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NOTE

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LIST OF ABBREVIATIONS

ACP Group	African, Caribbean and Pacific Group of States
AMCOST	African Ministerial Council on Science and Technology
AMU	Arab Maghreb Union
ANVISA	Agencia Nacional de Vigilancia Sanitaria
ARIA	Assessing Regional Integration in Africa
ARIPO	African Regional Intellectual Property Organization
ASTII	African Science, Technology and Innovation Indicators
AU	African Union
AUD	Australian Dollar
BITS	Bilateral investment treaties
CDIP	Committee on Development and Intellectual Property
CEMAC	Economic and Monetary Community of Central African States
CEN-SAD	Community of Sahel Saharan States
CFTA	Continental Free Trade Area
CLDP	Commercial Law Development Program Office of the General Counsel of the US Department of Commerce
COMESA	Common Market for Eastern and Southern Africa
CPA	Consolidated Plan of Action
DAG	Development Agenda Group
EAC	East African Community
EC	European Commission
ECCAS	Economic Community of Central African States
ECOWAS	Economic Community of West African States
EFTA	European Free Trade Association
EPA	Economic partnership agreements
EPO	European Patent Office
ESA	Eastern and Southern Africa
FDI	Foreign direct investment
FTA	Free trade agreements
GI	Geographical indications
IGAD	Intergovernmental Authority on Development
IGC	Intergovernmental Committee on Genetic Resources, Traditional Knowledge and Folklore
IP	Intellectual property
IPR	Intellectual property rights
LDC	Least developed countries
NEPAD	The New Partnership for Africa's Development
NGO	Non-governmental organizations
OAPI	Organisation Africaine de la Propriété Intellectuelle
OECD	Organization for Economic Cooperation and Development
PAIPO	Pan African Intellectual Property Organization
PCT	Patent Cooperation Treaty
PVP	Plant variety protection
R&D	Research and development
REC	Regional economic community
RISDP	SADC Regional Indicative Strategic Development Plan

SADC	Southern African Development Community
SCCR	Standing Committee on Copyright and Related Rights
SCP	Standing Committee on the Law of Patents
SCT	Standing Committee on Trademarks, Industrial Designs and Geographical Indications
SIPO	State Intellectual Property Office of China
SME	Small and medium enterprises
S&T	Science and technology
STI	Science, technology and innovation
TGA	Therapeutic Goods Administration
TK	Traditional knowledge
TRIPS	Agreement on Trade Related aspects of Intellectual Property Rights
UNCTAD	United Nations Conference for Trade and Development
UNDP	United Nations Development Programme
UNECA	United Nations Economic Commission for Africa
UNIDO	United Nations Industrial Development Organization
UPOV	International Union for the Protection of New Varieties of Plants
USA	United States of America
WAHO	West African Health Organization
WCT	WIPO Copyright Treaty
WIPO	World Intellectual Property Organization
WPPT	WIPO Performances and Phonograms Treaty
WTO	World Trade Organization

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INTRODUCTION

The objective of "Innovation and Global Intellectual Property Regulatory Regimes – The Tension between Protection and Access" is to assess the global intellectual property (IP) regimes centred on the World Intellectual Property Organization (WIPO) and the World Trade Organization (WTO), as well as the expansion of the scope of IP regimes through bilateral trade and investment agreements, from a development perspective. It will also focus on African efforts to engage with these regimes, including African proposals for rule-making in policy areas of interest to the region such as protection of biological resources and traditional knowledge and an enlarged scope for geographical indications. The implications of rules in these areas for innovation in the region will be explored.

Finally, the paper will discuss the arrangements that would provide an appropriate intellectual property regime to complement Africa's regional integration programmes such as the proposed Continental Free Trade Area and Treaty commitments.

I. CONTEXT

I.1 Conceptual Issues

This paper examines the role of intellectual property policies in the context of fostering innovation and regional competitiveness in Africa.

I.1.1 Innovation

It is clearly relevant in the African context to think about boosting economic growth through enhanced innovation.[1] The main question in this context is what kind of innovation should be the focus of innovation policy in Africa?

- Meaning of the concept

In a strict sense, innovation refers to putting a new or significantly improved good or service on the market or finding a better way (process) for doing so.[2] Innovation can be understood as

[1] It can be recalled that in 2005 the African Ministerial Council on Science and Technology (AMCOST) adopted Africa's Science and Technology Consolidated Plan of Action (CPA) which articulates the African Union (AU) agenda for harnessing science, technology and innovation to boost economic growth and improve the lives of African people.

[2] The Oslo Manual defines four types of innovations at the firm level: product innovations, process innovations, organisational innovations and marketing innovations. Product innovations involve significant changes in the capabilities of goods or services. It includes new goods and services and significant improvements to existing products. Process innovations represent significant changes in production and delivery methods. Organisational innovations refer to the implementation of new organisational methods such as changes in business practices, in workplace organization or in the firm's external relations. Marketing innovations involve the implementation of new marketing methods, such as changes in product design and packaging, in product promotion and placement, and in methods for pricing goods and services. Oslo Manual, Guidelines for Collecting and Interpreting

a process of putting improved or value added goods and services at the technological frontier which will have enhanced commercial value. This definition gives importance to three main elements: 1) commercial (profitable) markets where firms are the main players, 2) research and development (R&D) as a key activity for the novelty factor of a product, good and process, 3) commercialization (exploitation) with firms seeking returns on their investments by placing their innovations in the market. An additional element often highlighted is entrepreneurial activity, i.e. the role of innovative entrepreneurs creating businesses with new products, services, or ways of doing things.

However, from a development perspective, innovation can also be considered as a process of developing new products or services or adapting existing technologies to address socio-economic challenges that are prevalent in developing countries. Innovation is an avenue for problem solving that can involve firms but is not limited to the private sector. **For African countries, it is important to consider how innovation can be directed to address complex economic and social problems, e.g. industrial development, and satisfying the basic needs of the poorest populations, such as access to food, clean water, health care and housing**.

International discourse on innovation for development appears to be appropriately shifting towards this approach. The promotion of innovation specifically directed at the needs of the poor is gaining broader attention in many international fora.[3] Concepts such as 'inclusive innovation', 'pro-poor innovation', and 'grass-roots innovation' are employed to refer to innovations that meet needs and provide affordable access to the poorer segments of society and may be developed locally. Broadly viewed, innovation is rooted in everyday activities in firms and in the competencies and capabilities of ordinary people.[4]

Therefore, **adopting a broader approach to innovation than that which is usually associated with new products at the technological frontier will allow for a better understanding of its role in the context of African countries**.

A broader definition of innovation can include products, services and processes that may be new in the particular context, but not necessarily new to the world. Innovation by local firms through using or adapting existing technologies can have a significant impact in improving the firms' technological capabilities or other forms of learning by doing, or broader spill-overs in the economy. Importantly, they can significantly improve people's livelihoods, contributing to socio-economic development, even if they have no or low commercial value.[5] Innovation, understood in this broader sense, is critical to the "catching up" process of developing countries with developed economies. Importantly, it does not involve only

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Innovation Data, 3rd Edition

[3] Mark A. Dutz (2013), UNLEASHING INDIA'S INNOVATION: TOWARD SUSTAINABLE AND INCLUSIVE GROWTH (World Bank, Washington, D.C.); Pierre Mohnen and Metka Stare, "The Notion of Inclusive Innovation", *Policy Brief No 15*, High Level Economic Policy Expert Group, Innovation for Growth (i4g), European Commission.

[4] Bengt-Åke Lundvall, Bjorn Johnson, Esben Sloth Andersen, and Bent Dalum (2002), "National Systems of Production, Innovation and Competence Building", *Research Policy*, vol.31, pp. 213–31.

[5] Some social welfare enhancing innovations don't happen because of market failure—lack of commercial incentives for private R&D investment. An example is medical products for poverty-related diseases. See Viviana Munoz, Fabiana Visentin, Dominique Foray, and Patrick Gaule (2014), "Can Medical Products be Developed on a Non-Profit Basis? Exploring Product Development Partnerships for Neglected Diseases", *Science and Public Policy*.

imitation. It is also the result of deliberate efforts to modify and tailor technologies and practices to national conditions.

Innovation is therefore not only a pioneering activity,[6] but it is also a social and interactive process, whereby a firm cannot successfully innovate in isolation from the feedback of other external agents, i.e. suppliers, competitors and users, and networking with other firms.

It is also important to recognize that all innovations are not inventions. While sometimes innovations can be new inventions such as the portable music device (Walkman) invented by Sony Corporation, there may be non-inventive innovations such as the Apple iPod that combined for the first time existing portable music player technologies with digital music sharing technologies in a single platform. Similarly, the reverse engineering of an existing technology by a local firm in Africa may not be inventive, but it can still be considered as innovative in the local context.

- Drivers

In economic studies of innovation, much effort has been placed in identifying "framework conditions" of an economy and its institutions that help foster innovation in the sense that it is associated to economic growth in developed economies. However, the extent to which this framework is a useful benchmark for thinking of innovation conditions and policy in developing countries is not straightforward.

What are favourable conditions for innovation is now well known in the case of developed economies. These include a good supply of knowledge resources and services (i.e. human capital, basic and applied research, academia and industry collaborations, users' input to innovation), the role of institutions (i.e. political, regulatory, economic, financial) in promoting an adequate environment to support innovation (i.e. entrepreneurship, competition, risk-taking). Other institutional factors include the size of the market, the dynamism of a sector, the size of firms and macro-economic conditions. The innovation policy in developed economies aims at transforming institutions so as to create or improve this framework, given a country's specificities and history that determine the cost of such adjustments.

A conducive national innovation ecosystem in the African context would require a nationally appropriate innovation policy; enhanced government spending on science, technology and innovation; investing in education and training of scientists, engineers and entrepreneurs; improving R&D and science infrastructure; and sustainable financing. It is also important for the public sector to link product innovations into the value chains, promote skill development and joint ventures with foreign enterprises.

Thus, a main concern of innovation policy for development in the African context is building capabilities to enhance innovation capacities. Such efforts include in particular a proactive human capital policy to build a strong educational infrastructure to increase the skills and learning capacities through increased specialized workforce (i.e. engineers, managers, vocational training) and address basic needs such as public health.

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[6] Linsu Kim and Richard Nelson (2002), "Introduction" in Linsu Kim and Richard Nelson (eds.), TECHNOLOGY, LEARNING AND INNOVATION: EXPERIENCES OF NEWLY INDUSTRIALIZED ECONOMIES (Cambridge University Press, Cambridge).

It has been noted that the history of past successful catch up experiences has relied on a number of factors, including the cross-border flow of people, the active government support of industrial development, involving various forms of protection, and direct and indirect subsidy, that countries operated with intellectual property rights regimes that did not restrict the ability of domestic firms to replicate technologies developed and used in developed countries.[7]

- Challenges

It is now well accepted that what matters most is to understand what spurs or stalls innovation in a dynamic context. In this sense, deficits in R&D and other usual input measures of innovation are more symptoms rather than the cause of the difficulties of developing successful innovations. The causes can be, for example, that there are problems of supply of funds, or firms do not find opportunities that are profitable enough, or R&D inputs are scarce or the costs are too high (i.e. skilled labour, licenses for technology, loans).

In the case of developing countries, the problems identified above may be secondary to other factors. A critical concern for developing countries is the lack of absorptive capacity at the firm level to make appropriate use of existing technologies in innovative ways and experience technological learning. Private firms in African countries have very low R&D capability, and therefore firms tend to buy or borrow external technologies or production facilities, which limits technological learning to less technical methods or assembly manufacturing.

Due to the lack of absorptive capabilities at the firm level in most African countries,[8] it is not likely that conventional channels of exposure to foreign technology such as FDI and trade will lead to substantial learning activities. Even for middle-income countries, though FDI and trade can serve as channels for access to foreign technology, there is still a need to continuously improve the absorptive capacity to allow for spillovers from such activities to permeate the economy and to support the development of innovative activities by domestic firms and entrepreneurs.[9] Most African countries are not technologically ready to adopt, adapt and successfully apply the technologies embedded in the foreign products to which they are exposed.

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[7] See Roberto Mazolleni and Richard Nelson (2007), "Public Research Institutions and Economic Catch – Up", *Research Policy*, vol. 36, pp. 1512-28.

[8] It has been observed that less than 7 per cent of domestic firms in LDCs license foreign technologies. See UNCTAD (2006), *The Least Developed Countries Report 2006: Developing Productive Capacities,* United Nations, New York and Geneva, p. 158, http://unctad.org/en/Docs/ldc2006_en.pdf.

[9]Absorption of technologies crucially depends on the learning capacity of the recipient firms. Access to knowledge (e.g. through the availability of documentation – codified knowledge- or technical assistance) is a necessary but not a sufficient condition to ensure that technology absorption takes place. The ease of learning in a firm is generally related to the level of deliberate innovative efforts, including in R&D, that are extremely low in developing country firms. Absorption of foreign technologies requires ability to learn by doing and improving on technologies, rather than relying solely on technology transfer and technical assistance. Most firms in developing countries are micro-enterprises that use mature technologies and do not undertake any significant innovation effort. In this context, any policies directed at increasing the transfer and dissemination of technologies should be actively complemented by measures aimed at strengthening the firms' capacity to effectively absorb new knowledge and further innovate thereon. The need to provide enabling conditions for local innovation and entrepreneurial activities cuts across all sectors, i.e. not only high technology, and should be targeted to match the requirements of the local context.

It is also essential for universities and public research institutions to play a key role, particularly in a developing country context where private firms undertake little R&D. Universities and public research institutions are also important in developing infrastructure and undertaking research that is linked to industry and user communities and suited to local needs and conditions. However, universities and engineering schools in Africa do not have access to adequate equipment.

A critical challenge for African countries is that the current international trade and IP rules constrain the scope of government action to support local innovation. There is a need to find effective means to continue to provide support for indigenous firms to prosper, under the new conditions.

I.1.2 Intellectual Property

The next sections of this paper will discuss in more detail the role of IP for access to, production and use of knowledge and the implications of the current international IP regime and its implementation in national legislation.

- Meaning of the concept

Intellectual property rights are legal rights that confer proprietary rights over intangible creations of the human intellect. IP rights relate to pieces of 'information' that can be incorporated in tangible objects. IP confers protection on ideas, technical solutions or other information that have been expressed in a legally admissible form and, in some cases, are subject to registration procedures. Creations of the mind that are protected by IP could be technological inventions, literary and artistic works, films, music, or designs. IP rights are usually territorially limited and are granted for a limited duration. The scope of IP rights can also be specifically determined by respective national legislations.

By its very nature, knowledge is non-excludable and non-rivalrous. It is difficult, if not impossible; to exclude anyone from accessing and enjoying knowledge, and the communication of knowledge does not diminish the ability of the original or subsequent possessors of the same knowledge to use it to their benefit. This makes knowledge, including technological knowledge that embodies innovations, a public good, which should be accessible for all in a non-exclusive manner. However, intellectual property rights deliberately embody some of that knowledge in private hands to encourage the generation of new knowledge and thereby expand the scope of knowledge available to the nation at large.

There is a tendency to regard IP as a natural right of inventors to reap rewards from their investments on R&D. According to this view IP rights are intended to be incentives for rewarding inventors and creators for their work in order to enable them to recover the costs of their investment on their creative or inventive activities. It is argued that by rewarding successful inventions and creations, IP encourages allocation of more resources to such activities and in turn facilitates the creation of new jobs and industries and development of new products.[10]

However, the real purpose of IP is to benefit society by providing incentives to those who may introduce new inventions or creations. As famously observed by the US Supreme

[10] WIPO, What is Intellectual Property? p. 3, http://www.wipo.int/edocs/pubdocs/en/intproperty/450/wipo_pub_450.pdf.

Court in *Motion Picture Patents Co. v. Universal Film Mfg. Co.* (243 US 502, p.511, 1917), "this court has consistently held that the primary purpose of our patent laws is not the creation of private fortunes for the owners of patents but is to promote the progress of science and useful arts …."[11] It is crucial for African countries to understand the IP system in this sense.

IP rights are customarily divided into two main areas – copyright and related rights, and industrial property rights.[12] The rights of authors of literary and artistic works are protected by copyright. Industrial property rights on the other hand include patents, trademarks, industrial designs, geographical indications and trade secrets.

Box 1
Types of Intellectual Property Rights

Patent rights are granted for an invention, which is either a product or a process that provides a new way of doing something, or offers a new technical solution to a problem.[13]

A **trademark** is a distinctive sign which identifies certain goods or services as those produced or provided by a specific person or enterprise.[14] The owner of a trademark has the exclusive right to use it to identify goods or services produced or offered by him.[15]

An **industrial design** right provides exclusive ownership to the ornamental or aesthetic aspects of an article (like the unique look of a brand of cars, look of watches, design on clothes, etc.). [16]

Trade secrets are confidential business information, including manufacturing information and commercial information such as methods of sales, consumer profiles, advertising strategies, lists of suppliers and clients, which provides an enterprise a competitive edge.[17] Trade secrets are protected by keeping the information undisclosed in the public domain.

Geographical indications (GI) are signs used on products to signify a specific geographic origin which accords the product qualities or reputation due to such geographic origin. Those who have GI registration or certification for their products can exclude other producers of similar products but of different geographic origin from using the GI.[18]

In some countries some minor inventions are also protected by **utility models**, which are also known as "petty patents" or "utility innovations". The requirements for registration of utility models are less stringent than for patents as there is no or less requirement to demonstrate inventive step. The term of protection is lesser than that for patent protection. The registration of utility models may be restricted to some fields of technology. [19]

[11] Carlos Correa (2010), DESIGNING INTELLECTUAL PROPERTY POLICIES IN DEVELOPING COUNTRIES (Third World Network, Penang, Malaysia), p. 3.
[12] WTO, TRIPS: What are Intellectual Property Rights? https://www.wto.org/english/tratop_e/trips_e/intel1_e.htm.
[13] WIPO, What is a patent? http://www.wipo.int/edocs/pubdocs/en/patents/450/wipo_pub_l450pa.pdf.
[14] WIPO, What is a trademark? http://www.wipo.int/trademarks/en/trademarks.html.
[15] WIPO, About Trademarks, http://www.wipo.int/trademarks/en/about_trademarks.html#function.
[16] WIPO, Industrial Designs, http://www.wipo.int/designs/en/.
[17] WIPO, What is a trade secret? http://www.wipo.int/sme/en/ip_business/trade_secrets/trade_secrets.htm.
[18] WIPO, Geographical Indications, http://www.wipo.int/geo_indications/en/.
[19] WIPO, Protecting Innovations by Utility Models,

- Drivers

The implementation of an IPR system requires a clear legal and policy framework for IPRs, a supportive infrastructure for implementation of the laws and policies (including trained personnel and necessary office resources), as well as availability of legal knowledge[20] and drafting skills pertaining to IPRs.

The level of IP protection should also be commensurate with the level of industrial development of a country. Industrial development typically involves three stages – initiation, internalization and generation.[21] At the initiation stage, mostly "mature" or fully developed technologies are adopted through acquisition of machinery and equipment, reverse engineering and subcontracting, as well as through turnkey agreements and foreign direct investment. At this stage of industrial development, IP laws are unlikely to promote local innovation. Rather, IP laws should allow as much space as possible for absorption and diffusion of acquired technologies.[22]

In the internalization phase, local producers are able to develop minor or incremental innovations derived from routine exploitation of existing technologies rather than deliberate R&D efforts. At this phase, high levels of IP protection may have little or no effect on innovation, but could reduce technology diffusion and increase the cost of foreign inputs and technologies. At this phase, the IP system should be very flexible, but pursuant to the TRIPS Agreement and other free trade agreements that impose standards that are higher than TRIPS, developing countries have limited policy space in this regard.[23] African countries should make full utilization of the flexibilities available to them to allow reverse engineering and technological diffusion. Such flexibilities include application of strict criteria to assess patentability, exceptions to exclusive IP rights, compulsory licenses, and exceptions for educational and research purposes in copyright laws.

At the generation phase, some industries may benefit from increased IP protection, but there may still be a need to balance IP protection with the need to ensure access to and diffusion of technological products.

Most crucially, a country must have a sound and viable technological base to benefit from protection of IP and the extent of IP protection must be calibrated to the technological capacity of the country concerned. The TRIPS Agreement recognizes that public policy objectives, including developmental and technological objectives, underlie 'national' systems for the protection of intellectual property and also specifically recognizes the need for LDCs to have maximum flexibility in domestic implementation of laws and regulations for creating a sound and viable technological base.[24] Therefore, African countries need to assess their current levels of technological capacity in respect of each specific sector of the economy and

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http://www.wipo.int/sme/en/ip_business/utility_models/utility_models.htm.

[20] Patricia Kameri-Mbote (2005), "Intellectual Property Protection in Africa: An Analysis of the Status of Laws, Research and Policy Analysis on Intellectual Property Rights in Kenya", *IELRC Working Paper*, p. 4 http://www.ielrc.org/content/w0502.pdf.

[21] Carlos Correa (2010), *supra* note 11, p. 14.

[22] This situation corresponds to the level of industrial development of LDCs. In fact, Article 66.1 of the TRIPS Agreement recognized that implementation of higher standards of IP protection contained in TRIPS would be detrimental to the development of LDCs. This argument would also apply to other developing countries where high IP protection will not lead to technology transfer or local innovation.

[23] Carlos Correa (2010), *supra* note 11, p. 14.

[24] TRIPS Agreement, Preamble.

accordingly design their IP laws and policies to ensure that they facilitate the further technological development of those sectors that have significant potential or are of critical public interest.

In addition, developing countries should have the capacity to administer and regulate the IP system and conduct robust and thorough examination of applications for the grant of IP rights in accordance with the national law and its policy objectives. It is pertinent to note that a study on IP administration in selected countries in sub-Saharan Africa found that many African countries have grossly inadequate and sometimes non-existent IP administration capacities. At the time when the TRIPS Agreement was negotiated, most African countries had dormant IP Offices and very little resources were allocated to them by their respective governments.[25] Therefore, African countries must develop robust IP offices to thoroughly examine applications for the grant of IP rights to ensure that they are in full compliance with the national law and its policy objectives.

Moreover, there is need to ensure that local firms have the capacity to apply for and manage IP rights. Even in the few African countries with relatively more active IP Offices, the share of IP rights granted to local firms is significantly marginal to the number of IP rights granted to foreign firms. In this scenario, local firms would be constrained from applying for IP protection due to a lack of local skills for drafting an application for the grant or registration of a patent or trademark.[26]

- Challenges

Developing countries and LDCs face various challenges with regard to designing their IP rules in accordance with their development needs. First, as parties to the TRIPS Agreement, developing countries have much more limited policy space to design their IP regimes unlike the policy space than developed countries had when they were in their initial stages of industrial development. Nevertheless, the TRIPS Agreement still offers some space through flexibilities contained in the Agreement for developing countries to design their IP rules. For LDCs, there is an exemption from any obligation to implement IP rules at the standard set by TRIPS, under Article 66.1 of TRIPS, till 1 July 2021, and this exemption can be extended further.

However, a major constraint for developing countries is that they have limited capacity to use the available flexibilities under TRIPS to the fullest extent. Moreover, these flexibilities are also being undermined by further restrictions imposed through bilateral or regional free trade agreements (FTA) that contain TRIPS plus provisions, as well as bilateral investment agreements (BITs) that consider IP as investments that can be subjected to investor-State dispute settlement.[27] As of 2013, 793 BITs have been concluded by African

[25] James Otieno Odek (2014), "The Illusion of the TRIPS Agreement to Promote Creativity and Innovation in Developing Countries: Case Study on Kenya", in Gustavo Ghidini, Rodolph J.R. Peritz and Marco Ricolfi (eds.), TRIPS AND DEVELOPING COUNTRIES: TOWARDS A NEW WORLD ORDER? (Edward Elgar Publishing), p. 256.

[26] Isaac Rutenberg (2013), "Faking It: Time to Rethink Intellectual Property in Developing Countries?" *The Guardian*, 29 October 2013, http://www.theguardian.com/global-development-professionals-network/2013/oct/29/intellectual-property-rights-google.

[27] Many bilateral investment agreements (BITs) incorporate an all-encompassing concept of 'investment' that includes any kind of tangible or intangible asset of a foreign investor, including IPRs. As the BITS give the investors the right to directly sue the host State, they allow for unprecedented challenges to government action, including in respect of IPRs, even if the same is fully consistent with the requirements of the TRIPS agreement.

countries representing 27 per cent of the total number of BITs worldwide. Most African countries are also members of either of two regional IP organizations, the African Regional Intellectual Property Organization (ARIPO) and the *Organization Africaine de la Propriété Intellectuelle* (OAPI), which follow an objective of harmonization of IP protection and enforcement regimes in their respective regions and also of raising the standards of IP protection and enforcement, to the detriment of the policy space available to the African countries under the TRIPS Agreement. African regional economic communities (RECs) have also demonstrated incoherent approach towards IP policy making, with some sectoral agencies working on maximizing the use of TRIPS flexibilities while other agencies in the same REC have focused on strengthening IP protection and harmonization, ignoring the need to use the available flexibilities.

African countries need appropriate technical assistance in order to build their capacity to fully utilize the flexibilities available under the TRIPS Agreement in the process of designing their IP rules. The World Intellectual Property Organization (WIPO), as the specialized agency of the UN relating to IPRs, has to play a critical role in this regard. However, WIPO's technical assistance to developing countries has largely emphasized the benefits and ignored the costs of IP protection, and has generally failed to present the full range of options that developing countries may have to pursue their own interests, including the flexibilities allowed by the TRIPS Agreement.[28] The shortcomings of WIPO's technical assistance were a major concern in the proposals by developing countries for the adoption of a WIPO Development Agenda.[29]

African countries also need appropriate technical assistance for developing institutional capacities for implementing their IP laws. However, it is critical to ensure that such technical assistance is development-oriented rather than being necessarily IP oriented. WIPO will play a very critical role in this context. It is important to note that the WIPO Development Agenda mandates that WIPO's technical assistance and legislative assistance shall be development-oriented, demand-driven and transparent while taking into account the priorities and special needs of developing countries.[30] The Development Agenda also requires WIPO to assist member States to develop IP institutional capacity through further development of infrastructure and other facilities to make the IP institutions more efficient and promote a fair balance between IP protection and the public interest. In this context, the Development Agenda also states that high priority should be given to finance activities in Africa through budgetary and extra-budgetary resources.[31]

For example, the US based multinational pharmaceutical company Eli Lilly has initiated an investment complaint against Canada under the NAFTA, to challenge the decision of a Canadian court which invalidated a patent owned by the company. See Carlos Correa (2013), "Investment Agreements: A New Threat to the TRIPS Flexibilities?" South Bulletin 72, 13 May 2013, http://www.southcentre.int/question/investment-agreements-a-new-threat-to-the-trips-flexibilities/.

[28] Sisule F. Musungu and Graham Dutfield (2003), "Multilateral Agreements and a TRIPS-Plus World: the World Intellectual Property Organization (WIPO)", *TRIPS Issues Papers 3*, Quakers United Nations Office, Geneva, p. 18, http://www.geneva.quno.info/pdf/WIPO%28A4%29final0304.pdf.

[29] Recommendation 1 of the WIPO Development Agenda that was adopted unanimously by the WIPO General Assembly in 2005 states

> WIPO technical assistance shall be, *inter alia*, development-oriented, demand-driven and transparent, taking into account the priorities and the special needs of developing countries, especially LDCs, as well as the different levels of development of Member States and activities should include time frames for completion. In this regard, design, delivery mechanisms and evaluation processes of technical assistance programs should be country specific.

[30] WIPO Development Agenda, Recommendation 1 and 13.

[31] WIPO Development Agenda, Recommendation 2.

However, an independent external review of WIPO's technical assistance in the area of cooperation for development that was carried out in accordance with Recommendation 41 of the WIPO Development Agenda found several shortcomings in WIPO's technical assistance and their development orientation.[32] A proposal submitted by the African countries in WIPO on the basis of this external review, suggesting specific proposals for improving WIPO's development cooperation activities has been opposed by developed countries.[33]

I.1.3 Interface between Innovation and Intellectual Property Rights

While IPRs provide an incentive to innovate, they could only be effective in certain contexts. IPRs cannot boost innovation if the required conditions – skills, information, capital, market prospects – do not exist. Therefore, the strength of IP rules should be calibrated to the level of development in a country in each relevant sector of the economy and the public policy needs. In a country where the required conditions to benefit from strong IP protection do not exist, IP protection may pre-empt imitation of foreign technologies, which has been crucial for the technological catching up of countries like South Korea and Japan.[34]

In order to be effective, IP rules should encourage innovation and creation that will be relevant to the social and economic development of the country concerned. If IP protection in a country predominantly benefits foreign firms that undertake research and production abroad, it would not encourage innovation and creation to respond to the social and economic development needs of the country, and could stifle domestic innovation.

The various forms of IP such as patents, trademarks, copyright, industrial designs, etc., can play different roles in the pursuit of social and economic development objectives of a country. Therefore, any generalization about the impact of IP will be misleading. It is important to consider the role that each specific component of IP may play in a particular national context.

The relevance of different forms of IPRs varies across countries, depending on the level of their technological and economic development. For African countries, the relevance of particular forms of IPRs will depend on the type of goods and services they produce, and particularly on the nature of innovations they generate.

The sources for innovation are varied. These can be external or internal to the economy or firm. These include science and technology-based activities such as research and development (R&D), development of human capital (education, training), and the acquisition, adaptation, and use of external technology.[35]

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[32] See Carolyn Deere Birckbeck and Santiago Roca (2011), *An External Review of WIPO Technical Assistance in the Area of Cooperation for Development*, http://www.wipo.int/edocs/mdocs/mdocs/en/cdip_8/cdip_8_inf_1-annex1.pdf.

[33] WIPO (2012), *Joint Proposal by the Development Agenda Group and the Africa Group on WIPO's Technical Assistance in the Area of Cooperation for Development*, Committee on Development and Intellectual Property (CDIP), Ninth Session, CDIP/9/16, http://www.wipo.int/edocs/mdocs/mdocs/en/cdip_9/cdip_9_16.pdf.

[34] Carlos Correa (2007), "Intellectual Property in LDCs: Strategies for Enhancing Technology Transfer and Dissemination", *UNCTAD Least Developed Countries Report, 2007, Background Paper*, p. 7, http://unctad.org/Sections/ldc_dir/docs/ldcr2007_Correa_en.pdf.

[35] In innovation literature the choice between internal R&D and the external sourcing of technology is commonly known as the 'make or buy' problem, usually examined at the firm level. These two activities can also be complements.

In the context of developing countries, given that firm R&D activities are low, emphasis is often laid on acquisition and mastery of foreign technology. However, assimilating and reproducing complex technology is a difficult process. It requires knowledge—cognitive capabilities—that is not easy to articulate explicitly or to transfer to others.[36] Moreover, accumulated prior knowledge is necessary to assimilate and use new knowledge, what is known as "absorptive capacity".[37] In this sense, active learning, using, and transforming prior existing knowledge and accumulating experience are critical components for building capabilities for innovation in any sector of the economy.[38] Over reliance on external sources of technological learning, i.e. imported machinery and other technology, as well as technical assistance, can be harmful to local technological learning if it is not linked to the pre-existing capabilities and knowledge base, for example when innovation efforts are focused on a field that is highly underdeveloped in the economy.

The policy dilemmas surrounding IP revolves around the tension between, on the one hand, offering IP as a means for the creators or innovators to capture the benefits of the knowledge effort, and on the other hand, maximizing the dissemination of the knowledge for broader social benefit. The impact of this trade-off can be easily observed in the case of access to medicines, whereby patent protection can promote innovation but bring about high prices and delay generic medicine competition.

When thinking of IP as an incentive mechanism for private R&D and innovation, it is important to keep in mind that IP is only one, among several, incentive mechanisms used by governments for this purpose. IP is used mainly as a response to the problem of imperfect appropriability.[39] Accordingly, firms that are leading in knowledge and technology production are most invested in IP protection, as opposed to firms for which access to knowledge and learning are key concerns. By limiting R&D spillovers, in theory intellectual property helps innovators to protect returns to innovation. On the other hand, R&D spillovers are an important source of technical progress. An implicit assumption of the theory is that there are market drivers for innovation in the first place, which is not always the case, e.g. in the case of neglected diseases that mainly affect developing countries there is little interest, with or without IP as an incentive mechanism, for private firms to invest in R&D for new medicines.
Economists have also pointed to defects of IP as an incentive mechanism due to the deadweight loss from monopoly pricing that reduce users, i.e. those unable or not willing to pay the price of the license, and inefficiencies that are caused by "patent races". Inefficiencies are due, among other factors, to the difference that may exist between the private value of the IP from the social value and imperfect sharing of information among R&D competitors.[40] It has been suggested that joint ventures and other strategic alliances are a way to reduce such inefficiencies related to "patent races", though empirical evidence is lacking.[41]

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[36] Paul David and Dominique Foray (2003), "Economic Fundamentals of the Knowledge Society", *Policy Futures in Education*, vol. 1, no. 1, pp. 20-49.
[37] Wesley M. Cohen and Daniel A. Levinthal (1990), "Absorptive Capacity: A New Perspective on Learning and Innovation", *Administrative Science Quarterly*, vol. 35, no.1, pp. 128-52.
[38] On the role of accumulating experience, see Christopher Freeman and Luc Soete (2007), "Developing science, technology and innovation indicators: what we can learn from the past", Working Paper Series, UNU-MERIT, United Nations University, Maastricht.
[39]The problem of appropriability refers to the situation where innovators may not be able to fully capture the profits associated with their innovation, given the potential for unintended spillover (i.e. transmission, imitation) of the information and knowledge created through their private investment in R&D.
[40] Peter Menell and Suzanne Scotchmer (2007), *Intellectual Property*, in Mitch Polinsky and Steven Shavell (eds.) HANDBOOK OF LAW AND ECONOMICS (Elsevier, Amsterdam).
[41] Suzanne Scotchmer (2004), "The Political Economy of Intellectual Property Treaties", *The Journal of Law, Economics and Organization*, vol. 20, no. 2, pp. 415-437.

Whether or not IPRs can work well as an incentive mechanism for innovation depends on the context. IPRs do not boost innovation where the required framework conditions – where the scientific and technological infrastructure is weak and R&D efforts at the firm level are low, skills, information, capital, market prospects – do not exist. There is strong evidence, for example, suggesting that patents do not encourage R&D in pharmaceuticals for diseases prevalent in developing countries, as large pharmaceutical companies concentrate on projects leading to profitable drugs and tend to ignore those for which the effective demand is low.[42] Moreover, there are major asymmetries in the potential benefits of IPRs for small and large firms, as it is also the case in developed countries. The take up of patents and the enforcement of such rights increases the larger the business and the higher the level of innovation. Obtaining patents and other registered IPRs and maintaining them in force is costly and unaffordable to most small firms. Specialized knowledge is required in patents' search and drafting. Maintenance fees also need to be paid periodically during the term of patent in order to prevent it from lapsing. Additional costs also need to be incurred for monitoring possible infringements and enforcing patents and other rights against infringers or defending them against validity challenges by third parties. Patent litigation may be extremely risky and expensive, especially if foreign grants have been obtained, and well beyond the reach of small enterprises.

A significant part of innovation takes place as a result of routine production activities and learning, unrelated to the existence and scope of IPRs. Limited IPR protection historically has played the role of allowing firms to imitate imported technology. In addition, internalized forms of technology transfer (i.e. those taking place intra-firm) are likely to be preferred by technology holders or constitute the only viable option when the absorptive capacity in the recipient country is low. The lack of IPR protection may be essential to allow learning through imitation at the initial levels of technological development. IPRs may pre-empt the duplicative imitation of foreign technologies that has played a key role in the process of technological catching up.[43]

I.1.4 Regional Competitiveness

Regional competitiveness means the ability of some region to compete with another, both within and between nations, and achieve economic prosperity in the process. Competitiveness is measured by the ability to produce goods and services, which meet the test of international markets and generate high and sustainable levels of income and employment, in the face of external competition. The framework conditions for regional competitiveness are similar to the framework conditions for innovation – the ability to attract other firms (capital) and the existence of technological, social, infrastructural and institutional assets.[44] Therefore, a regional policy that supports innovation towards solving regional needs and problems complemented by an appropriate IP policy will play a critical role in strengthening regional competitiveness.

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[42] WHO (2006), *Public Health, innovation and Intellectual Property Rights: Report of the Commission on Intellectual Property Rights, Innovation and Public Health*, http://www.who.int/intellectualproperty/documents/thereport/ENPublicHealthReport.pdf.

[43] See Linsu Kim(2002), *Technology Transfer and Intellectual Property Rights: The Experience of Korea*, Issues paper No. 2, UNCTAD-ICTSD Project on Intellectual Property Rights and Sustainable Development, Geneva, p. 5, http://www.ictsd.org/downloads/2008/06/cs_kim.pdf.

[44] Dula Borozan, Regional Competitiveness: Some Conceptual Issues and Policy Implications, p. 60, ftp://ftp.repec.org/opt/ReDIF/RePEc/osi/journl/PDF/InterdisciplinaryManagementResearchIV/IMR4a03.pdf.

A common feature of the existing regional agreements concerning cooperation and economic integration at the sub-regional and continental levels in Africa is that they explicitly recognize the role of science, technology and innovation in regional economic integration and development. Regional cooperation on science, technology and innovation is necessary to enable countries to pool and share their scarce resources such as R&D infrastructures and skilled engineers. Regional cooperation can also facilitate collective technological learning.[45] However, in order to turn these commitments in regional agreements for cooperation on science, technology and innovation into concrete actions, there is a need to establish dedicated and capable institutions. In this regard, it will be critical to establish appropriate innovation and IP policies.

I.2 Innovation and Intellectual Property in the African Context

A major challenge before Africa's economic development is that Africa's dependence on exports of primary commodities is rising while commodity prices have been falling. Therefore, there is a need for African countries to innovate and enhance their productive capacities. Lack of productive capacities of African countries clearly points to the need to develop a sound and viable technological base and ensure that IP laws and policies do not impede this endeavour.

In recent years, there has been a growing emphasis by governments, policy makers, scientists, private sector actors and civil society on the importance of science, technology and innovation (STI) for the development of Africa.[46] African governments have adopted a number of high-level political statements on STI and have also developed institutional arrangements at the national, regional and pan-African levels to work on STI capacity building and policy making in Africa. However, STI data on Africa shows that African countries continue to be impacted by prevalence of low levels of human capital in research and development and very marginal levels of R&D expenditure.[47]

Recognizing the importance of innovation in economic development and growth, policy makers and firms are interested in the collection and analysis of reliable information that can help guide national policy and firm strategic decisions on innovation. Efforts to measure innovation capacity in Africa and to guide the development of innovation policy are focusing on traditional indicators of science and technology (S&T).[48] While this approach can

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[45] John Mugabe (2009), *Knowledge and Innovation for Africa's Development: Priorities, Policies and Programmes*, The World Bank Institute, pp. 29-30, http://info.worldbank.org/etools/docs/library/250707/Knowledge%20and%20Innovation%20for%20Africas%20Dev.pdf.

[46] NEPAD (2014), *African Innovation Outlook II*, April 2014, http://www.nepad.org/system/files/AIO_2_Final%20Product%5B2%5D.pdf

[47] UNECA (2013), *African Science, Technology and Innovation Review 2013*, United Nations Economic Commission for Africa, Addis Ababa, http://www.uneca.org/sites/default/files/PublicationFiles/st_innovation_report.pdf.

[48] For example, the NEPAD-ASTII report on Africa Innovation Outlook II (April 2014) is a useful compilation of the results of the R&D and innovation surveys and bibliometric studies on the status of science, technology and innovation policies and/or strategies of selected African countries, using the OECD's Frascati Manual for conducting the R&D surveys, while the innovation surveys used the OECD/Eurostat Oslo Manual. However, the report has important limitations, having based its work on the Oslo and Frascati Manuals that were designed with developed economies in mind. The emphasis in the Oslo and Frascati Manuals are on outputs in terms of innovation products or processes. Accordingly, key measures of innovation used are investment in research and development (R&D) as a proxy for innovation input and patents as a proxy for innovation output. It would be

be useful in measuring the existing gaps in high-technology innovation, it also risks side-lining the importance of building technological capabilities and building upon the pre-existing knowledge base that are of great relevance for Africa.

In this context, African countries should ensure that their **innovation policy is geared towards driving innovation based on regional or local unresolved problems and unfilled needs, and accordingly to assist firms to identify unmet market opportunities for such problems.**[49]

Secondly, **innovation policy should give more emphasis to the building of technological capabilities (i.e. activities to increase the knowledge base and skills, such as education and training) alongside building upon the pre-existing knowledge base, given that building absorptive capacities depends largely on prior knowledge and accumulation of capabilities.** Innovation that builds on the pre-existing knowledge base and geared towards meeting local needs and problems is more likely to be relevant to economic growth and socio-economic development at the regional and local level, as opposed to innovation that may create gains for few outward-looking firms with little trickledown effect on the local economy.

In order to enable innovation policies to support the above objectives, it will be necessary for African countries to **retain maximum policy space in designing their IP laws and policies to support the economic policies in respect of development of various sectors of the economy as well as support of the realization of public policy objectives in areas such as public health, food security, education and environment,** which are critical challenges facing regional integration in Africa. **African RECs should provide guidance to their member countries on how to make maximum use of the available flexibilities in international IP Agreements in this regard.**

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useful for future efforts to compile innovation data for Africa that is adapted to the regional circumstances. One such example is the Bogota Manual that adapts the Oslo Manual to the context of Latin America. The approach is to study innovation processes in Latin America on the basis of technological capabilities. Extending the framework of the Oslo Manual, it recognizes that most innovation in developing country firms involve the modification or improvement of existing technologies, and places emphasis in measuring efforts at developing "technological capabilities" as opposed to measuring outputs solely in terms of innovation products or processes. Firms in developing countries generally do not produce radical product or process innovations, which is the main type of innovation that the Oslo Manual aims to measure. The Bogota Manual advances that it is not be adequate to define innovation in a narrow sense to refer to the successful commercialization of products embodying technological knowledge that are new to the market. Rather, it introduces the concepts of Innovating Activity Management, which takes in not only innovation in a narrow (Oslo Manual) sense, but the set of activities constituting "technological effort". The definition of innovation is extended in the Bogota manual to include significant technological improvements in products and processes, an organizational innovation, and a marketing innovation. A technologically improved product is an existing product whose performance has been significantly enhanced or upgraded. Innovation activities, on the other hand, include research and development, and innovation efforts. Innovation efforts include design, installation of new machinery, industrial engineering and product start up, acquisition of embodied technology (machinery and equipment) and disembodied technology (i.e. licenses), organizational innovation, marketing, and training.

[49] Bengt-Ake Lundvall, Brigitte Gregersen, Bjorn Johnson and Edward Lorenz (2011), INNOVATION SYSTEMS AND ECONOMIC DEVELOPMENT (Aalborg University, Aalborg).

II. INTELLECTUAL PROPERTY PROTECTION AND ACCESS

II.1 Trade Offs between Intellectual Property Protection and Access

As described above, the fundamental objective of IP protection is to provide an incentive to innovators to encourage them to invest in conducting research and development to invent technological solutions to challenges faced by a country in relation to industrial development, access to knowledge, public health, agriculture, environment protection, etc. Therefore, in order to ensure that the public benefits from the technological advancements induced by IP incentives, governments need to strike a balance between incentivizing innovation and ensuring that new products are widely available.

Indeed, Article 7 of the TRIPS Agreement clearly states that the protection and enforcement of IP rights should contribute to the promotion of technological innovation and to the transfer and dissemination of technology, to the mutual advantage of producers and users of technological knowledge and in a manner conducive to social and economic welfare, and to a balance of rights and obligations.[50] Article 7 is a reflection of the tension between IP protection and access manifested in the concern of developing countries during negotiation of the TRIPS Agreement that stronger IP protection would give too much power to title-holders and limit access to and transfer of technology to those countries.[51]

The challenge before policy makers in relation to IP has always been about striking the right balance between IP protection and access that would be appropriate to the needs of the country. Even developed countries had to confront this systemic concern about IP in the early stages of their industrial development. In the nineteenth century, developed countries that were technological late-comers vis-a-vis others sought to develop their technological capacity by copying and building upon technologies developed by foreigners. Denial of IP rights to foreigners was a critical aspect of this approach to technological catch up. IP protection in developed countries evolved as their industrial and technological capacities improved over time.

For instance, the USA introduced copyright protection for foreigners only at the end of the nineteenth century. Copyright protection was denied to foreigners in order to ensure availability to cheap yet excellent books for expanding literacy, and to facilitate the growth of the US publishing industry.[52] Sometimes, IP laws were revoked in order to facilitate the development of industry. For example, in 1869 the Netherlands abolished patent protection to enable Philips to start the production of light bulbs without infringing Edison's patents. The chemicals and textiles industry flourished in Switzerland in the nineteenth century in the absence of patent protection.[53]

In the nineteenth century, leaders of the Swiss textiles and machine-building industry expressed on record that Swiss industrial development was fostered by the absence of patent

[50] TRIPS Agreement, Article 7.
[51] Carlos Correa (2007), TRADE RELATED ASPECTS OF INTELLECTUAL PROPERTY RIGHTS: A COMMENTARY ON THE TRIPS AGREEMENT (Oxford University Press, Oxford and New York), p. 91.
[52] Carlos Correa (2010), *supra* note 11, p. 1.
[53] Carlos Correa (2010), *supra* note 11, p. 2.

protection by copying or borrowing from foreign inventions.[54] During the debate in the Swiss Parliament in 1906 on the revision of the Swiss Patent Law, Swiss Federal Councillor Brenner said:

> In our deliberations on this law, we would do well to bear in mind that it should be framed in such a way that it is adapted to the needs of our own industries and conditions in our own country. These considerations, rather than the demands and claims of foreign industries, must be our primary concern in shaping the law.[55]

Therefore, it is critical for developing countries to formulate and implement IP laws in a manner that is conducive to attaining particular objectives of industrial policy and other public policy objectives. The tension between IP and access must be resolved in view of the needs of technological development of local industries and their need for access to technology for the same.

The use of IP policy as an instrument for dissemination of technology and indigenous technological and industrial development in Japan is very illustrative in this regard. From the 1880s through the 1960s Japan followed a policy of using the patent system in a manner that would facilitate the diffusion or access of foreign technology among domestic firms. Section 1 of the Japanese patent code elaborated that the objective of the patent system is to encourage invention by promoting their protection and utilization so as to contribute to the development of the industry. Accordingly the patent system was designed to facilitate importation, indigenisation and diffusion of foreign technology.[56]

However, governments today have very limited policy space to ensure that they are able to maintain an appropriate balance between incentivizing innovation and promoting access. Multilateral IP rules and institutions have encouraged the relaxation of the standards for grant of IP rights in pursuit of IP creation as a goal in itself. The liberalization of standards for the grant of IP rights has enabled the creation of more IP rights but this has not led to any significant technological progress in developing countries. Rather, it has encouraged firms to use patents as a strategic tool for restraining rival competitors and a revenue generating instrument. In 2008, a pharmaceutical sector inquiry by the European Commission under the EC Competition Rules found that even in the European Union, originator pharmaceutical

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[54] Richard Gerster, *Patents and Development: Lessons Learnt from the Swiss Economy,* pp. 4-7, http://www.gersterconsulting.ch/docs/twn_patents_and_development.pdf.

[55] Ibid. p. 7.

[56] Robert J. Girouard (1996), *U.S. Trade Policy and the Japanese Patent System*, BRIE Working Paper 89, Berkeley Roundtable on the international Economy, University of California Berkeley, p. 12, http://escholarship.org/uc/item/3107d3jv#page-1; The following are some of the important features of the Japanese patent code that were instrumental in furthering this policy objective:

1) The requirement to lay open or publish patent application even during the examination process within 18 months of filing, forcing the foreign patent applicant to disclose in public the technological knowledge even before the grant of a patent.
2) Until 2001, patent applicants in Japan could request deferring examination of their patent applications for up to seven years from the date of filing, encouraging Japanese firms to strategically file patent applications to prevent the grant of patents on similar inventions or claims by foreign firms.
3) The Japanese patent law recognized a short grace period which limited the opportunity for foreign firms to file patent applications.
4) A pre-grant opposition system (removed from the patent law in 1994) which enabled Japanese firms to oppose and delay the grant of patents to foreign firms and narrow the scope of patents granted to foreign firms.
5) The requirement of compulsory cross-licensing of patents that are improved upon by new patents.

companies used IP as a tool for strategic use to restrain the market entry of generic competitors.[57]

II.2 Negative Impact of Intellectual Property Protection on Innovation and Access

Many economists have commented strongly in the recent past about the negative impact of enhanced IP protection on innovation and access. In 2013 two economists argued that "The historical and international evidence suggests that … strong patent systems retard innovation with many negative side effects."[58] Relaxation of standards of patentability has led to an increase in the number of IPRs filed and granted in various patent offices even in developed countries, leading to a massive increase in patents without a corresponding increase in innovation. On the contrary, grant of such IP have constrained access for many countries.

For example, in 1999 the US patent office granted a patent (US patent 5894079) on "a new field bean variety that produces a distinctly coloured yellow seed. The breeder named the variety "Enola" after his wife. The breeder had developed the claimed variety by purchasing a bag of commercial been seeds in Mexico and by selecting the variety through conventional breeding methods.[59] After the grant of the patent, Mexican farmers of yellow beans were denied access to the US market for almost a decade until the patent was successfully challenged and revoked in the US.[60] An estimated 10,000 families in Mexico were impacted adversely by the denial of access to US markets due to the existence of a patent that was wrongly granted, because a patent is legally valid and enforceable until successfully challenged after lengthy and costly litigation.[61]

The tension between IP and access is also reflected in the recent opposition in a number of countries, both developed and developing, to a patent application on a blockbuster drug sofosbuvir that can cure hepatitis C in 12 weeks if taken in combination with another drug. Public health groups around the world have opposed the grant of a patent on this drug to the applicant, Gilead Sciences, on the ground that the price being sought by the company for the drug is prohibitive. [62]

The most prominent example of the tension between IP and access, both globally and in the African context, is the legal dispute between South Africa and the multinational pharmaceutical companies who challenged a law introduced by President Nelson Mandela in 1997 to enable South Africa to undertake parallel importation of cheaper generic versions of

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[57] European Commission (2009), *Pharmaceutical Sector Inquiry: Final Report*, http://ec.europa.eu/competition/sectors/pharmaceuticals/inquiry/staff_working_paper_part1.pdf.

[58] Michael Boldrin and David K. Levine (2013), "The Case Against Patents", *Journal of Economic Perspectives*, vol.27, no.1, pp. 3-22 at p. 3, http://pubs.aeaweb.org/doi/pdfplus/10.1257/jep.27.1.3.

[59] Carlos Correa (2012), *TRIPS Related Patent Flexibilities and Food Security: Options for Developing Countries*, Policy Guide, Quaker UN Office and the International Centre for Trade and Sustainable Development, p. 10, http://www.ictsd.org/downloads/2012/10/trips-related-patent-flexibilities-and-food-security.pdf.

[60] See Sangeeta Shashikant and Asmeret Asghedom (2009), *The Enola Bean Dispute: Patent Failure & Lessons for Developing Countries*, TWN Info Service on WTO and Trade Issues, 12 August 2009, Third World Network, http://www.twn.my/title2/wto.info/2009/twninfo20090811.htm.

[61] See "Experts Still Divided on Influence of IP on Biodiversity Conservation", *Intellectual Property Watch*, http://www.ip-watch.org/2011/09/15/experts-still-divided-on-influence-of-ip-on-biodiversity-conservation/.

[62] Andrew Pollack (2015), "High Cost of Hepatitis C Drug Prompts a Call to Void its Patents", *The New York Times*, 19 May 2015, http://www.nytimes.com/2015/05/20/business/high-cost-of-hepatitis-c-drug-prompts-a-call-to-void-its-patents.html?_r=1.

antiretroviral medicines that were patented and exorbitantly priced in South Africa, which was suffering from an AIDS epidemic. The multinational pharmaceutical companies challenged this law in the South African High Court and also lobbied the US government to exert pressure on the South African government to withdraw this legislation as they considered this to be an expropriation of their patent rights.[63] However, in the face of an international campaign by health activists the legal challenge was withdrawn and this led to a process initiated by African countries in the WTO that culminated in the adoption of the famous Doha Declaration on TRIPS and Public Health which clarified the flexibility available to WTO members under the TRIPS Agreement to take measures supportive of public health considerations.[64]

In another example in the context of access to environmentally sound technologies, firms in India and Korea were effectively denied license to a patented technology for non-ozone depleting refrigeration by DuPont even though the Indian and Korean firms by offering very restrictive licensing conditions. [65]

II.2.1 Addressing Worrying Trends in Patent Regimes

Though there has been a steady increase in patent applications[66] in some developing countries, this does not correspond to a genuine augmentation of innovation. Rather, it points to a major deviation of the patent system away from its original objective of rewarding those who contribute to technological progress by creating new and inventive products and processes. Increasingly, patents are being granted despite a lack of genuine invention due to the application of low requirements of patentability by patent offices and courts. Thus, there has been a proliferation of patents with low or no inventive step. The application of low standards of patentability has encouraged the filing of a large number of patent applications that would not have been otherwise made, which in turn has led to huge backlogs in patent offices and impacted the quality of search and examination and consequent grant of patents by patent offices. The proliferation of such low quality patents makes it uncertain for genuine inventors to assess their freedom to operate and restrains competition. Hence, there is a need to take measures to avoid the grant of patents on trivial developments.[67]

Some of the measures that can be taken to prevent the proliferation of trivial patents and ensure that patents are only granted where they truly constitute genuine technological progress are described below. These measures will be fully consistent with the provisions of the WTO TRIPS Agreement, as they fall within the policy space that WTO members have retained to design and apply their patent laws.

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[63] See William W. Fischer III and Cyril P. Rigamonti (2005), "The South Africa AIDS Controversy: A Case Study in Patent Law and Policy", *The Law and Business of Patents*, Harvard Law School, http://cyber.law.harvard.edu/people/tfisher/South%20Africa.pdf.

[64] South Centre (2011), "The Doha Declaration on TRIPS and Public Health Ten Years Later: The State of Implementation", *Policy Brief No. 7*, 1 November 2011, http://www.southcentre.int/wp-content/uploads/2013/06/PB7_-Doha-Declaration-on-TRIPS-and-Health_-EN.pdf.

[65] See Martin Khor (2012), *Climate Change, Technology and Intellectual Property Rights: Context and Recent Negotiations*, Research Papers 45, South Centre, p. 9, http://www.southcentre.int/wp-content/uploads/2013/05/RP45_Climate-Change-Technology-and-IP_EN.pdf.

[66] Patent applications grew by 9.2 per cent in 2012, which was the fastest growth in the past 18 years. See WIPO (2013), World Intellectual Property Indicators – 2013 Edition, http://www.wipo.int/ipstats/en/wipi/index.html

[67] Carlos Correa (2014), *Tackling the Proliferation of Patents: How to Avoid Undue Limitations to Competition and the Public Domain*, Research Paper 52, August, 2014, South Centre, http://www.southcentre.int/wp-content/uploads/2014/09/RP52_Tackling-the-Proliferation-of-Patents-rev_EN.pdf.

- Raising the standards of patentability

Patent offices need to rigorously apply the standards of patentability to determine if a patent application truly merits the grant of a patent, based on thorough examination. Application of a strict standard of what constitutes an inventive step can ensure that patents are only granted where a genuine technical contribution is made.[68] Patent offices should also ensure that claims in patent applications are not accepted unless in addition to a higher standard of inventiveness, the claim also demonstrates its industrial applicability or technical usefulness. There is also a need to ensure that patent applications disclose the claimed invention in so adequate a manner that it enables a person skilled in the art to use the patented invention and implement it after the expiry of the patent. Countries could also apply different standards of strictness with regard to the criteria of patentability with respect to different fields of technology. Such differentiation will be fully consistent with the requirements of Article 27 (1) of the TRIPS Agreement.

The standards of patentability can be raised either through legislations or through policy guidelines. For example, in India, stricter requirements of patentability for patent applications in the field of chemicals and pharmaceuticals was introduced through section 3 (d) of the Patents Act.[69] A similar provision was introduced in the Philippines patent law through an amendment in 2008. In 2012, Australia enacted the "Raising the Bar Act" to raise the requirements of patentability and disclosure, and expanded the grounds of re-examination of a granted patent to all substantive grounds considered during examination.[70] In 2012, Argentina adopted guidelines on the patentability of pharmaceutical products and processes to limit the evergreening of pharmaceutical patents.[71] Even in the United States, the US Federal Trade Commission had suggested in 2003 the need to tighten the non-obviousness (novelty) standard in order to limit the grant of unwarranted patents.[72] Judicial decisions in the US have increasingly applied strict criteria of patentability in recent years to reject a number of patents that were granted by the USPTO. Since 2007 the European Patent Office has also been exploring means to raise the quality of patents.[73]

- Use of pre- grant and post-grant opposition

Once granted, patents are presumed to be valid unless they are invalidated by courts. This is a major concern in the context of increasing proliferation of trivial patents. Invalidation of such trivial patents would require substantial investment of technical and financial resources, which makes it very difficult for many small and medium companies, NGOs or individuals who may be wrongly affected by the grant of such patents to initiate invalidation proceedings. Moreover, the invalidation procedures may take years during which the patent will be legally enforceable. Opportunities for third parties to oppose the grant of a patent during the examination stage (pre-grant) or following the grant (post-grant) of a patent are possible

[68] Ibid, p. 4.
[69] Section 3 (d) of the Indian Patents Act states that new forms of known substances will not be considered as inventions unless they prove significant enhancement of therapeutic efficacy.
[70] Intellectual Property Laws Amendment (Raising the Bar) Act, 2012, http://www.wipo.int/wipolex/en/text.jsp?file_id=263200.
[71] Joint Resolution of the Ministry of industry, Ministry of Health and Instituto Nacional de la Propriedad Industrial 118/2012, 546/2012 y 107/2012.
[72] Federal Trade Commission (2003), "To Promote Innovation: The Proper Balance of Competition and Patent Law and policy", Washington, D.C.
[73] EPO (2007), Annual Report, https://www.epo.org/about-us/annual-reports-statistics/annual-report/2007/focus.html.

mechanisms that can limit the grant of wrong patents. Opposition procedures can be less costly and of limited duration than judicial procedures to invalidate a patent.[74]

Many patent laws provide for the possibility of filing observations or oppositions in the pre-grant stage on the grounds of non-compliance with any of the patentability requirements or insufficiency of disclosure.[75] The arguments raised and information provided during pre-grant opposition proceedings can assist patent examiners in conducting a rigorous examination of the patent application. It is important to ensure that patent laws provide sufficient period of time within which a pre-grant opposition must be filed, so that interested third parties have sufficient time to complete the complex technical analysis needed to complete the opposition.[76]

A major challenge with pre-grant opposition is that often the full application is not published but only a summary of the claims is published and applicants tend to conceal information about the true nature of the invention.[77] However, potential opponents may be dissuaded from filing a pre-grant opposition if they are not able to assess the market value of the claimed invention to determine if it is worthwhile to file an opposition. In many countries post-grant opposition procedures are available as an alternative or a supplement to pre-grant opposition.

Opposition procedures have been provided for in the laws of many countries. India allows both pre-grant and post-grant opposition. In the United States, the America Invents Act of 2011 amended the US Patents Act to introduce new mechanisms to trigger post-grant re-examination procedures.[78]

Patent opposition procedures have been mostly used in areas of high patenting activity such as pharmaceuticals. Data from EPO, Argentina[79] and India[80] suggest that a large number of the patent applications were amended, revoked or rejected based on opposition proceedings initiated against them.

- Easing legal challenges to patents of questionable validity

The grant of a patent does not guarantee the utility of the invention or the validity of the patent. Granted patents are often invalidated in post-grant opposition proceedings or in legal proceedings by courts. It is estimated that around 28 per cent of current patents have been found to be invalid by US courts.[81] However, patent applicants often find it worthwhile to obtain and defend patents even if they are of questionable validity because the legal

[74] Carlos Correa (2014), *supra* note 67, p. 9.
[75] WIPO (2011), *Opposition Systems*, Document prepared by the Secretariat, Geneva, SCP/17/9, October 31, 2011, http://www.wipo.int/edocs/mdocs/scp/en/scp_17/scp_17_9.pdf.
[76] Carlos Correa (2014), *supra* note 67, p. 9.
[77] Ibid, p. 9.
[78] John Richards, US Patent Law Reform, 2011, http://www.ladas.com/BULLETINS/2011/New_US_Patent_Law.shtml.
[79] MSF, New Resources from Argentina now available on PODB, http://news.patentoppositions.org/.
[80] Shamnad Basheer (2009), "Patent Oppositions in India: The 'Efficacy' of Section 3 (d)", September 16, 2009, http://spicyip.com/2009/09/patent-oppositions-in-india-efficacy-of.html.
[81] Shawn P. Miller (2012), "Where's the innovation? An analysis of the quantity and qualities of anticipated and obvious patents", 10 February 2012, http://ssrn.com/abstract=2029263.

proceedings have the effect of delaying the entry of potential competitors who find it a significant and unwieldy challenge to engage in expensive and extensive litigation.[82]

In this context, some countries are exploring mechanisms to ease the initiation and pursuit of legal challenges to patents of questionable validity. In the US, the first generic company to successfully challenge a patent on a drug is granted a 180 day period in which no subsequent application for approval of a corresponding drug could be filed.[83] In Australia, a panel established by the Parliamentary Secretary for Innovation discussed the lack of incentives for generic manufacturers to challenge the validity of pharmaceutical patents and suggested some possible mechanisms, which could also be considered in the context of developing countries. These suggestions are – the patentee should mandatorily undertake to repay any damages to the government as a condition for the grant of injunction in pharmaceutical cases, paying a portion of the damages to the challenger of a patent, subsidizing the litigation costs for the challenger, requiring the patentee to repay to the government amount equivalent to the loss in subsidy in the public healthcare scheme due to the delay in entry of generics, and requiring the patentee to pay a portion of its profits during the injunction period to a successful challenger.[84] Another possible measure that may be considered is relaxing the standard of proof for the challenger in a patent invalidation proceeding from a strict standard of "clear and convincing" evidence to that of preponderance of evidence of the patent being granted wrongly.[85]

- Involving other public authorities in examination or litigation

Involving other relevant national authorities to assist patent offices in the process of patent examination or to assist courts in patent dispute adjudication may be useful in improving the quality of patent examination and avoiding abuse of patent litigation. For example, in Brazil there is a legal requirement that any pharmaceutical patent application has to be subjected to the prior consent of ANVISA – the National Agency for Sanitary Surveillance – and the IP office can only grant a patent after ANVISA has given its consent. While ANVISA has rejected some pharmaceutical patent applications, a large number of patent applications have been amended due to ANVISA's review.[86] In Australia, the Australian Therapeutic Goods Act gives the Commonwealth Attorney-General the right to join an application for an injunction by a patent holder against a generic medicines manufacturer and claim damages if the injunction causes a price rise in the universal healthcare programme of the government.[87]

- Applying penalties and additional damages

While patent laws provide for enforcement measures against infringement of patent rights, there is also need for legal sanctions for misconduct by patent applicants and holders leading to abuse of patent rights and remedies.[88] For example, in Australia, if a patent owning

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[82] Michael Burdon and Kristie Sloper (2003), "The Art of Using Secondary Patents to improve Protection", *International Journal of Medical Marketing*, vol. 3, p. 228.
[83] Carlos Correa (2014), http://www.wipo.int/edocs/mdocs/scp/en/scp_17/scp_17_9.pdf.
[83] Carlos Correa (2014), *supra* note 67, p. 12.
[84] Australian Government, *Pharmaceutical Patent Review : Draft Report*, April 2013, p.155, http://www.ipaustraliaa.gov.au/about-us/ip-legislation-changes/review-pharmaceutical-patents/.
[85] Carlos Correa (2014), *supra* note 67, p. 15.
[86] Ibid, p. 14.
[87] Ibid., p. 15 http://www.southcentre.int/wp-content/uploads/2014/09/RP52_Tackling-the-Proliferation-of-Patents-rev_EN.pdf.
[88] Ibid.

pharmaceutical company intends to initiate infringement proceedings against a generic company, it has to submit a certification to the Therapeutic Goods Administration (TGA) and the generic company stating that the proceedings are to be commenced in good faith, have reasonable prospects of success, and will be conducted without undue delay.[89] If the certification is breached, or is false or misleading, a penalty of up to 10 million AUD may be imposed.[90] Moreover, if an injunction is granted against the generic company, and subsequently the infringement proceedings are discontinued or dismissed, or the court finds that the patentee had reasonable grounds to believe that the final relief would not be granted, the court may award compensation to the generic company or the government for losses arising due to the injunction. Developing countries could also consider adopting similar legal mechanisms to prevent abuse of patent rights and remedies.

- Limiting divisional applications

Divisional applications are patent applications that include some part of subject matter that has been claimed in a prior (parent) application. Divisional applications therefore claim the priority from the filing date of the parent application, and thus the claim does not lose the qualification of novelty or inventive step. When liberally allowed divisional applications can be misused to keep pending the decision on grant of a patent for long periods making it uncertain for competitors to ascertain whether they would infringe any patent or not.[91] Some countries are considering legal measures to curb the misuse of divisional applications. In Australia, stricter conditions for filing divisional applications and seeking extensions of time have been introduced in the Raising the Bar Bill of 2011.[92]

- Increasing registration and maintenance fees

Patent examination and maintenance fees can be used as a means to prevent the proliferation of patents. By raising patent examination and maintenance fees, applicants could be dissuaded from strategic filing of trivial patent applications with the purpose of delaying the market entry of competitors. This has been suggested by a group of experts convened by the EPO.[93] Moreover, in Ecuador the examination and registration fees, and the fees for maintenance of patents were increased drastically to more than $100,000 except for some categories of applicants.[94]

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[89] Australian Government, *Pharmaceutical Patent Review : Draft Report*, April 2013, p. 159, http://www.ipaustraliaa.gov.au/about-us/ip-legislation-changes/review-pharmaceutical-patents/.

[90] Ibid, p. 171.

[91] Carlos Correa (2014), *supra* note 67, p. 20 http://www.southcentre.int/wp-content/uploads/2014/09/RP52_Tackling-the-Proliferation-of-Patents-rev_EN.pdf.

[92] Jacinta Flattery-OBrien and Kieran Williams, "Changes to divisional applications deadlines in Australia – is there a need for precautionary filings?", http://www.shelstonip.com/news_story.asp?m=5&y=2013&nsid=274.

[93] Carlos Correa (2014), *supra* note 67, p. 21 http://www.southcentre.int/wp-content/uploads/2014/09/RP52_Tackling-the-Proliferation-of-Patents-rev_EN.pdf.

[94] Resolucion No. 001-2013 CD-IEPI, http://www.propriedadintelectual.gob.ec/wp-content/uploads/2013/08/reformas_tasas_2013.pdf.

III. MULTILATERAL INTELLECTUAL PROPERTY REGIMES

III.1 Overview of Multilateral Intellectual Property Regimes

III.1.1 The WTO TRIPS Agreement

The WTO TRIPS Agreement is the most comprehensive multilateral agreement on IPRs. The adoption of the TRIPS Agreement had significant implications for the policy space hitherto available to developing countries for designing their national IP rules and policies. TRIPS universalized standards of IP protection that would benefit certain industrial sectors where firms from developed countries are dominant. Monopoly rights granted by IPRs were regarded as an instrument to avoid catching-up based on imitative paths of industrialization by developing countries.[95]

TRIPS deals with all types of IPRs except plant breeders' rights and utility models. TRIPS establishes minimum standards on copyright and related rights including computer programmes and databases, trademarks, geographical indications, industrial designs, patents, integrated circuits and undisclosed information (trade secrets). TRIPS also incorporates and expands the scope of a number of WIPO treaties that precede the adoption of TRIPS. The following IP treaties were concluded in WIPO before the establishment of the WTO – the Paris Convention for the Protection of Industrial Property (the Paris Convention), the Berne Convention for the Protection of Literary and Artistic Works (the Berne Convention), the Rome Convention for the Protection of Performers, Producers of Phonograms and Broadcasting Organizations (the Rome Convention), and the Washington Convention on the Protection of Layout Designs of Integrated Circuits. All member States of the WTO are bound by the provisions of these conventions except the Rome Convention, even if they have not ratified these treaties. In a major departure from pre-existing IP agreements, TRIPS contained detailed provisions on enforcement of IPRs.[96]

Box 2
Minimum Requirements under TRIPS

Copyright
Extends the Berne Convention for the Protection of Literary and Artistic Works to all WTO members; extends copyright protection to computer programmes and news stories; restrictive conditions on use of exceptions and limitations to ensure access to copyright works in the public interest.

[95] Carlos Correa (2000), INTELLECTUAL PROPERTY RIGHTS, THE WTO AND DEVELOPING COUNTRIES (Third World Network, Penang, Malaysia), pp.4-5. In the 1980s, the US supremacy in manufacturing and technology had been significantly eroded by the catching up processes of Japan and the newly industrializing countries in Asia, particularly in the field of consumer electronics. Microelectronics, robotics, computer hardware, etc. Overseas counterfeiting and piracy was considered a major source of declining American competitiveness. The pharmaceutical industry, the software industry and the phonograms industry had actively lobbied with the US government to link IPRs with trade to increase returns on R&D and prevent imitation.

[96] Ibid, pp.1-2.

Trademark
Extends the Paris Convention for the Protection of Industrial Property provisions relating to trademarks to all WTO members; defines subject matter eligible for trademark protection to include signs that can be perceived visually or through other sensory modes; introduced minimum period of protection for 7 years; indefinite renewal of trademark; restrictions on special requirements regulating use of trademarks.

Geographical Indications
WTO member States required to provide legal means to prevent use of GIs in manner that misleads the public or constitutes unfair competition; invalidation of trademark for misleading about true place of origin of a product; additional protection for GIs on wines and spirits; negotiations to be undertaken to establish a multilateral system of notification and registration for increasing protection of GIs for wines and spirits.

Patents
Extends the Paris Convention for the Protection of Industrial Property provisions relating to patents to all WTO members; patents extended to all fields of technology without discrimination whether the technology is imported or locally manufactured; minimum protection for 20 years; micro-organisms, non-biological and microbiological processes made patentable; protection for plant varieties by patents or a *sui generis* system required.

Layouts and Designs
Extends the Washington Convention on the Protection of Layout Designs of Integrated Circuits to all WTO members but the Washington Convention has not entered into force.

Undisclosed Information
WTO member States required to protect trade secrets from unfair competition, protect test data from unfair commercial use, but no requirement to provide exclusivity to undisclosed information or test data.

- Copyright

In the area of copyright and related rights, TRIPS enhanced the market position of software, database and phonograms industries - sectors where US firms were globally dominant.[97] The main obligations under TRIPS in respect of copyrights include 1) protection of works covered by the Berne Convention, 2) protection of computer programmes as literary works and of compilations of data, 3) recognition of rental rights at least for phonograms, computer programmes and cinematographic works, and 4) recognition of rights of performers, producers of phonograms and broadcasting organizations.[98] The recognition of computer programmes as copyrightable material went beyond the requirements of the Berne Convention, where it was not mandatory to regard computer programmes as eligible for copyright protection. TRIPS also broadened the understanding of databases such as collection of short stories, anthologies or scholarly works that would be eligible for copyright protection under Berne Convention to include collections or compilations of factual material such as news stories, even if they do not constitute literary or artistic works. Another significant

[97] Carlos Correa, *supra* note 95, p. 12.
[98] UNCTAD-ICTSD (2005), RESOURCE BOOK ON TRIPS AND DEVELOPMENT (Cambridge University Press, New York), p. 138.

expansion of TRIPS over the provisions of the Berne Convention was the expansion of the restrictions on the application of copyright exceptions and limitations. Under TRIPS exceptions and limitations to copyright were subjected to a three-step test - that it should be a special case, that it should not conflict with normal exploitation of the work, and should not unreasonably prejudice the normal interests of the author.

- Trademarks

In respect of trademarks, TRIPS required all member States to comply with the provisions on trademark protection under the Paris Convention, even if they had not ratified the Paris Convention.[99] However, the Paris Convention did not define the subject matter of trademark protection. In this context, Article 15 (1) of TRIPS provided an explicit definition of subject matter that would be eligible for trademark protection. It made any sign that is perceptible to a human being visually or through other sensory modes of perception such as sound and smell to qualify for trademark protection.[100] It also made "well-known" trademarks eligible for protection even if they were of no effective use in a country.[101] Moreover, TRIPS introduced the minimum period of trademark protection of 7 years and made trademarks indefinitely renewable. [102] TRIPS also precludes the freedom of countries to impose special requirements regulating the use of a trademark such as the use with another trademark or to use the trademark in a special form.[103] This prevented a practice that was common among developing countries prior to TRIPS, of requiring a foreign brand to link its mark with the trademark of a local enterprise, to ensure continuity in business relationships and enable the local enterprise to develop its brand identity by partnering with a popular brand.[104] This provision could also preclude the ability of countries to require the depiction of trademarks for certain unhealthy products such as tobacco in a special form in order to diminish the brand identity, unless the government taking such measure can establish that such restriction is justified.[105]

- Geographical Indications

On geographical indications, TRIPS requires member States to provide the legal means to prevent the use of a GI in manner that misleads the public or constitutes unfair competition, and requires countries to invalidate a trademark if the public is misled as to the true place of origin of the product. It provides additional protection for GIs on wines and spirits, and requires negotiations to be undertaken to establish a multilateral system of notification and registration for increasing protection of GIs for wines and spirits.[106]

With respect to industrial designs, the only requirement under TRIPS is for member States to provide a minimum standard of protection of industrial designs for a period of at least 10 years.[107] However, members have the freedom to decide how industrial designs should be protected, and can do so either through copyright protection, or the grant of design patents or through a *sui generis* system of registration of industrial designs.

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[99] Article 15 (2), TRIPS Agreement.
[100] UNCTAD-ICTSD (2005), *supra* note 98, p. 219.
[101] Carlos Correa (2000), *supra* note 95, p. 13.
[102] Article 18, TRIPS Agreement.
[103] Article 20, TRIPS Agreement.
[104] UNCTAD-ICTSD (2005), *supra* note 98, p. 246.
[105] Susy Frankel and Daniel Gervais (2013), "Plain Packaging and the Interpretation of the TRIPS Agreement", *Vanderbilt Journal of Transnational Law*, vol. 46, no. 5, pp. 1149-1214.
[106] Articles 22-24, TRIPS Agreement.
[107] Articles 25-26, TRIPS Agreement.

- Patents

On patents, TRIPS introduced very significant expansions over the standards contained in the Paris Convention. TRIPS requires member States to grant patents in all fields of technology without any discrimination whether the technology is imported or locally manufactured.[108] The minimum term of a patent application is 20 years.

In this way, TRIPS took away significant policy space that was available to developing countries to deny or restrict the term of patent protection in certain areas of technology such as chemicals and pharmaceuticals, or to require that a patent be granted only if the product is produced locally. Though member States can exclude plants and animals and essentially biological processes for the production of plants and animals from the scope of patent protection, micro-organisms and non-biological and microbiological processes are eligible for patent protection. Members are also required to grant protection of plant varieties either by patents or by a *sui generis* system. While some developing countries have adopted their *sui generis* models of plant variety protection, many developing countries are being encouraged in bilateral trade agreements to adopt the UPOV system of plant variety protection as the *sui generis* model.[109]

- Layouts and Designs

TRIPS also requires layouts of designs and integrated circuits to be protected in accordance with the provisions of the Washington Treaty of 1989 which has not entered into force.

- Undisclosed Information

In respect of undisclosed information, member States are required to protect trade secrets against unfair competition, but this does not require members to provide exclusive protection to such undisclosed information. In respect of test results and other data submitted to governments to obtain approval for pharmaceutical or agro-chemical products, governments are required to protect such data against unfair commercial use or disclosure. However, this does not extend to making the right over such data exclusive.[110]

III.1.2 TRIPS Flexibilities

In spite of the significant expansion of the scope of patent protection, the TRIPS Agreement contains certain flexibilities that provide significant policy space to developing countries, which can be effectively used in designing their IP regimes. These include the ability to determine the criteria of patentability in a strict manner, the freedom to allow pre-grant opposition of patent applications by interested parties, post-grant patent opposition, international exhaustion of patent rights, issuance of compulsory licenses or government use authorizations, as well as application of limited research exceptions.

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[108] Article 27.1, TRIPS Agreement.

[109] The UPOV system is established by the International Convention for the Protection of New Varieties of Plants (UPOV Convention) which confers IP rights to plant breeders over new plant varieties developed by them. The UPOV system is administered by a small Secretariat hosted by WIPO. The Director General of WIPO acts as the ex officio Secretary General of the UPOV Secretariat. While developing countries can design plant variety protection laws that strike a balance between protection of plant breeders' rights and the right of farmers to sustain their traditional practice of developing new varieties by saving and exchanging seeds, the UPOV system restricts the scope of farmers' rights very significantly.

[110] Carlos Correa (2000), *supra* note 95, p .18.

Box 3
TRIPS Patent Flexibilities

Application of high standards of patentability
Exclusion of new forms of known drugs
Setting level of sufficient disclosure of inventions from patent applications
Exclusion of plants and animals from patent protection
Pre-grant and post-grant opposition
Compulsory licensing and government use authorization
Parallel importation
Research exception
Limiting the extent of test data protection
Control of anti-competitive practices and abuse of IP
Transition period waiver for LDCs from implementing TRIPS obligations (till 1 July 2021, extendable)

- High Standards of Patentability

The TRIPS Agreement uses the terms 'inventions' 'new', 'inventive step' and 'industrial application' without defining them. This makes it possible for countries to calibrate their standards of patentability to the level that suits their economic and technological needs. For instance, the application of high standards of inventiveness will ensure that only high quality inventions are granted patent protection.

- Sufficiency of Disclosure

Article 29.1 of the TRIPS Agreement states that patent applicants shall disclose the invention in a manner sufficiently clear and complete for the invention to be carried out by a person skilled in the art and may require the applicant to indicate the best mode for carrying out the invention known to the inventor. Developing countries therefore have the flexibility to require the applicant to disclose the best mode of carrying out the invention. Developing countries could also set the level of sufficiency of disclosure at different levels with reference to each specific sector.

- Exclusion of new forms of known drugs

Some pharmaceutical companies have perfected the art of extending the term of their patent rights by seeking for patent rights on trivial modifications of old drugs. This is usually called 'ever-greening'. The TRIPS Agreement does not prevent countries from including provisions in their patent laws to prevent the grant of patent rights on trivial modifications of previously known drugs. This type of provision is contained in Section 3(d) of the Indian Patents Act (as amended in 2005) and it prohibits the grant of patent rights on new forms of known drugs unless the new form significantly enhances the therapeutic efficacy of the previously known drug. This provision was applied by the Indian Supreme Court to deny a patent to an anti-cancer drug (Glivec) developed by Novartis. The court held that the drug failed to meet the requirements of Section 3(d) of the Indian Patents Act.

- Exclusion of Plants from Patent Protection

Article 27.3(b) of TRIPS allows WTO member States to exclude from patent protection plants, animals and essentially biological processes. This gives the flexibility to developing countries to altogether exclude plants, including plant varieties, from patent protection, or to limit the scope of patent protection on plants to non-food crops and plants exploited for exportation. Though microorganism such as bacteria, virus or fungi are not excluded from the scope of patent protection under TRIPS, countries can exclude cells and sub-cellular components, including genes (DNA) from the scope of patent protection.[111]

- Pre-grant and Post-Grant Opposition

The TRIPS Agreement permits countries to allow interested persons (including generic drug companies and NGOs) to file an application, either before (pre-grant opposition) or after (post-grant opposition), challenging the grant of a patent on a pharmaceutical product. This procedure helps to improve the quality of patents granted in a country as it ensures that trivial inventions are not patented.

- Compulsory Licensing and Government Use Authorization

Article 31 of the TRIPS Agreement permits countries to give third parties the right to use another person's patent to produce the patented the product without the consent of the patent owner. As confirmed in the Doha Declaration on TRIPS and Public Health, countries are free to determine the grounds upon which to grant compulsory licences and these grounds can include: the failure of a patentee to meet the reasonable requirements of the public with respect to the patented drug; failure of the patentee to sell the product at a reasonably affordable price; and failure of the patentee to engage in the local production of the patented product (i.e. failure to satisfy local working requirements).

While Article 31 of the TRIPS Agreement requires that a third party seeking a compulsory licence on a patented product should attempt to obtain a voluntary licence within a reasonable period of time prior to seeking a compulsory licence, this requirement can be waived in cases of national emergency, extreme urgency, or in cases of public non-commercial use.

The TRIPS Agreement also permits governments to use patented products for their own purposes. In this case, which the TRIPS Agreement terms 'public non-commercial use', there is no need for the government to seek to obtain a voluntary licence from the patentee prior to the use by the government. This flexibility can be a useful tool to address public health emergencies such epidemics and pandemics.

- Parallel Importation

Article 6 of the TRIPS Agreement gives countries the freedom to permit the parallel importation of patented products that have been sold in the market in other countries without patentee's permission. This can be done by incorporating the principle of the international exhaustion of patent rights into a country's patent law. This principle states that patent rights

[111] Carlos Correa (2014), *Patent Protection for Plants: Legal Options for Developing Countries*, Research Papers 55, South Centre, pp. 10-14, http://www.southcentre.int/wp-content/uploads/2014/11/RP55_Patent-Protection-for-Plants_EN.pdf.

are exhausted once the patented product has been sold by the patentee in any market in the world.

- Research Exception

Under Article 30 of the TRIPS Agreement, a patent can be used without the authorization of the patent holder for the purpose of non-commercial research and development. The TRIPS Agreement also gives countries the freedom to permit the use patented products prior to the expiration of the patent term for the purpose of obtaining regulatory approval. This is called the 'Bolar exemption'. This can be a useful tool for facilitating the early production of cheaper generic drugs after the expiration of the term of the patent rights on patented pharmaceutical products. Thus, manufacturers of generic versions of patented drugs do not have to wait till the end of the patent term before taking steps to obtain regulatory approval for their generic drugs.

- Limiting the extent of test data protection

Article 39 of TRIPS requires member States to provide protection of test data submitted for regulatory approval from unfair commercial use but does not require countries to grant exclusive protection to such test data. Data exclusivity is the protection of clinical trial data submitted to regulatory authorities (to establish safety and efficacy of a drug) by drug manufacturers for a specific period of time. During this period, third parties cannot rely on such data for the purpose of obtaining regulatory approval for their own drugs. Thus, producers of generic drugs will either have to wait till the expiration of the period of data exclusivity or generate their own data. Data exclusivity can delay the early market entry of generic versions of patented drugs. The TRIPS Agreement does not mandate countries to provide data exclusivity. Article 39(3) of the TRIPS Agreement merely states that undisclosed test data should be protected against unfair commercial use without specifying any term limit for such protection. Essentially, Article 39(3) deals with the question of disclosure of data to third parties and this should be distinguished from data exclusivity.

- Control of Anti-Competitive Practices and Abuse of IP

Articles 8(2) and 40 of the TRIPS Agreement permits to take steps to prohibit patentees from abusing their patent rights by engaging in practices which unreasonable restrain trade or adversely affect the international transfer of technology. Furthermore, compulsory licences can be granted to remedy anti-competitive practices and, as stated in Article 31(k) of the TRIPS Agreement, in such cases there is no need to attempt to obtain a voluntary licence prior to the grant of the compulsory licence and the products produced by virtue of this type of compulsory licences can be exported to other countries. South Africa has used competition law to address anti-competitive practices in the context of patents and access to medicines such as excessive pricing and refusal to licence.

- Transition Period waiver for LDCs from Implementing TRIPS obligations

An important flexibility that is available to least developed countries (LDCs) under the WTO TRIPS Agreement (Art. 66.1) is an extendable transition period. During the transition period LDCs need not implement the provisions of the TRIPS Agreement except for Articles 3, 4 and 5 of the TRIPS Agreement which contain provisions pertaining to national treatment and the most favoured nation treatment. This flexibility was given to LDCs in recognition of their

special needs and requirements, the economic, financial and administrative constraints faced by LDCs as well as their need for flexibility to create a viable technological base.[112]

The transition period under Article 66.1 can be extended if the LDCs submit a "duly motivated request" for such extension to the TRIPS Council. According to Article 66.1 of the TRIPS Agreement "The Council of TRIPS ***shall***, upon duly motivated request … ***accord*** extensions of this period". The TRIPS Council has extended this transition period three times, including a specific extension for pharmaceutical products, and it is possible to seek further extensions of this period. Currently, the LDCs can utilize a general transition period till 1 July 2021. This general transition period is without prejudice to the specific extension of the transition period for pharmaceutical products that is in force till 1 January 2016. LDCs have also submitted a new duly motivated request for a further extension of the transition period for pharmaceutical products.[113]

III.1.3 IP Agreements in WIPO

WIPO administers 15 treaties on various subjects of IP, which include agreements pertaining to protection of industrial property (the Paris Convention) and copyright and related rights (the Berne Convention). The following is a list of substantive IP treaties administered by WIPO:

- The Beijing Treaty on Audiovisual Performances
- The Berne Convention for the Protection of Literary and Artistic Works
- The Brussels Convention Relating to the Distribution of Programme-Carrying Signals Transmitted by Satellite
- The Madrid Agreement for the Repression of False or Deceptive Indications of Source on Goods
- The Marrakesh Treaty to Facilitate Access to Published Works for Persons who are Blind, Visually Impaired or Otherwise Print Disabled
- The Nairobi Treaty on the Protection of the Olympic Symbol
- The Paris Convention for the Protection of Industrial Property
- The Patent Law Treaty
- Convention for the Protection of producers of Phonograms Against Unauthorized Duplication of their Phonograms

[112] The negotiators of TRIPS were aware of the special needs of LDCs and the unique challenges they would face in the process of technological catch-up as latecomers to technological development. It was recognized that IPRs cannot be effective as an incentive mechanism in the absence of a sound and viable technological base. In order to be effective, IPRs need to apply in a context where there is a significant market, sufficient capital, qualified personnel at the firm level, innovation-oriented entrepreneurs, as well as a solid scientific and technological base.[112] Mere access to new technology is not adequate for the technological catch-up of LDCs. Rather, LDCs need access to appropriate technology and effectively use such technology in the local context. This requires sufficient levels of absorptive capacity – the ability to assimilate and adopt technological know-how, which is substantially lacking in the LDCs. These primary conditions for benefiting from stronger standards of IP protection are absent in the LDCs. Strong IP protection in such a context can actually stifle technological learning which can severely impede the development of a technological base. It is for this reason that Article 66 was crafted to give LDCs maximum flexibility to develop a viable technological base.

[113] WTO (2015), Council for Trade Related Aspects of intellectual Property Rights, Communication for an Extension of the Transition Period under Article 66.1 of the TRIPS Agreement for Least Developed Country Members with Respect to Pharmaceutical Products and for Waivers from the Obligations of Article 70.8 and 70.9 of the TRIPS Agreement, 23 February 2015, IP/C/W/605.

- Rome Convention for the Protection of Performers, Producers of Phonograms and Broadcasting Organizations
- The Singapore Treaty on the Law of Trademarks
- Trademark Law Treaty
- Washington Treaty on Intellectual Property in Respect of Integrated Circuits
- The WIPO Copyright Treaty
- The WIPO Performances and Phonograms Treaty

Though all countries are not parties to all of the WIPO administered treaties, by virtue of the TRIPS Agreement, which cross-references the Paris Convention, the Berne Convention, the Rome Convention and the Washington Treaty, all the member States of the WTO are also bound by the provisions of these agreements. The WIPO Copyright Treaty (WCT), the WIPO Performances and Phonograms Treaty (WPPT), the Beijing Treaty on Audiovisual Performances (Beijing Treaty) and the Marrakesh Treaty to Facilitate Access to Published Works for Persons who are Blind, Visually Impaired or Otherwise Print Disabled (Marrakesh Treaty) have been concluded after the entry into force of the TRIPS Agreement. The WCT and WPPT has expanded traditional copyright to the digital environment and has restricted access to copyright works through the use of technological protection measures (TPM) by IPR holders, and parties are required to take legal measures to prevent the circumvention of such TPMs.[114] These treaties therefore create significant obstacles for developing countries to access copyright works by using the digital media. The Marrakesh Treaty requires parties to introduce a standard set of copyright exceptions and limitations in order to permit reproduction, distribution and making available published works in accessible formats for visually impaired persons, and to permit exchange of those works by organizations that serve visually impaired persons.[115]

However, negotiations on various other treaties or legal instruments in WIPO have not achieved much progress. These are negotiations on a treaty for protection of broadcasting organizations, negotiations on copyright exceptions and limitations for libraries and archives, and for educational and research institutions, negotiations on a design law treaty and regulations, and negotiations on an international legal instrument or instruments on traditional knowledge, traditional cultural expressions and genetic resources.

In addition to the substantive IP treaties, WIPO also administers treaties that lay down maximum requirements in respect of formalities for IP application. These are the Patent Law Treaty, the Trademark Law Treaty and the Singapore Treaty on the Law of Trademarks. WIPO also administers agreements pertaining to filing of IP applications. A very important agreement in this respect is the Patent Cooperation Treaty (PCT). The PCT enables patent applicants to file for a patent application in the PCT member States through a single international application which also receives a preliminary search and examination report by a recognized international search authority. While the PCT search and examination reports do not preclude the freedom of national offices to conduct their own substantive examination, there have been attempts made by the developed countries to make the PCT system more

[114] South Centre (2007), T*he Threat of Technological Protection Measures to a Development-Oriented Information Society*, Policy Brief 9, p. 6, http://www.southcentre.int/wp-content/uploads/2013/05/PB9_Threat-of-Technological-Protection_EN.pdf.

[115] WIPO, Summary of the Marrakesh Treaty to Facilitate Access to Published Works for Persons who are Blind, Visually Impaired or Otherwise Print Disabled, http://www.wipo.int/treaties/en/ip/marrakesh/summary_marrakesh.html.

binding on national patent offices. This could significantly curtail the ability of countries to apply the standards of patentability under their laws in deciding the grant of patents.

IV. AFRICA AND THE MULTILATERAL INTELLECTUAL PROPERTY REGIMES

IV.1 Overview of Membership of African Countries in Multilateral Intellectual Property Regimes

Out of the 54 African countries, 47 are parties to the WTO TRIPS Agreement.[116] Moreover, 29 African member States of the WTO also belong to the group of LDCs and constitute the majority of the LDC members of the WTO (29 out of 35 members). There are 11 African States that are not members of the WTO (Algeria, Comoros, Equatorial Guinea, Eritrea, Ethiopia, Liberia, Libya, Somalia, Sudan).

The following 52 African countries are members of WIPO: Algeria, Angola, Benin, Botswana, Burkina Faso, Burundi, Cabo Verde, Cameroon, Central African Republic, Chad, Comoros, Congo, Cote d'Ivoire, Democratic Republic of the Congo, Djibouti, Egypt, Equatorial Guinea, Eritrea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Liberia, Libya, Madagascar, Malawi, Mali, Mauritania, Mauritius, Morocco, Mozambique, Namibia, Niger, Nigeria, Rwanda, Senegal, Seychelles, Sierra Leone, Somalia, South Africa, Sudan, Swaziland, Togo, Tonga, Tunisia, Uganda, Tanzania, Zambia and Zimbabwe.[117] 47 of the African member States of WIPO are also parties to the PCT.[118]

The table below gives an overview of the 54 African States and their membership in WTO and WIPO.

Country	Member of WTO/TRIPS	Exempt from TRIPS as LDC	WIPO Member	Contracting Party to Paris Convention
Algeria	No	----	Yes	Yes
Angola	Yes	Yes	Yes	Yes
Benin	Yes	Yes	Yes	Yes
Botswana	Yes	No	Yes	Yes
Burkina Faso	Yes	Yes	Yes	Yes
Burundi	Yes	Yes	Yes	Yes
Cabo Verde	Yes	No	Yes	Yes
Cameroon	Yes	No	Yes	Yes
Central African Republic	Yes	Yes	Yes	Yes
Chad	Yes	Yes	Yes	Yes

[116] WTO (2014), Groups in the WTO, https://www.wto.org/english/tratop_e/dda_e/negotiating_groups_e.pdf.
[117] WIPO, Member States, http://www.wipo.int/members/en/.
[118] WIPO, States Parties to the PCT and the Paris Convention and Members of the World Trade Organization, http://www.wipo.int/export/sites/www/pct/en/texts/pdf/pct_paris_wto.pdf.

Country	**Member of WTO/TRIPS**	**Exempt from TRIPS as LDC**	**WIPO Member**	**Contracting Party to Paris Convention**
Comoros	No	----	Yes	Yes
Congo	Yes	No	Yes	Yes
Cote d'Ivoire	Yes	No	Yes	Yes
Democratic Republic of Congo	Yes	Yes	Yes	Yes
Djibouti	Yes	Yes	Yes	Yes
Egypt	Yes	No	Yes	Yes
Equatorial Guinea	No	----	Yes	Yes
Eritrea	No	----	Yes	No
Ethiopia	No	----	Yes	No
Gabon	Yes	No	Yes	Yes
The Gambia	Yes	Yes	Yes	Yes
Ghana	Yes	No	Yes	Yes
Guinea	Yes	Yes	Yes	Yes
Guinea-Bissau	Yes	Yes	Yes	Yes
Kenya	Yes	No	Yes	Yes
Lesotho	Yes	Yes	Yes	Yes
Liberia	No	---	Yes	Yes
Libya	No	---	Yes	Yes
Madagascar	Yes	Yes	Yes	Yes
Malawi	Yes	Yes	Yes	Yes
Mali	Yes	Yes	Yes	Yes
Mauritania	Yes	Yes	Yes	Yes
Mauritius	Yes	No	Yes	Yes
Morocco	Yes	No	Yes	Yes
Mozambique	Yes	Yes	Yes	Yes
Namibia	Yes	No	Yes	Yes
Niger	Yes	Yes	Yes	Yes
Nigeria	Yes	No	Yes	Yes
Rwanda	Yes	Yes	Yes	Yes
Western Sahara	No	---	No	No
Sao Tome and Principe	No	---	Yes	Yes
Senegal	Yes	Yes	Yes	Yes
Seychelles	Yes	No	Yes	Yes
Sierra Leone	Yes	Yes	Yes	Yes
Somalia	No	---	Yes	No
South Africa	Yes	No	Yes	Yes
Sudan	No	---	Yes	Yes
Swaziland	Yes	No	Yes	Yes
Tanzania	Yes	Yes	Yes	Yes
Togo	Yes	Yes	Yes	Yes
Tunisia	Yes	No	Yes	Yes
Uganda	Yes	Yes	Yes	Yes

Country	Member of WTO/TRIPS	Exempt from TRIPS as LDC	WIPO Member	Contracting Party to Paris Convention
Zambia	Yes	Yes	Yes	Yes
Zimbabwe	Yes	No	Yes	Yes

The overview of membership of African countries in WTO and WIPO shows that **the minimum standards of IP protection required by the TRIPS Agreement are not applicable to 36 African countries**. **This means that only 18 African Countries are currently bound to implement the TRIPS Agreement.** Therefore, 40 African countries have substantially more policy space than other developing country members of the WTO to design their own nationally appropriate IP laws and policies without being constrained by the TRIPS Agreement. Comoros, Equatorial Guinea, Ethiopia, Liberia and Sudan are, however, in the process of acceding to the WTO. These countries should ensure that the terms of their accession to WTO do not require them to introduce standards of IP protection that go beyond the minimum requirements of TRIPS or curtail the scope of flexibilities available under TRIPS. Eritrea and Ethiopia are also not Contracting Parties to the WIPO administered Paris Convention for the Protection of Industrial Property.

Box 4
African Countries that are not bound by TRIPS

Algeria, Angola, Benin, Burkina Faso, Burundi, Central African Republic, Chad, Comoros, Democratic Republic of the Congo, Djibouti, Equatorial Guinea, Eritrea, Ethiopia, The Gambia, Guinea, Guinea-Bissau, Lesotho, Liberia, Libya, Madagascar, Malawi, Mali, Mauritania, Mozambique, Niger, Rwanda, Senegal, Seychelles, Sierra Leone, Solomon Islands, Somalia, Sudan, Togo, Uganda, United Republic of Tanzania, Zambia.

Even though 36 African countries are not bound by the TRIPS Agreement, 11 of these countries are members of the Lusaka Agreement establishing the ARIPO and another 10 countries are members of OAPI under the Bangui Agreement. Membership of ARIPO and OAPI significantly impacts the ability of these countries to design and implement their IP laws even though they are not constrained by the TRIPS Agreement. Moreover, the policy space for African countries can also be curtailed by the terms of bilateral or regional trade and investment agreements. It will be critical for African countries that are not bound by obligations under the TRIPS Agreement to ensure that the policy space available to them is not restricted through other IP, trade or investment agreements.

IV.2 Africa's Participation in Groups Engaged in Multilateral Negotiations

African countries have been coordinating their negotiating positions on various issues in different IP fora such as WIPO and WTO as a regional group. The African group strives to promote cooperation with other regional groups. Some African countries have co-sponsored proposals with developing countries from other regions. Many countries in the LDC group are also from Africa. Some African countries are also members of the Development Agenda Group (DAG) – which is a cross-regional group of developing countries in WIPO. Through these various modes of cooperation within and beyond the African group, African countries have initiated or supported a number of significant proposals in WIPO and WTO.

The following is a list of groupings that include African countries (in bold) in WTO TRIPS discussions, i.e. African Group, ACP group, LDC group, disclosure requirement group.

Groups	Description	Countries
ACP Group	**African, Caribbean and Pacific**	WTO Members (60): **Angola**, Antigua & Barbuda, Barbados, Belize, **Benin**, **Botswana**, **Burkina Faso**, **Burundi**, **Cameroon**, **Cabo Verde**, **Central African Rep**., **Chad**, **Congo**, **Côte d'Ivoire**, Cuba, **Congo (Democratic Rep.)**, **Djibouti**, Dominica, Dominican Rep., Fiji, **Gabon**, **Gambia**, **Ghana**, Grenada, **Guinea**, **Guinea Bissau**, Guyana, Haiti, Jamaica, **Kenya**, **Lesotho**, **Madagascar**, **Malawi**, **Mali**, **Mauritania**, Mauritius, **Mozambique**, **Namibia**, **Niger**, **Nigeria**, Papua New Guinea, **Rwanda**, St Kitts & Nevis, St Lucia, St Vincent & the Grenadines, Samoa, **Senegal**, **Sierra Leone**, Solomon Islands, **South Africa**, Suriname, **Swaziland**, **Tanzania**, **Togo**, Tonga, Trinidad & Tobago, **Uganda**, Vanuatu, **Zambia**, **Zimbabwe** WTO Observers (8): Bahamas, **Comoros**, **Equatorial Guinea**, **Ethiopia**, **Liberia**, **São Tomé and Principe**, Seychelles, **Sudan** Not WTO Members or Observers (11): Cook Islands, **Eritrea**, Kiribati, Marshall Islands, Micronesia, Nauru, Niue, Palau, **Somalia**, Timor-Leste, Tuvalu
African Group	**All African WTO Members**	WTO Members (42): Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cabo Verde, Central African Rep., Chad, Congo, Congo (Democratic Rep.), Côte d'Ivoire, Djibouti, Egypt, Gabon, Gambia, Ghana, Guinea, Guinea Bissau, Kenya, Lesotho, Madagascar, Malawi, Mali, Mauritania, Mauritius, Morocco, Mozambique, Namibia, Niger, Nigeria, Rwanda, Senegal, Sierra Leone, South Africa, Swaziland, Tanzania, Togo, Tunisia, Uganda, Zambia, Zimbabwe
LDC Group	**Least Developed Countries**	WTO Members (35): **Angola**, Bangladesh, **Benin**, **Burkina Faso**, **Burundi**, Cambodia, **Central African Republic**, **Chad**, **Congo (Democratic Republic of the)**, **Djibouti**, **Gambia**, **Guinea**, **Guinea Bissau**, Haiti, Lao (People's Democratic Republic), **Lesotho**, **Madagascar**, **Malawi**, **Mali**, **Mauritania**, **Mozambique**, Myanmar, Nepal, **Niger**, **Rwanda**, Samoa, **Senegal**, **Sierra Leone**, Solomon Islands, **Tanzania**, **Togo**, **Uganda**,

Groups	Description	Countries
		Vanuatu, Yemen, **Zambia** WTO Observers (8): Afghanistan, Bhutan, **Comoros**, **Equatorial Guinea**, **Ethiopia**, **Liberia**, **Sao Tomé & Principe**, and **Sudan**
G-90	**African Group+ACP+LDC**	WTO Members (69): **Angola,** Antigua & Barbuda, Bangladesh, Barbados, **Belize, Benin, Botswana, Burkina Faso, Burundi, Cambodia, Cameroon, Cabo Verde, Central African Rep., Chad, Congo, Côte d'Ivoire, Cuba, Congo (Democratic Rep.), Djibouti, Dominica, Dominican Rep., Egypt, Fiji, Gabon, Gambia, Ghana, Grenada, Guinea, Guinea Bissau, Guyana,** Haiti, Jamaica, **Kenya, Laos, Lesotho, Madagascar, Malawi, Maldives, Mali, Mauritania, Mauritius, Morocco, Mozambique,** Myanmar, **Namibia,** Nepal, **Niger, Nigeria,** Papua New Guinea, **Rwanda,** St Kitts & Nevis, St Lucia, St Vincent & the Grenadines, Samoa, **Senegal, Sierra Leone,** Solomon Islands, **South Africa,** Suriname, **Swaziland, Tanzania, Togo,** Trinidad & Tobago, **Tunisia, Uganda,** Vanuatu, Yemen, **Zambia, Zimbabwe** WTO Observers (10): Afghanistan, Bahamas, Bhutan, **Comoros, Equatorial Guinea, Ethiopia, Liberia,** São Tomé & Principe, **Seychelles, Sudan** Not WTO Members or Observers (12): Cook Islands, **Eritrea,** Kiribati, Marshall Islands, Micronesia, Nauru, Niue, Palau, **Somalia, South Sudan**, Timor-Leste, Tuvalu
W52' sponsors	Sponsors of document TN/C/W/52 "procedural decision including disclosure proposal"): This is a proposal for "modalities" in negotiations on geographical indications (the multilateral register for wines and spirits, and extending the higher level of protection beyond wines and spirits) and "disclosure" (patent	Albania, Brazil, China, Colombia, Croatia, Ecuador, the European Communities, Georgia, Iceland, India, Indonesia, the Kyrgyz Republic, Liechtenstein, the Former Yugoslav Republic of Macedonia, Moldova, Pakistan, Peru, Sri Lanka, Switzerland, Thailand, Turkey, the **ACP Group** and the **African Group** *Detail of WTO Members (109): Albania, **Angola**, Antigua & Barbuda, Austria, Barbados, Belgium, Belize, **Benin**, **Botswana**, Brazil, Bulgaria, **Burkina Faso**, **Burundi**, **Cameroon**, **Cabo Verde**, **Central African Rep.**, **Chad**, China, Colombia, **Congo**, **Côte d'Ivoire**, Croatia, Cuba, Cyprus, Czech Rep, **Congo (Democratic Rep.)**, Denmark,*

Groups	Description	Countries
	applicants to disclose the origin of genetic resources and traditional knowledge used in the inventions). The list includes as groups: the EU, ACP and African Group.	***Djibouti***, *Dominica, Dominican Rep.*, Ecuador,* ***Egypt***, *Estonia, EU, Fiji, Finland, FYR Macedonia, France,* ***Gabon***, ***Gambia***, *Georgia, Germany,* ***Ghana***, *Greece, Grenada,* ***Guinea***, ***Guinea Bissau***, *Guyana, Haiti, Hungary, Iceland, India, Indonesia, Ireland, Italy, Jamaica,* ***Kenya***, *Kyrgyz Rep., Latvia,* ***Lesotho***, *Liechtenstein, Lithuania, Luxembourg,* ***Madagascar***, ***Malawi***, ***Mali***, *Malta,* ***Mauritania***, *Mauritius, Moldova,* ***Morocco***, ***Mozambique***, ***Namibia***, *Netherlands,* ***Niger***, ***Nigeria***, *Pakistan, Papua New Guinea, Peru, Poland, Portugal, Romania,* ***Rwanda***, *St Kitts & Nevis, St Lucia, St Vincent & the Grenadines,* ***Senegal***, ***Sierra Leone***, *Slovak Rep., Slovenia, Solomon Islands, Spain, Sri Lanka, Suriname,* ***Swaziland***, *Sweden, Switzerland,* ***South Africa******, ***Tanzania***, *Thailand,* ***Togo***, *Tonga, Trinidad & Tobago,* ***Tunisia***, *Turkey,* ***Uganda***, *United Kingdom,* ***Zambia***, ***Zimbabwe***
Joint proposal	(Sponsors of document TN/IP/W/10/Rev.2 GI register): Proposing a database that is entirely voluntary	Argentina, Australia, Canada, Chile, Costa Rica, Dominican Rep., Ecuador, El Salvador, Guatemala, Honduras, Israel, Japan, Korea, Mexico, New Zealand, Nicaragua, Paraguay, Chinese Taipei, **South Africa**, US

Source: http://www.wto.org/english/tratop_e/dda_e/negotiating_groups_e.pdf.

IV.3 Proposals about Intellectual Property Initiated by African Countries

IV.3.1 Proposals to the WTO

African countries have made various proposals in the WTO TRIPS Council as well as the in the WTO Working Group on Trade and Transfer of Technology. These proposals have been made either by the African group or by some African countries that are members of other groups such as the LDC group or ACP group. In particular, proposals have been made with respect to extension of the transition period for implementation of TRIPS by LDCs, review of Article 27.3 (b) of TRIPS on patents of life forms, traditional knowledge, transfer of technology to LDCs, and public health.

The African Group has led proposals for the review of Article 27.3(b) of TRIPS that concerns patents on life forms and the protection of plant varieties. In 1999, the African Group presented s proposal to ban patents on life forms, recognize farmers' rights and provide protection to traditional knowledge[119]. In a follow up communication the African Group

[119] WTO (1999), Review of Article 27.3 (b) of the TRIPS Agreement, Joint Communication from the African Group, Council for Trade Related Aspects of Intellectual Property Rights, WT/GC/W/302.

reiterated their position.[120] In 2003, the African Group submitted a proposal at the WTO TRIPS Council to adopt a decision on protecting traditional knowledge.[121] The proposed decision sought to recognize traditional knowledge as IP rights, recognize rights of local community of traditional knowledge practitioners and prevent the misappropriation of traditional knowledge through the grant of IP rights. The African Group also seek, together with most developing countries, an amendment to the TRIPS Agreement to introduce a mandatory disclosure requirement for patent applications to disclose the source/origin of genetic resources and/or traditional knowledge used in a claimed invention.[122] The purpose of the disclosure obligation would be to misappropriation and misuse of genetic resources and traditional knowledge through the patent system. This would be achieved on the one hand, by supporting access and benefit sharing regimes in relation to access and utilization of genetic resources and traditional knowledge, and on the other hand, by providing additional information to prevent the grant of erroneous patents.

As part of the LDC Group in WTO, African countries in the LDC Group have also been involved in advancing proposals requesting extensions of the transition period granted to the LDCs under Article 66.1 of the TRIPS Agreement. LDCs have been granted two general extensions of the transition period by the TRIPS exempting them from implementing TRIPS. The current general extension is available until July 2021 and can be extended further if the LDCs make a duly motivated request for extension. Separately, LDCs were granted a specific extension exempting them from obligations relating to patents and protection of undisclosed information in relation to pharmaceutical products until 1 January 2016. LDCs have submitted a request for further extension of the transition period for pharmaceutical products until they graduate to being developing countries. That proposal received wide support from developing countries and also some developed countries and is currently being negotiated in the WTO. LDCs have also submitted proposals for improving the reporting under Article 66.2[123] on incentives provided by developed countries to firms in their territories to encourage transfer of technology to LDCs.[124] Uganda presented the proposal on behalf of the LDC group. The improvement of the mechanism for reporting by developed country members on the implementation of Article 66.2 could well lead to an increased understanding of incentive mechanisms for transfer of technology and harmonization in the way information is presented that can facilitate assessment.

[120] WTO (2000), Joint Communication by the African Group, IP/C/W/206.
[121] WTO (2003), Taking Forward the Review of Article 27.3 (b) of the TRIPS Agreement, Joint Communication from the African Group, Council for Trade Related Aspects of Intellectual Property Rights, 26 June 2003, IP/C/W/404.
[122] WTO (2008) TN/C/W/49, WTO(2008) TN/C/W/52, WTO(2011) TN/C/W/59.
[123] The objective of the TRIPS Agreement establishes that the protection of IPRs should contribute to the promotion of technological innovation and the transfer and dissemination of technology, to the mutual advantage of producers. Article 66.2 of the TRIPS Agreement creates an obligation on developed country members to provide incentives to enterprises and institutions in their territories for the purpose of promoting and encouraging technology transfer to LDCs to enable them to create a sound and viable technological base. LDCs have raised concerns on the implementation of Article 66.2 since 1998. A study that analysed the reports submitted on the implementation Article 66.2 in the period of 1999 to 2002 found that the existing Article 66.2 language and reporting mechanism does not provide enough data to identify the extent to which developed country incentives are actually working to promote technology transfer. See Moon S., Does TRIPS Art. 66.2 Encourage Technology Transfer to LDCs? An Analysis of Country Submissions to the TRIPS Council (1999-2007), ICTSD, Policy Brief Number 2, December 2008.
[124] WTO (2011), Proposed Format for Reports submitted by the Developed Country Members under Article 66.2, Submission by the LDC Group, WTO document IP/C/W/561, 6 October 2011.

IV.3.1 Proposals in WIPO

African countries have taken common positions on the following issues in WIPO:

- Proposal in the Standing Committee on the Law of Patents (SCP) for a work programme on patents and public health
- On the WIPO Marrakesh treaty
- On limitations and exceptions in the Standing Committee on Copyright and Related Rights (SCCR) work program
- On the work plan for the intergovernmental Committee on Genetic Resources, Traditional Knowledge and Folklore (IGC)
- In the process of establishing a Development Agenda (including proposals or co-sponsored proposals by the African Group and the participation of individual African countries in the Development Agenda group) and in recent critical processes in the WIPO Committee on Development and Intellectual Property (CDIP), i.e. on the review of Technical Assistance and the external evaluation of the Development Agenda.
- On appellations of origin / geographical indications

The objective of the various proposals submitted, co-sponsored or supported by the Africa Group in WIPO has been focused essentially on making norm-setting discussions in WIPO as well as WIPO's technical and legislative assistance and capacity building activities in the area of IP development oriented. Five African countries (Egypt, Kenya, Sierra Leone, South Africa and Tanzania) were part of a cross-regional group of developing countries called the "Group of Friends of Development" that submitted a proposal in WIPO for the adoption of a development agenda in order to integrate the development dimension into all activities of WIPO in the area of IP norm-setting, transfer of technology, enforcement, and technical cooperation and assistance. In 2005 the African Group submitted "The African Proposal for the Establishment of a Development Agenda for the World Intellectual Property Organization (WIPO)"[125] which supported the proposal by the Group of Friends of Development stating that the proposal reflected the concerns and interests of African countries. More specifically, the African Group proposal stated that WIPO should devote more resources to African countries to further development of infrastructure and other facilities to enable them to make maximum use of IP as a tool for national economic development. It also called upon WIPO to work with organizations such as UNCTAD and UNIDO to develop and maintain a list of essential technologies, know-how, processes and methods that are necessary to meet the basic development needs of African countries in areas such as environment, health, education and food security. It also called upon WIPO to select, monitor and facilitate the transfer and diffusion of essential technologies to African countries, as well as focus on the informal sector and SMEs in Africa. WIPO was also called upon to examine the TRIPS flexibilities in order to give practical advice to developing countries and LDCs on how to effectively use the flexibilities. The African Group also called for the adoption of an internationally binding instrument on the protection of genetic resources, traditional knowledge and folklore. It also proposed the establishment of a mechanism to facilitate access to knowledge and technology to developing countries and LDCs, an independent development impact assessment of technical assistance, technology transfer and impact of new treaties. Some of these proposals

[125] WIPO (2005), Proposal by Morocco on Behalf of the African Group Entitled "The African Group Proposal for the Establishment of a Development Agenda for WIPO", Inter-Sessional Intergovernmental Meeting on a Development Agenda for WIPO, IIM/3/2, http://www.wipo.int/edocs/mdocs/mdocs/en/iim_3/iim_3_2.pdf.

by the African Group are reflected in the final 45 Development Agenda Recommendations that was adopted by the WIPO General Assembly.

African countries have also engaged in discussions in the WIPO Committee on Development and Intellectual Property (CDIP) on implementation of the Development Agenda recommendations. The African Group has made specific proposals in the CDIP for improvement of WIPO's technical assistance to ensure that they are development-oriented.[126]

In furtherance of the objective of addressing the development concerns of African countries in relation to IP, the African Group has engaged constructively in the WIPO Standing Committee on the Law of Patents (SCP) to advance proposals for developing a balanced work programme that addresses the relationship of patents with development issues such as health, food security, technology transfer, etc. In particular, the African Group has submitted a proposal on patents and health in the SCP that proposes a work programme to assist countries to adapt their patent laws and make full use of patent flexibilities in accordance with public health needs.[127] In the area of copyright, the African Group has called for development of international norms on copyright exceptions and limitations to facilitate effective access to copyright protected works for the visually impaired and other disabled persons, libraries and archives, as well as educational and research institutions.[128] Discussions in the WIPO Standing Committee on Copyright and Related Rights (SCCR) has led to the successful adoption of the 2013 Marrakesh Treaty to Facilitate Access to Published Works for Persons Who are Blind, Visually Impaired or Otherwise Print Disabled. The African Group continues to demand for internationally binding instruments on copyright exceptions and limitations for libraries and archives, as well as for educational and research institutions and for persons with other disabilities.

A major demand for the African countries in WIPO has been the development of a treaty for the protection of genetic resources, traditional knowledge and traditional cultural expressions. African countries have been engaged in text-based negotiations on these issues in the WIPO Intergovernmental Committee on Genetic Resources, Traditional Knowledge and Folklore advanced various proposals on the same. The African Group has also proposed the introduction of a mandatory disclosure requirement for any industrial design inspired by any traditional cultural expression in negotiations for a Design Law Treaty in the WIPO Standing Committee on Trademarks, Industrial Designs and Geographical Indications (SCT).

From the various proposals initiated or supported by African countries in the WTO and WIPO, it is evident that African countries have identified the implications of IP for development as of utmost concern for their economic and social development. In this regard, at the multilateral level the African countries have sought to essentially retain the policy space available to them under the TRIPS Agreement either as developing countries or LDCs, and improve upon the limitations of the TRIPS Agreement through specific proposals (e.g., on

[126] WIPO (2012), Joint Proposal by the Development Agenda Group and the Africa Group on WIPO's Technical Assistance in the Area of Cooperation for Development, Committee on Development and Intellectual Property, Ninth Session, 8 May 2012, CDIP/9/16, http://www.wipo.int/edocs/mdocs/mdocs/en/cdip_9/cdip_9_16.pdf.
[127] WIPO (2011), Joint Proposal by the African Group and the Development Agenda Group SCP Work Program on Patents and Health, Standing Committee on the Law of Patents, Sixteenth Session, 18 May 2011, SCP/16/7, http://www.wipo.int/edocs/mdocs/scp/en/scp_16/scp_16_7.pdf.
[128] WIPO (2011), Draft WIPO Treaty on Exceptions and Limitations for the Persons with Disabilities, Educational and Research Institutions: Proposal by the African Group, Standing Committee on Copyright and Related Rights, Twenty-Second Session, 3 June 2011, SCCR/22/12, http://www.wipo.int/edocs/mdocs/copyright/en/sccr_22/sccr_22_12.pdf.

protection of traditional knowledge, mandatory disclosure of source or country of origin of genetic resources or associated traditional knowledge used in patent applications, extension of the transition period, improving reporting on transfer of technology by developed countries). Similarly, in WIPO African countries have been focused on seeking multilateral solutions to ensure efficient utilization of flexibilities in t the field of patents in relation to specific development challenges, multilaterally expand the regime for copyright exceptions and limitations to serve development needs, and improve and ensure the development-orientation of technical assistance and capacity building support provided by WIPO to developing countries.

It will be important to see in this context whether policy initiatives relating to IP at the national and regional levels address the concerns correctly raised by African countries at the multilateral level relating to the development implications of IP.

V. INTELLECTUAL PROPERTY IN THE CONTEXT OF REGIONAL INTEGRATION IN AFRICA: CONSIDERATIONS AND STRATEGIES

V.1 Intellectual Property and Regional Integration in Africa

Given the current level of industrial and technological development of the African countries, it is crucial that African countries ensure that their IP laws and policies are designed for the purpose of facilitating transfer and dissemination of technology for the development of local industries. IP laws that are suitable for African countries should also not constrain their ability to tackle development challenges in areas such as public health and agriculture. In order to fulfil this objective, African countries need to utilize the policy space available to them in accordance with their obligations under the TRIPS Agreement and applicable WIPO treaties.

African RECs should provide guidance and support to their member States in designing nationally appropriate IP policies and establish robust national IP offices. In relation to IP, African countries and RECs must consider that a large number of African countries have either not committed to the TRIPS Agreement or are exempted from implementing TRIPS as LDCs. Two African countries – Eritrea and Ethiopia – are also not bound by the Paris Convention on the Protection of Industrial Property. Therefore, significant policy space is available for a large number of African countries in designing their IP policies. However, while many African countries are not constrained by the provisions of the TRIPS Agreement, they have constrained their policy space through membership of regional IP organizations –ARIPO and OAPI.

V.1.1 African RECs Approach to IP

Eight RECs are considered to be the building blocks of the African Economic Community – the Arab Maghreb Union (AMU), the Community of Sahel Saharan States (CEN-SAD), the Common Market for Eastern and Southern Africa (COMESA), the East African Community (EAC), the Economic Community of Central African States (ECCAS), the Economic Community of West African States (ECOWAS), the Intergovernmental Authority on

Development (IGAD) and the Southern African Development Community (SADC).[129] The RECs are at varied stages of regional integration. Among these AMU, CEN-SAD and IGAD are still in the stage of pre-FTA cooperation among their respective member States, ECOWAS, ECCAS and SADC have established FTAs, COMESA has launched a Customs Union in 2009 and the EAC has launched its Common Market in 2010. [130] Since regional cooperation on IP is addressed within the framework of enhanced levels of regional integration, this paper limits its focus on the approach to IP by ECOWAS, ECCAS, SADC, COMESA and EAC.

- East African Community

Article 5(3)(k) of the EAC Common Market Protocol expresses the agreement of EAC Partner States to cooperate in the promotion and protection of IPRs. At the same time the Common Market Protocol also calls for promotion of research and technological development within EAC, promoting industrial development, as well as coordinating and harmonizing social policies.[131] Specifically on cooperation on IP, Article 43 of the Protocol states that the purpose of cooperation in the field of IP is to promote and protect creativity and innovation for economic, social, technological and cultural development within EAC and enhance the protection of IPRs.[132] To that end, cooperation is envisaged in all areas of IP[133] through measures to prevent infringement, misuse and abuse of IPRs, promoting public awareness of IPRs, increasing dissemination and use of patent documentation as a source of technological information, and putting in place IP policies to promote creativity, innovation and development of intellectual capital.[134] Partner States are also required to establish mechanisms for legal protection of traditional knowledge, traditional cultural expressions, genetic resources and national heritage; protection and promotion of cultural industries; use of protected works for the benefit of communities in the Partner States; and cooperation in the field of public health, food security, research and technological development.[135]

The EAC has adopted contradictory approaches in implementing the provisions of the Protocol in relation to IP. On the one hand, EAC Partner States and the EAC Secretariat launched an initiative to harmonize policies, regulations and legislations of Partner States on IP for facilitating regional manufacturing, importation and / or trade in essential medicines. In this process, the EAC Secretariat developed the EAC Regional Intellectual Property Policy on the Utilisation of Public Health-Related WTO-TRIP Flexibilities and the Approximation of National Intellectual Property Legislation and the EAC Health Protocol on Public Health Related WTO-TRIPS Flexibilities, which were adopted by EAC Health Ministers in 2011. On the other hand, the EAC Secretariat has also adopted a Policy on Anti-Counterfeiting, Anti-Piracy and Other Intellectual Property Rights Violations and has also proposed an EAC Anti-Counterfeiting law, which significantly undermines the regional policy and protocol on utilizing the TRIPS flexibilities related to public health as well as various other EAC initiatives aimed at promoting local production of generic medicines in the EAC. While the development of the regional IP policy on the utilization of the public-health related TRIPS

[129] UNECA, *African Union (AU) and Regional Economic Communities (RECs) in Africa*, http://www.uneca.org/oria/pages/african-union-au-regional-economic-communities-recs-africa.
[130] African Union Commission (2013), *Status of Integration in Africa (SIA IV)*, p. 20, http://www.au.int/en/sites/default/files/SIA%202013(latest)_En.pdf.
[131] EAC, Protocol on the Establishment of the East African Community Common Market. Article 5.
[132] Ibid, Article 43(1).
[133] Ibid, Article 43(2).
[134] Ibid, Article 43(3).
[135] Ibid, Article 43(4).

flexibilities for development of the local pharmaceutical industry is a very positive example of how RECs can provide guidance to their member States in designing development-oriented IP policies, the pursuit of a contradictory policy and legislative initiative on anti-counterfeiting by the EAC Secretariat also points to an urgent need for greater policy coherence within RECs.[136]

- Common Market for Eastern and Southern Africa

The COMESA has also adopted a regional policy on intellectual property rights.[137] The COMESA IP policy recognizes that COMESA member States are net importers of IP developed and created by firms from developed countries (i.e. IP in COMESA countries are predominantly owned by foreigners) and that IP bases of local firms in COMESA are still in infancy and underdeveloped. However, the COMESA IP policy goes on to identify the creation and ownership of IP as an end in itself rather than viewing IP as an instrument to be used to promote innovation and technology diffusion among local firms to facilitate industrial development and access to knowledge products to respond to public needs. This is in spite of the fact that the COMESA clearly recognized the need for COMESA to develop mechanisms for harnessing relevant available technical knowledge worldwide by developing the technical capacity to know and absorb the knowledge and apply it in dealing with challenges that face the region in key priority areas. [138]

The COMESA IP policy wrongly regards the objective of IP as the statutory expression of the moral (natural) right of creators on their creations and the rights of the public in accessing those creations. It thus regards IP as an end in itself. It asserts that IP can transform the economic landscape of COMESA as it has assisted rapid socio-economic development of some countries and stresses on creation, protection and enforcement of IP as well as mainstreaming of IP into industrial, technological, economic, social and cultural policies. This assumption about IP is fundamentally wrong as demonstrated by the historical evidence of how industrial and technological development in the developed countries have been facilitated in the absence of IP protection for foreigners. It further asserts that removal of restrictions on foreign investments by developing countries has created opportunities for manufacturing patented products in those countries under license or joint ventures, if the IP of the technology owning foreign firm is adequately protected and enforced. However, this ignores that under the TRIPS Agreement there is no obligation on a patent holder to manufacture the patented product locally, it can be sufficient to put the product on the market by importing it. Firms can deny licensing the technology for various motivations, including the prevention of capacity building of potential technology rivals in the long run. The COMESA IP policy only makes superficial references to the need for member States to use the flexibilities under TRIPS without providing any guidance on how the flexibilities can be utilized in respect of each sector of the economies of member States of COMESA.

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[136] Christoph Spennemann (2015), ACTA, East African Enforcement Legislation and Generic Medicines: A Comparison, in Pedro Roffe and Xavier Seuba (eds.), THE ACTA PLURILATERAL AND THE ENFORCEMENT AGENDA: GENESIS AND AFTERMATH (Cambridge University Press, New York), pp. 244-58 at p. 257.

[137] COMESA Policy on Intellectual Property Rights, http://www.ip-watch.org/weblog/wp-content/uploads/2013/05/Comesa-IP-policy-May-2013.pdf.

[138] Decisions of the 2010 COMESA Summit on Science and Technology for Development, http://belfercenter.ksg.harvard.edu/files/Juma-appendix-ii-rev.pdf.

- Southern African Development Community

Article 24 of the SADC Protocol on Trade requires SADC member States to adopt policies and implement measures within the Community for the protection of Intellectual Property Rights, in accordance with the TRIPS Agreement.[139] In furtherance of the objective of the SADC Protocol on Trade to enhance economic development, diversification and industrialization of the region,[140] and the differences in the levels of economic development of SADC member States,[141] **the SADC member States should design and implement their national IP regimes with a view to making maximum utilization of the TRIPS flexibilities to support the development of local industries**. In 2003 SADC adopted the Regional Indicative Strategic Development Plan (RISDP) which recognized that most of the challenges facing regional integration such as food security, energy, water, transport, communications infrastructure and human resources development will require scientific and technological solutions.[142] Accordingly, the RISDP seeks to establish dedicated regional science and technology policies and strategies to facilitate transfer and diffusion of technology. However, the RISDP also seeks to harmonize IP legislations in all of its member countries on the assumption that harmonization of IP protection will facilitate the realization of this objective. In accordance with the RISDP, in 2008 SADC adopted the Protocol on Science, Technology and Innovation aimed at enhancing and strengthening the protection of IP. [143]This approach based on regional harmonization of IP protection and enforcement standards disregards the fact that **9 out of the 15 SADC member States are LDCs who are exempted currently from implementing the provisions of the TRIPS Agreement because the WTO member States clearly recognize that the LDCs do not have a sound and viable technological base to benefit from implementing TRIPS.**

- COMESA-EAC-SADC Tripartite Free Trade Area

In June 2015 COMESA, EAC and SADC launched the COMESA-EAC-SADC Tripartite Free Trade Area and has directed that negotiations be undertaken on a range of subjects including IPRs.[144]Though the provisions of the Tripartite FTA in relation to IP are still to be negotiated, the draft texts that have been proposed suggest an approach based on mainstreaming IP considerations across development policies and harmonizing IP protection.[145]The draft COMESA-EAC-SADC IP policy is very similar to the COMESA IP policy[146] and is based on the wrong assumption that strong protection and enforcement of IP is a necessary condition to facilitate transfer and dissemination of technology to local

[139] Protocol on Trade in the Southern African Development Community (SADC) Region, Article 24, http://www.sadc.int/files/4613/5292/8370/Protocol_on_Trade1996.pdf.
[140] Ibid, Article 2.
[141] Ibid, Preamble.
[142] SADC (2003), Regional Indicative Strategic Development Plan, p. 59, http://www.sadc.int/files/5713/5292/8372/Regional_Indicative_Strategic_Development_Plan.pdf.
[143] SADC Protocol on Science, Technology and Innovation, Article 2, http://www.sadc.int/files/4613/5292/8370/Protocol_on_Trade1996.pdf.
[144] Communiqué of the Third COMESA-EAC-SADC Tripartite Summit, 10 June 2015, Sharm El Sheikh, Egypt, http://www.sadc.int/files/5914/3401/0196/Communiqu_of_the_3rd_COMESA_EAC_SADC_Tripartite_Summit.pdf.
[145] Draft Agreement Establishing the COMESA, EAC and SADC Tripartite Free Trade Area, Annex 9, Article 1 (b) and (c), http://www.tralac.org/images/Resources/Tripartite_FTA/TFTA%20Annex%2009%20IPR%20Revised%20Dec%202010.pdf.
[146] See Annex on the Tripartite Policy on Intellectual Property Rights, http://www.tralac.org/wp-content/blogs.dir/12/files/2011/uploads/Annex_10_a_IPR_policy_2009.pdf.

industries in the COMESA-EAC-SADC regions through voluntary licensing of technologies or joint venture projects.

- Economic Community of West African States

ECOWAS member States are required to strengthen their national science and technology capabilities and ensure the proper application of science and technology to the development of agriculture, industry, health and hygiene, energy, education, etc. and to that end cooperate in the development, acquisition and dissemination of appropriate technologies. ECOWAS member States are therefore required to harmonize their national technology development plans by placing *special emphasis on indigenous and adapted technologies as well as their regulations on industrial property and transfer of technology*.[147] The Revised ECOWAS Treaty therefore requires ECOWAS member States to design their IP laws and policies in a manner that will strengthen the technological capacity of local industries through transfer and acquisition of appropriate technologies. As 10 out of 15 ECOWAS member States are LDCs, they are currently exempted from implementing the TRIPS Agreement. However, most of the ECOWAS member States, including the LDCs, are members of regional IP regimes like ARIPO or OAPI and have therefore subscribed to higher standards of IP protection than they are required to under TRIPS. Sectoral institutions in ECOWAS should therefore provide guidance to their member States regarding how to use fully the flexibilities available under the TRIPS Agreement, including through reforms to the regional IP regimes like ARIPO and OAPI, in order to ensure that national IP regimes are development-oriented and appropriate to the objective of facilitating transfer and dissemination of technology for building the science and technology capacity of member States of ECOWAS. In fact, the health agency of ECOWAS, the West African Health Organization (WAHO), has made significant recommendations on how ECOWAS member States can make full utilization of the TRIPS flexibilities to ensure access to medicines.[148] Among others, the WAHO has recommended that ECOWAS should establish an IP Unit to oversee utilization of the TRIPS flexibilities in the region.

However, ECOWAS member States are being assisted by the Commercial Law Development Program Office of the General Counsel of the US Department of Commerce to develop a regional IP policy framework and guidelines.[149] The CLDP has facilitated the establishment of inter-agency task forces on IP matters in Ghana, Nigeria and Liberia with the objective of strengthening and harmonizing standards and procedures for IP protection and enforcement.[150] It will be important for ECOWAS and its member States to ensure that the development of national IP policies are not so designed that IPRs strengthen the technological dominance of firms from developed countries and exacerbate technological dependence of local industries from the region, contrary to the objectives of the ECOWAS Treaty.

[147] Economic Community of West African States, Revised Treaty, Article 27.
[148] ECOWAS (2012), Development of a harmonised TRIPS Policy for Adoption by ECOWAS Member States that Employ TRIPS Flexibilities to Improve Access to Medicines in the Region, West African Health Organization, Technical Document, 31 October 2012.
[149] United States Department of Commerce, Commercial Law Development Program, CLDP Results in Sub-Saharan Africa, http://cldp.doc.gov/about-cldp/results/cldp-results-sub-saharan-africa.
[150] Ibid.

- Economic Community of Central African States

ECCAS also mandates its member States to develop an adequate science and technology base and ensure proper application of science and technology to development by placing emphasis on development of local technologies, transfer of foreign technologies and regulations on industrial property.[151] Although the ECCAS Treaty of 1983 provided for the establishment of a free trade area after 8 years, ECCAS member States adopted an action plan for a regional FTA only in 2004. The ECCAS FTA is not yet in effect. However, any development with regard to the regional FTA will have to harmonize its standards with the Economic and Monetary Community of Central African States (CEMAC) which is comprised of 6 of the 11 member States of ECCAS. ECCAS has not yet addressed the issue of IP and its development implications.

V.1.2 TRIPS Plus FTAs and BITs in Africa

In addition to the TRIPS Agreement, the policy space for African nations in relation to IP and development concerns are also impacted by the IP provisions in economic partnership agreements (EPA), bilateral investment treaties (BITS), as well as regional IP frameworks and other regional integration initiatives. Free trade agreements and bilateral investment treaties that various African countries are negotiating or are parties to may contain provisions that could significantly curtail the policy space that is necessary for these countries to make maximum use of the flexibilities available under the TRIPS Agreement.

Many African regions are negotiating economic partnership agreements (EPA) with the European Union, while some other African countries have also joined association agreements or trade cooperation agreements with the EU. Some African countries have also joined FTAs with the EFTA. Many African countries have also entered into BITS with the US. As of 2013, 793 BITs have been concluded by African countries representing 27 per cent of the total number BITs worldwide. All of these agreements have provisions relating to IP.

Five RECs in Africa are negotiating EPAs with the European Union. These are West Africa, Central Africa, Eastern and Southern Africa (ESA), the EAC, and the SADC. An interim agreement has been concluded with ESA, Central Africa and SADC. All of these EPAs contain clear references to protection and enforcement of IP and specifically refer to IP as a subject of further discussions in the rendezvous clause. African countries that are parties in these EPA negotiations must be cautious about the possibility of EU demanding the adoption of standards of IP protection and enforcement that are above the requirements of the TRIPS Agreement and can significantly diminish the scope of TRIPS flexibilities for these countries.[152] For instance, the Egypt-EU Partnership Agreement which entered into force in 2004 requires Egypt to join a number of international IP Conventions including the PCT and the 1991 Act of the UPOV Convention. The Algeria-EU Association Agreement requires Algeria to implement the WIPO Internet Treaties which has a negative impact on access to knowledge.

Similarly, African countries that are parties in the EPA could be required to accede to international IP agreements that may not be of benefit to their development interests and can

[151] Treaty Establishing the Economic Community of Central African States, Article 52.
[152] South Centre (2007), *Development and Intellectual Property under EPA Negotiations*, Policy Brief No.7, March 2007, http://www.southcentre.int/wp-content/uploads/2013/06/PB6_Development-IP-under-EPA-Negotiations_EN.pdf.

curtail the policy space for developing an IP policy that complements the development policies of these countries. In a number of bilateral investment treaties and in free trade agreements concluded by African countries with the US and EFTA, intellectual property rights are included within the definition of investments protected by such agreements. This could significantly curtail the ability of these governments to use TRIPS flexibilities to address public policy needs in areas such as public health.

V.1.3 Continental Free Trade Area Negotiations

The 2012 Assembly of Heads of State and Government of the African Union had adopted a decision to establish a Continental Free Trade Area (CFTA) by an indicative date in 2017. Negotiations for CFTA were launched at the 26th ordinary session of the Assembly of Heads of State and Government of the African Union in June 2015.[153] The CFTA is expected to promote incremental regional integration, based on the following indicative milestones – finalization of the EAC-SADC-COMESA Tripartite FTA, conclusion of similar cross regional FTAs by other RECs by 2014, consolidation of all regional FTAs into a CFTA between 2015 and 2016, and conclusion of CFTA by 2017.[154]

Within the framework of the Abuja Treaty establishing the African Economic Community, the objective of CFTA negotiations would be to achieve comprehensive and mutually beneficial trade agreement among members of the African Union. CFTA would accordingly aim to harmonize and coordinate trade liberalization and trade facilitation regimes and instruments across RECs and African countries, in order to boost intra-African trade[155] by creating a single continental market for goods and services and accelerate the establishment of a Continental Customs Union. Enhancing competitiveness of African industries is a fundamental objective of CFTA. The draft objective of CFTA adopted by the Continental Task Force on CFTA states that the CFTA shall also cover intellectual property rights.[156] However, apart from this general reference to IP, there is no reference to how CFTA should address IP in the context of its stated objectives.

Nevertheless, from the provisions pertaining to IP in the EAC-SADC-COMESA Tripartite FTA which is considered to be a reference point for enhanced integration leading to CFTA, it may be assumed that there is a possibility that the provisions on IP in CFTA could mirror the provisions on IP in the Tripartite FTA and similar provisions in other RECs. It can also be assumed that CFTA could consider the establishment of PAIPO with regard to enhanced IP protection and harmonization in Africa. It is observed that an early harvest with respect to IP under CFTA may be possible.[157]

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[153]Declaration on the Launch of the Negotiations for the Establishment of the Continental Free Trade Area (CFTA), Doc.Assembly/AU/11 (XXV), http://www.tralac.org/images/Resources/Continental_FTA/Declaration_on_the_Launch_of_the_Negotiations_for_the_Establishment_of_the_CFTA_June_2015.pdf.

[154] African union, Update on the Continental Free Trade Area, p. 2, http://www.tralac.org/images/docs/5869/update-on-the-continental-free-trade.pdf.

[155] African Union, Draft Framework, Roadmap and Architecture for Fasttracking the Continental Free Trade Area (CFTA), p. 15, http://www.tralac.org/images/Resources/Continental_FTA/Draft_framework_for_the_CFTA.pdf.

[156]African union (2013), Draft Objectives and Guiding Principles for Negotiating the Continental Free Trade Area (CFTA), p. 2, http://www.tralac.org/images/Resources/Continental_FTA/Draft%20Objectives%20and%20Guiding%20Principles%20for%20Negotiating%20the%20CFTA%202013.pdf.

[157]David Luke and Simon Mevel (2015), "The Option of a Framework Agreement in the Continental Free Trade Area (CFTA)", A Non-Paper, African Trade Policy Centre (ATPC), Economic Commission for Africa, p. 5,

As the analysis in this paper suggests, however, enhanced protection and harmonization of IP regimes in Africa will significantly undermine the efforts of African countries and RECs to boost productive capacity through technological learning and facilitate the development of competitive manufacturing industries and also ensure access to innovative products for resolving development challenges relating to public health, food security, etc. Therefore, it is very crucial to ensure that the CFTA preserves and enhances the policy space that is available to African countries under multilateral agreements like TRIPS. In particular, CFTA should provide clear exemption to African LDCs from implementing enhanced IP protection as that would only benefit foreign technology owners rather than local firms.

V.2 Curtailment of IP Policy Space by Regional IP Organizations

The model of regional cooperation on intellectual property matters that is most prevalent in Africa is that IP regimes are shaped by regional intellectual property organizations which are established as independent organizations with no linkage to regional economic and development organizations. Most African countries are members of either of 2 regional IP frameworks – the African Regional Intellectual Property Office (ARIPO) and the *Organisation Africaine de la Propriété Intellectuelle* (OAPI).

The policy rationale for a regional IP office is to share resources to reduce costs of administering IP offices and to standardize some aspects of IP law among countries party to the regional IP office. However, it also means that countries give up their power to decide on IP matters themselves to a larger body. If the regional IP office has sufficient expertise and capacity and an adequate development perspective in its operation (e.g. provides rigorous examination of patents) it may serve the intended purpose. However, there are significant implications and risks of establishing regional organizations, as opposed to the alternative of strengthening national IP offices, and increasing cooperation among national IP offices. One of the implications is that if the regional IP office does not apply rigorous criteria in its examination, the risk of low quality patents being granted is high. The majority of the patent applications that are granted in countries that are part of ARIPO and OAPI are examined and decided by the regional IP offices. This means, for example, that if a patent is wrongly granted by one of these regional offices, it becomes very difficult for these countries to invalidate the patent. Moreover, given the lead role of the regional IP office, national IP offices are likely to be under-resourced and under-staffed.

Regional IP organizations are also unlikely to offer a viable forum for developing local expertise on the use of TRIPS flexibilities for public health and related purposes. The main reason for this is the tendency of these types of organizations towards harmonization as opposed to coordination. OAPI, which constitutes a single regional patent system, for example, harmonized the rules on compulsory licensing by requiring that no compulsory licence can be issued before the expiry of three years from the date the patent was issued or four years from the date of application. The Bangui Agreement establishing OAPI also provides that compulsory licences do not extend to acts of importation which defeats the whole purpose, for example, of paragraph six negotiations. This goes beyond the requirements of TRIPS and therefore has the effect of limiting the powers of the Member States to use compulsory licensing. Another problem with this model of independent intellectual property or patent organizations is that they tend to operate outside the broad policy framework on

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http://www.uneca.org/sites/default/files/PublicationFiles/cfta_framework_agreement_non-paper-rev1_en.pdf.

research, technology development and innovation that should inform intellectual property policy formulation[158].

There is very little policy supervision by economic development bodies in the region with the result that very little expertise on the use of TRIPS flexibilities for public health purposes has so far been developed in these organizations. Finally, the mandates of these organizations are mostly limited to matters of patent grants and examination or registration and do not include issues relating to the exercise of patent rights. This will limit the extent to which the organizations can help member States in the use of TRIPS flexibilities for public health[159].

V.2.1 African Regional Intellectual Property Organization

The African Regional Intellectual Property Organization (ARIPO) is a regional intellectual property organization that caters to 19 predominantly English speaking African countries (Botswana, the Gambia, Ghana, Kenya, Lesotho, Malawi, Mozambique, Namibia, Sierra Leone, Liberia, Rwanda, Sao Tome and Principe, Somalia, Sudan, Swaziland, Tanzania, Uganda, Zambia and Zimbabwe). ARIPO was established by the Lusaka Agreement in 1976 and is based in Harare, Zimbabwe.[160] Of the 19 countries, Liberia, São Tomé and Príncipe, Somalia, Sudan are LDCs but not WTO members and thus are under no obligation to implement any aspect of the TRIPS Agreement. Further 9 countries (Gambia, Lesotho, Malawi, Mozambique, Sierra Leone, Rwanda, Tanzania, Uganda and Zambia) are WTO Members but fall within the LDC category and thus are exempted from TRIPS implementation except for Articles 3, 4 and 5 of the Agreement so long as the LDC transition period remains in force.[161]

The ARIPO member States adopted the Protocol on Patents and Industrial Designs within the Framework of the African Regional Intellectual Property Organization[162] (commonly known as the Harare Protocol) in 1982. The Harare Protocol empowers ARIPO to grant patents and register utility models and industrial designs in the Contracting States of the Harare Protocol. All ARIPO member States except Somalia is a Contracting Party to the Harare Protocol. ARIPO is also empowered to register and administer marks for 9 Contracting Parties under the Banjul Protocol on Marks, 1995.[163] In 2010 ARIPO member States adopted the Swakopmund Protocol on the Protection of Traditional Knowledge and Expressions of Folklore within the Framework of the African Regional Intellectual Property Organization.[164] ARIPO member States are also considering a draft ARIPO Legal Framework

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[158] Musungu, S.F., Villanueva, S. and Blasetti, R. (2004) "Utilizing TRIPS Flexibilities for Public Health Protection through South–South Regional Frameworks," Geneva: The South Centre.

[159] Ibid.

[160] Lusaka Agreement: http://www.aripo.org/index.php/resources/laws-and-protocols/finish/13-laws-protocols/50-the-lusaka-agreement-on-the-creation-of-the-organization.

[161] Sangeeta Shashikant (2014)**.** The African Regional Intellectual Property Organization (ARIPO) Protocol on Patents: Implications for Access to Medicines, Research Paper 56, Geneva: South Centre. Available at: http://www.southcentre.int/wp-content/uploads/2014/11/RP56_The-ARIPO-Protocol-on-Patents_ENl.pdf.

[162] ARIPO, Harare Protocol, http://www.aripo.org/index.php/resources/laws-and-protocols/finish/13-laws-protocols/51-the-harare-protocol-on-patents-utility-models-designs.

[163]ARIPO, Banjul Protocol, http://www.aripo.org/index.php/resources/laws-and-protocols/finish/13-laws-protocols/52-the-banjul-protocol-on-marks.

[164] ARIPO, Swakopmund Protocol, http://www.aripo.org/index.php/resources/laws-and-protocols/finish/13-laws-protocols/53-swakopmund-protocol-on-the-protection-of-traditional-knowledge-and-expressions-of-folklore.

for the Protection of New Varieties of Plants which seeks to empower ARIPO to grant and administer breeder's rights.[165]

Under the Harare Protocol, ARIPO is empowered to grant patents on behalf of the contracting states. Applications to ARIPO have to designate the contracting states in which a patent is sought. The ARIPO system operates on an opt-out basis. If ARIPO decides to grant the patent then it will take effect in the designated states unless, using the procedures of the Harare Protocol, a contracting state notifies ARIPO that the patent cannot take effect under its national law.[166]

An applicant for the grant of an ARIPO patent can by filing only one application designate any of the Contracting Parties in which the applicant wishes to protect his/her invention. On receipt of the patent application the ARIPO office assesses compliance with the formal and physical requirements under the Regulations and the Administrative Instructions. If the application is compliant, a notification of the compliance of the application with the prescribed formal requirements is made to the IP offices and to the applicant. Once it is determined that the formal requirements have been met, Section 3(3) of the Harare Protocol states that the ARIPO Office "shall undertake, or arrange for, the substantive examination of the patent application" to determine whether a patent should be granted.[167]

Examination capacity at the ARIPO office is very limited. The Kenyan Industrial Property Institute (KIPI) has 12 examiners actively involved in examination of patent applications and 4 examiners on other assignments. In comparison, ARIPO which manages patent applications for its 18 Contracting Parties, has only 6 patent examiners. Often the ARIPO Office arranges for the patent applications to be examined by foreign patent offices such as the European Patent Office and the IP offices of Korea and Mexico. In determining whether to grant a patent, the ARIPO Office relies heavily on the results of the PCT or foreign search and examination reports and on the European Patent Office (EPO) guidelines. According to ARIPO officials, the ARIPO Office is in the process of finalizing its own guidelines for the examination of patent applications.[168]

Due to its limited examination capacity ARIPO has to rely upon the reports generated by the PCT system. Its growth and competency is dependent upon its liability to capture resources from the wealthy players in the system such as WIPO or the EPO. In 2007 it signed a cooperation agreement with China's State Intellectual Property Office (SIPO). [169]

Where the ARIPO Office determines that the application is deserving of a patent, it notifies the applicant and each designated state. On receiving the notification, Contracting Parties designated in the application have six months to make a written communication to the ARIPO office objecting to the grant of the patent in its territory. If an objection is received from a Contracting State, the patent if granted will have no effect in its territory. If the notified states do not communicate their objection to the ARIPO office, the ARIPO office "shall grant the patent, which shall have effect in those designated States which have not

[165] Draft ARIPO Legal Framework for the Protection of new Varieties of Plants, http://www.aripo.org/index.php/resources/laws-and-protocols/finish/13-laws-protocols/77-draft-aripo-legal-framework-for-the-protection-of-new-varieties-of-plants.
[166] Peter Drahos (2010), THE GLOBAL GOVERNANCE OF KNOWLEDGE: PATENT OFFICES AND THEIR CLIENTS (Cambridge University Press, New York), p. 281.
[167] Sangeeta Shashikant (2014), *supra* note 156, p. 18.
[168] Ibid, p. 19.
[169] Peter Drahos (2010), *supra* note 161.

made the communication". Discussions with ARIPO officials, and some IP offices revealed that apart from Kenya, which occasionally communicates its objection, most other Contracting Parties either rarely or have never objected to the granting of the patent, on receiving a notification from ARIPO.[170]

According to ARIPO officials, it is not uncommon for the ARIPO office to grant pharmaceutical patents, which are in contravention with the national law as national IP offices often fail to communicate their written objection in a timely manner. Once granted, a patent is subject to provisions set out in the national patent law of each Contracting Party such as on compulsory licenses, forfeiture or use of the patented inventions in the public interest.[171]

A patent applicant also has the option of filing an application for a patent grant in specific countries rather than applying for a region wide ARIPO patent. However even these patent applications filed directly with the national IP office are usually assessed only for compliance with the formal requirements. Most IP offices do not conduct substantive examination of patent applications. According to an IP official, most training programmes for examiners do not build capacity in conducting of substantive examination from a development perspective. The majority of national IP offices rely on the ARIPO Office to conduct substantive examination of patent applications. Often even applications that are filed in specific individual countries are sent to the ARIPO Office for examination. As mentioned above, in turn the ARIPO Office relies on the search and examination report issued by the PCT system and the examination practises and services of foreign patent offices in particular the European Patent Office.[172]

V.2.2 Organisation Africaine de la Propriété Intellectuelle

The *Organisation Africaine de la Propriété Intellectuelle* (OAPI) is a regional IP office for 17 Francophone African countries (Benin, Burkina Faso, Cameroon, Central African Republic, Chad, Comoros, Congo, Cote d'Ivoire, Equatorial Guinea, Gabon, Guinea, Guinea Bissau, Mali, Mauritania, Niger, Senegal and Togo). OAPI replaces the African and Malagasy Intellectual Property Organization (better known during its existence under the acronym OAMPI for its French name, l'Office Africaine et Malgache de la Propriété Industrielle), which was established by the Libreville Agreement of September 13, 1962. It was established in 1977 under the Bangui Agreement Relating to the Creation of an African Intellectual Property Organization[173], Constituting a Revision of the Agreement Relating to the Creation of an African and Malagasy Office of Industrial Property.[174] The Bangui Agreement was revised in 1999 with the aim of complying with TRIPS, but in the process OAPI member States forfeited many of the legal options and safeguards that is available under TRIPS and

[170] Sangeeta Shashikant (2014), *supra* note 156, p. 19.
[171] The main reason given for the failure to object within the allocated time frame is the lack of capacity and resources in national IP or patent offices. National IP offices in the ARIPO region tend to deal with a range of IP matters. In addition to patents, national IP offices also administer trademarks, industrial designs, utility models and often, even matters concerning company and business registrations. In some IP offices (e.g. Tanzania, Zimbabwe) there is a small team of examiners (about 6-10 examiners) that rotate in dealing with trademarks, industrial designs, utility models and patents, though most of the focus is on trademark registration. This limited capacity may not exist in other national IP offices of ARIPO.
[172] Sangeeta Shashikant (2014), *supra* note 156, p. 20.
[173] Agreement Revising the Bangui Agreement of March 2, 1977, on the Creation of an African Intellectual Property Organization (Official translation):
http://www.wipo.int/edocs/lexdocs/treaties/en/oa002/trt_oa002_2.pdf.
[174] http://www.wipo.int/wipolex/en/other_treaties/text.jsp?file_id=181152.

committed standards of IP protection that went beyond the requirement of TRIPS.[175]Particularly for the twelve LDC members of OAPI, the entry into force of the revised Bangui Agreement in 2002 made them implement higher standards of IP protection[176] and this made the critical flexibility granted under Article 66 of the TRIPS Agreement of not having to implement TRIPS redundant in effect for LDCs that are member so of OAPI. Thus, OAPI member States surrendered the policy space in relation to IP that they had sought to preserve multilaterally during the negotiation of the TRIPS Agreement.

It is important to understand why the member States of OAPI agreed to standards of IP protection that went beyond their TRIPS obligations and was contrary to their development interests? The answer to this question can be instructive in the context of the current discourse on the role of IP with regard to regional integration in Africa and the desirability of a harmonized regional IP system.

The process of revision of the Bangui Agreement to bring the OAPI countries into compliance with the provisions of the TRIPS suffered substantially from the lack of inputs on the development concerns of the OAPI countries and the implications of IP for the same. Though it is true that OAPI countries wilfully consented to the terms of the revised Bangui Agreement, national IP offices of the OAPI countries that negotiated the agreement had very little technical expertise or resources to understand the development implications of TRIPS implementation, and this resulted in the negotiations being conducted in a policymaking vacuum at the national level. Consequently, OAPI countries relied heavily on technical assistance from WIPO, WTO, UPOV, the OAPI Secretariat and developed countries (most notably the French IP Office) and this resulted in the Bangui Agreement's revision being driven by the donors' objective of securing rapid and strong implementation of TRIPS. [177] According to Deere, "Through technical assistance, monitoring, public outreach, and diplomatic channels, progress on IP protection was presented by developed countries and key international organizations as a central component of the domestic reforms francophone African countries needed to advance in order to secure broader political rewards. Among anticipated benefits were foreign aid, trade and investment …."[178] It is pertinent to note that much of the current debate on regional harmonization of IP protection in Africa is also based on the anticipated benefits in the form of trade, investment, and technology licensing.

As in the case of the Harare Protocol, the Bangui Agreement is integrated with PCT procedures[179] that facilitates easy filing of patent applications by foreigners (predominantly firms from developed countries) that are then examined by OAPI. Grant of a patent by OAPI takes the effect of a national patent in all OAPI member States without involving any further process at the national level.

The establishment of OAPI as the overall IP Office for all of its member States preceded the adoption of the Bangui Agreement. While the ceding of IP administration and management to OAPI substantially undermined IP institutional capacity and policymaking expertise at the national level, the revised Bangui Agreement itself contained a number of

[175] Carolyn Deere (2009), THE IMPLEMENTATION GAME: THE TRIPS AGREEMENT AND THE GLOBAL POLITICS OF INTELLECTUAL PROPERTY REFORM IN DEVELOPING COINTRIES (Oxford University Press, Oxford and New York), p. 240.
[176] Ibid.
[177] Ibid, pp. 241-242.
[178] Ibid, p. 242.
[179] Peter Drahos (2010), *supra* note 161, p. 282.

provisions that significantly undermined the TRIPS flexibilities available to developing countries and LDCs. First, the Bangui Agreement advanced the date of TRIPS implementation for LDCs from OAPI to 2002 and denied them from using the transition period granted to LDCs under Article 66 of the TRIPS Agreement and subsequent extensions of this period granted by the TRIPS Council, including extensions for pharmaceutical products. Second, while TRIPS allowed countries to choose their own regime for exhaustion of patent rights and thus WTO members could establish an international regime for exhaustion (i.e. a patent right is exhausted when the patented product is put in any market in the world) under the Bangui Agreement member States could only have a regime of regional exhaustion. Third, the Bangui Agreement provided strong general protection for confidential data and restricted the flexibility available under Article 39 of TRIPS to decide how to protect test data against unfair commercial use and disclosure. Fourth, the Bangui Agreement provided for an extended term of copyright protection (lifetime of the author plus 70 years) than under TRIPS. Fifth, the revised Bangui Agreement provided for an extended term of protection for radio broadcasting. Sixth, the Bangui Agreement obliges OAPI member States to join the 1991 Act of the UPOV Convention and provide a minimum term of plant variety protection for 25 years, whereas the TRIPS Agreement allowed countries to have any form of *sui generis* system of protection for plant varieties or provide patent protection. Seventh, the Bangui Agreement committed OAPI member States to 11 other international IP agreements.[180]

The revised Bangui Agreement imposed more stringent conditions than TRIPS on the use of compulsory licenses by third parties or by governments, such as the requirement of a judicial process before a compulsory license can be granted to third parties. It regarded importation of a patented product as a method of working the patent and eliminated the option of using compulsory licensing as a tool to build production capacity in the region. The regional exhaustion regime for patent rights meant that parallel importation of generic versions of patented products like medicines could only be made by OAPI countries from within the OAPI region even if the same can be available at lower prices outside the OAPI region. The revised Bangui Agreement also did not provide any exceptions to patent rights for experimental and research purposes,[181] implying that scientific and technological research institutions from OAPI member States could not use the patented technology for research purposes to further develop their technological learning.

Though awareness has increased about the flaws of the Bangui Agreement,[182] it has been difficult to push through any proposal for reforming the Bangui Agreement and reintroduce the development dimension due to resistance from the OAPI Secretariat and the complexity of briefing to ministers representing member States in the OAPI Administrative Council about the technical legal issues involved.[183] At the same time WIPO, OAPI, bilateral donors, multinational companies and industry associations have actively supported the creation of new constituencies and interest groups that are supportive of stronger IP protection in OAPI and are resistant to any revision of the Bangui Agreement.[184]

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[180] Deere (2009), *supra* note 170, p. 256.
[181] Ibid, p. 258.
[182] Even during the Diplomatic Conference for adopting the revised Bangui Agreement, environment and agriculture agencies from some OAPI countries unsuccessfully urged their governments not to sign the Bangui Agreement. After the adoption of the Bangui Agreement, some legal scholars and Geneva based diplomats from OAPI countries published strong critiques of the Bangui Agreement and also called for its revision; Ibid, pp. 265-276.
[183] Ibid, p. 276.
[184] Ibid, p. 277.

V.2.3 Proposal to Establish a Pan African Intellectual Property Office

A significant development that has taken place with regard to regional approach to IP in Africa concerns discussions on the possible establishment of a Pan African Intellectual Property Office (PAIPO). A draft statute of the proposed PAIPO has been developed[185] and the Assembly of the African Union has adopted a decision requesting the AU Commission to present the draft statute for further consideration and recommendations to the Specialized Technical Committee on Justice and legal Affairs and also requested the AU Commission to prepare a roadmap for implementation of PAIPO with its headquarters in Tunisia. The decision also recognized ARIPO and OAPI as building blocks of PAIPO.[186]

The objective of PAIPO as stated in the draft statute includes promoting harmonization of IP systems of its member States particularly with regard to protection, exploitation, commercialization and enforcement of IPRs.[187] The functions of PAIPO would include setting IP standards for the African Union and its member States and African RECs, grant and register IP titles, facilitate harmonization of national laws and regional treaties, support the use of IP to promote innovation and creativity, promote and develop the IP system, strengthen regional organizations, develop policy guidelines and train member States to develop world class IP systems, etc.[188] PAIPO is to be funded by contributions from member States, income from services (fees) rendered by PAIPO, and income from property or investments owned by PAIPO.[189]

Critics have pointed out that the draft PAIPO statute promotes a narrow vision of IP that focuses on promotion of IP rights as an end in itself and harmonization of IP laws across Africa without taking into consideration differences in levels of development and socio-economic circumstances in countries in Africa. The draft statute also does not address or facilitate the full utilization of TRIPS flexibilities. Rather, it reinforces the impediments that are present under ARIPO and OAPI. First, PAIPO will be financially independent from the control of member States much like ARIPO, OAPI and WIPO as most of its activities can be financed from the income from services offered by PAIPO to those who seek IP protection. Therefore, there is a risk that a service-oriented approach giving primacy to the interests of IP right holders and applicants over development implications of IP will drive PAIPO's orientation. As demonstrated in the case of OAPI, the establishment of a powerful regional IP organization with financial independence from member States led to the flawed revision of the Bangui Agreement being driven by the IP oriented perspective of the OAPI Secretariat. Second, the draft PAIPO statute pursues an approach focused on enhanced IP protection and harmonization of IP standards among African countries and regions without much elaboration on how the flexibilities available to African countries under international IP regimes can be utilized for development.

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[185] Final Draft Statute of the Pan-African Intellectual Property Organization (PAIPO): http://www.au.int/fr/sites/default/files/PAIPO%20Statute%20English.pdf.

[186] Assembly of the African Union (2014), Assembly/AU/Dec.522(XXIII), DECISION ON PAN AFRICAN INTELLECTUAL PROPERTY ORGANIZATION (PAIPO). Available at: http://www.au.int/en/sites/default/files/Assembly%20AU%20Dec%20517%20-%20545%20%28XXIII%29%20_E_1.pdf.

[187] Final Draft Statute of the Pan-African Intellectual Property Organization, Article 5 (iii).

[188] Ibid, Article 6.

[189] Ibid, Article 18.

Therefore, **African countries should view the draft PAIPO statute with caution in the light of its possible implications for development priorities and challenges for the countries in Africa.**[190]

In view of this analysis, it is important to **ensure that regional integration institutions in Africa do not pursue or advocate an IP oriented approach that is divorced from development considerations, and explore mechanisms to safeguard existing TRIPS flexibilities from being further eroded through TRIPS plus provisions in trade agreements and also seek further regional cooperation on maximizing the use of the TRIPS flexibilities to address development needs for industrial development, public health, education and environment protection**. **African countries also need to establish IP policies and laws that are appropriate to their development challenges in various sectors and should therefore consider adopting differential standards of IP protection within the flexibilities available under the TRIPS Agreement. In particular, national legislations should adopt strict standards of patentability criteria in the field of chemicals and pharmaceuticals. National laws should also require mandatory disclosure of country or source of origin of genetic resources used in patent applications. African countries should develop robust systems for examination of patent applications. In this regard, regional patent offices like ARIPO and OAPI should be appropriately reformed to accommodate the flexibilities available under TRIPS such as the transition period for LDCs as well as application of strict criteria of patentability**.

V.3 Proposed Strategies for Designing Development-Oriented IP Policies in Africa

One approach to regional cooperation that could be considered as a vehicle for developing local expertise in intellectual property matters generally, health-related research and innovation and, in particular, the use of TRIPS flexibilities is where intellectual property issues are dealt with as a component of the broad regional economic integration and related processes from a sectoral development perspective. This approach has most commonly been adopted among RECs in Latin America and the Caribbean region. The best example of this approach where members of an REC have attempted to work together on incorporating TRIPS flexibilities is the Andean Community.[191] Similarly, **African RECs can facilitate the adoption of a broader development-oriented approach towards IP and explore how**

[190] Dick Kawooya (2012), "A New Course for the Pan African Intellectual Property Organization is Urgently Needed", Letter to African Union (AMCOST V) , 18 October 2012, https://www.change.org/p/a-new-course-for-the-pan-african-intellectual-property-organization-is-urgently-needed. Also see Brook Baker (2012), "Intellectual Property Policy Incoherence at the African Union Threatens Access to Medicines – Proposed Pan-African IP Organization a Terrible Idea", *Fix the Patent Laws*, 6 September 2012, http://www.fixthepatentlaws.org/?p=438.

[191] The desire to overcome the economic disadvantages of fragmentation gave rise to the establishment of a large number of regional groupings with the objective of creating self-reliant development of African countries. However, the early integration process was constrained by political divisions, and the economic marginalization of African countries which were un-integrated in the world economy. African countries started showing renewed interest in developing appropriate frameworks for integration in order to realize the benefits of enlarged market with the attendant opportunities for economic transformation, growth and sustainable development with the signing of the Treaty establishing the African Economic Community (AEC) in 1991. Current integration initiatives in Africa build on earlier institutions while broadening the objectives of the economic cooperation and regional integration to include and emphasize the coordination and harmonization of macroeconomic policies; the lowering of trade tariffs and removal of non-tariff barriers; the facilitation of capital mobility and the free movement of persons. In addition, the new economic integration schemes are paying more attention to crosscutting development issues such as those related to health and education (Musungu *et al*, 2004).

IPRs and flexibilities in the IP system can be utilized to address the development challenges that countries in the region face.

Some of the African RECs have taken policy measures to facilitate the full utilization of TRIPS flexibilities for facilitating local production of medicines in the regions and ensure access to affordable medicines. The SADC has developed a Pharmaceutical Business Plan, which asks SADC member States to coordinate the implementation of TRIPS flexibilities.[192] The EAC has adopted a regional policy on the utilization of TRIPS flexibilities for public health and has developed a regional pharmaceutical manufacturing plan of action (RPMPOA) that stresses on the need to make full utilization of the TRIPS flexibilities by EAC member States.[193] The ECOWAS has adopted guidelines to facilitate member States to implement TRIPS flexibilities in their national IP laws for promotion of public health and ensuring access to medicines.

It will be important for African RECs to provide guidance to their member States through respective sectoral bodies at the regional level about the critical considerations that should inform the design of national IP policies of respective member States for the sectors concerned. Second, RECs should also safeguard in the negotiations on regional free trade and investment agreements that flexibilities that can be available to respective African countries (particularly for LDCs and non-WTO members). Third, it will be critical for the African RECs to encourage member States to consider reforming ARIPO and OAPI as the functioning of these two regional IP organizations has had greater impact than multilateral IP regimes in expanding the scope of IP protection and restricting the scope of IP flexibilities, and has not facilitated industrial development of African countries.

V.3.1 Critical Considerations for Designing a Development Oriented National IP Policy

The most important issue in the formulation of domestic IP policy is the integration of the IP policy into different aspects of the national development policies such as industrial and agricultural policies, health policy and environmental policy. The basic purpose of an IP policy should be to ensure that IPRs promote activities that improve the prospects of social and economic development. The focus should not be on pursuing the protection and promotion of IPRs as an objective per se, but rather on the interface between IP and other national policies. [194]

An important consideration in designing an IP policy should be how IP could impact innovation in various branches of the manufacturing industry in African countries. The role of IP in respect of industrial development will be of particular importance in Africa in the context of the need to develop the productive capacity of African countries and enhance regional competitiveness of African firms. As demonstrated by the history of the evolution of the IP policy as an integral part of the industrial policy of Japan, some amount of technological capacity is necessary for engaging meaningfully with the IP system and that too

[192]SADC Pharmaceutical Business Plan, https://www.unido.org/fileadmin/user_media/Services/PSD/BEP/SADC%20PHARMACEUTICAL%20BUSINESS%20PLAN%20-APPROVED%20PLAN.pdf.

[193] Regional Intellectual Property Policy on the Utilisation of Public Health-Related WTO-TRIPS Flexibilities and the Approximation of National Intellectual Property Legislation http://www.cehurd.org/wp-content/uploads/downloads/2013/05/EAC-TRIPS-Policy.pdf.

[194] Carlos Correa (2010), *supra* note 11, p. 42.

would require designing the IP system in a manner that can facilitate indigenous innovation and technology transfer and diffusion to local firms, rather than only protect the IP of foreign firms dominant in respective technology areas. A recent study commissioned by WIPO under a project to explore challenges and solutions to technology transfer in accordance with the WIPO Development Agenda recommendations observed that "Empirical evidence suggests that enforceable patents can … have little impact in the least-developed countries. Thus, the TRIPS Agreement at the WTO by itself will have little impact on technology acquisition for poor countries."[195]

It is often assumed without any evidential basis that high levels of IP protection in a sector would encourage foreign direct investment and technology licensing. Indeed, this assumption is the fundamental basis of the discourse in African RECs that view raising the standards and harmonization of IP protection and enforcement as essential requirements for ensuring investment, licensing and joint venture projects in Africa by technology owning firms from outside Africa. As demonstrated under the Bangui Agreement, importation is accepted as a method of working a patented invention by a foreign firm in the OAPI countries. This is in clear conflict with the declared objectives of ECOWAS and ECCAS of eliminating technological dependence and developing local capacity in science and technology.

However, a study published by the World Bank has observed that the

> …poorest countries are unlikely to benefit from strong IPR ….Stronger patent rights may be expected to raise monopoly rents earned by international firms as such rights become more valuable, obliging developing countries to pay more for protected technology. These are also countries where … (technology) spillovers are likely to be small…. Such countries should be exempt from strong IPR obligations ….[196]

Thus, high levels of IP protection could encourage IP rights holders to exploit their IP right through the export the final product rather than investing in or transferring technology for developing the product locally.[197]

Important considerations in designing national IP policies with the objective of complementing the development of the manufacturing industry, facilitating access to medicines, access to knowledge, agriculture and traditional knowledge are described below.

- Manufacturing Industry

The design of a national IP policy should therefore be commensurate to the level of industrial development of respective African countries. Most African countries are at the initial stage of industrial development where firms are dependent on importation of fully developed technologies and do not have domestic capacity to exploit the technologies themselves. Many

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[195] A. Damodaran (2014), *Economics of IP and International Technology Transfer*, Word Intellectual Property Organization, Committee on Development and Intellectual Property, Fourteenth Session, CDIP/14/INF/7, 18 September 2014, p. 15, http://www.wipo.int/edocs/mdocs/mdocs/en/cdip_14/cdip_14_inf_7.pdf.

[196] Bernard M. Hoekman, Keith E. Maskus and Kamal Saggi (2005), "Transfer of Technology to Developing Countries: Unilateral and Multilateral Policy Options", *World Development*, vol. 33, no. 10, pp. 1587-1602 at pp. 1592-3, http://siteresources.worldbank.org/INTEXPCOMNET/Resources/Transfer_of_Technology_to_Developing_Countries.pdf.

[197] Carlos Correa (2010), *supra* note 11, p. 10.

African countries not only import plant and machinery, they also rely on foreign engineers to run the plant and machinery due to the lack of domestic absorptive capacity. At this level of technological capacity, IP protection will be of no benefit to most African firms because they will not be able to develop innovative technologies or innovative products by applying technological innovations. Rather, IP protection will only create concentration of foreign monopolies who may not be interested in developing the technology locally if the option of exporting the same is legally available and commercially viable.

Thirty four African countries are LDCs and as such they are entitled to benefit from the flexibility available to them under Article 66.1 of the TRIPS Agreement to set their IP laws and policies below the standards required by TRIPS in order to facilitate the development of local industries and develop a sound and viable technological base for local industries. Thus, these countries should be able to absolutely deny patent protection in certain sectors of critical importance and expand the range of copyright exceptions and limitations to enable access to educational, scientific and technological works for educational and research institutions in their countries. In other words, they can abolish the patent system like the Dutch did for facilitating the development of the light bulbs industry in the nineteenth century, or restrict pharmaceutical patenting to facilitate the development of a local generic industry like Germany, Switzerland and India did in the past. However, the policy space that is available to LDCs under the TRIPS Agreement has been curtailed by regional IP systems such as ARIPO and OAPI, and these restrictions on policy space in respect of IP are being further expanded or reinforced through negotiations of trade and investment agreements and donor driven IP policy making in African LDCs.

Even for non-LDC African countries that may have some domestic capacity in specific industrial sectors, it will be crucial to make use of the available under the TRIPS Agreement to the fullest possible extent in order to strengthen their manufacturing capacity. African countries should make full utilization of the flexibilities available to them to allow reverse engineering and technological diffusion. Such flexibilities include application of strict criteria to assess patentability, exceptions to exclusive IP rights, compulsory licenses, and exceptions for educational and research purposes in copyright laws.[198]

While patent protection may have insignificant impact in incentivizing innovation in African countries, a second-tier form of IP – utility model patents (or petty patents) could be useful for incremental innovation by firms in African countries. Utility model patents can grant protection for short periods for minor innovations with very low threshold of inventiveness to be demonstrated. Utility model patents are easier to acquire for small firms. In all countries where utility models are recognized the majority of applications and grants of utility model patents corresponds to domestic applicants.[199] In designing utility model patents regime, it must be ensured that utility models do not facilitate the proliferation of second-tier patents held by foreign firms. Therefore, it will be important to exclude certain sectors such as chemicals and pharmaceuticals or biological materials or substances or processes.[200] Utility models may be of limited use to African LDCs because due to their reliance on mature technologies and imported machinery and equipment, they are not likely to be active in the kind of innovations that could be protected by utility models.

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[198] Ibid, p. 14.
[199] Carlos Correa (2007), *supra* note 34, p. 13.
[200] Uma Suthersanen (2006), *Utility Models and Innovation in Developing Countries*, International Centre for Trade and Sustainable Development (ICTSD) and the United Nations Conference on Trade and Development (UNCTAD), Geneva, p. 38, http://unctad.org/en/Docs/iteipc20066_en.pdf.

- Public Health and Access to Medicines

From the perspective of health policy, it should be ensured that the IP system does not constrain access to affordable generic medicines and health technologies. In this respect, it is important to ensure that African countries are able to utilize to the maximum possible extent the flexibilities available under the TRIPS Agreement and avoid accepting obligations in bilateral or regional agreements that may erode such flexibilities. A critical flexibility is the freedom of countries to define the criteria of patentability and apply a differential standard for pharmaceutical patent applications. In this respect, it will be critical for African countries to bolster the capacity of their national IP offices to undertake robust examination of pharmaceutical patent applications. In this regard appropriate revisions to the Harare Protocol of ARIPO and the Bangui Agreement of the OAPI must be pursued.

In applying a strict criteria of patentability in relation to medicines, patent offices should be encouraged to consider the following typical pharmaceutical patent applications as not constituting inventions – new dosage forms of known medicines, new salts, ethers, esters and other forms of existing pharmaceutical products, discovery of polymorphs of existing compounds, enantiomers, therapeutic, diagnostic or surgical methods of treatment, claims for new uses of known products.[201]

African countries could also use a patented product for research purposes and conduct necessary experiments and other procedures to obtain marketing approval for a generic drug during the life of the patent. African countries should also adopt an international regime of exhaustion of patents allowing parallel importation of a generic medicine if the patented product is put in the market in any country. Under the TRIPS Agreement, countries also have the freedom to determine the grounds for issuing a compulsory license. African countries should also refrain from introducing data exclusivity in relation to test data as this will require generic companies to incur significant expenses in generating test data rather than relying on test data already submitted by the originator drug company. There is no obligation under TRIPS to grant data exclusivity. Article 39.3 of TRIPS only requires protection of test data from unfair competition. For countries that are members of OAPI, there is need for revising the provisions of the Bangui Agreement in order to enable these countries to make use of these public health flexibilities in their national IP policies.

- Agriculture

In designing an IP policy with regard to agriculture, policy makers should take into account the characteristics of agricultural production, changes that may be brought about by the growing liberalization of agricultural trade through trade agreements, the diverse inputs needed for sustainable productions, and food security considerations. An important consideration in this respect is the structure of the seed supply system. Traditionally, seeds have been largely produced in Africa by farmers themselves through the customary practice of saving seeds for their own use or exchange. While countries are required by the TRIPS Agreement to provide for protection of plant varieties either through patents or a *sui generis* system, the plant variety protection (PVP) system per se was established to support commercial breeding activities by conferring temporary exclusive rights over the plant varieties to the breeders. It will be important for African countries to adopt a *sui generis*

[201] Correa, Carlos (2010), *supra* note 11, pp. 19-20.

system of PVP that strikes an appropriate balance between the rights of plant breeders and the ability of farmers to save and exchange seeds, appropriate to their conditions and needs.

The African Union has developed an African Model Law for the Protection of the Rights of Local Communities, Farmers and Breeders, and for the Regulation of Access to Biological Resources, which aims to achieve a balance between the protection of breeders and the preservation of local farmers' rights in the interest of the sustainable use of biodiversity.[202] However, this model law has not been followed by the African countries who have adopted legislations for PVP protection in accordance with the standards under the 1991 Act of the UPOV Convention. OAPI member States have adopted PVP legislation that corresponds to the UPOV standards under the Bangui Agreement. Some African RECs are also promoting enhanced and harmonized PVP regimes.[203] ARIPO member States are also considering adopting a regional protocol on protection of new varieties of plants based on UPOV 1991.[204]

African countries should also assess whether patent protection should be available for cells and sub-cellular components including genes. Patenting of genes and cells may have significant implications in countries where genetically modified plant varieties have been accepted. In such countries, if one or more patented transgenes are incorporated into a variety, farmers may be prevented from saving seeds and breeders too would have limited freedom to conduct further research using the variety.

It will also be important to ensure in relation to agriculture that the IP policy is based on an assessment of the optimal mode and level of protection for geographical indications (GI) that best suits local conditions. GI protection may be extended under collective trademarks, or through a special GI regime or through disciplines on unfair competition. For some local agricultural products that have niche markets and high-value customers, GI protection may bring value addition, and bring about economic benefits in specific geographical regions. However, increased GI protection itself may not guarantee enhanced market access unless corresponding actions are taken for quality assurance of the product such as complying with sanitary and phytosanitary and other quality regulations of the importing country. Moreover, extended GI protection could also restrict local production of products that may infringe foreign GIs. Therefore, a proper cost-benefit analysis must inform the design of the national GI regime.[205]

- Access to Knowledge

With regard to access to knowledge, the IP policy should aim to make the maximum utilization of flexibilities available under copyright law to facilitate access to creative works, including protected computer programmes. These flexibilities include keeping the term of copyright protection to the minimum required by the TRIPS Agreement and the Berne Convention, allow for parallel imports of protected works without the consent of the right holder, implement compulsory licenses for translation, reproduction and publication of

[202] African Model Legislation for the Protection of the Rights of Local Communities, Farmers and Breeders, and for the Regulation of Access to Biological Resources, 2000, http://www.apbrebes.org/files/seeds/files/AU-model%20law00.pdf.
[203] The World Bank (2012), AGRICULTURAL INNOVATION SYSTEMS: AN INVESTMENT SOURCEBOOK (The World Bank, Washington, D.C.), p. 453.
[204] Sangeeta Shashikant (2015), Draft ARIPO Protocol on plant Varieties: Whose Interest Does it Serve?, TWN Info Service on Intellectual Property Issues, 25 June 2015, Third World network, http://www.twn.my/title2/intellectual_property/info.service/2015/ip150606.htm.
[205] Carlos Correa (2010), *supra* note 11, pp. 25-32.

copyright protected works as stipulated in the Appendix to the Berne Convention, make fixation of the work in a material form a condition for the grant of copyright protection, limit the protection to the expression of the work rather than the idea expressed in the work, control anti-competitive practices, allow for the use of copyright work in broadcasts, make minor use of the copyright work for educational purposes in respect of performing, recitation, broadcasting, recording and cinematographic rights, and include exceptions with regard to news about current events, facts and miscellaneous data, personal use, quotations and citations, reproduction by libraries and archives for storage and replacement, reproduction, distribution and broadcasting of works and speeches by the press, reproduction and adaptation of a computer code for interoperability purposes, ephemeral recordings, use of a work for informational, scientific and educational purposes, and reproduction of articles on current events for informatory purposes by the press. Official texts and their translations, political speeches and speeches delivered in course of legal proceedings should be excluded from copyright protection. It will also be important to ensure that access to copyright content in the digital media for legitimate use is not constrained by "technological protection measures" or "anti-circumvention measures".[206]

African countries should also ensure the broadest possible accessibility to scientific and factual data. Though such content is traditionally excluded from the scope of copyright protection, developments in some developed countries such as the European Database Directive of 1996 make it possible to apply and extend proprietary claims to all factual content.[207]

- Traditional Knowledge

As explained earlier, it is known that the process of development, assimilation and diffusion of new knowledge relies on prior knowledge, as much as on learning by doing. One important policy recommendation that can be derived from this fact is that in designing innovation policy, developing countries should draw on, rather than neglect or destroy the existing knowledge base and competences. The design of policies aimed at upgrading technological capabilities in the African context should not ignore the potential offered by existing local innovation and integrate it with transferred technologies. Capabilities for innovation in developing countries are rooted in two distinct knowledge systems that are relevant to different types of innovations.[208] Building scientific, formal knowledge is important to develop capabilities for technical, knowledge-intensive innovation and tapping into global knowledge. Other forms of knowledge, however, are just as relevant.

Traditional knowledge (TK) is a source of valuable knowledge on uses of natural resources for health, food and other uses that are important for local livelihoods and rural development, but may as well have modern applications in fields such as pharmaceuticals and biotechnology. However, TK is rarely integrated into innovation policies in developing countries.

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[206] Ibid, pp. 33-37.
[207] Ibid, p. 37.
[208] For easiness of the analysis we differentiate between two broad categories 'science-based' and 'traditional'. In practice, the ways in which knowledge systems relate are complex and drawing clear distinctions can lead to oversimplification and mask connections or tensions between systems. See A. Agrawal 1995, Dismantling the Divide Between Indigenous and Scientific Knowledge, Development and Change, vol. 26, 413-439.

The design of innovation policy in African countries should support TK-based innovations in two ways. First, innovation policy should consider how to support innovation within TK systems for the benefit of the local communities and indigenous peoples that hold and depend on such knowledge. Second, innovation policy should also consider how to promote and build capabilities to use TK as a source of modern innovation for growth in a way that empowers TK holders. In both contexts, connections need to be made among related and at times conflicting policies (i.e. development policy, public health policy, industrial policy, trade policy, IP policy) and institutions.[209] It is critical to build appropriate institutions to manage the interactions among both TK holders and the diversity of users of TK so as to reduce the uncertainties that surround knowledge sharing.

VI. CONCLUSION

This paper observes that **the main challenge to innovation in the African context is the lack of capacity to absorb technologies at the firm level.** In this context, it concludes that in African countries innovation policy should be geared towards driving innovation based on regional or local unresolved problems and unfilled needs, and accordingly to assist firms to identify unmet market opportunities for such problems. **Innovation policy should give more emphasis to the building of technological capabilities** (i.e. activities to increase the knowledge base and skills, such as education and training) **alongside building upon the pre-existing knowledge base as these are critical to developing technology absorptive capacities.**

In this context, **it is crucial for African countries to design their IPR regimes in a manner that strikes an appropriate balance between the intention to offer the reward of exclusive protection for an invention that constitutes a significant advancement over existing technical knowledge in a given area with the need to ensure fair dissemination and access to such knowledge in order to contribute to the realization of development objectives.** In the early stages of development of an industry, which is where many African countries are placed, IPRs may create obstacles to the dissemination of technology and prevent local firms from accessing such technology, emulating them, adapting them to local contexts and in the process.

Thus, **it is critical for African countries to have adequate policy space to design national IP laws and policies to respond adequately to their development needs.** However, the policy space available to WTO members with regard to IP is constricted due to the obligations of the TRIPS Agreement, though LDCs currently benefit from a transition period during which they do not have to implement the substantive TRIPS obligations. 34 African countries are legally exempted from implementing the provisions of the TRIS Agreement as they are LDCs and 2 African countries are still not members of the WTO and hence the TRIPS Agreement does not apply to them. Thus, **LDCs from Africa have the**

[209] Institutions can be broadly understood as the 'rules of the game'. As defined by Douglas North, 'they are the humanly devised constraints that structure human interaction'. See Douglas North (1990), INSTITUTIONS, INSTITUTIONAL CHANGE AND ECONOMIC PERFORMANCE (Cambridge University Press). Institutions can also constitute 'social technologies'. See Richard Nelson and Bhaven Sampat (2000), "Making Sense of Institutions as a Factor Shaping Economic Performance" *Journal of Economic Behaviour and Organization*, vol. 44, pp. 31-54.

possibility of making the maximum use of the TRIPS flexibilities to design nationally appropriate IP policies that may fall below the standards of TRIPS. Other African countries also could make maximum use of the other flexibilities available under TRIPS such as applying a strict standard of patentability, and developing a robust examination system with pre-grant and post-grant opposition enabled.

However, African countries have not made adequate use of the available flexibilities. While regional economic communities in Africa have shown some initiative in facilitating the use of these flexibilities for ensuring access to affordable medicines, African countries are also negotiating free trade agreements and investment treaties with EU and US that can substantially limit the scope of currently available IP flexibilities. Provisions in BITS can also restrain the ability of African countries to use legitimate measures to revoke patents or issue compulsory licenses where appropriate.

A major constraining factor for African countries with regard to the use of flexibilities is that the grant or registration of IP rights in many of these countries is not nationally determined, but is ceded to regional IP offices like ARIPO and OAPI. These regional IP offices pursue the objective of harmonization of IP laws, which are not development oriented. Moreover, these regional IP regimes also do not sufficiently accommodate the TRIPS flexibilities. Even though most African countries depend on these offices for a decision on a grant or registration of an IP, these Offices often rely on the work done by IP offices from developed countries. In this context, **discussions on the possible establishment of a Pan-African intellectual Property Office raises significant concerns and African countries should consider this with great caution.**

African RECs should provide guidance to their member States through respective sectoral bodies at the regional level about the critical considerations that should inform the design of national IP policies to boost local and regional manufacturing in various industries. Negotiations on regional free trade and investment agreements, including the negotiations for the Continental Free Trade Area, must ensure that flexibilities that can be available to respective African countries (particularly for LDCs and non-WTO members) are safeguarded. African countries should also consider reforming ARIPO and OAPI as these two regional IP organizations has had greater impact than multilateral IP regimes in expanding the scope of IP protection and restricting the scope of IP flexibilities.

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