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Intellectual Property Rights in Tanzania: An Appraisal of the Law and Developmental Issues

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Abstract

The ubiquity of intellectual property rights (IPR) makes it a special and an ever-present agenda in various forums and dialogues on developmental issues. Reflections and debates on the role of IPR are abounds in all fields and sectors such as education, science and technology, business, agriculture and food security, arts and culture, and environmental protection. Thus, a proper assessment of the developmental dimension of the IPR system inevitably requires calibrating along many fields. This paper investigates possible positive effects of strategic use of IPR in various developmental initiatives and posits that IPR, if strategically integrated in national policies, laws, and development programs, have the potential of triggering social and economic development in Tanzania. The paper deploys a qualitative and rights based approach exploring the policy and legal framework on IPR by unearthing the developmental related issues intertwined therein. It has been established that while currently there is no national policy on IPR, yet there are various policy statements traceable from scattered policies, hence making it impractical to have a coordinated national approach on IPR. Therefore, amongst the interventions, it is proposed to adopt a stand-alone national IPR policy in Tanzania, followed by a wholesome review of the existing legal and regulatory framework on IPR to integrate a development-conscious approach and keep abreast with the recent global trends and developments.

Keywords: *intellectual property law, human development, and perspectives of Tanzania.*

Introduction

For decades, the interface of IPR system and human development has been a subject of policy and regulatory debates. The field of IPR refers to legally protected rights in respect of expressive, informational and technological subject matter resulting from human intellect (Dreysfuss and Pila, 2018: 4). The nature of property rights under IPR system exists in intangible medium, in subject matters such as inventions; literary and artistic works; designs; and symbols, names and images used in commerce. The IPR protection is acquired under the statutory framework governing patents, copyright, trademarks, industrial designs, new plant varieties, geographical indications, and other forms of intellectual property. The protection of IPR enables owners to earn exclusive rights to use the protected IPR for a prescribed duration. The exclusive rights afford an opportunity to owners of protected works to gain financial benefits through various transactional arrangements, such as licensing, selling otherwise referred to as assignment, as the

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case may be. Notably, all early IPR statutes were tailored to achieve to some extent certain societal developmental objectives (Mwakaje, 2020: 73). In Tanzania Mainland, the subject of IPR features in various national policies, development programs, and strategies including those on agriculture, science and technology, research and development, and industrial development. In terms of national legislative framework, except for geographical indications and industrial designs, there exist laws governing all other aspects of IPR. The regulatory institutions for IPR are also present and functioning (Mwakaje, 2012: 19–26).

At the regional level, the legal instruments establishing the East African Community (EAC) points to IPR as one of the critical issues in achieving the developmental objectives (EAC, 2009: art. 43). At the continental level, the structure of intellectual property regulation is mainly tailored along the colonial affiliation and linguistic orientations under which the English speaking African countries are coordinated under the African Regional Intellectual Property Organization (ARIPO) whose headquarters are in Harare, Zimbabwe, while French speaking African countries are under the Organisation Africaine de la Propriété Intellectuelle (OAPI) based in Younde, Cameroon. Recently, African Union in its 26th Ordinary Session of the AU Assembly held on 31st January 2016 enacted a Statute of the Pan-African Intellectual Property Organization (PAIPO). The Statute, among others, conferred the legal mandate to PAIPO to promote effective use of the intellectual property system as a tool for economic, cultural, social, and technological development of the continent by setting standards that reflect the needs of the African Union, its member states, and RECs, ARIPO and OAPI (African Union, 2016: art. 3). Appreciably, the Statute is anchored on developmental considerations that should be used as the basis for developing the IPR policies and laws. In addition, the Agreement on African Continental Free Trade Area (AfCFTA) expressly identifies IPR as one of the crucial element and agenda for the implementation of the cross-border trade in Africa. The drafting of the Protocol to the AfCFTA on Intellectual Property Rights is currently underway, which will set the required benchmarks for national policies and laws on IPR (African Union, 2021).

At the international level, the recent trend and thrust has been on linking issues of IPR and sustainable development as exemplified by the adoption of the Agreement on Trade related Aspects of Intellectual Property Rights (TRIPs Agreement) in 1994, under the auspices of the World Trade Organization (WTO) and the World Intellectual Property Organization (WIPO) Development Agenda in 2007. Since then, WIPO and WTO have consistently sought to repackage their global initiatives by focusing on how IPR should inform and influence national initiatives for sustainable development (Bannerman, 2020). Yet, there is still a lack of clarity on how the use of IPR policies, laws and practices may trigger development. Isolated anecdotes traceable from various national studies suggest a need for assessing the interface of IPR and development on a case-by-case basis, guided by specific national conditions (WIPO, 2017: 3).

A Problem to Investigate

The omnipresence of IPR in various sectors of the economy has made it one of the topical subjects in contemporary policy and regulatory initiatives across the globe. A generalized theoretical narrative suggests that the progress of science and useful arts is dependent on proper deployment of IPR initiatives as incentive instruments to spur creativity (Dreyfuss & Pila, 2018: 9–15). Several literatures have asserted that IPR protection is a *sine qua non* for socio-economic and scientific development (Ncube, 2013: 370). In Tanzania, there is a growing sense of urgency to embrace the protection of IPR as a means to support and spearhead the industrialization agenda (Tanzania, 2017a: s. 3.3.8), yet there is no coordinated policy, legal and regulatory framework on IPR. In addition, there is no nuanced, elaborate and informed study with a substantiated narrative on the connection between strategic use and protection of IPR, and human development. In the absence of a coordinated and informed guide on the appropriate national regulatory path, issues and initiatives of IPR will continue to be addressed in patchworks, making its impact less discernible and appreciated, hence resulting into minimal impact in societal development. Thus, this paper delves into a legal enquiry on the need for a coordinated IPR regime, and the potential positive influence of an efficient IPR system to various developmental initiatives in Tanzania.

Reflecting on Current Literatures

The subject of IPR has a plethora of literature base. In view of its cross-cutting nature, the writings on IPR are predicated on diverse disciplines and professional contexts (De Beer, Mogyoros & Stidwill, 2014: 87–90). Various authors have attempted to address the connection of IPR to subjects such as education, science and technology, human rights, public health, environmental protection, and trade (Brown et al, 2019: 14; Bracha, 2018: 592). Yet, the legal and regulatory context in which their assessment is based is different from the obtaining framework in Tanzania. Notably, the existing pool of literatures tends to address the subject of IPR and development from at least two distinct angles. The first literature orientation emphasizes on strict compliance with IPR regimes as a precondition for social and economic development (Idris, 2003: 33–46; Wong & Dutfield, 2011: 46; Halabi, 2018: 30–40). On the other, there is a growing literature advocating a cautious approach on the integration of the IPR agenda, cognizant of the need to consider local conditions in a particular country or region (Zimmerman, 2011: 54, Gobble, 2014: 61; Tzeng, 2017: 322). The latter school of thought proffer that there is a need of applying and integrating IPR initiatives in tandem with specific local conditions, and that 'no-one-size-fits-all' is the most appropriate model in making IPR work for every national and institutional set-up.

Despite the existing dilemma on the appropriate approach for the IPR in addressing the desired developmental changes; there is a global consensus in support of the thesis that an effective protection model for IPR tend to contribute to development by creating incentives to innovate, access to information, efficient markets, growth of Gross Domestic Products (GDP), and job-creation (Drahos & Mayne, 2002: 4–8,

WIPO, 2017). Yet, for IPR to trigger human development, it is pertinent to make an empirical assessment on the propriety of the attendant IPR laws in achieving the envisaged developmental goals. Once such policy and legal dimensions are fully understood, it will create a requisite platform for realigning the protection of IPR in support of human development initiatives. Thus, this paper calibrates and interrogates key IPR issues and suggests effective ways through which it may be strategically integrated to support national developmental initiatives in Tanzania, as reflected in various national instruments such as the National Development Vision, 2025; and the National Five-Year Development Plan (FYDP III) – 2021/22–2025/26.

The Framework of Assessment

The subject under enquiry centres on assessing the functional or otherwise dysfunctional effect of IPR system when assessed from a broader developmental point of view. Thus, to yield a balanced outcome, the chosen methodology compels the deployment of a hybrid approach that is cognizant of the inherent nature of IPR; hence the assessment model is based on a rights discourse and the qualitative assessment on the impact of IPR strategies at different levels and contexts of human development.

The rights discourse affords a necessary and balanced assessment platform that considers the varying national and institutional circumstances, which consequently influence the choices of appropriate national strategies. To complement on the rights discourse, the qualitative review of national policies and laws on IPR is made to interrogate the appropriateness of existing statutory and regulatory set-ups in spurring human development. Furthermore, the qualitative review is preferred as a viable methodology that can guide an effective and critical analysis of contemporary international approaches on enforcement and implementation of IPR (Ferrie & Hosie, 2018: 12) which, for many decades, its formulation has been based on the conceptual orientation that treats IPR as mere market monopolistic tools, thus belittling its potential developmental spill-overs.

To formulate a logical assessment platform, this paper begins by setting the base by outlining the context in which development may be looked at, then proceed to draw the interface of the essential developmental contours with the IPR system.

Defining the Term 'Development'

There is no universal definition of the term 'development'. The concept of development may be appreciated from various angles and perspectives. There are those who may look at it from a purely economic context; while others may address it from social, political, or scientific contexts. Irrespective of the context under which the subject of development is addressed, a key convergence point is that it refers to some form of exponential scientific, social, and economic growth or advancement within a society at either individual, institutional, or national levels. The tendency has been that one form of development sparks the growth of the other: to illustrate, scientific development has in many cases triggered economic and social development, and vice versa.

In the context of this paper, reference to the term 'development' loosely connotes the concept of total factor productivity drawn from the causality between human capital and growth, and the institutional roles in the production process within a particular economic setting (Cotter, 2018: 37–61). Appreciated as such, this paper examines the contribution of IPR in the various facets of a production process, and in the growth of the service sector. Specifically, it highlights the trigger points that correlate IPR and the incremental institutional and national performance from the production stage to the product supply or service delivery point (Mwakaje, 2011: 14–24).

To fully appreciate the convergence and the interlinkage of IPR and development, first, it is pertinent to map-up the operating framework underlying the IPR system. Thus, the section that follows highlights the conceptual and legal setting of the IPR system as a basis of interrogating the human developmental dimensions arising therefrom.

Conceptual Framework of IPR System

The system of IPR has been traditionally clustered into two branches: industrial property, and copyright. Each of the two branches has its own distinct history and underlying substantive and procedural precepts. Under industrial property, there are significant structural variations of the underlying subsets, which consequently affect their operational effects in stimulating societal development (Idris, 2003: 18–21). Yet, there is a common thread that unites the two branches and their underlying legal principles because they are all tailored to protect proprietary rights in creative works, in an intangible form.

Conceptually, an IPR system is a form of exclusive rights conferred by law to creators or authors of creative works in the realm of industrial, scientific, artistic and literally works. It constitutes property rights arising from human intellect. It has all the transactional attributes of a physical property, such as the capacity to be purchased, sold, and bequeathed. The principal policy objective of IPR is to provide legal protection as an incentive framework for scientific, artistic, and literally creativity by granting limited period of commercial exclusivity to owners of IPR. Consequently, costs expended in the creation of the protected rights can be recouped, thus encouraging further creativity. In view of its cross-cutting nature, the importance of IPR has cascaded through many sectors; such as agriculture, education, public health, cultural and artistic promotion, and business (Bannerman, 2020: 122). As highlighted above, the two major categories of IPR are copyright and industrial property. The anatomy of these categories has their variances and similarities (Dreyfuss & Pila, 2018: 4), as briefly discussed in the following sub-sections.

Copyright and Neighbouring Rights

Copyright is a branch of IPR dealing with the protection of literally and artistic works (Mwakaje, 2007: 7). In Tanzania, matters of copyright are governed and regulated under the Copyright and Neighbouring Rights Act, Cap 218 [R.E. 2002]. Currently, as per section 46 of the Act, the regulatory role is vested to the Copyright Society of Tanzania (COSOTA). The Act has set a defined legal framework that

determines the protectable subject-matter, the eligibility criteria, nature of ensuing rights, duration of protection, the exceptions to copyright protection, and the enforcement-related issues. Under section 5(2) of the Act, there is a wide range of works protected under copyright; including printed works, cinematographic works, musical works, architectural drawings, photographs, films and videos or broadcasts. The international legal instruments governing copyrights are important to Tanzania as they set the minimum standard for compliance purposes; and help in defining the subject-matter and the scope of copyright protection. Some of the key international legal instruments on copyright include the Berne Convention for the Protection of Literary and Artistic Works of 1886, as amended from time to time; the Universal Copyright Convention of 1951; and the Agreement on Trade related Aspects of Intellectual Property Rights (TRIPs Agreement). Notably, there are other important international legal instruments on specific operational areas of the copyright regime. In defining the scope of the term 'literary and artistic works', the Berne Convention uses an illustrative list of works (WIPO, 1886: art. 2(1)). The TRIPs Agreement, as per Article 9, has adopted the definition proffered under the Berne Convention, but in addition it makes specific reference to computer programs and compilation of data as protectable subject-matter under copyright.

The rights conferred under copyright are of two folds: economic rights, and moral rights. The former refers to transactional rights that afford authors the opportunity to recoup economic returns from the works they have created. They include right of reproduction, distribution, rental, and translation of the protected work. On the other hand, moral rights refers to reputational and attribution rights of authors based on the inextricable personal and moral connection between the author and the protected work (Simone, 2019: 21). It is worth pointing out that as part of the regulatory balancing process, there are provisions in the copyright statute that allow certain uses, mostly in the nature of public interest, without prior authorization of the author under the fair use doctrine. Over the years, the doctrine of fair use under copyright has attracted debates from various corners, specifically with regards to its scope, limitations and desirability in the context of developing countries (Mwakaje, 2018: 14). In the context of this paper, the flexibilities under the copyright law within the purview of the fair use precepts present a useful analytical platform in assessing the role of copyright law in societal development. The discussion and analysis will be centred on the social development, specifically on access to educational published materials.

Industrial Property

Industrial property is a branch of IPR covering several types of intangible assets that are essentially of industrial use. It includes subsets such as patents, industrial designs (aesthetic creations related to the appearance of industrial products), trade and service marks, layout-designs of integrated circuits, commercial names and designations, geographical indications, and protection against unfair competition (WIPO, 2016: 6). Strategic protection of industrial property can often result into the progress of science and technology through patent protection, which

encourages researchers and innovators to invest in research in the expectation of being granted exclusive rights over their inventions. Trademark protection guards against market abuse by free-riders, hence, significantly contributing in creating fairness and market efficiencies, which are key bases for economic growth.

Patent Rights

The patent system is a field of IPR dealing with the protection of inventions, either as products or processes. The term 'invention' has its specific technical meaning in the context of patents. In many local patent statutes, the term 'invention' denotes "… a solution to a specific problem in the field of technology" (Tanzania, 1987: s.7(1)). The administration of patents in Tanzania is under the Business Registration and Licensing Agency (BRELA) which serves as a national intellectual property office. As a qualifying process, three conditions must be met for a patent registration to be granted: the invention must be new, involve an inventive step, and is capable of industrial application (Cotter, 2018: 24). These criteria are globally accepted and have been prescribed to set high standards for the novelty of inventions that are of practical relevance. The criteria for patent protection are meant to set high standards in making sure that only scientific discoveries that have significant scientific contribution, clearly distinguishable from the existing level of knowledge and state of art in the field of invention, qualify for patent protection. In this way, the patent criteria are devised to push for incremental growth of scientific and technological knowledge and solutions thereby resulting into improvement of human livelihood and the overall societal development.

Once a patent is registered, the proprietor is given exclusive monopoly rights for a specific period. In Tanzania, the patent statute grants a maximum of 20 years of protection from the date of filing an application, with an initial duration of 10 years, with the possibility of renewals of the term for two consecutive durations of 5 years each. The exclusive rights enable the patent owner to enjoy several commercial related rights by precluding any person from exploiting the patented invention by making, importing, offering for sale, selling, using the product; or stocking such a product for the purposes of offering for sale, selling, or using. In this context, patents serve as an enabling legal infrastructure to patent owners in obtaining financial returns from their inventive works, thereby promoting further creativity. Poised as such, the appropriate patent regime is widely considered as crucial for the progress of science and technology as evidenced by the patent concentration map, and recent global innovation indexes (Bergquist & Fink, 2020: 43). On the other side of the equation, patents, if not strategically regulated, may inhibit the progress and welfare of society. Classical examples on this potential negative dimension relates to the protection of pharmaceutical patents, which affect access to medicines in developing countries by raising prices of medicines so as to recoup costs of research and patents. Inappropriate strategies of patent regulation may also inhibit access to technological information for SMEs and start-ups companies, hence to some extent limiting their ability to grow and

compete with established companies in the market. Thus, there is a necessity of interrogating the existing patent system with a view of developing an appropriate and balanced model that support development in line with the obtaining local circumstances, e.g., in Tanzania.

Property Rights in Trade and Service Marks

The relevance of trademarks as an essential business tool for market control and development is on the rise, partly because of the increased competition in the market which avail consumers with tremendous choices of substitute goods. Trademarks are one of the instrumental tools for market regulation and creating market and economic efficiencies. Conceptually, trade or service marks refer to signs or symbols used in commerce to indicate the source or association of a particular goods or service to a designated manufacturer (Sheldon, 2018: 56). It serves to distinguish sources of products or services and their associated qualities. In principle, trade and service marks serves two important purposes: protection of consumers from potential market confusion, and protection of investment in nurturing the mark. Thus, protection is necessary because of the tendency of unscrupulous businessmen in imitating well-known marks to free-ride on their established market reputation.

In Tanzania, trademarks are regulated under the Trade and Service Marks Act, Chapter 218. To acquire protection, a trademark must be distinctive, which means that the mark must be capable of being visually distinguished from other registered marks. The administration of trademarks in Tanzania is under the Business Registration and Licensing Agency (BRELA), which serves as a national intellectual property office. Trademarks are protected as IPR because of their distinctive characteristics and the underlying goodwill, which is a result of concerted innovative efforts of the proprietors in the quality controls of the products represented by the mark. The standard of legal protection for trademarks is based on the test of whether the alleged infringing mark presents likelihood of confusion to unsuspecting consumers when used in the same market with a registered mark.

As opposed to other types of IPR which have specific duration of protection, trademark can be protected perpetually, based on the possibility of never-ending periodic renewals. As a property, trademarks are transferrable through a variety of ways such as licensing, assignment, and franchising. The proprietor of a mark is given exclusive rights to use the mark in commerce, and precludes others from using similar mark within the territory of protection. Such exclusivity is an important business asset to enterprises as it affords a platform to control the market and drive away competitors from imitating their brands (Visconti, 2020: 12). From business and legal perspectives, such controls arising from exclusivity affords proprietors of trademark an important platform to keep their competitors away from the market. In addition, such assurance of exclusivity serves to encourage owners of trademarks to invest more in quality controls to improve taste and functionality of their products, thereby resulting into business growth.

Geographical Indications

Geographical indications (GIs) refer to types of IPR that provide legal frameworks through which the geographical origin of products can be differentiated based on the special geographical features and climatic attributes of the places of origin. The GIs system recognizes that taste and attributes of certain products are connected to certain *in situ* geographical features, and valuable elements of a product (Gangjee, 2018: 560). Thus, GIs protection aims at preventing other manufacturers from a misleading use of registered GIs if their products do not originate from such locality, hence protecting consumers against market deception. In Tanzania Mainland, there is neither a specific legislation nor an express provision on GIs protection in any IPR law (Mwakaje, 2021a). A far-fetched inference can be drawn from the provisions of the Trade and Service Marks Act, which prohibits the registration of a mark which is likely to cause confusion as to the nature, geographical or other origins of goods or services concerned (Tanzania, 1986: s. 19(a)). Admittedly, section 19(1) is not a registration provision, rather a deterrent prescription on the registration of geographical names as trademarks. Therefore, by statutory inference, a geographical name in Tanzania Mainland may be registered as a trademark, not as a GI. In the current set-up, there is a need to enact a comprehensive GIs law in Tanzania, particularly in the context of agri-business and access to international markets, as advocated by the African continental agenda on GIs (African Union, 2018: 53). Putting in place a defined national regulatory set up of GIs will enable Tanzania, whose economy is largely dependent on agriculture, to add value to the agricultural products through an effective branding strategy guided by GIs protection, thereby increasing revenue to farmers and the country's GDP. This is particularly potential for Tanzania in view of her tremendous reservoir of natural resources and variety of climatic and geographic characteristics.

Industrial Designs

Industrial designs deal with the protection of visual ornamental features of articles such as shape and appearance of industrial products. It relates to the features of a shape configuration, pattern or ornament applied to a product through the industrial process. Design protection does not apply to the underlying functional features of a product; rather, it only applies to its aesthetic features (Adams & Adams, 2011: 197).

Currently, there is no national legislation for industrial designs registration and protection in Tanzania Mainland. Section 76 of the Patents (Registration) Act, Cap 217, provides that the registration of industrial designs under the United Kingdom's Patents and Design Act of 1907, and subsequent enactments amending or substituting it, extends to Tanzania. Thus, the rights and privileges under a certificate issued in the UK extend to Tanzania. Alternatively, industrial designs may be registered in Tanzania through the African Regional Intellectual Property Organization (ARIPO) registration system, under the Harare Protocol on Patents and Industrial Designs adopted in 1982 as amended in 2019. Tanzania became a member to the Harare Protocol on 1st September, 1999.

Industrial designs are one of the important business assets, and in many cases have been strategically used by enterprises to attract new consumers by creating and applying attractive and appealing visual features of the products. In view of its potential in appealing to, and attracting consumers, the role of industrial designs in commercial success and economic development cannot be overemphasized.

Plant Breeders' Rights (PBR)

The National Agriculture Policy has succinctly stated that the protection of PBR is one of the key policy issues in Tanzania and crucial for creating conducive environment for seed production and trade (Tanzania, 2013: 12). PBR are protected under the Plant Breeders' Rights Act, Chapter 344, which set statutory criteria for the registration of a new plant variety. To be protected, the variety must meet the statutory criteria which require the variety to be distinct, characteristically uniform, and stable over years (Tanzania, 2012: ss. 3, 13). At the sub-regional level, the relevant instrument on the PBR is the Arusha Protocol on the Protection of New Varieties of Plants of 2015, administered by the ARIPO. The Protocol vest powers to the ARIPO to register new plant varieties on behalf of member states to the Protocol. Internationally, PBR are governed by the International Convention for the Protection of New Varieties of Plants of 1961. The administration of the Convention is under an intragovernmental organization known as the International Union for the Protection of New Varieties of Plants (UPOV).

The essence of the legal regime on plant breeding is based on the quest for the promotion of creativity in agriculture. Once strategically used, PBR can play a central role in the global agenda on food security and sustainable development. Some authors have suggested that, to bring the desired outcome for food security, the strictures of IPR should be relaxed and be more accessible to users (Hongladarom, 2013: 31). In this way, it is argued, more innovation may come in the form of new plant varieties with desirable traits—such as resistance to diseases, better yields, tastier food—that have stability and can be cultivated in various geographical environments.

The protection of PBR is especially important in the context of Tanzania given the crucial role of agriculture in the national economy (Ngwediagi, 2009: 4). To illustrate, between the years 2016 to 2020, national revenues from the agricultural sector rose by 17%; in 2018 agriculture contributed to 28.2% of the GDP; and in 2019 agriculture accounted for 58% of the employment in Tanzania (Tanzania, 2020a: 8). Thus, statistics strongly point to the fundamental role of agriculture as a key factor in the national development agenda, hence issues of promotion and protection of PBR deserves closer and wholesome policy and regulatory attention.

Trade Secrets as Business Assets

Trade secret—otherwise referred to as confidential information—is a type of IPR that concerns the protection of certain proprietary information owned by an entity or a person. Examples of trade secrets may include customers' profile and information,

financial arrangements, internal managerial practice manual, and market survey information. To be protected, the information must, first, offer some form of business advantages to the holder of such information over competitors; secondly, there must be concerted efforts to keep it secret; and thirdly, such information must not be publicly available (Sheldon, 2018: 47). The protection of trade secret is largely based on common law and broad principle of equity which requires good faith dealing on information that is shared in confidence between parties. It seeks to prevent a recipient of confidential information from revealing it to others, or taking unfair advantage of it, unless there is a legal obligation or public interest to do so.

Trade secret may be protected through various ways, including putting confidentiality clause in an employment contract, using institutional policies or non-disclosure agreements (NDAs): the latter may be applied to both employees of a company and non-employees. Companies may prefer to use trade secrets for a variety of reasons, including the potential for unlimited duration of protection, there being no complicated registration formalities, and insignificant initial costs of protection (Sheldon, 2018: 51).

Trade secret protection regime enables owners of proprietary information to have advantage over their competitors, and thus affords a requisite platform for enhanced income generation by the company owning such information. In turn, such an outcome normally leads to business growth, job creation, and expanding the tax base. All these are important ingredients to the subject of development.

Intellectual Property Protection and Development

The discussion above has provided a glimpse of the nature and scope of the subject of IPR, particularly its ubiquity and overriding effects on several production sectors. The progress of science, technology, and innovation is largely associated with effective application of patents, and in many cases copyright in software. An abundance of literatures points to the fact that optimal economic returns from the creative and cultural industries, and access to education, depends on strategic use of copyright and design policies and laws in the production and supply chains (Wong & Fernandini, 2011: 175; Mwakaje, 2020: 72–91). On the other hand, sustainable development agendas hinge on, among others, issues of environmental protection and food security. Thus, the protection and use of environmentally friendly technologies through patents and protection of PBR become instrumental in achieving sustainable development objectives (Haugen, Muller & Narasimhan, 2011: 103). For businesses to thrive based on their innovative capacities, competition in the market must be regulated to make sure it is fair and efficient. One of the vital tools in regulating fair competition is through the protection of trademarks and prohibition of counterfeiting. In addition, issues relating to public health and access to medicines are at the centre of developmental agenda: in this respect, strategic use and enforcement of patents becomes a critical national intervention (Chamas, Prickril and Sarnoff, 2011: 60). The above discoursed areas on the convergence of IPR and human development illustrate the magnitude of the

issues for policy and regulatory consideration to make IPR contribute to the economic and social development in Tanzania. Some of these dimensions are discussed in the following sub-sections.

Access to Education and IPR

Access to, and quality of, education are broad concepts and amongst the important elements in signifying levels of development in a society. Access to education cut across several variables, including access to quality published materials and information. From a developmental perspective, education enables upward socio-economic mobility, and is widely considered as key to escaping poverty (Olwan, 2013: 347). Unsurprisingly, the 4th Goal in the UN Sustainable Development Goals succinctly refers to *quality education* as a key development agenda. In Tanzania, the national development goals have cited education as one of the critical ingredients for the attainment of targeted socio-economic development (Tanzania, 2005: s. 1(2)(4)). In turn, the quality of education is dependent on several variables, one being easy and effective access to educational materials.

Issues relating to accessibility to educational materials in printed or other formats are regulated by IPR law. IPR policies and laws are one of the principal instruments regulating the ownership and dissemination of educational materials by striking a regulatory balance between interest of holders and users of copyrightable materials (Zimmerman, 2011: 40). Copyright law regulates publishing and other literally rights by conferring exclusive rights to authors of published materials. The rights granted to authors are not absolute; there are several exceptions to the general copyright protection, such as fair use which allows access and use of published materials under certain prescribed conditions. The other strategic balancing provision is based on the duration of protection, which is limited to a specified period, i.e., life of the author and 50 years after death (Tanzania, 1999: s. 14), after which the rights revert to the public domain. Once a work is deemed to be in the public domain, restrictions on accessibility will no longer apply; thus it will be free for the anyone to use it without being required to obtain the permission of the author. The essence of these exceptions is to benefit mostly students and educational institutions by enabling them to use published materials for educational purposes, hence improving the quality of education. Thus, issues relating to access to educational materials can be strategically approached at the national level to achieve national developmental goals without creating tensions with authors (Mwakaje, 2020: 84).

On the other hand, patents regulate accessibility and use of scientific information available in the patent database. Patents law grants exclusive rights to inventors for a specified duration; serving as an incentive for further scientific creativity, and thereby enriching the pool of technical and scientific knowledge for the benefit and improvement of education systems and livelihood in the society. In Tanzania, free accessibility to scientific information in the patent database for research and educational purposes is provided under section 38 of the Patents (Registration) Act,

Cap 217. Thus, patents are one of the key instruments in regulating access to scientific information for education purposes. The provisions on free access to patented information for academic and research purposes are important in improving the quality of education (WIPO, 2017: 13). Surprisingly, Tanzania's Education and Training Policy of 2014 is silent on how issues of IPR rights should be leveraged to facilitate orderly access to published materials and other information protected through IPR (Mwakaje, 2020: 75, 86). Having a national policy position on these issues is crucial, and will provide a needed policy platform to trigger and necessitate the orientation of IPR statutes in support of national developmental goals on education.

Intellectual Property Rights and Public Health

The quality of public health system is one of the key indicators used in assessing the level of human development in a society. In turn, the assessment yardstick used in gauging the quality of public health glances on, among others, accessibility to health services such as medicines and hospitals facilities. The correlation of IPR and public health arises mostly in the context of patent regulatory regime (WHO, 2011: 12). Specifically, debates oscillate between a need to enhance access to essential medicines for the poor, and the quest for protecting inventions as an incentive to owners of pharmaceutical patents (Musungu & Oh, 2006: 4). Tensions between the two sides emanate from the fact that many studies have indicated that there is a strong connection between prices of pharmaceutical products and rising research operational costs resulting from the pursuit of patent protection (Chamas, Prickril, and Sarnoff, 2011: 67; Tzeng, 2017: 327, Cotter, 2018: 139). In many cases the most affected are those with meagre financial resources, hence it became a social developmental issue. Thus, the strains between patent protection and access to medicines have necessitated a review of the patent system such that it may be tailored to address issues of public health with a requisite equilibrium. To arrest the seeming injustices of patents in public health, several initiatives have been developed at national, regional, and international level.

In the patent's realm, the initiatives have entailed repackaging patents laws in the lens of human rights as part of calibrating the balance between rights of inventors and public interests (Helfer, 2007: 1017; Wong, 2011: 20). Along this trajectory, issues of rights to health have been treated as part of the obligation of states in the international human rights (United Nations, 1966; art. 12). Health and development promotion are one of the central drivers of the UN Millennium Development Goals (MDGs). Under MDG8, one of the stated targets is to provide access to essential drugs in developing countries in cooperation with multinational pharmaceutical companies. This target is considered a critical one in view of the boiling complaints from developing countries over the expansive sphere of application resulting from the adoption of the Agreement on Trade-Related Aspects of IPR Rights (TRIPs Agreement) in 1994. One of the effects of TRIPs Agreement was to extend the scope of the subject matter of patents to cover "inventions in all technical fields" (WTO, 1994: art. 27).

In addressing the potential implication of patent protection to access in medicine as a public interest matter, the patent statute in Tanzania have provision on compulsory licensing and government use rights in cases where national security or public health is at peril (Tanzania, 1987: ss. 55, 62). These provisions afford a necessary balance in making sure that patent laws operate as tools for development by supporting the public health system. Yet, the level of awareness on the availability of these options to policymakers and pharmaceutical companies is on the low side, hence rendering these provisions practically redundant.

IPR and Market Competition

Market access is one of the important developmental variables because it determines a country's ability to reap the benefits of globalisation and international competition. For this to happen, barriers to cross-border trade, either tariffs or non-tariffs, must be removed or minimized. IPR has been classified as a form of non-tariff barrier because of its potential restraint on trade (Hemphill, 2018: 894). IPR confers several exclusive rights—including the right to prevent use, manufacturing, offering for sale, and importation—of goods infringing on the protected IPR. These rights are commercial and territorial in nature (Hemphill, 2018: 874). Thus, the legal effect of such right is to enable owners or licensees of such rights prevent other business competitors in the same market to do any of those rights within the territory of protection. It is on this basis that patents and trademarks have been widely used as tools for market domination. Notably, Part A, items 1 and 12 of the 2nd Schedule to the East African Community Customs Management Act of 2004, prohibit the importation of counterfeits goods, and goods that are prohibited by any written laws in force in the partner states. Thus, based on this provision, customs authorities may refuse entry of goods that infringes on IPR of any person protected in their territory.

Intellectual Property System as a Catalyst for Innovation

A country's level of innovation is widely acclaimed as one of the significant drivers of economic and social development. Innovation can take different routes, such as effective application of technology to improve production, or the use of new managerial practices for optimal institutional functions. Whatever the mode, the ultimate objective of innovation is to improve production output and service delivery with a view of enhancing market competitiveness (Menell, et al, 2017: 350). Innovation begins and flourishes in an environment where creative ideas are properly nurtured and appreciated through established policy and legal systems. It may be achieved through adopting supportive policies, or setting up responsive legal and regulatory frameworks (Tanzania, 2010: 17).

The IPR system is an integral part of innovation systems. Patents, for instance, serve an important purpose by creating the incentive framework for inventors to invest in research with the assurance that once they have secured a patent protection, they will have control over the commercial use of their invention (Cotter, 2018: 212). Such control affords inventors market opportunities for their inventions through licensing

and other forms of transactional arrangements. In addition, the provisions on patent flexibility—such as free experimental use and other non-commercial purposes—constitute an important platform through which progress of science and technology can be achieved by facilitating access to scientific information to academic and research institutions (Commonwealth Secretariat, 2017: 477).

However, the net developmental gains from IPR as a catalyst for innovation in Tanzania are not yet fully realized, partly because of the current inept legal framework on IPR, the lack defined and IP-conscious institutional linkage between creators of innovative ideas and users of those ideas; and low level of IPR awareness across the spectrum of researchers, users, and policymakers.

IPR for Cultural Development and Preservation

The dimension of IPR in the development of culture has attracted never-ending debates at various forums at regional and international levels. The term 'culture' connotes a wide range of issues such as the ideas, customs, social behaviours of a particular society, arts, and other collective manifestations of human intellectual achievements. Culture is not only a source of societal pride and recognition, but has also an economic function by creating revenue from sectors such as tourism and the creative industry: thus, it is a human developmental issue (Mahama, 2018: 7). For instance, one study in Tanzania has indicated that the total value-added of creative or copyright-based industries in 2007–2010 ranged from TZS391.635bn to TZS 680.990bn, which represented 3.0% and 4.6% of the total GDP of Tanzania (WIPO, 2013: 29). Similar studies from other jurisdictions such as Australia, Kenya, Malaysia, Netherlands and Peru offer similar testimonies (WIPO, 2011). Most cultural manifestations—such as expressions of traditions, culture, expressions of folklore, and other cultural productions—are protected under copyright law (Tanzania, 1999: ss. 2, 3(2), and 24). Arguably, the cultural industry can be of tremendous economic potential to Tanzania if appropriate policies and legal framework are put in place.

At the regional level, a relevant framework under ARIPO is the Swakopmund Protocol on the Protection of Traditional Knowledge and Expressions of Folklore of 2010. Notably, Tanzania is yet to sign the Protocol despite the fact that the national copyright statute contains detailed provisions for the protection of expression of folklore, and there is a law to regulate traditional and alternative medicines (Tanzania, 1999: s. 24; Tanzania, 2002: s. 10). At the international level, Tanzania is a signatory to several conventions for the protection and promotion of cultural properties (UNESCO, 1954; UNESCO, 1972, UNESCO, 2003). In these international legal instruments, the terms 'cultural property' and 'intangible cultural heritage' are defined to include monuments of architecture, art, or history (whether religious or secular); works of art; and manuscripts, books, and other objects of artistic, historical or archaeological interest (UNESCO, 1954: Article 1). Furthermore, "intangible cultural heritage" covers practices, representations, expressions, knowledge, and skills—as well as the instruments, objects, artefacts,

and cultural spaces associated therewith—that communities, groups and, in some cases, individuals recognize as part of their cultural heritage (UNESCO, 2003: art. 2). Notably, there are several subsets within the intangible cultural heritage that are protectable under the IPR system, such as monuments of architectural designs, works of arts, manuscripts, books, and other objects of artistic nature.

Thus, the linkage between IPR and cultural development is discernible and warrants a thorough and broader policy and regulatory reflection in the context of Tanzania. Developing an appropriate framework to regulate right of access and community benefits arising from cultural properties and intangible cultural heritage should top the agenda.

Environmental Protection, Development and IPR

The linkage between environmental protection and human development is one of the key policy objectives underlying environmental protection in Tanzania. The primary national policy objective centres on the promotion to use environmentally sound technologies that protect the environment (i.e., are less polluting), and which put thrust on waste recycling (Tanzania, 1997: ss. 7, 10). Among the key targets in the Tanzania Development Vision 2025 is high-quality livelihood that can be attained by deploying strategies that lead to universal access to clean environment and safe water (Tanzania, 2000). Furthermore, Tanzania Vision 2025 points to the role of technological development in ensuring clean environment. In the National Strategy for Control of Chemicals and Toxic Wastes 2020–2025, there are repeated references on the need to use environmentally friendly technologies as a measure to protect the environment (Tanzania, 2020b: 23).

A reference to 'technology' as a tool to achieve the desired changes bring to the fore a discussion on the role of IPR in attaining the stated objectives of environmental protection in Tanzania. A properly structured IPR system can play a crucial role in creating an incentive platform for the development of appropriate technologies that may accomplish a variety of environmental protection interventions, such as limiting the emission of toxic materials to the environment. This can be achieved by creating a model of access to key technological information currently kept in the patents database, and prescribing statutory incentives and exceptions on the accessibility to environmentally friendly technologies (Tanzania, 2004: s. 172(2); Gollin, 1991: 209).

Unfortunately, there is no discernible incentive distinction between disruptive and less-disruptive inventions to the environment in the patent laws. Just as the IPR law does not generally distinguish between environmentally harmful and beneficial technologies; environmental policies and laws also do not also expressly consider IPR incentives as strategic means to protect the environment. For instance, in Tanzania, there is no mention of IPR in the National Environmental Policy as one of the strategic interventions for environmental protection. Consideration of IPR as one of the thematic interventions is peripherally mentioned in the National

Environmental Research Agenda for Tanzania 2017–2022 (Tanzania, 2017b: 24). In this regard, it is argued that for the IPR system to support the creation of the requisite technologies for clean environment in Tanzania, a strategic and proper realignment of policies and statutory incentives under the patent system for less-disruptive technologies should be one of the options to be considered. Such a measure may have significant impact in creating a drive for inventors to develop new environmentally friendly technologies; thereby helping to achieve key national development targets.

Food Security and IPR

Issues revolving around food security are integral part to the national development goals of Tanzania (Tanzania, 2000). Under the National Agriculture Policy of 2013, food security is treated as one of the overriding agenda in meeting the national development targets under the National Strategy for Growth and Reduction of Poverty (NSGRP), the East African Community (EAC) Food Security Action Plan, and the Millennium Development Goals (Tanzania, 2013: s. 3(12)). The enactment of the legislation governing PBR in 2012, followed by the accession to the Arusha Protocol for the Protection of New Varieties of Plants under ARIPO in 2016, set Tanzania with the requisite legal frameworks for the protection of PBR, which is crucial in food security. According to the FAO, the term 'food security' encompasses four components: food *availability*, physical *access* to food, food *utilization*, and the *stability* of the other three components over a period of time (EC-FAO, 2008). It is from these four key pillars of food security that a connecting line between food security and IPR can be drawn.

The *availability* of food is facilitated by, among other factors, the use of appropriate agricultural technologies, drought-resistant seeds or plant varieties, having in place appropriate agricultural value-and-supply chains, and branding (Hongladarom, 2013: 36). IPR has a significant role in all these angles. Setting up a large-scale mechanized agriculture project requires the use of appropriate innovative machines and technologies, which are a subject of patent protection. Several useful information on farming techniques, seed propagation, and food preservation may qualify for protection under the trade secret system (Blakeney, 2009). *Utilization* as an aspect of food security encompasses the proper biological use of food, a dietary setting that provides sufficient energy and essential nutrients, potable water, and adequate sanitation. To a large extent, effective food *utilization* depends on knowledge within a household of food storage and processing techniques, basic principles of nutrition, and proper childcare: all these, too, are subjects that attracts IPR consideration in the form of patents, plant breeder's rights, and copyright.

Understandably, the National Agriculture Policy has identified the strengthening of IPR protection, particularly PBR, as one of the key national intervention in addressing food security (Tanzania, 2013: s. 4.1.2). At the international level, the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPs Agreement) has provided practically an open-ended definition of the protectable subject matter under patents (WTO, 1994: art. 27(3)). While the Agreement has

allowed member states to adopt *sui generis* systems of protection for new plant varieties, nevertheless it has emphasizes that irrespective of measures taken, societal developmental needs should always take precedence. In 2009, the FAO adopted the Treaty on Plant Genetic Resources for Food and Agriculture, which, as part of food security intervention, aims at facilitating access to, and transfer of, technology -- including those protected by IPR -- to developing countries; and particularly to least-developed countries and countries with economies in transition under fair and affordable terms (FAO, 2009: 20).

Pertinent Policy, Legal and Regulatory Issues

The discussion above raises a number of issues that warrant the attention of policy- and law-makers in Tanzania. First, the ubiquity of IPR rights is plainly evident in view of the wide array of sectors that are connected to it: thus, an assessment of policy and regulatory options for Tanzania must take a holistic developmental oriented approach. Second, crucial in such an exercise is to set the benchmark based on the need to repackage the current structure of IPR laws such that it may be refocused to attain and support broader national developmental goals. Thirdly, the adopted approach must be sector-specific by appreciating the context and priorities of each sector to limit possible tensions during implementation stages. Predicated on these three prongs, the following sub-sections lay down some of the pertinent policy and legal issues that must be strategically addressed in Tanzania.

Adoption of a National IPR Policy

Under the current national policy set-up in Tanzania, there is no single policy document on matters of IPR; rather, policy statements on IPR issues are scattered and traceable from various national policy documents. This can be appreciated from national policies on subjects such as agriculture (Tanzania, 2013: s. 4.1.2); research and development (Tanzania, 2010: s. 3.7); and science and technology (Tanzania, 1996: II). The current policy set-up, it is argued, is problematic and deprives the country of a unified and all-encompassing approach in integrating IPR issues in various national developmental programmes. Adopting a single and all-inclusive national policy on IPR will bring a number of benefits, such as:

(1) Availing a single national policy reference point that will guide and inform other national policies on IPR perspectives, relevant to their sectors;
(2) Offering a platform for developing an informed and integrated national strategy on effective use of IPR for developmental purposes; and
(3) Setting a basis for legal and regulatory reforms aimed at reshaping the IPR laws in support of national developmental objectives.

Effective Use of IPR Flexibilities

Flexibilities in the international IPR system refers to the specific concession arrangements available to developing and least-developed countries in the implementation of their international obligations arising from various legal instruments regulating IPR (Musungu & Oh, 2006: 8). They afford a requisite policy and regulatory

space for countries whose economies are in transition to devise and adopt implementing measures that are reflective of their levels of development, regional and national circumstances, and capacities. In the process, flexibilities allow entitled countries to put a moratorium on certain high standards of compliance such as waiving patent protection for pharmaceutical products (WTO, 2001: 7), effective use of compulsory licensing provisions in cases of emergencies and non-working of the inventions (WTO, 1994: art. 31), and facilitating non-commercial use of protected IPR by governments and other institutions under the experimental and fair use provisions.

Thus, effective use of IPR flexibilities in Tanzania requires an informed and responsive policy and legislative framework that is cognizant of the complete scope of available flexibilities. In addition, appropriate institutional innovative structures must be put in place to take advantage of the available flexibilities. This entails having in place research institutions, and manufacturing and industrial establishments capable of adapting and internalizing otherwise protected technologies and other forms of IPR (Tanzania, 2003: 14).

Intellectual Property Awareness

The level of awareness on the importance and role of IPR within the overall production setting is a critical element that may determine the eventual ability in utilizing IPR as a tool for development (Idris, 2003: 328). In a global context where there are deep divided views on the exact contribution of IPR in economic growth (Gobble, 2014), a thorough and balanced understanding of national and regional ramifications of adopting a particular IPR regulatory route is a necessity to policy and law makers (Mwakaje, 2021b: 10). This will enhance national negotiation capabilities in various regional and international forums where issues of IPR are discussed and debated on.

In addition, as part of the awareness program, a robust review of education curriculum should be done to integrate the requisite perspectives of IPR (Ncube, 2016: 38). Enforcement agencies such as the police, the courts of law, and other *quasi-judicial* bodies such as the Fair Competition Commission (FCC), Tanzania Bureau of Standards (TBS), and Customs Department ought to be knowledgeable on matters of IPR as they apply in the context of human development.

Institutional Support Systems for IP Management

By its nature, the operational aspects of IPR system presuppose a certain level of institutional organization and formality. For instance, a proper and coordinated information-keeping is necessary for the patent strategy and protection of trade secret to optimally function within an organization. Also, there is a need for proper linkage of IPR and core institutional business in all key operational documents of an organization such as in institutional business plans and strategies (Mwakaje, 2011: 58). Furthermore, internal enabling infrastructures -- such as institutional IPR policies, an office/contact point/desk for IPR related matters -- must be in place. These frameworks are essential for IP initiatives to function well in an institution.

To complement the above the existence of national IPR support services is likely to result into increased interest and use of IPR by individuals and institutions involved in innovation and other creative endeavours. This may be implemented under the statutory mandates of BRELA, COSOTA, and the Tanzania Commission for Science and Technology (COSTECH). The nature and the package of available support frameworks may include advisory services on how to protect creative works in the field of arts and science; preparation and filling of application forms for patents, trademarks and other allied rights; patent drafting; negotiating IPR licences; and the effective use of patent database. With such national institutional support framework in place, there is likely to be an increased use of IPR at various levels which, in turn, may trigger human development in various sectors of the economy.

Strengthening the Enforcement of IPR

Effective IPR enforcement infrastructure is another key prerequisite for achieving desired human developmental goals. It serves as a deterrent tool for commercial scale IPR infringements. The absence of strong enforcement framework for IPR tend to discourage creativity by discouraging investment in research for developing new solutions for the fear that others may copy and use their creative process, products, or works without risking legal sanctions.

One of the ways through which the enforcement of IPR can be strengthened is by undertaking a wholesome IPR legislative review to reflect recent global developments. In Tanzania, the establishment of High Court (Commercial Division) has had some desired effect in terms of improving the speed in the determination of IPR-related disputes. However, higher court filing fees may have a deterrent effect. It is also crucial to set up continuous IPR awareness programs for judges, magistrates, the police, and customs officers; particularly on evidentially and procedural issues relating to IPR, which may lead to expeditious resolution of IPR-related disputes and enriching the jurisprudence of IPR in Tanzania.

Conclusion

The paper has highlighted on the inseparable linkage between IPR regulation and developmental related issues in Tanzania, despite the general lack of institutional cohesion and linkages in most national sectoral policies. All along, the argument stresses on the tremendous economic and social development potential if appropriate approaches of IPR are applied in Tanzania. The thrust of the narrative is on two critical aspects: the ubiquitous nature of IPR, which makes it relevant and applicable to all fields of human development; and the net gain that may result from its strategic integration in various national development initiatives. The argument is, there is a significant policy and regulatory space within the international IPR legal regimes which, if effectively used by Tanzania, may galvanize human development by encouraging innovation and creativity. In turn, creativity will lead to improved production and service delivery and general quality of life, which are hallmarks of human development. Thus, there is an urgent need for the adoption

of national policy on IPR that will identify the priority and focal issues at national and institutional levels, consequently setting the basis for legislative and regulatory reviews. Ultimately, whatever national IPR regulatory path is adopted, it is pertinent to predicate it to developmental contexts and considerations.

Cognizant of the ongoing debates of how best IPR may be deployed in the context of developing and least-developed countries, the paper conjures the conclusion that, in all cases the application of IPR should be informed and influenced by the obtaining local conditions, taking into account existing platforms of available flexibilities in international IPR instruments.

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