Chapter 5 Intellectual property rights and African development

Intellectual property refers broadly to creations of the mind. Notable among such creations are inventions: literary and artistic works, designs, symbols, and names and images used in commerce. Intellectual property is categorized into copyright and related rights, industrial property, and sui generis forms of protection that are customized for certain creations.

This chapter discusses intellectual property and development within the context of investment and competition, and it considers how intellectual property rights (IPRs) can enhance or hinder competition and investment. Intellectual property has been considered in several previous Assessing Regional Integration in Africa (ARIA) reports, and this chapter builds on those reports, specifically the relationship between innovation and intellectual property global regulatory regimes and innovation and the Continental Africa Free Trade Area (AfCFTA) IP Protocol.

The demand for efficient institutions that improve the workings of markets and that support countries in achieving development goals will increase with the establishment of the AfCFTA. The legal and institutional frameworks governing competition and investment will contribute to market efficiency and other gains by establishing fairness, equity and non-discrimination principles. Similarly, institutions governing IP rights, will contribute through public interest mechanisms such as patent flexibilities and copyright limitations and exceptions.

A flexible patent system can incentivize entrepreneurs and firms to invest in research and development (R&D) to produce more inventions, while the disclosure of these inventions in patent applications enables others to access and use the information and thus contribute further to scientific and technological progress.

The legal protection afforded by IPRs, and the possibility of generating income from their economic exploitation will act as incentives for innovation and the production of goods and services by both existing and new firms. Consumers will benefit from an expanding range of goods and services, and the origin and distinguishing function of trademarks and geographical indications will eliminate or reduce consumer confusion. These mechanisms can prevent or deter such anti-competitive behaviours as unlawful copying and taking undue advantages based on competitor reputation or quality.
Across Africa, concerns are mounting about which IPR rules or provisions, including protection and enforcement, AfCFTA states should pursue to balance the interests of IPR holders and other stakeholders. These rules and provisions need to be in keeping with national development plans, the Sustainable Development Goals (SDGs) and the socioeconomic and developmental needs outlined in the African Union’s Agenda 2063. Notable goals relate to R&D; technology transfer; access to food and essential medicines at affordable prices, and the development of competitive markets, local industries and value-added exports. Technologies under consideration include 4IR technologies—specifically how they may be used to enhance development.

There are two major views on IPR policy among scholars and practitioners. The minority view favours tighter IPR rules or provisions and sees protection and enforcement as the appropriate course of action. The majority view favours protection and enforcement standards in keeping with the minimum standards set out in international agreements, primarily the World Trade Organization (WTO)-administered Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS). TRIPS lays down a set of substantive laws on IPR protection and enforcement measures that are binding on WTO member countries. TRIPS also has some attributes that developing countries can use to advance their agendas, such as flexibility. Broadly, flexibility refers to setting general principles in international treaties so that member countries can take into account national policy goals, interests and constraints when they craft national laws. Flexibility allows countries to use rules that are different from those in an international treaty. This makes it easy for them to implement a treaty yet still advance their own development agendas. Flexibility also allows members to not use certain principles for which the required means of implementation are absent. Some African countries have used this flexibility to access affordable essential medicines in response to public health emergencies such as the HIV/AIDS and COVID–19 pandemics. A nuanced use of the IP system can aid development.

TRIPs minimum standards are non-binding on observer and non-WTO member countries. But these countries are bound by other international agreements to which they are party, some of whose provisions have been incorporated into the TRIPS agreement through its article 2. TRIPS provides for enforcement of the WTO dispute settlement mechanism. And it allows member countries to negotiate on emerging and pressing matters at the TRIPS Council, which may be used by developing countries to advance their interests. An example is when, in October and November 2020, the TRIPS Council deliberated on the requested extension of the transition period for least-developed countries (LDC) and on a proposal for a waiver so these countries could meet COVID–19 health priorities.
The development of IP legislation in African regional arrangements

IP policy and regulatory frameworks across Africa are fragmented and guided by three different models:

- Cooperation and experience sharing, such as in the initiatives led by the African Union (AU) and regional economic communities.

- Regional filing systems, such as the anglophone African Regional Intellectual Property Organization (ARIPO).

- Unification of IP law, as in the francophone Organisation Africaine de la Propriété Intellectuelle (OAPI), which aims at developing common, uniform regional IP legislation.\footnote{444}

At the multilateral level, the TRIPS Agreement, to which 43 African countries are party, is the main international trade-related instrument on IPRs. At the regional level, various initiatives exist with uneven levels of implementation.

The AU has adopted three significant IP initiatives:

- The 2000 Model Law that serves as a basis for developing national legislation and is an alternative to the revised Convention on the Protection of New Varieties of Plant of the International Union for the Protection of New Varieties of Plants.\footnote{445}

- The AU Continental Strategy for Geographical Indications, adopted in 2017 with the objective of supporting sustainable rural development and food security.

- The AU statute for the creation of a Pan-African Intellectual Property Organization (PAIPO) responsible for the promotion of IP systems as tools for economic development. No country has ratified the PAIPO statute.

The regional economic communities (RECs) have adopted the following IP instruments:

- The Common Market for Eastern and Southern Africa’s (COMESA) 2011 policy on IPRs and cultural industries, which provides for a common set of definitions and principles to address the relationship between IPRs and trade and development, among other aspects.

- The East African Community’s (EAC) 2018 regional policy on the utilization of public health-related TRIPS flexibilities. It has also prepared a draft IP policy that has not yet been adopted.

- Economic Community of West African States’ (ECOWAS) 2012 TRIPS Policy and Guidelines.
- The Southern African Development Community’s (SADC) 2017 Protocol for the Protection of New Varieties of Plants (Plant Breeders’ Rights), which has been adopted but has yet to enter into force. SADC has also started work on an IP framework and guidelines.

ARIPO and OAPI are regional IP organizations. ARIPO, which has 20 Member States (mostly English-speaking countries), is establishing a regional copyright registration system and is assisting members in creating collective management offices. ARIPO operates a two-tiered system where national offices apply national laws, but applicants can apply for regional protection of IPRs. The OAPI has 17 Member States, mostly French-speaking countries. Its Bangui Agreement is a unified IP law covering the acquisition, maintenance and enforcement of IPRs.

Since preparatory work for the AfCFTA negotiations started, IPRs have been considered a key element for boosting intra-African trade. For this reason, IPRs have been given a prominent role under Agenda 2063, with the aim of building Africa’s human and social capital through a skills revolution underpinned by science, technology and innovation (Aspiration 1 of Agenda 2063). This call resonates with the ambition of “accelerating progress towards continental unity and integration for sustained growth, trade, exchanges of goods, services, free movement of people and capital” (Aspiration 2 of Agenda 2063). When AfCFTA negotiations were launched, IPRs were included as one of the AfCFTA pillars in accordance with the recommendations of the High-Level African Trade Committee (HATC). The original timeline was to have an IPR protocol negotiated and submitted for adoption to the AU Assembly by February 2020 and appended to the AfCFTA Agreement. But due to COVID-related disruptions, the IPR negotiations have been delayed and they are now expected to be finalized by 31 December 2021.

UNECA previously recommended that the AfCFTA IPR protocol establish a regional intellectual property system to prevent fragmentation of the market, in addition to setting up a platform for WTO-compliant regional provisions on IPRs. It also suggested setting norms to sufficiently or adequately protect African interests under international instruments in areas such as traditional knowledge, genetic resources and traditional cultural expressions. It recommended that the protocol not be a comprehensive statement of continental intellectual property norms because countries already have national laws and have entered international commitments. It also recommended the protocol build on the existing framework, while emphasizing matters of significance to AfCFTA states.
TRIPS minimum and TRIPS plus standards

Two major standards used in this chapter are the minimum standards outlined in the TRIPS Agreement and the higher set of standards referred to as TRIPS plus, found in interregional, preferential and bilateral trade agreements. The United States and European Union have increasingly been proposing TRIPS plus standards to their trading partners, including partners from Africa who generally follow TRIPS minimum standards.

TRIPS minimum standards

Provisions concerning availability, scope and use of IPRs

Control of anti-competitive practices in contractual licences. In their national laws, WTO Member States may specify licensing practices or conditions that constitute an abuse of IPRs and that have an adverse effect on competition. Appropriate measures may be used to control or prevent such practices (article 40).

Provisions concerning the enforcement of intellectual property rights

The TRIPS minimum standards concerning IPR enforcement are:

- General obligations: Enforcement procedures are required to provide preventive remedies and remedies aimed at deterring additional infringements, which should be applied in a way that avoids “the creation of barriers to legitimate trade and to provide for safeguards against their abuse” (article 41.1). They should be fair and equitable, affordable and not unduly complicated or “entail unreasonable time limits or unwarranted delays” (article 41.2). Decisions ought to be written and available to the parties within a reasonable period of time (article 41.3). Final administrative decisions should be subject to review, and judicial decisions should be subject to appeal (article 41.4). WTO Member States are not required to establish separate judicial systems for IPR enforcement, nor does TRIPS place any obligation on them regarding resource allocation for IPR enforcement.

- Civil and administrative procedures and remedies: Overall, the rightsholders eligible to pursue civil procedures, include federations and associations having legal standing as defined by domestic laws (article 42). Additional provisions relate to disputes and injunctions.\textsuperscript{449}

- Provisional measures: The most important is the provision on infringements on intellectual property (article 50).\textsuperscript{450}

- Border measures: The following are among the most important provisions—adopting procedures enabling rightsholders to lodge an application with competent administrative or judicial authorities for suspension by customs authorities of the release into free circulation of counterfeit trademark or pirated copyright goods (article 51).\textsuperscript{451}
Criminal procedures: Wilful trademark counterfeiting and copyright piracy must be prosecuted, and in cases where criminal activity has reached commercial scale, penalties must include imprisonment and/or monetary fines (article 51).

Policy space afforded by TRIPS flexibility measures

TRIPS provides for flexibilities for various forms of IPRs, including copyrights, trademarks and patents. While some assessments have found that flexibilities are not used as effectively as possible, the following examples illustrate their potential:

Transitional periods. WTO Member States were not required to implement the TRIPS agreement at the same pace to allow for countries’ differing socioeconomic contexts and capabilities. During transition periods states were not required to fully implement the agreement. All Member States were given a transition period of one year following the TRIPS entry into force (article 65.1), and developing countries were granted an additional four years (article 65.2). During this period developing countries were only bound by article 3 (national treatment principle), article 4 (most-favoured nation principle) and article 5 (procedures provided in multilateral agreements concluded under the auspices of World Intellectual Property Organization (WIPO) relating to the acquisition or maintenance of intellectual property rights). Developing countries were granted a further five years to provide patents for products not previously protected (article 65.4). Least-developed countries (LDCs) were granted a 10-year transition period—up to January 2006—plus additional extensions on request. That 10-year period was extended several times and is currently valid until 2021, and an additional request has been made to the TRIPS Council for a further extension. The Doha Declaration extended the deadline for the introduction of patents for pharmaceutical products, which is now set for January 2033. Several African LDCs have forfeited these flexibilities: providing patent protection for pharmaceutical products is one example.

Compulsory licences and government use of patents. In these licences, a government authorizes itself or a third party to use a patent without the permission of the patent holder. These authorizations help governments overcome bureaucratic issues that slow the use of patents and the authorizations to help governments move faster towards solving a public emergency or crisis. Patent holders are expected to be adequately remunerated. In Africa, a number of countries have legislation allowing for compulsory licences and government use, mainly under emergencies. But having the required legislation does not mean that the licence will officially be issued or that the drug will be manufactured and accessible to the public. The process leading to such outcomes is complex, as are the legal grounds for applying for and issuing the licence. In South Africa, for example, no compulsory licence was issued in five cases brought before the courts between 1992 and 1997, and in some of these cases voluntary licences were issued to settle litigation. A country’s production infrastructure and supply system readiness is also important. Where these exists, as in Zimbabwe, manufacturing and supply can take place.
In other instances, where readiness is insufficient, other legal mechanisms are needed to get the goods manufactured and supplied by a different country. Such was the case with Rwanda when it imported drugs from Canada. Exhaustion. Under the principle of exhaustion an IPR holder loses its right to further control the distribution of a protected item after it has lawfully entered the national market (national exhaustion), regional market (regional exhaustion) or global market (international exhaustion). Article 6 of TRIPS provides that the selection of an exhaustion regime is a matter of national law. Exhaustion can act as a policy instrument to limit the scope of IPRs and to address anti-competitive abuses of IPRs, including market segmentation and excessive price differentiation.

National exhaustion is most limited within a regional integration context, where regional exhaustion has more scope to support regional markets. OAPI has adopted regional exhaustion, as has the EU. In the EU single market, regional exhaustion has played an important role in facilitating the free movement of goods and services and reducing the anti-competitive behaviour of many IPR holders. International exhaustion, with the broadest scope, has the potential to ease access to learning and teaching resources. Textbooks are an example: access to new textbooks is limited in many African countries partly because of prohibitive costs. So, international exhaustion rules can make textbooks more affordable in the second-hand market as rightsholders have no right to object to used copies being resold at lower prices. International exhaustion may also facilitate access to other goods and services embodying IPRs that are not easy to afford, particularly in a public health context. In Africa, Egypt, Ghana and Kenya have adopted international exhaustion to accelerate parallel importation. While South Africa has not adopted this principle for all IPRs, its Medicines and Related Substances Control Act of 1965 is premised on international exhaustion and permits the parallel importation of medication.

Bolar exception. This flexibility establishes a balance between two major interests—the interests of the patent holders and those of the producers of generic drugs. The exemption does this by reducing delays in regulatory approval for manufacturing. The exemption allows using a pharmaceutical product for testing and the authorization of approval before the patent expires. The exemption allows commercialization of a generic version of a drug after the expiration of the patent. Brazil, Egypt, India, Kenya, Nigeria and Tunisia have the Bolar exception or regulatory review flexibility in their legislation.

Research exception. The research exception, also called the experimental use exception, allows researchers to investigate the effects of inventions as disclosed in the patents and improve them without this activity being considered a patent infringement. The exception is usually allowable through a statute or through case law. Many countries in Africa provide for this exception: Burkina Faso, Cameroon,
Central African Republic, Chad, Congo, Côte d’Ivoire, Equatorial Guinea, Egypt, Gabon, Guinea, Guinea Bissau, Kenya, Mali, Mauritania, Mauritius, Morocco, Namibia, Niger, Senegal, Eswatini, Tanzania, Togo and Tunisia.\textsuperscript{467}

**TRIPS plus standards**

**Provisions concerning protection and enforcement of IPRs**

TRIPS plus goes beyond TRIPS minimum standards and requires restricting or removing flexibilities. Such provisions are increasingly introduced in interregional, preferential and bilateral trade agreements led by the United States, European Union and Organisation for Economic Co-operation and Development countries and countries from other regions, including Africa. Some TRIPS plus standards are detrimental to development. They may increase the monopoly of the rightsholders and shift IPR enforcement costs to states beyond what is expected by TRIPS. Some examples of TRIPS plus enforcement standards are listed below to facilitate a discussion of their potential costs to governments and threats to many areas of development policy. They are in agreements signed between the United States and the following countries: Australia, Bahrain, Colombia, Chile, Jordan, Morocco, Oman, Peru, Singapore and South Korea. It is worth noting that other agreements in which similar provisions can be anticipated are in negotiations between the United States and South Korea and the United States and the Southern Africa Customs Union. The United States is also currently negotiating a free trade agreement (FTA) with Kenya.\textsuperscript{468}

Algeria, Egypt, Libya, Morocco and Tunisia have signed Association Agreements with the European Union. The agreement with Libya is not in force.\textsuperscript{469} The agreements require higher standards of IPR protection and read: “suitable and effective protection of intellectual, industrial and commercial property rights, in line with the highest international standards” (article 44.1 EU–Algeria Association Agreement; article 37.1 EU–Egypt Association Agreement; article 39.1 EU–Morocco Association Agreement; article 37.1 EU–Tunisia Association Agreement). This standard is higher than that set by Article 41 of the TRIPS agreement described above. It is also not clear what is meant by “highest international standards.”\textsuperscript{467,470} There are other aspects of the agreements that are TRIPS plus, such as the requirement to use dispute settlement procedures outside the WTO (article 39.2 of the EU–Morocco Association Agreement). At the time of writing, the contents or the nature of these standards were not available.

\begin{quote}
\textbf{Algeria, Egypt, Libya, Morocco and Tunisia have signed Association Agreements with the European Union. The agreement with Libya is not in force.}
\end{quote}
The following are examples of TRIPS plus provisions relating to patents, copyright, trademarks and plant varieties in the US–Morocco FTA. This is not a comprehensive list of TRIPS plus provisions but serves to illustrate and highlight the types of clauses the IP protocol ought to avoid, since they have negative impacts on development.

**Patents:** Grants patents to new uses of known substances, including for “the treatment of humans and animals” (article 15.9(2)).

**Copyright:** The term of protection of copyrights is the life of author plus 70 years, or 70 years from the first authorized publication, or 70 years from the creation of the work (article 15.5.5(a)). TRIPS plus provisions diminish certain flexibilities provided by TRIPS minimum standards, which enable developing countries to pursue a number of their development goals, such as access to and development of knowledge and learning. In the US–Morocco FTA copyright holders have the right to obstruct parallel importation of copyrighted works, including books and musical CDs lawfully sold in foreign markets.

**Trademarks:** Provides protection for visual, scent and sound marks (article 15.2(1)).

**Plant varieties:** Requires Morocco to join the International Union for the Protection of New Varieties of Plants (UPOV) (article 15.1(2-3)), while TRIPS presents this as an option and not a requirement.

**The potential costs of TRIPS plus to access essential medicines in Africa**

Compulsory licensing may be used by WTO Member States to pursue multiple policy objectives central to their development agendas. These efforts may be hindered if TRIPS plus provisions, which restrict compulsory licensing and parallel importations, are deployed. For instance, provisions that restrict competition among potential and existing generic manufacturers by expanding the monopoly on data exclusivity to five years will fail to balance the interests of the public and IPR owners. The provisions will make it difficult for AfCFTA states to achieve some of the goals of their national development plans, Agenda 2063 and the SDGs.

The expanded monopoly power that TRIPS plus standards afford IPR holders has a high potential to restrict competition in markets. For example, for pharmaceuticals the local producers of generic drugs will find it difficult to produce and supply markets because of the restrictions TRIPS plus imposes on the use of patents. The concentration of non-generic producers will likely increase, as will the chances of having higher deadweight losses caused by suboptimal supply. Consequently, the prices of non-generic drugs will be higher. The chances of getting access to essential drugs at affordable prices will diminish, particularly among the poorest and marginalized communities. Metformin, a drug to treat diabetes, costs 800 per cent more in Jordan than in Egypt (table 5.1). In Jordan, metformin is produced by Jordan Merck and covered by the US–Jordan FTA TRIPS plus provisions. In Egypt, the drug is produced by a local generic manufacturer.
Table 5.1  Egyptian prices and Jordanian prices for the same active pharmaceutical ingredient dosage for the same medical use

<table>
<thead>
<tr>
<th>COUNTRY</th>
<th>ACTIVE PHARMACEUTICAL INGREDIENT DOSAGE</th>
<th>MEDICAL USE</th>
<th>PRICE PER UNIT IN JORDANIAN DINNERS</th>
<th>JORDAN PRICE IN RELATION TO EGYPT PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Egypt – local generic manufacturer</td>
<td>Metformin (850 mg)</td>
<td>Anti-diabetic</td>
<td>0.002</td>
<td>800%</td>
</tr>
<tr>
<td>Jordan - Merck</td>
<td></td>
<td></td>
<td>0.16</td>
<td></td>
</tr>
<tr>
<td>Egypt – local generic manufacturer</td>
<td>Atenolol (100 mg)</td>
<td>Anti-hypertensive</td>
<td>0.3</td>
<td>367%</td>
</tr>
<tr>
<td>Jordan - Kleva</td>
<td></td>
<td></td>
<td>0.11</td>
<td></td>
</tr>
<tr>
<td>Egypt – local generic manufacturer</td>
<td>Simvastatin (20 mg)</td>
<td>Anti-hyperlipidemic</td>
<td>0.452</td>
<td>498%</td>
</tr>
<tr>
<td>Jordan - Merck</td>
<td></td>
<td></td>
<td>2.25</td>
<td></td>
</tr>
</tbody>
</table>

Source: ECA elaboration based on Oxfam (2007).

Tightening IPR enforcement provisions will reduce the ability of AfCFTA states to imitate, learn and develop technological capabilities. To some extent, this will subsequently constrain progress in other development areas, such as industrial development and digitalization. In some cases, TRIPS plus provisions will place a burden of IPR enforcement on governments, forcing them to reassign resources, thus distracting them from other development goals.

**IPRs and technology transfer**

Two main channels of technology transfer are transfer through inward foreign direct investment and IPR licensing.

**Greenfield foreign direct investment projects**

Greenfield foreign direct investment projects (referred to as fDi) are much more sensitive to IPRs than conventional foreign direct investment (FDI), which mainly covers investments in low-tech sectors where IPRs have little or no relevance. fDi covers manufacturing and technology-related areas or activities, including research and development and design and testing. The main sectors of interest for fDi include transportation, communication, food and tobacco, financial services, business services, renewable energy, industrial equipment, automotive components, and software and IT services. fDi data track wholly owned foreign subsidiary investments, including investments that create jobs.
The numbers of greenfield fDi projects announced in Africa were low (figure 5.1), indicating that the adoption of TRIPS has not yet boosted technology transfer to the levels expected when African governments were first negotiating and signing agreements. Algeria, Côte d’Ivoire, Egypt, Ethiopia, Ghana, Kenya, Morocco, Mozambique, Nigeria, South Africa, Tanzania, Tunisia, Uganda and Zambia and have each announced more than 100 greenfield projects. South Africa, following TRIPS minimum standards concerning IPR protection and enforcement, had the highest number of projects (1,019), almost double the number of Morocco’s (510). Morocco has stringent TRIPS plus provisions in its FTAs with the United States. Kenya, following the minimum standards of TRIPS, has 457 announced greenfield projects, like the number in Morocco. This suggests that tightening IPR protection and enforcement to TRIPS plus standards does not necessarily lead to increased fDi. The association between fDi and IPR protection and enforcement should thus be regarded as elusive.
Figure 5.1 Total greenfield projects announced by African countries that have adopted TRIPS plus, 2012–2018

Source: ECA elaboration based on Financial Times data (2020).
This observation also holds for fDi projects announced in some of the BRICS countries (figure 5.2) —Brazil, India, China and South Africa—that have followed TRIPS minimum standards compared with countries from other regions that have concluded FTAs with the United States under TRIPS plus provisions.

Figure 5.2 Total greenfield foreign direct investment projects announced, by destination, 2012–2018

Source: ECA elaboration based on Financial Times data (2020).

Figure 5.3 Greenfield projects announced, by destination, 2012–2018

Select OECD countries that have adopted TRIPS plus

United States: 12,527
United Kingdom: 8,815
Germany: 6,934
France: 4,279
Australia: 2,938
Canada: 2,390
Netherlands: 1,660
Japan: 1,513
Belgium: 1,169
Italy: 1,128
Finland: 925
Denmark: 621
Portugal: 466
Greece: 183
Germany, the United Kingdom, and the United States have higher standards of IPR protection and enforcement (TRIPS plus) and have attracted the highest numbers of greenfield FDI projects (Figure 5.3, left panel). But the number of FDI projects announced by China (6,826), which follows TRIPS minimum standards, was close that announced by Germany (6,934) and far higher than numbers observed in France (4,279), Canada (2,390), Japan (1,513) and Belgium (1,169), which all follow TRIPS plus. Similarly, India, which follows TRIPS minimum standards, has more announced FDI projects (5,174) than those observed in many developed countries that have higher standards, including Australia (2,938), Belgium, Canada, Finland, France, Greece and Japan. Brazil (2,316) and South Africa (1,019) followed TRIPS minimum standards and had more FDI projects announced than a number of developed countries with TRIPS plus provisions, such as Denmark, Finland, Greece and Portugal. The numbers for South Africa and Brazil were also higher than those announced in Colombia, Chile, Morocco and Peru (Figure 5.3, right panel), which have signed a number of FTAs with the United States covering TRIPS plus provisions. Similarly, the number of FDI projects announced in Egypt (501), Kenya (457) and Nigeria (399) were higher than the number announced in Oman (372) and Jordan (122).

These findings indicate that the relationship between the IPR standards and FDI are elusive. Higher IPR protection and enforcement (TRIPS plus) do not necessarily give rise to higher inward FDI, and TRIPS minimum standards do not necessarily result in lower inward FDI. One reason could be that, in addition to the IPR protection and enforcement available in a location, firms take into consideration many other factors. These include research, infrastructure, human capital and market and business sophistication. Effective use of these factors, along with TRIPS standards and the efficient use of flexibilities, can help developing countries improve inward FDI even to the point of exceeding that achieved by countries observing TRIPS plus. And this can be done without incurring the higher costs of maintaining a TRIPS plus system.
**Licensing IPRs**

Receipts of charges for the use of intellectual property are the amounts received by residents from non-residents for the authorized use of proprietary rights—patents, trademarks, copyrights, industrial processes and designs, including trade secrets and franchises—and for the use through licensing agreements of produced originals or prototypes—copyrights on books, manuscripts, computer software, cinematographic works, and sound recordings—and related rights such as for live performances and television, cable or satellite broadcasts. The charges received for the licensing of IPRs are low in African countries that have followed TRIPS minimum standards. For instance, the charges received by South Africa from 2010 to 2018 were relatively low, at $118 million a year on average. They were, however, higher than those received by Chile, Colombia, Mexico, Morocco and Peru—non-OECD countries observing TRIPS plus provisions. The charges received by Kenya were also higher than those of Morocco (figure 5.4). This indicates that in the observed countries, TRIPS plus standards did not necessarily increase receipts from IPR licensing.

**Figure 5.4 Charges for the use of intellectual property, receipts in African and comparator countries, 2010–2018**

Source: ECA elaboration based on World Bank data (2020).
One reason for the limited numbers of IPRs licensed is the limited numbers of IPRs generated. Another potential reason, which still needs further research, may be the poor market for technology and information products in specific sectors or sub-sectors. Allocation of scarce resources to R&D—and other activities that produce technology, information and related products that generally are subject for IPR protection—is stimulated by the presence of large technology and information markets in specific sectors or subsectors. Without such markets, firms find it difficult to justify R&D investment, since the chances of payoffs are limited. Large markets and demand for technology are thus good incentives for firms and enterprises developing or producing technology and information protected by IPRs. Larger markets also increase the opportunity for inter-firm cooperation through which firms acquire or purchase information or technology through licensing and other means. Although this needs additional analysis, efforts aimed at developing markets or demand for technology—such as public investment in digital, biotech and clean tech development, which has long-term snowball effects that result in private investment in R&D—can increase IPR stocks and licensing in African countries.473

**Research and development financing, patent protection and inventive activity**

The gross expenditure in R&D (GERD) by the government sector and by business enterprises is a standard indicator of performance of national innovation systems. Among other things, GERD indicates to what extent science, technology and innovation are financed in a country and what capability can be expected.

**Public investment in research and development**

GERD as a percentage of GDP describes the total expenditure on R&D in a national territory during a specific reference period.474 Through 2000–2017, the average GERD of Sub-Saharan Africa was about 0.4 per cent of GDP (figure 5.5). In Northern Africa it increased from 0.35 per cent in 2002 to 0.61 per cent in 2017. In Latin America and the Caribbean, GERD was 0.97 per cent of GDP in 2017. In Oceania, Europe and North America, GERD was above 1.5 per cent of GDP from 2008 onwards.

Since 2006, when African Heads of States recommended improving national innovation systems,475 African GERD has remained below 1 per cent of GDP. At country levels, similar limitations are observed. In 2009, GERD was as follows: 0.14 per cent of GDP in Burundi, 0.08 per cent in Democratic Republic of Congo, 0.43 per cent in Egypt, 0.02 per cent in Ghana, 0.84 per cent in South Africa, 0.71 per cent in Tunisia and 0.35 per cent in Uganda. In 2015, GERD was 0.58 per cent of GDP in Senegal, 0.41 per cent in Democratic Republic of Congo and 0.80 per cent in South Africa. Overall, South Africa and Tunisia have made significant efforts to approach 1 per cent.476 Given the limited sizes of national budgets, the funds allocated to R&D are thus very limited—a major constraint to technological progress for AfCFTA states.
Investment in research and development by business enterprises

GERD gauges the extent to which businesses engage in R&D. Examining GERD in three groups of countries over 2007–2017 reveals that the relationship between GERD and IPR protection and enforcement standards is elusive (figure 5.6). Group 1 comprises Brazil, Egypt, India, Kenya and South Africa, countries that have followed the TRIPS minimum standards. Group 2 comprises Chile, Colombia, Mexico, Morocco and Oman, countries that do not have advanced economies but have signed FTAs with the United States that have TRIPS plus provisions. Group 3 comprises Canada, Finland, Italy and Spain, developed economies having large numbers of TRIPS plus provisions. South Africa has followed the TRIPS minimum standards and has higher GERD than Chile, Colombia, Morocco and Oman, which have all followed TRIPS plus. Oman’s GERD was not significantly higher than Kenya’s, which followed TRIPS minimum standards.
The findings suggest that higher IPR protection and enforcement (TRIPS plus) does not necessarily give rise to increased GERD. Minimum IPR protection and enforcement systems (TRIPS) do not necessarily result in lower GERD. A minimum IPR protection and enforcement standard, along with the efficient use of the flexibilities afforded by TRIPS and with improvements in research, infrastructure, human resources and business sophistication can help AfCFTA states improve GERD without incurring the higher costs of maintaining a TRIPS plus system.

Figure 5.6 Higher intellectual property rights protection and enforcement do not necessarily give rise to increased gross expenditure on research and development

![Bar Chart]

Source: ECA elaboration based on UNESCO data (2019).

The limitations in GERD by business enterprises in Africa are indicative of business enterprises’ limited contributions to technology development across Africa. This constraint can also explain the observed limitations in the numbers of patent applications discussed in the next section.
**Trends in patent protection and patenting activities in Africa**

Patent applications are a widely used indicator of scientific and technological change, and they can identify how residents and non-residents protect their inventions in Africa after the adoption of TRIPS agreements. In Africa, from 1999 to 2018, patent applications by non-residents and residents increased in number (figure 5.7). Non-residents have much higher numbers of patents protected in Africa than residents do. In 1999, residents had 1,000 patents registered, while non-residents had 5,900. In 2018, residents had only 3,120 patents registered, while non-residents had 13,380. The large numbers of patent applications by non-residents may be because patent owners need to protect the technologies embodied in products exported to the African region. Non-resident firms may also be registering patents in a location in order to block innovation by using defensive patents. The increases, however, indicate that large numbers of patent owners have some trust in the level of protection provided by TRIPS.

Similar trends in patent applications are also observed at the country level for Egypt, Morocco and South Africa (figure 5.8).

**Figure 5.7 Patents application in Africa, 1995–2018**

Source: ECA elaboration based on WIPO data (2020).
Figure 5.8 Patent applications by country, 1995–2018

Source: ECA elaboration based on WIPO data (2020).
The high costs of maintaining a TRIPS plus system may be justified in EU countries where residents (taxpayers) have more patents registered than non-residents. For AfCFTA countries, TRIPS plus standards will increase the cost for governments to enforce patents owned largely by non-residents (non-taxpayers) in cases of infringement. This may not be in the best interests of AfCFTA states. TRIPs plus will likely have similar effects in countries, such as Chile (figure 5.8), that have more registered non-residents patents than residents.

Inventions produced by most African countries tend to focus on the mainstream areas of technology, including technology in engines, electrical engines, turbines and pumps, machines and apparatus, basic and organic chemistry, and civil and chemical engineering. Inventions in emerging technology are weak compared with other regions. For example, from 2000 to 2017, the United States had 376,855 patent applications in digital communication, France had 53,679, China had 344,959, and Brazil had 782, while South Africa had 412, Kenya had 7, Côte d’Ivoire had 1 and Nigeria, the largest economy in the African region, had none (figure 5.9, panel a). In computer technology (figure 5.9, panel b), Japan had 558,568 patent applications, France had 54,170, India had 15,100, South Africa had 993, Senegal had 12, Nigeria had 9 and Gabon had 1 over the same period. Similar differences occurred in nanotechnology (figure 5.9, panel c), and biotechnology (figure 5.9, panel d).
Figure 5.9 Total patent applications by sector, 1995–2015

Source: ECA elaboration based on WIPO data (2019).
Policy recommendations

This chapter assessed IPR protection and enforcement standards pursued by AfCFTA states and countries from other regions, distinguishing between the TRIPS minimum and TRIPS plus standards. It has also measured progress on certain aspects of development in countries that have used the different standards, focusing on investment in research and development, technology transfer through inwards investments in greenfield projects (fDi), and invention and protection of patents by non-residents and residents in AfCFTA. The chapter outlined some of the benefits and costs associated with the use of those standards on a number of national development goals, such as access to essential drugs, technological learning, development of competitive markets and anti-competitive behaviour. The findings provide a basis for reflecting on two issues of concern in multilateral, regional and bilateral trade negotiations:

- Will higher standards (TRIPS plus) for IPR protection and enforcement support African countries’ development agendas?
- Will TRIPS minimum standards help achieve African countries’ development agendas?

This chapter’s findings aim to inform future regional and multilateral trade negotiations, as well as FTAs, especially bilateral investment treaties that have IPR chapters that strive to balance various stakeholder interests. Stakeholder interests include those of private owners of IPRs, the public—including consumer groups—and States, whose priorities include the SDGs, regional agendas (such Agenda 2063 and Science, Technology, and Innovation Strategy 2024) and national development goals.

The findings are that TRIPS plus legislation alone does not necessarily give rise to technology transfer, investment in R&D, increased inventive capacity or activities, level of patent protection or expansion of patent protection by monopolists. And TRIPS minimum standards do not necessarily cause a decrease in these. Countries that have followed the minimum standards—such as Brazil, India and South Africa—have outperformed countries that have adopted TRIPS plus standards—Chile, Morocco and Peru. Kenya and Nigeria followed TRIPS minimum standards and outperformed Morocco, which adopted TRIPS plus standards in its FTA with the United States. The numbers of patents held across the AfCFTA by non-residents were overwhelmingly higher than those held by African residents. An important reason for this observation, which holds in a number of other regions, may be non-residents’ strategies to protect their exports and expand their global monopoly power. The findings suggest that the interactions between IPRs standards and outcomes are complex. The factors that cause technological progress and drive investment decisions by firms are numerous and cannot be reduced to a single parameter, namely IPRs.

It is possible for AfCFTA states to achieve high levels of technology transfer, investment in R&D and inventive capacity as an important component of technological capacity by using TRIPS minimum standards, adjusted by flexibilities. Flexibilities that can be leveraged in the AfCFTA include:
• **Transitional periods.** This flexibility takes into account LDC and developing country limitations concerning their readiness to implement TRIPS in a manner that works for their development needs. AfCFTA states can use this policy to build up capabilities in technological niches—as India did to advance its capabilities in pharmaceutical production—and support other needs, such as learning and imitation in national innovation systems.

• **Bolar exception.** This can balance the interests of patent holders and the interests of producers or manufacturers of generic drugs by accelerating the regulatory approval process for drug manufacturing. The exception enables the use of a patent-protected pharmaceutical product for testing and regulatory approval before the patent expires. This is done to facilitate commercialization of a generic version of a drug soon after the expiration of the patent. In AfCFTA this exemption can be used to implement regional strategies, such as the New Partnership for African Development strategy on pharmaceutical manufacturing.

• **Research/experimental use exception.** This allows researchers to investigate the effects of inventions disclosed in patents. Improving patented inventions plays an important role in advancing science and technology.

• **Compulsory licensing and government use.** This flexibility helps states move faster in a public emergency or crisis, since the licences can facilitate the procurement and supply of essential generic drugs.

• **Exhaustion.** Exhaustion can help AfCFTA states facilitate broader distribution of essential goods or services across markets. States have the right to adopt a national, regional or international exhaustion regime. Regional and international exhaustion regimes would best support health policies in AfCFTA such as pooled procurement and other supply policies aiming to respond to emerging diseases such as COVID–19, Ebola and SARS.

A comparison of the costs and benefits of TRIPS minimum and TRIPS plus standards revealed the following:

• TRIPS minimum standards are coupled with flexibilities that allow states to nuance their IP systems and thus enhance their development agendas. In several cases, this was not done effectively, hence the recommendation to use flexibilities in the AfCFTA. TRIPS plus standards disproportionately expand the global monopoly power of rights holders—who are concentrated in advanced economies—while constraining the interests of the public in such rights. The distortionary market effects of these restrictions will be severe for developing countries, especially for AfCFTA states that do not have sufficient resources to build innovation systems, develop the local industries or generate viable technological bases.
• TRIPS provides policy space to WIPO Members to use IPRs to advance national development goals. TRIPS plus standards impose restrictions on such flexibilities. The standards expand the monopoly power of IPR holders and increase the risks of price differentiation and market segmentation on the free movement of goods and services within AfCFTA. For pharmaceuticals this can constrain access to and distribution of essential drugs for treating communicable and non-communicable diseases. This limits the ability of many AfCFTA states to fulfil their constitutional commitments to protect health and nutrition and to provide access to essential drugs at affordable prices, particularly during public health emergencies.

• TRIPS minimum civil and administrative measures aimed at deterring and preventing infringements allow IPR holders to enjoy their rights to a reasonable extent. Measures, such as injunction relief, must be carried out in a proportional manner. Criminal penalties are only projected in cases where infringements have expanded to a commercial scale. The costs of IPR enforcement must be incurred by the private rightsholders and not by the government. TRIPS plus standards ratchet up the provisions on IPR enforcement. Border measures are strengthened and criminalization goes up, even covering such minor cases as circumventing technologies. The additional provisions reduce the space for technological learning, imitation and growth in developing countries.

• TRIPS plus standards will be difficult to implement and are unrealistic policy options for developing countries. The fixed costs for administering and coordinating a stringent national enforcement system may be wasteful in countries where there is a lack of resources and managerial and technical capabilities to attain even the minimum standards required of TRIPS. These are complex interdependencies between institutions and patterns of industrial development, technological learning and economic growth. The United States during the industrial revolution, Japan through the 1970s and many European countries have faced similar challenges protecting and enforcing IPRs. It is generally when market sophistication has gained momentum, and when local dynamic capabilities have accrued, that higher levels of enforcement standards become realistic and useful to large populations of IP users. TRIPS minimum standards will be the more reasonable, realistic and useful route for the AfCFTA, given the limitations of judiciary and administrative systems to enforce IPRs.

For AfCFTA States to advance their socioeconomic goals and for there to be a balance of interests between IPR holders and the public, TRIPS minimum standards adjusted with flexibility measures are the most appropriate option. But this will not automatically lead to intended outcomes. To maximize opportunities offered by such policies, AfCFTA states should make progress on the following:

• Improve IP and other policy environments to boost small and medium-sized enterprises, innovation and industrial development. AfCFTA is an important opportunity to make progress in:
  - Using the AU’s Science, Technology and Innovation Strategy 2024 more effectively to raise GERD to at least 1 per cent of GDP, as African Heads of States have recommended.
- Improving IP law enforcement and aligning enforcement with TRIPS so that countries can absorb and learn from fDi and international R&D, thus boosting creativity, innovation and competition.
- Streamlining the costs of IP protection to encourage youth and female entrepreneurs, who generally lack the resources needed to develop inventions and bring their innovations to the marketplace.

- **Increase public and private investment in the production of inventions and innovations to socially or publicly desirable levels.** This will reduce the scarcity of inventions and innovations and thus restrict opportunities for counterfeiteers to produce substandard, lower-cost substitutes. The increased public and private investment should be coupled with improved enforcement in cases that are threats to public safety or security, such as the counterfeiting of branded medicines. Such cases will require strong interagency coordination and collaboration, including regulatory authority, police services, customs officers and so on. It will be necessary to mobilize additional resources from developed countries, as recommended by TRIPS (Article 69), to supplement national efforts and strengthen the capacity of judiciary and administrative systems to improve IPR enforcement standards.

- **Build country capacity to use the flexibility measures of the TRIPS agreement.** It is essential to:
  - Develop the required resources, capabilities and infrastructure to implement compulsory licences and government use to protect health and nutrition, and regional or international exhaustion to accelerate parallel importation.
  - Provide technical assistance to countries that lack the capacity to manufacture generic substitutes for patented medicines under locally granted compulsory licensing to import such medicines.

- **Accelerate country progress on sustainable and inclusive growth plans.** This should focus on improving wages, expanding employment away from informal economies, resolving corruption and bribery and ending precarious jobs, which all augment the market and demand for counterfeit and pirated goods.480

- **Integrate the development of IPR enforcement systems in the existing reforms of public institutions.** Particularly, include in such reforms developing the capacity of relevant officials in the judiciary and administrative systems, including judges, customs officers and police officers, to implement more effectively civil and administrative procedures and remedies. Remedies must be used in keeping with proportionality measures, especially in cases in which infringement has serious impacts on societies and economies.

- **Increase public awareness campaigns about the role of IPRs to economic development and mobilize a much stronger political will to build efficient IPR enforcement systems.** These efforts should take into consideration TRIPS flexibilities. The systems must support the development of competitive markets, reduce abuses by the IP rightsholders, avert deceits of consumers and the public, allow innovation in downstream markets, and promote the production of and access to information, knowledge and goods to socially desirable levels.
References


End notes

433 WIPO, n.d.
434 Industrial property includes patents, trademarks, industrial designs, geographical indications, layout designs of integrated circuits, protection of undisclosed information and control of anti-competitive practices in contractual licences.
435 Sui generis forms of protection that are customized for certain creations are appropriate for traditional knowledge and traditional cultural expressions. This is demonstrated by the AU’s Model Law the Protection of the Rights of Local Communities, Farmers and Breeders, and for the Regulation of Access to Biological Resources (2000), and the African Regional Intellectual Property Organization’s (ARIPO) Swakopmund protocol on the Protection of Traditional Knowledge and Expressions of Folklore (2010).
436 ECA, 2016.
437 ECA, 2017.
438 ECA, 2019a.
442 This chapter does not detail African states’ membership in international IP agreements since this has been done elsewhere: ECA, 2016, pp. 61–81; de Beer, Baarbé and Ncube, 2018.
444 ECA, 2019a.
445 UPOV, 1991; see also Correa (2015) for discussions on how UPOV may reduce policy space and ignore the nature of seed supply in small-scale agriculture in developing countries.
448 ECA, 2019a.
449 Sufficient claims and evidence submitted by the concerned party in administrative and judicial proceedings subject to the protection of undisclosed information (article 43.1) must substantiate disputes. Injunctions must be applicable (Article 44), damages must be resolved fairly (article 45), and infringing goods must be seized, and further delivery of related services must be prevented (article 46).
450 Prompt and effective provisional measures must be used to prevent infringement and particularly entry of infringing goods in market channels (article 50.8).
451 Notice of suspension of the release of goods (article 51) to importer and applicants (article 54). Indemnification of the importer and of the owner of the goods (article 56). Remedies (article 59). Prima facie evidence of impending infringement is required (article 52), and reasonable security measures must be provided to protect the interests of the defendants (article 53).
453 The chapter does not present a holistic statement and evaluation of African states’ use of flexibilities.
454 Adusei 2012; Deere 2009.
456 Compulsory licenses had not yet been granted at the time the CIP website was accessed. Saracem (Pty) Ltd v British Technology Group PLC 1992 BP276 (CC); Africa (Pty) Ltd and Another v Carlton Paper of SA (Pty) Ltd 1992 BP 331 (CC); Circuit Breaker Industries Ltd v Backer and Nelson (Pty) Ltd 1992 BP 431 (CC); Syntheta (Pty) Ltd v Janssen Pharmaceutica NV and Another 1998 BIP 264 (AD); Atomic Energy Corporation of South Africa Ltd v The Du Pont Merck Pharmaceutical Company 1997 BIP 90 (CC). The first three cases were prior to TRIPS.
458 It has been noted that the Minister of Justice, Legal and Parliamentary Affairs has, in terms of section 34 as read with section 35 of the Patents Act (Chapter 26:03) made the following notice: 1. This notice may be cited as the Declaration of Period of Emergency (HIV/AIDS) Notice, 2002. 2. In view of the rapid spread of HIV/AIDS among the population of Zimbabwe, the Minister hereby declares an emergency for a period of six months, with effect from the date of promulgation of this notice, for the purpose of enabling the State or a person authorized by the Minister under section 34 of the Act (a) to make or use any patented drug, including any antiretroviral drug, used in the treatment of persons suffering from HIV/AIDS or HIV/AIDS-related conditions; (b) to import any generic drug used in the treatment of persons suffering from HIV/AIDS or HIV/AIDS-related conditions from the date of promulgation of this notice, for the purpose of enabling the State or a person authorized by the Minister under section 34 of the Act to prepare and release the goods (article 51) to importer and applicants (article 54). Indemnification of the importer and of the owner of the goods (article 56). Remedies (article 59). Prima facie evidence of impending infringement is required (article 52), and reasonable security measures must be provided to protect the interests of the defendants (article 53).
459 The government of Rwanda informed the WTO that it intends to import 260,000 packs of TriAvir (antiretroviral) over two years. The drug is to be made in Canada by Apotex, Inc. Canada made a favourable notification. This eased the way for countries with public health problems to import cheaper generics made under compulsory licensing elsewhere when they are unable to manufacture the medicines themselves.
460 Abbot, Cottier and Gurry, 2015.
462 WTO, n.d.
463 Medicines and Related Substances Control Act 1965, s15C.
466 WIPO, 2018.
467 WIPO, 2010.
469 European Commission, n.d.
473 ECA, 2019b.
474 Total domestic expenditure on R&D during a given year divided by the GDP (that is, the sum of gross value added by all resident producers in the economy, including distributive trades and transport, plus any product taxes and minus any subsidies not included in the value of the products and multiplied by 100 (OECD, 2015).
475 AUC, 2006.
478 ECA, 2019a.
480 Communication with the Executive Secretary of ECA (2019).