricultural and Livestock Research Organisation (KALRO)

The Kenya Agricultural and Livestock Research Organisation (KALRO) emerged from the merger of KARI and other research institutions. is a government organisation mandated with the task and duty of conducting research into, among others, crop and livestock production and marketing.²³ KARI was established by the now repealed the Kenyan Science and Technology Act, Cap 250. KARI accounted for more than half of the total research and development (R&D) expenditure in Kenya and was responsible for research on crops (except research on coffee, tea and sugarcane), livestock, and land and water resources. It has a network of national commodity and factor research centres responsible for generating knowledge and technology, and also regional centres responsible for applied and adaptive research in respective regions.²⁴

In 2013, KARI merged with Coffee Research Foundation (CRF), Tea Research Foundation of Kenya (TRF) and Kenya Sugar Research Foundation (KESREF) to form KALRO.²⁵ KALRO was established through the establishment of the Kenya Agricultural and Livestock Research Act No. 17 of 2013. The reorganization of KARI was so as to lead to higher efficiency in the delivery of services necessary to propel the advancement of the agricultural sector and national economy in general.²⁶

3.2.4.3 The Kenya Forest Research Institute (KEFRI)

The Kenya Forest Research Institute (KEFRI) is a state corporation provided for under the Science Technology

¹³ *ibid.*

¹⁴ Republic of Kenya, *Organization of the Government of the Republic of Kenya* Executive Order No. 1 of 2018.

¹⁵ Section 32 of Kenya's Science, Technology and Innovation Act No 28 of 2013. Cf. National Research Fund website <<http://researchfund.go.ke/background/>> accessed 18 June 2018.

¹⁶ *ibid.*

¹⁷ Fourth Schedule of the (now repealed) Kenyan Science and Technology Act, Cap 250.

¹⁸ Section 53 of the Kenyan Science Technology and Innovation Act, No. 28 of 2013.

²⁰ Republic of Kenya, *Organization of the Government of the Republic of Kenya* Executive Order No. 1 of 2018.

²¹ Fourth Schedule of the Kenyan Science Technology and Innovation Act No. 28 of 2013. Cf. Kenya Industrial Research and

Development Institute website < <https://www.kirdi.go.ke/>> accessed 29 June 2018.

²² *ibid.*

²³ Maureen Kiruka, Julius Okello, Violet Kirigua & Festus Murithi (eds), 'The role of the Kenya Agricultural Research Institute (KARI) in the attainment of household food security in Kenya: A policy and organizational review' (2012) <https://www.researchgate.net/publication/257788782_The_role_of_the_Kenya_Agricultural_Research_Institute_KARI_in_the_attainment_of_household_food_security_in_Kenya_A_policy_and_organizational_review> accessed 29 June 2018.

²⁴ *ibid.*

²⁵ KALRO, Kenya Agricultural and Livestock Research Organisation Strategic Plan 2017-2021' (2017) <<http://www.kalro.org/sites/default/files/strategic-Plan-KALRO-2017-2021.pdf>> accessed 30 June 2018.

²⁶ *ibid.*

and Innovation Act, No. 28 of 2013.²⁷ It is mandated to undertake research in forestry and allied natural resources.²⁸ KEFRI conducts research and development activities under five thematic areas namely: Forest productivity and Improvement; biodiversity and environment management; forest products development; social-economics, policy and governance and technical support services.²⁹

3.2.4.4 The Kenya Marine and Fisheries Research Institute (KMFRI)

Kenya Marine and Fisheries Research Institute (KMFRI) is a State Corporation that was established by the Science and Technology Act, Cap 250 that was repealed by the STI Act. The STI Act recognizes KMFRI as a national research institution under section 56, fourth schedule.³⁰ KMFRI's mandate is to undertake research in marine and freshwater fisheries, aquaculture, environmental and ecological studies, and marine research including chemical and physical oceanography.³¹ This is in order to provide scientific data and information for sustainable exploitation, management and conservation of Kenya's fisheries and other aquatic resources, and contribute to national strategies of food security, poverty alleviation, clean environment and creation of employment as provided for under Kenya's Vision 2030.³²

3.2.4.5 Kenya Medical Research Institute (KEMRI)

Kenya Medical Research Institute (KEMRI) is a State Corporation established through the Science and Technology Act Cap 250, which has since been amended to Science, Technology and Innovation Act 2013.³³ KEMRI's main mandate is; first, to carry out research in human health. Second, cooperate with other research organizations and institutions of higher learning on matters of relevant research and training. Third, liaise with other relevant bodies within and outside Kenya carrying out research and related activities. Fourth,

disseminate and translate research findings for evidence-based policy formulation and implementation. Fifth, cooperate with the Ministry of Health, the NACOSTI and the Medical Sciences Advisory Research Committee on matters pertaining to research policies and priorities.³⁴

3.2.4.6 Kenya Trypanosomiasis Research Institute (KETRI)

The Kenya Trypanosomiasis Research Institute (KETRI) is a research institution established under the section 53 and fourth schedule of the Kenya Science Technology and Innovation Act No 28 of 2013.³⁵ KETRI's main mandate was to carry out research and develop technologies for effective control of trypanosomiasis including collection and preservation of trypanosomiasis stabilities.³⁶ KETRI was later merged with KARI after the recognition by the government that there was need to further strengthen its agricultural research system to create an institutional framework to effectively manage, reorganize and consolidate agricultural research in Kenya.³⁷ KARI would later merge with Coffee Research Foundation (CRF), Tea Research Foundation of Kenya (TRF) and Kenya Sugar Research Foundation (KESREF) to form KALRO in 2013.³⁸

4. INTELLECTUAL PROPERTY MANAGEMENT OFFICES, TECHNOLOGY TRANSFER OFFICES AND INCUBATORS

Intellectual Property Management Offices (IPMOs), technology transfer offices (TTOs) and incubators play an important role in IP teaching and scholarship in Kenya and Africa. This is because they promote IP and innovation by funding R&D of individuals, public and private institutions.³⁹ They play an important role in connecting research institutions which are typically focused on basic research with the industry sector which is focused on development and commercialization.⁴⁰

²⁷ Fourth Schedule of the Science Technology and Innovation Act, No. 28 of 2013.

²⁸ Kenya Forestry Research Institute website < <https://www.kefri.org/> > accessed 29 June 2018.

²⁹ *ibid.*

³⁰ Fourth Schedule of the Science Technology and Innovation Act, No. 28 of 2013.

³¹ *ibid.* Kenya Marine and Fisheries Research Institute website < <http://www.kmfri.co.ke/> > accessed 29 June 2018.

³² Republic of Kenya, *Kenya Vision 2030: A Globally Competitive and Prosperous Kenya* (Government Printer Press, Nairobi, 2007).

³³ Section 53 and Fourth Schedule of the Science Technology and Innovation Act, No. 28 of 2013.

³⁴ Caroline Githinji, 'KEMRI Research Review Process' (2014) < https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=w eb&cd=10&cad=rja&uact=8&ved=0ahUKEwjArq7RsPjAhURGe wKHVPFCmsQFgiSATAJ&url=https%3A%2F%2Fbioethics.medicin e.iu.edu%2Findex.php%2Fdownload_file%2Fview%2F312%2F41 4%2F&usg=AOvVaw0k8tYS-P6Xa5A_51-Eb-IU > accessed 29 June 2018. Cf. Kenya Medical Research Institute website <

<https://www.kemri.org/index.php/features-intro/background> > accessed 29 June 2018.

³⁵ Section 53 and Fourth Schedule of the Science Technology and Innovation Act, No. 28 of 2013.

³⁶ Grace Murilla, Joanna Auma, & Johnson Ouma (ed), 'Kenya Trypanosomiasis Research Institute Cyrobank for Human and Animal Trypanosome Isolates to Support Research: Opportunities and Challenges' (2014) PLOS Vol. 8, Issue 5 < <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.874.7019&rep=rep1&type=pdf> > accessed 29 June 2018.

³⁷ KALRO, Kenya Agricultural and Livestock Research Organisation Strategic Plan 2017-2021' (2017) < <http://www.kalro.org/sites/default/files/strategic-Plan-KALRO-2017-2021.pdf> > accessed 30 June 2018.

³⁸ *ibid.*

³⁹ Ben Sihanya, Intellectual Property and Innovation Law in Kenya and Africa: Cases and Materials (Sihanya Mentoring & Innovative Lawyering, forthcoming 2018).

⁴⁰ *ibid.* Cf. Graff G, Heiman A, & Zilberman D (eds), 'University Research and Offices of Technology Transfer' (2002) *California Management Review*, 45(1): 88-115.

Some IPMOs, TTOs and incubators have the necessary funds, facilities and connections that individual innovators or researchers do not possess and thus limiting them in their research. By partnering with these IPMOs, TTOs and incubators, researchers and innovators have access to a wide range of information and materials crucial to their research which enables them to make progress that they would have otherwise been unable to without the help of these offices.

In Kenya the University of Nairobi has established an IPMO whose role includes protecting the IP rights of the University of Nairobi, its innovators, inventors, breeders, research sponsors and the public.⁴¹ It also has the mandate to eliminate the infringement, improper exploitation, and abuse of the IP assets belonging to the University of Nairobi or others, promote creativity and innovation, ensure fair and equitable distribution of all benefits accruing from all innovations, inventions and breeding activities and to promote linkages with industry and stimulate research through developing and utilizing novel works for commercialization.⁴²

The University of Nairobi also has an incubation policy governed by the office of the Deputy Vice Chancellor (DVC) Research, Production and extension (RPE).⁴³ The main goal of the incubation policy is to nurture new enterprises that have innovative products and services for local, regional and global markets and develop them into sustainable and competitive businesses that contribute to the realization of Kenya's Vision 2030.⁴⁴

5. THE ROLE OF UNIVERSITIES IN SCIENTIFIC AND TECHNOLOGICAL INNOVATION IN KENYA AND AFRICA

There is need to reform the curriculum on university scholarship and teaching of IP, innovation, ToT and

licensing in Kenya and Africa. The legal aspects of IP and related concepts should be offered in all universities. In developed countries such as the US, UK, Germany and Japan, universities and the science-based industries grew up together. In various fields like chemistry, biochemistry, physics, engineering and electrical science, academic research and teaching played a major role in the growth of these industries in USA and Europe.⁴⁵ This system needs to be adapted in Kenya and Africa. Universities ought to be a source of technical human resource for industry. They should generate and nurture new ideas about product and process innovation. Closer linkages between industries and institutions of higher learning need to be developed.⁴⁶ Industries involved in a particular field need to be consulted on curriculum development at all levels.

Education and training institutions should integrate research, and also develop institutional policies on R&D, innovation and IP. Currently, a few companies, as well as the University of Nairobi, Moi and JKUAT have developed IP policies. These should be bolstered through appropriate linkages with industry and the public sector to help develop relevant skills, knowledge, attitudes, values, and innovation (SKAVI) for sustainable livelihoods.

Universities have historically focused on teaching and academic research.⁴⁷ Furthermore, new universities merely copy paste(d) the programmes, curricula and syllabi of their predecessors. Thus, many Kenyan universities have merely copied the programmes, curricula and syllabi of the University of Nairobi (UoN),⁴⁸ the oldest and largest in Kenya. Some had a lot of promise and had the opportunity to focus on niche fields. Five examples. First, Moi University (ICT and technology or

⁴¹ University of Nairobi, 'Role of IPMO in Promoting Research at the University of Nairobi' (2014) <http://erepository.uonbi.ac.ke/bitstream/handle/11295/78385/UON_Role%20of%20intellectual%20property%20management%20office%20in%20promoting%20research%20at%20the%20University%20of%20Nairobi.pdf?sequence=1&isAllowed=y> accessed 18 June 2018. Cf Ben Sihanya, *Intellectual Property and Innovation Law in Kenya and Africa: Transferring Technology for Sustainable Development* (IL & SM, 2016).

⁴² *ibid.*

⁴³ University of Nairobi, 'Incubation Policy' (2015) <<http://dvcrpe.uonbi.ac.ke/sites/default/files/centraladmin/dvcrpe/Incubation%20Policy.pdf>> accessed 29 June 2018.

⁴⁵ Richard Nelson, 'What is commercial and what is public about technology, and what should be?' in Rosenberg *et al.* (eds), *Technology and the Wealth of Nations*, *op. cit.* Cf. Nathan Rosenberg, 'Scientific instrumentation and university research' in *Exploring the Black Box: Technology, Economics and History* (Cambridge University Press, New York, 1994) Chapter 13.

⁴⁶ This point has been emphasized in Sessional Paper No. 1 of 2005, *op. cit.*

⁴⁷ According to the Kenyan Commission of University Education website, <<http://www.cue.or.ke/index.php/accredited-campuses-of>

universities-in-kenya> accessed 4 October 2017, there are currently thirty (30) public chartered universities, five (5) public university constituent colleges, eighteen (18) private chartered universities, five (5) private university constituent colleges and thirteen (13) institutions with letters of interim authority. According to Times Higher Education the fifteen (15) leading universities in Africa are University of Cape Town (South Africa), University of the Witwatersrand (South Africa), Makerere University (Uganda), Stellenbosch University (South Africa), University of Kwazulu-Natal (South Africa), American University (Egypt), Uganda of Ghana (Ghana), University of Johannesburg (South Africa), University of Pretoria (South Africa), Sohag University (Egypt), Suez Canal University (Egypt), University of the Western Cape (South Africa), Ain Shams University (Egypt), Alexandria University (Egypt), Cairo University (Egypt), University of Ibadan (Nigeria), Mansoura University (Egypt), University of Marrakech Cadi Ayyad (Morocco), Mohammed V University of Rabat (Morocco), University of Monastir (Tunisia), University of Nairobi (Kenya), University of South Africa (South Africa), South Valley University (Egypt) and University of Tlemcen (Algeria).

⁴⁸ John Odhiambo, 'Advancing the quality of higher education through internalization' (2005) <http://www.ifc.org/wps/wcm/connect/480037804970c1a69fcedf336b93d75f/Internationalization+Kenya_JohnOdhiambo_Paper.pdf?MOD=AJPERES> accessed 4 October 2017.

information technology generally);⁴⁹ secondly, Kenyatta University (education, literature and cultural studies).⁵⁰ Thirdly, Egerton University (agriculture);⁵¹ fourthly Jomo Kenyatta University of Agriculture and Technology (JKUAT) (agriculture and technology).⁵² Last, and fifthly, Strathmore University (accounting and business; ICT).⁵³

Some universities are now engaged in commercialising the research findings. Some Kenyan public and private universities play a leading role in advancing the frontiers of science, technology, innovation and cultural creativity. There is a need to establish and strengthen innovation, transfer of technology and structures for IP administration in Kenyan universities to coordinate the development, commercialization and dissemination of innovation within academia, industry and public spaces.⁵⁴

Universities play a major role in R&D. Their role and mandate in national development is increasingly becoming important. The primary and traditional role of universities was to transmit SKAVI, especially through education, training, research, innovation and mentoring (ETRIM). Over the years, the importance of research and dissemination of research findings or outreach in the Kenyan and African society has been underscored. Through research, and the research results or findings, universities are expected to contribute to the improvement of the quality of life and to social and technological change.

The University of Nairobi has embarked on a business incubation project and related projects with the National Government agencies and private corporations as well as state departments to help in the development, dissemination and utilization of science, technology and innovation (STI).⁵⁵ There are concerns regarding application, commercialization and efficient utilization of

STI that has been or is being developed. There are also concerns that innovations and creativity in the arts, humanities and social sciences should be encouraged and nurtured. These should get appropriate support even as the relevant agencies also improve support for patentable technologies, inventions and innovations.⁵⁶

In the medium to long term, this calls for institutional (re)design in at least three ways. First, universities should enhance the orientation of their programmes to ensure they are practical and income-orientated. They should enrich or move beyond the privately sponsored Module II or the direct paying student model that began in the late 1990s.⁵⁷ While this model has provided opportunity to thousands of students and earned universities a lot of money, it has its weaknesses. These include focus on teaching or training using already generated knowledge, some of which is dated. This has a detrimental impact of the quality of education.

There is also general complacency among some university managers whereby teaching or training units focus on mere clerical and accounting work involving collecting student fees rather than pro-active R&D activities such as cutting-edge research or job focused post graduate training based on a needs assessment of the academy, the national and county government, industries and civil society organizations.⁵⁸

Secondly, some scholars, like the Kenya School of Government's Prof Calestous Juma, have suggested that the relevant Government Ministries, Departments, and Agencies (MDAs) be converted into universities.⁵⁹ What are the implications of this? Author's views? The third model is probably more focused centres and institutes.⁶⁰ What is the third model??

⁵⁴ See Ben Sihanya, *Intellectual Property and Innovation Law in Kenya and Africa (op. cit.)*, at 623.

⁵⁵ A challenge is that universities develop appropriate programs with the relevant agencies of the National Government and the relevant 47 County Governments.

⁵⁶ There is a running debate in which some Kenya government officials express preference for science, technology, engineering, and mathematics (STEM) or science, technology or innovation (STI) in comparison to the arts, humanities and social sciences. Deputy President William Ruto expressed such sentiments while serving as Minister for Higher Education in the Grand Coalition Government. He has not retracted. Cf. BA. Ogot, 'Rereading the history and historiography of epistemic domination and resistance in Africa' (2009) 52.01 *African Studies Review* 1-22.

⁵⁷ My argument is that all students who qualify for university or college education and training should be given adequate concessionary and long-term loans. They should pursue degrees or diploma and even doctoral programmes. And university staff should be compensated and remunerated appropriately including in terms of salaries, allowances and research grants, rather than the basis of participation module II where the

payment to staff has always delayed, declined and even collapsed in most universities anyway. Cf. Duncan Omanga, 'The crisis in our universities starts from sub-standard teaching in lecture rooms' *Daily Nation* Newspaper (Nairobi, 2015) <<http://www.nation.co.ke/oped/opinion/Universities-Teaching-Lectures-Crisis/440808-2760372-3ktafhz/index.html>> accessed 4 October 2017. Also see Duncan Omanga, 'Kenya stands to gain most when lecturers are well remunerated' *Standard Digital* newspaper (Nairobi 2017) <<https://www.standardmedia.co.ke/article/2001231373/kenya-stands-to-gain-most-when-lecturers-are-well-remunerated>> accessed 16 November 2017.

⁵⁸ See appropriate teaching and training programs have been discussed under the auspices of University of Nairobi Enterprise Services (UNES).

⁵⁹ Calestous Juma, 'African universities are lagging behind as the world moves on' *Daily Nation* (Nairobi, 2016) <<http://www.nation.co.ke/lifestyle/weekend/African-universities-are-lagging-behind-as-the-world-moves-on/1220-3358812-r1sgl7z/>> accessed 13 November 2016.

Some are owned by fully affiliated, loosely affiliated to, managed or independent of universities. This is a major source of inspiration behind Sihanya Mentoring (SM) and Innovative Lawyering (IL). Also see Bitange Ndemo, 'Our education through my eyes' *Daily Nation* newspaper (Nairobi, 2014) <<http://www.nation.co.ke/oped/blogs/dot9/Our-Education->

6. TEACHING IP AND INNOVATION IN KENYA & AFRICA

For a long time, IP has been the exclusive domain of a small number of specialist lawyers, who had generally acquired their expertise from working in IP based companies or representing clients with IP related problems.⁶¹ However, with the rapid acceleration of globalization of a world economy, IP has become recognized as a trade issue. This increasing prominence of IP on the national and international scenes has led to a significant impact on how IP is taught and the content that is taught.⁶²

The importance of IP in the modern world goes beyond just the protection of creations of the mind as it also affects all aspects of economic and cultural life. As a result, IP education at university level is increasingly becoming popular.⁶³ There are four (4) types of IP courses taught at university level. First, survey courses. These are basic and broadly focused courses which are intended to give an overview of the various fields of IP. Secondly, specialized courses are taught. These focus in-depth on a single or particular field of IP. Thirdly, advanced seminars. These seminars are designed for students who have taken a specialized course in a particular field e.g. copyright, patents, trademarks etc. Fourth, practice courses. These courses focus on the actual steps that IP attorneys would take to obtain and enforce IP rights.⁶⁴

Leading Kenyan and African universities and training institutions have adapted to providing courses either at the undergraduate level, LLM level and doctoral level. In Kenya, IP is offered as a course unit at the University of Nairobi, which is the leading University.⁶⁵ Other institutions that offer IP as a course unit are Strathmore University,⁶⁶ JKUAT,⁶⁷ KU,⁶⁸ and MKU.⁶⁹ At the University of Nairobi, IP is taught as a compulsory course unit at LLB 4 level. This is usually during a candidate's fourth (final) year and second semester.⁷⁰ The course gives the

candidates an overview of the various fields of IP law, with specific evidence and legal analysis of the core doctrines of IP, innovation, ToT, and licensing. This is to interest students in IP and those who might decide to specialize in IP in practice in advanced research, scholarship or teaching.⁷¹

Leading African universities such as the University of Cape Town (UCT), Pretoria University, the University of South Africa (UNISA), Africa University, the University of Witwatersrand, the University of Botswana, the University of Dar Es Salaam, Makerere University, Open University of Tanzania, and the University of Lagos among others have also introduced IP in their curricula. At the University of Botswana, IP is divided in to two course units i.e. Intellectual Property I and Intellectual Property II.⁷² At the University of Cape Town (UCT), IP is taught at a more advanced level of LLM as Intellectual Property Law, Development and Innovation.⁷³

The Africa University in particular, has partnered with WIPO and ARIPO to offer a Masters in Intellectual Property (MIP) Programme that offers the training of trainers in IP.⁷⁴ The main objectives of the programme are to create IP expertise in Africa, support IP teaching in institutions of higher learning and promote IP systems in Africa.⁷⁵ The programme was established in 2008 and has had nine (9) editions. The MIP programme has attracted 315 participants with 256 graduating with a Masters in IP.⁷⁶ ARIPO is also launching an MIP course in collaboration with the Nkwame Nkrumah University of Science and Technology, Ghana scheduled to start in August 2018 and also the University of Dar es Salaam, Tanzania in May 2019.⁷⁷

The incorporation of IP in the curricula has also played a huge role in the development of IP policies in these institutions. As such IP benefits students from a wide

through-my-eyes/1959700-2161438-goqdo1z/index.html
accessed 26 September 2017.

⁶¹ Yo Takagi, Larry Allman, and Mpazi A. Sinjela, *Teaching of Intellectual Property* (op. cit., 2011).

⁶² *ibid.*

⁶³ WIPO, *WIPO Intellectual Property Hand Book: Policy, Law and Use* (2004) WIPO Publication No 489(E), Geneva.

⁶⁴ *ibid.*

⁶⁵ University of Nairobi website <<http://www.uonbi.ac.ke/>> accessed 4 April 2018.

⁶⁶ Strathmore University website <<https://www.strathmore.edu/>> accessed 4 April 2018.

⁶⁷ Jomo Kenyatta University of Agriculture and Technology website <<http://www.jkuat.ac.ke/>> accessed 4 April 2018.

⁶⁸ Kenyatta University website <<http://www.ku.ac.ke/>> accessed 4 April 2018.

⁶⁹ Mount Kenya University website <<http://www.mku.ac.ke/>> accessed 4 April 2018.

⁷¹ The present author has taught IP since 1997, with a 3 year break as a JSD (PhD) student in IP at Stanford University Law School (2000-03).

⁷² Email correspondence of April 5, 2018 between Prof Ben Sihanya and Dr Jimcall Pfumorodze.

⁷³ Email correspondence of April 1, 2018 between Prof Caroline Ncube and Prof Ben Sihanya

⁷⁴ Africa University website <<http://www.africau.edu/admissionrequirements.html>> accessed 4 April 2018.

⁷⁵ *ibid.*

⁷⁶ Fernando Dos Santos, 'The role of Regional IP Organizations in Shaping IP Substance and Teaching in Africa-The Case of ARIPO' (2018) Presentation at the WIPO-WTO Colloquium for Intellectual Property Teachers and Researchers in Africa, held on 9 April 2018 to 12 April 2018, Pretoria, South Africa. Cf. Barthelemy Nyasse, 'IP Teaching Methodology and Syllabi: African Experiences' (2018) Presentation at the WIPO-WTO Colloquium for Intellectual Property Teachers and Researchers in Africa, held on 9 April 2018 to 12 April 2018, Pretoria, South Africa.

⁷⁷ *ibid.*

range of disciplines such as law, business, fine arts, engineering, sciences, and journalism.

7. SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

The main objective of this essay was to analyse scholarship and teaching of IP, innovation, technology transfer and licensing in Kenya and Africa. The overarching argument was that scholarship and teaching of intellectual property (IP) needs to be reconceptualized to cover IP, innovation, ToT and licensing as well as line topics that are relevant to Kenya's and Africa's sustainable development including socio-economic, cultural and political development. This is because IP is an interdisciplinary field as it covers all sectors of the economy including the legal, business, medical, agricultural, industrial, and education fields.⁷⁸ It therefore benefits not only legal students and professionals but also other professions. From the discussions above, it is clear that IP scholarship, teaching and training is very important and should be given considerable priority in universities and training institutions. IP scholarship and teaching in Kenyan and African universities should therefore be inter-disciplinary and inter-sectoral and should also be integrated with sub-national (or county), national, sub-regional and Africa-wide frameworks on RSTI.

Remarkably, most Kenyan and African universities focus on teaching for the diploma and degree qualifications. Thus, most human, financial, technical and infrastructural resources are dedicated to the first-degree culture. There is limited basic and applied research in RSTI, as well as in the arts, humanities and social sciences. Most of the research is based on the motivation of individual scholars, their interests in promotion or career advancement or in the context of research funded by foundations and institutions outside Kenya and Africa. While various leading universities and institutions in Kenya and Africa have adopted IP teaching and training in their curricula, there is still a lot that needs to be done. The teaching curricula and methodology is inadequate. A three-pronged methodology and appraisal is necessary to address the major challenges.⁷⁹

First, there is need to keep up with the dynamic and rapid changes taking place in IP, innovation and technology transfer. Each day new developments are being made in the IP world. Therefore, IP teachers and scholars need to keep updating and reviewing their teaching materials so as not to be left behind. Reviewing and updating of the IP curricula is very important as it ensures that the IP

students and trainees are up to speed with the developments that are taking place in the IP world. A majority of institutions in Kenya borrow their curricula from institutions that have been offering IP for a long time such as the University of Nairobi and may not use the curricula or syllabi that these institutions have revised. They therefore do not have their own authentic IP curricula and thus updating the borrowed curricula also poses a challenge as they do not have the relevant materials to refer to.

Secondly, teaching that address emerging IP issues from an African perspective are inadequate. For IP teaching and training to be effective, the materials used must be appropriate and up to date. There is therefore the need to invest in locally written and up to date materials on IP issues and matters in order to provide the best training for IP students. In Kenya and other African countries, IP teachers and scholars mostly rely on IP material written and prepared by foreign scholars from the US and Europe. The lack of IP materials by African authors poses a huge challenge and concern as the emerging IP issues discussed by authors from developed countries are not necessarily the challenges that Kenya and other African countries are facing. Some authoritative journal articles and books are emerging on Kenya and Africa IP.⁸⁰

Thirdly, the objectives, agendas and curricula on IP, innovation, and ToT should be reviewed to make them suitable for an interdisciplinary approach in which IP scholarship and teaching are conducted the light of its increasing role in fields such as business, commerce, science, medicine and engineering.⁸¹ There is therefore the need to develop inter-disciplinary objective, agenda and curricula on IP. The establishment of IPMOs, TTOs and incubators in public and private institutions, and not just in law schools is crucial. This will enable students from all fields to access the necessary IP knowledge and knowhow to all disciplines and including law.

To recap: The methodology in the scholarship and teaching of IP, Innovation, ToT, and licensing in universities should be enriched through interdisciplinary research, teaching and collaboration among students and scholars of law, health, agriculture, engineering, architecture, business, education, communication, sociology, political sciences, (cultural) history, cultural politics and literature.

⁷⁸ Sihanya, 'Intellectual Property and Innovation Audit, Valuation, and Commercialisation in Kenya' (forthcoming 2018).

⁷⁹ Yo Takagi, Larry Allman, and Mpazi A. Sinjela, *Teaching of Intellectual Property* (op. cit., 2011).

⁸⁰ See *Intellectual Property and Innovation law in Kenya and Africa: Transferring Technology for Sustainable Development*; See also Ben Sihanya, *Intellectual Property and Innovation law in Kenya and Africa: Cases and Materials* (2018) and the books and articles cited therein.

⁸¹ *ibid.*

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