

HARNESSING THE POWER OF INTELLECTUAL PROPERTY RIGHTS IN BUILDING SCIENCE AND TECHNOLOGICAL CAPACITY

Key Issues for Policy Makers in East Africa



Godber Tumushabe Ronald Naluwairo The views expressed in ACODE Policy Briefing Papers are entirely those of the authors and do not in any way represent the position of ACODE or its partners who provide financial support for these publications.

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List of Acronyms

ACODE Advocates Coalition for Development and

Environment

CBD Convention on Biological Diversity

CJRP Commercial Justice Reform Programme

CTE Committee on Trade and Environment

FDIs Foreign Direct Investments.

ITPGRFA International Treaty on Plant Genetic Resources

for Food and Agriculture

IPRs Intellectual Property Rights

KIPI Kenya Industrial Property Institute

NARO National Agriculture Research Organization

PIDOC Patent Information and Documentation Centre

R & D Research and Development

TRIPs Trade Related Aspects of Intellectual Property Rights

UNDP United Nations Development Programme

UNCST Uganda National Council for Science and

Technology

URSB Uganda Registration Services Bureau

WTO World Trade Organization

Acknowledgement

This policy briefing paper is one of ACODE's contribution to the ongoing Intellectual Property Rights Policy and legal reform process in East Africa. The paper aims at ensuring that reforms in this area contribute to the building of national science and enhancement of technological capacity.

We are indebted to the Global Inclusion Programme of the Rockeffeller Foundation for providing the financial support that facilitated the production and publication of this policy briefing paper.

It is our hope that in exploring ways of making patent protection work for Africa's development, countries in the region will embrace the ideas espoused in this paper.

Executive Summary

Debate about the role of patent protection and Intellectual Property Rights (IPRs) in national development has been reignited by the advent of modern biotechnology. Policy analysts are now calling for a re-evaluation of the conventional philosophy that espouses IPR protection as essential for stimulating innovation, technology transfer and attracting Foreign Direct Investments (FDIs).

In this policy briefing paper, we also challenge such philosophy and argue that even where IPRs are used to stimulate innovation and attract FDIs, it does not happen by accident but by a consciously planned effort based on clear policy goals, actions and priorities. In particular it is argued that patent protection in modern biotechnology can only meaningfully benefit African countries if IPR policy and legislation is tailored to supporting building national scientific and technological capacity. We analyze the critical issues that are necessary for making IPRs more relevant to African development. These include: reconceptualising the purpose and role of IPR, understanding the factors shaping IPR legal and policy reforms, reconfiguring national IPR management institutions to bring them within the national systems of innovation, investing in research and proactively participating in regional and international negotiations. It is emphasized that a strong foundation for benefiting from IPRs also requires development of a critical mass of scientists in cutting edge technologies and scientific methods.

It is observed that the ongoing national legal and policy reforms and negotiations within the World Trade Organization (WTO)

framework in the IPR arena present rare opportunities for countries in East Africa in particular and sub Saharan Africa in general to rethink the role and purpose of IPR in national development. East African countries should seek to incorporate IPRs in national policy and legislation in a way that fosters national and regional development.

We strongly believe that the recommendations and ideas espoused in this policy briefing paper can go a long way in making Intellectual Property Rights work for Africa's development, in particular building and enhancing scientific and technological capacity. We therefore, call upon Governments in the region to take them seriously in the ongoing intellectual property rights policy and legal reform processes.

1. Introduction

The ongoing discourse on modern biotechnology and its role in promoting agricultural productivity in Africa has rekindled the debate on the utility of patent protection and the entire intellectual property rights regime in general. In its broadest sense, the debate on patents and biotechnology is informed by the traditional notions that espouse IPR regimes as being essential for stimulating innovation, facilitating the transfer of technology and attracting foreign direct investments. However, based on an analysis and understanding of the ongoing patent law reforms in the region and the structure of IPR management institutions, it is argued that unless there is a complete transformation in the way countries handle IPR legal reforms, IPR in general and patent protection regimes in particular may continue to be irrelevant to Africa.

Because East Africa's economies are still dominated by agriculture, the ongoing debate on intellectual property rights in modern biotechnology and the transformation of the agricultural sector should be at the core of national and regional policy and decision making. These debates combined with continuing policy, institutional and legal reforms

Making IPR More Relevant to African Countries: Five Priority Areas for Action

- Reconceptualize the purpose and role of IPR taking into account national peculiar contexts;
- Understand the factors shaping IPR legal & policy reforms and the agenda of the various actors;
- Reconfigure national IPR management institutions to bring them within the national system of innovation;
- Invest in research and analytical work to understand the interface between IPR & technological innovations and development; and
- Proactively participate in the global institutional architecture where global IPR norms and rules are made.

present tremendous opportunities for countries to redefine the role of IPR to support the objectives of building national

biotechnology capacity and stimulating the transformation of agriculture through the application of appropriate tools of biotechnology. However, the current institutional architecture for IPR management and the philosophical foundations of the ongoing debate all point to the abstract nature with which many African countries are engaging in this debate.

Intellectual property rights are no panacea to stimulating innovation, facilitating technology transfer or attracting Foreign Direct Investments (FDIs). Even when IPR is used to achieve these objectives, it does not happen by accident. It must be a consciously planned effort based on clear policy goals, objectives and actions. African countries that want to harness the power of intellectual creativity and innovation must undertake five specific actions for this to happen. They must reconceptualize the role of IPR within their national and peculiar contexts, understand the factors shaping IPR legal and policy reforms and the agenda of the various actors, reconfigure national IPR management institutions to bring them within the national systems of innovation, invest in research and analytical work to understand the interface between IPR and technology innovation and development, and understand the global institutional architecture within which IPR norms and rules are emerging.

2. Reconceptualizing the Role of Intellectual Property Rights

Historically, intellectual property rights have been defined as rights granted to innovators by states. The traditional arguments for IPR protection regimes include the need to stimulate innovation and attract Foreign Direct Investments (FDIs). The grant of intellectual property rights creates a monopoly in favor of a grantee of that right who uses the monopoly to recoup the costs of

Some Basic Issues

- Granting of a patent is not an end in itself, patent protection should be used as a national policy instrument;
- The grant of IPR confers monopoly right on the grantee, hence it must be balanced with the broader national policy objectives and societal goals;
- There is no sufficient evidence to demonstrate that strong IPRs attract private investments in national R & D programmes or will promote FDIs.
- Current IPRs rules are founded on western notions of property and their beneficial application in Africa is dependent on how well these rules are reconceptualized.
- Promoting technological innovation and the development and application of biotechnology is dependent on many factors that call for a comprehensive intervention policy package at the national level.

research and development that led to the creation of the product covered by the property right. On the other hand, many proponents of IPR argue that because firms are able to secure protection of their technologies in national jurisdiction, this provides them with incentives to invest in those countries that have strong IPR protection regimes.

In many African countries, two important issues need to be noted. First, Africa lags behind in science and technology Research and Development (R & D) and therefore has limited capacity to engage in innovation. Most of the national research institutions mainly dominated by the public sector also don't have adequate funding to engage in research and innovation. In

other cases, there is general absence of a culture of individualism which is one of the major motivations for acquiring IPR protection. There is also absence of literature to demonstrate empirically that strong IPR regimes can attract FDIs. Finally, traditional and indigenous knowledge which embody the intellectual knowledge and creativity of many African communities are excluded from existing IPR protection regimes.

It is therefore tenable to argue that in these circumstances, the philosophical foundations of strong IPR protection do not provide useful insights for IPR policy making in Africa. For IPR legal regimes to be relevant to African countries, there is need to rethink these philosophical foundations and the purpose of intellectual property rights in national economic development. The rationale for strong IPR protection regimes is articulated in the Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS) as to "contribute to the promotion of technological innovation and the transfer and dissemination of technology in a manner conducive to social and economic welfare, and to a balance of rights and obligations".

However, it is argued that the promotion of technological innovation and the transfer and dissemination of technology is largely dependent on many other factors other than those propounded by the proponents of strong IPR protection regimes. Therefore, African countries need to reconceptualize the meaning and purpose of IPR legal reforms. It must be understood that to achieve the broader societal goals as articulated in Article 7 and 8 of the TRIPS Agreement², IPR must be seen as a policy instrument that should be harnessed to achieve clearly defined

Article 7 of the TRIPs Agreement.

² Article 8 of the Agreement provides among other things that member countries may, in formulating or amending their laws and regulations, adopt measures necessary to protect public health and nutrition, and to promote the public interest in sectors of vital importance to their social-economic and technological development.

national policy and societal development objectives. Those objectives will often go beyond the ambit of stimulating innovation and attracting investments to include efforts to build national innovation capacity, accessing technologies protected through IPR, eradicating poverty and ensuring food security, health security and national security³. The grant of monopoly rights to the innovator should be seen as a direct consequence of State action rather than the primary objective of IPR policies and laws.

3. Factors shaping National Policy and Legal Reforms

Three Factors Shaping IPR Legal Reforms in most African Countries:

- Bilateral Assistance Programmes compelling countries to engage in IPR policy and legal reforms per se without any bearing on how IPR can enable these countries achieve their objectives to develop national biotechnology capacity;
- Obligations to Implement International Commitments without due regard to how they complement national objectives to achieve biotechnology capacity; and
- Attracting Foreign Direct Investment without any clear evidence that this is possible and without appropriate legal and institutional mechanisms to ensure appropriate technology content in FDIs.

In addition to problems associated with conceptual understanding of the role of IPR and patent protection regimes in Africa, IPR policy and legal reforms are largely being driven by three inter-related factors. These factors include "opportunistic" bilateral assistance programmes, the presumed obligations to implement obligations under international agreements, and the need

to attract foreign direct investments. It is argued that in the absence of clearly articulated national policies and objectives, these factors are unfortunately shaping the scope and content

³ Ibid

of IPR policy and legal reforms to the detriment of national biotechnology and agricultural development priorities.

3.1 Bilateral Assistance Programmes

It is not common to find African countries which have invested national resources to reform national Intellectual Property Rights policy and legislation. Most of the policy and legal reform processes as is the case of Uganda are supported under bilateral assistance programs⁴. Even where these countries are not required to comply with TRIPS obligations until the end of the grace period, donors have influenced these countries to strengthen their IPR laws through bilateral assistance programmes. It is argued that in the absence of a strong science and technology base and low usage of IPR to protect innovations, the major beneficiaries of these reforms would be the bilateral donors themselves who secure protection for their firms investing in these countries. Indeed, as the 2001 Human Development Report observes, "the technology revolution

begins at home yet no country will reap the benefits of the network age by waiting for them to fall from the sky. Today's technological transformation hinges on each country's ability to unleash the creativity of its people, enabling them to understand

Like all bilateral assistance programmes, assistance to reform IPR policies and laws is influenced by the priorities of the donor countries. Given the fact that these programmes are provided in the context of the World Trade Organization agreements, the primary motivation for these programmes is to ensure market access for the products of the donor country, it cannot be for facilitating access to or promoting national science capacity and innovation.

and master technology, to innovate and to adapt technology to their own needs and opportunities"5. Indeed, if ongoing bilateral

In Uganda, such bilateral assistance has been provided by a multiplicity of donors under the Commercial Justice Reform Programme (CJRP)

⁵ UNDP, 2001. Human Development Report 2001: Making New Technologies Work for Human Development. United National Development Programme. Oxford University Press. New York.

assistance programmes are to be of benefit to the countries engaged in the reforms, they should invest in creating a critical mass of scientists who can engage in technology-oriented research.

3.2 Obligations to Implement International Commitments

Many countries are engaging in IPR policy and legal reforms because international instruments that they have signed oblige them to do so. Consequently, the rush to enact new legislation or reform of existing laws is guided more by the need to meet deadlines for compliance with international agreements rather than what the new regimes are intended to achieve for the country. Essentially, one could argue that a country that has not clearly defined what it intends to achieve by strong IPR policies and laws has no business investing in IPR policy and legal reforms. But African countries are told time and again and they tend to be convinced that because they have signed these instruments, they have to comply by reforming their IPR policies and laws⁶.

3.3 Need to Protect Foreign Innovations as a Panacea for Attracting Foreign Direct Investments

The proponents of strong IPR protection argue that such a regime gives confidence to investors and therefore can facilitate Foreign Direct Investments (FDIs). Consequently, development of IPR policy and legal regimes are driven by the illusion that strong laws will attract investors to invest in the national economy

⁶ African countries have continuously failed to take advantage of flexibilities provided in key international agreements. For example, although most of these countries have up to 2006 to implement the TRIPS Agreements, most of them have been rushing to reform their IPR laws to provide for stronger IPR protection. The argument is often that since these countries have signed the agreements, they are obliged to comply. Instead of taking advantage of the flexibilities, it is the donor countries that are taking advantage of these agreements to compel these countries into stringent legislation often running counter to national interests and national priorities including in the areas of science and technology development.

and bring in new technologies. However, there is no empirical evidence yet to demonstrate that strong IPR laws attract FDIs and that increase of FDIs leads to the transfer of the much needed technologies⁷. What is needed therefore in the circumstances is for analytical research to be undertaken on the relationship between IPRs and FDIs before making blanket conditions on the issue. In any case, issues of major concern often relate to infrastructure development, market size, human capital, availability of business services and openness to trade⁸. In Uganda for example, there is no mechanism within Government to even determine the technological content of FDIs that have been licensed.

Consequently, this is an area that needs empirical research

focusing on trying to understand the relationship between strong IPR regimes and country performance in attracting FDIs in Africa. Secondly, the research should also explore the legal and institutional mechanisms needed to influence the technology content of FDIs that are licensed. In other words, FDIs acting as a vehicle for technology

Prudent policy making on the part of African Governments will require undertaking empirical research to understand the coloration between IPR protection and FDIs. At the moment there is no authoritative literature to suggest that strong IPR protection acts as an incentive for foreign investors to invest in a country. Instead, experience and investor surveys show that investors are more concerned with other issues such as utilities, infrastructure, etc than a liberal IPR legal framework. The notion that IPR will attract FDIs therefore needs to be investigated further and the research must be conducted in African countries because of the nature of the problems facing Africa.

transfer cannot happen as an accident, it has to be planned and

⁷ The relationship between IPRs and technology transfer is not clear cut as reasonable theoretical assumptions can be developed in either direction: stronger IPRs could lead to slower rates of imitation, which in turn slows down the rate of innovation as there is less competitive pressure. Equally reasonable is the proposition that technology diffusion is strengthened by stronger IPRs as FDI and licensing replace imitation and the quality of transferred technology is improved. See Ethel Teljeur, Intellectual Property Rights in South Africa: An Economic Review of Policy and Impact, the Edge Institute, South Africa (2003)

⁸ Maskus (2000).

stimulated through appropriate policy packages, legal and administrative requirements. At the moment, institutions such as the Uganda Investment Authority (UIA) operate more as promotional agencies rather than regulatory agencies. In the case of the former, such institutions focus on attracting FDIs and measure their outputs on the basis of the inflows licensed annually. In the case of the later, the agency ought to be able to determine the nature of the investment including its technological content.

4. Reconfigure Intellectual Property Rights Management Institutions

Current national institutional arrangements do not reflect the desire of IPR regimes to facilitate technology innovation and transfer or even address pressing national problems of poverty, food security and health security. The current institutional architecture related to IPR clearly demonstrates the disjuncture between the role of IPR as a policy instrument to stimulate science and technological innovation and attract FDIs.

First, these institutions are located mainly in the Attorney General's Chambers and have no relationship whatsoever with the national R & D institutions⁹. This problem is perhaps best illustrated by the case of Uganda. In Uganda, the registry of Patents is under the Registrar General's office under the Ministry of Justice. It is largely manned by registry clerks who simply handle filing of applications. There is no mechanism for linking

⁹ Kenya is however exceptional in this respect. The Kenya Industrial Poverty Office (KIPO) now Kenya Industrial Property Institute (KIPI) was established to administer industrial property rights (trade marks, patents, industrial designs and utility models) in the country. The Institute has an established Patent Information and Documentation Centre (PIDOC) with over 14 million patent documents that are available to the public at a small fee. Most of the work is processed using IT equipment. Members of many research institutions also sit on KIPI'S board. For details, see Patricia Kameri-Mbote (2004) Intellectual Property Protection in Africa: An Assessment of the Status of Laws, Research and Policy Analysis on Intellectual Property Rights in Kenya (Unpublished)

the work of the patents office to institutions such as the National Agricultural Research Organization (NARO) or Universities that could take advantage of the technologies that are no longer protected by patents¹⁰.

It is also instructive to note that in East Africa, countries such as Uganda are essentially losing the initiative created by the ongoing reform processes to reconfigure and reform this institutional architecture. In 1990 for example, the Uganda National Council for Science and Technology (UNCST) was established with the overall mandate of coordinating science and technology activities in the country¹¹. Among its specific functions, the UNCST is mandated to "protect intellectual property through appropriate patent laws and to operate a national patent office" Yet, fourteen years later, there is no national patent office and there is no evidence that the Council exercises its statutory mandate of protecting intellectual property.

It is important to recognize that as the apex science and technology body in Uganda, the UNCST is appropriately placed to create the necessary linkages between IPR protection and the application of technology in R & D activities in Uganda. Therefore, the creation and hosting of a national patents office would be a strategic action to refocus the role of IPR policy in the country. However, there appears to be no authoritative explanation as to why the legal requirement to operate a national patent office has never been implemented by the Council.

¹⁰ A patent is granted for a limited period (in most cases 20 years). Patent protection could also be lost for failure to pay maintenance fees or any other fees required by law.

¹¹ Cap 209, Laws of Uganda. Revised Edition, 2000.

¹² Ibid. s4(b)(e)

Another opportunity to rethink the role of IPR in Uganda and the appropriate institutional architecture to promote technological innovations and technology transfer presented itself in 1998 when the Uganda Registration Services Bureau Act (URSB) was enacted¹³. While this was an opportunity to separate patents registration from the other forms of registration that ought to be performed only as services¹⁴, it was not done. In fact, by its long title and its objectives¹⁵, the Uganda Registration Services Bureau focuses more on registration and revenue collection. Its mandate does not extend to promoting science and technology development and does not show how it relates to the Uganda National Council for Science and Technology¹⁶. What is needed therefore is to ensure that the operationalization of the Bureau takes into account these strategic considerations of science and technology research and development in the country.

The argument that Ugandan policy makers and planners have not assisted the country much in tapping the power of IPR in stimulating science and technology R & D is reinforced by the fact that the URSB was also not created soon after the Act was enacted. It is only under the Commercial Justice Reform Programme (CJRP) that attempts are being made to operationalize the Uganda Registration Services Bureau Act. Again, the main focus of the CJRP is to improve the efficiency in registration services and has nothing to do with the utilization of the technologies that may be protected by patents. It is

¹³ Cap 210, Laws of Uganda. Revised Edition, 2000.

¹⁴ Registration of companies, business names, marriages, births and deaths.

¹⁵ Ibid. s.4

¹⁶ In a personal conversation with Dr. Charles Mugoya of the National Council for Science and Technology on November 18, 2004, he indicated that due to fears of potential rivalries with the Ministry of Justice, there was a gentleman's agreement that Ministry of Justice should continue handling the administration aspects of IPR while the Council dealt with the technical aspects. There is no evidence of this gentleman's agreement working in favor of using the patents registration system to stimulate innovation or attract FDIs.

therefore tenable to argue that the relevance of a national patent office as an institution that takes policy responsibility for harnessing patent protected technology is as valid as it was when the UNCST Act was enacted in 1990.

Consequently, all political good will need to be marshaled to ensure that a national patents office, perhaps more appropriately called the National Science and Technology Office be established under the Uganda National Council for Science and Technology or another appropriate institution. The objectives of the office should be clearly spelt out to include promotion of using technologies that are available in public domain and should be fully integrated in the national system of innovation.

5. Developing a Critical Mass of Scientists

Indeed, it is important to recognize that taking advantage of the potential role of IPR as a policy instrument to stimulate indigenous innovations and facilitate technology transfer and attract FDI must start with transforming the institutions for IPR management. However, reforming these institutions will only be beneficial if its complemented by appropriate investments in creating a national pool of highly trained scientists. It is important to appreciate that in many countries such as Uganda, the current school system is not tailored to producing scientists who are innovators. In the short-term, such countries ought to take strategic decisions to support training in cutting age science and technology disciplines. In the long-term, the school curriculum could be re-oriented to offer such specialized training or even special academies could be established for this purpose.

6. Investment in Research and Analytical Work

As already alluded to, there is a lot of myth, most of it based on western notions of property rights suggesting that strong IPR protection stimulates the development of R&D by attracting investments by the private sector. Yet, there appears to be no evidence to suggest that such private investments have been attracted to support R & D anywhere. Even in developed countries, a lot of the basic and applied research is funded publicly. Empirical studies performed with data on United States, France and Japan generally find that patent protection is not of critical importance in R & D decisions¹⁷. Sakakibara and Branstetter (2001)¹⁸ for instance find no evidence of increase in either R & D spending or innovative output that could plausibly be attributed to the 1988 Japanese patent law reforms. Indeed, there are several other basic infrastructural and policy incentives that attract private investments into R & D activities rather than mere strong IPR protection.

In order to make informed choices and decisions, we need to initiate a conscious investment program to develop research and analytical capacity to inform policy reform and decision making on intellectual property rights. Key areas of research may cover issues such as the role of IPR in attracting FDIs, the necessary incentives to attract private investments in national R & D programmes, implications of implementing global IPR regimes on the development of national scientific and technological capacity among others.

¹⁷ Ibid note 7

¹⁸ Cited in Ethel Teljeur (2003)

7. Effective Participation in the Global Architecture and Negotiations on IPR Rules and Standard Setting

The multiplicity of institutions and processes for negotiations and rule setting on IPR pause a significant challenge to African countries. At the moment, discussions on IPRs are going on within the TRIPS Council of the WTO, the Committee on Trade and Environment (CTE) of the WTO, the World Intellectual Property Organizations (WIPO), the Convention on Biological Diversity (CBD), the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) among others. In all these cases, different issues that have implications for access to technology, food security, health, etc are being negotiated.

At the national and Africa Regional level, there is no mechanism for effectively engaging in these multiple processes later on ensuring that these processes inform IPR policy and legal reforms at the national level. East African Countries and Uganda in particular need to develop an appropriate mechanism for ensuring coordination in the negotiation of these agreements to the extent that they relate to intellectual property rights. Indeed, a national patent office or national science and technology office guided by an appropriate national policy would provide the much needed mechanism for addressing this gap.

8. Conclusion

There is currently growing consensus often expressed through political statements that the new national policy direction is to make Ugandan and East African products more competitive in the global market. Global market competitiveness of the economies of today and the future will largely depend on a country's capacity to engage in science and technology innovation. A properly functioning patent regime can be harnessed to enable countries achieve this competitiveness. In this context, patents ought to be considered as not only business assets but also as inputs into the national research system. Patent protection has to be considered as a policy instrument and the grant of patent rights to innovators a natural consequence of that policy. At the centre of the entire patents debate, a national science and technology office must be established as a priority as the fulcrum for the national system of innovation.

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