*International In-house Counsel Journal*
Vol.13, No. 53, Autumn 2020, 1

# Patent Protection of Plants in AATF Biotechnology Project Countries

M. T. MAHOP, A. TEJAN-COLE, A. SHIKOLI & H. OKIROR
Research Fellow, University of Leeds; Legal Counsel, AATF; Senior State Counsel, Office of the Attorney General, Kenya; Legal Officer, AATF

## 1.0 INTRODUCTION

The basis of this article stems from the evolution of protection of plant biotechnology culminating in the extension of intellectual property rights to plant biotechnology. The World Trade Organization's (WTO) Trade Related Aspects of Intellectual Property Rights (TRIPS) Agreement has particularly served to ensure protection of plant biotechnology as evidenced by Article 27 which provides for agricultural patents by stipulating that patent protection is available for all inventions in all fields.

Specifically, Article 27 (3) (b) of the TRIPS Agreement provides that members may exclude from patentability plants other than micro-organisms, and essentially biological processes for the production of plant other than non-biological and microbiological processes. However, members shall provide for the protection of plant varieties either by patents or by effective *sui generis* systems or by a combination of both.[1] This provision leaves a wide choice to members which are also African Agricultural Technology Foundation (AATF) Biotechnology Project Countries.[2] Apart from the WTO's TRIPS Agreement, there are regional agreements relating to patent protection of plant biotechnology in AATF Biotechnology Project Countries. This article conducts a review of patent legislation in AATF Biotechnology Project Countries in order to establish the extent of patent protection of plant biotechnology in such countries.

## 2.0 EAST AFRICA

### 2.1 KENYA

#### 2.1.1 Patents

In Kenya, the legislation currently in force governing patents comprises the Industrial Property Act 2001[3] and Industrial Property Regulations 2002.[4] Relevant to this article are the provisions of the Industrial Property Act 2001 which defines an invention for the purpose of patentability and whether, from the perspective of the Act, plant biotechnology inventions are eligible for patent protection. The meaning of what constitutes an invention is provided under Section 21, which stipulates that an invention is a solution to a specific problem[5] which may be, or may relate to, a product or a

[1] TRIPS Agreement, Section 5, Article 27(3) (b)
[2] AATF was founded in 2003 to address Sub-Saharan Africa's food security prospects through agricultural technology, AATF believes that the agricultural sector is a key foundational pillar as Sub-Saharan Africa consolidates its economic growth and carves out its new position as a major global economic powerhouse and the next growth market in the world. It was formed in response to the need for an effective mechanism that would facilitate and support negotiation for technology access and delivery and formation of appropriate partnerships to manage the development and deployment of innovative technologies for use by smallholder farmers in Sub-Saharan Africa (https://www.aatf-africa.org/)
[3] http://www.kipi.go.ke/images/docs/legal/Industrial_Property_Act_3_of_2001.pdf
[4] http://www.kipi.go.ke/images/docs/ipr2002.pdf
[5] Industrial Property Act 2001, Section 21(1)

process.[6] The basic requirements for a patentable invention reflect the stance of the TRIPs Agreement in that for an invention to be patented it must be new, it must be derived from an inventive step and it must be industrially applicable or provide a new use.[7]

#### 2.1.2 Patentability of Plants

The extent to which the Kenya legislation may be seen to accommodate plant biotechnology inventions can be assessed by looking at the exclusions from patentability. Section 26 of the 2001 Act provides that plant varieties as provided under the Seeds and Plant Varieties Act are not patentable.[8] However, the parts of such plants or the products of a biotechnological process may be patentable. Furthermore, the 2001 Act excludes from patentability inventions contrary to public health and safety and environmental conservation.[9] The fact that parts of plants and the products of biotechnological processes may be patented under Kenyan law suggests that there is an opportunity under the law, for the patentability of plant biotechnology inventions.

### 2.2 TANZANIA

#### 2.2.1 Patents

Patents in Tanzania are governed by the Patents Act Chapter 217 of 1987 as the principal legislation and the Patents Act No. 1 of 1987, as amended by Acts 13 and 18 of 1991. Pursuant to the 1987 Patents Act, inventions may be protected in Tanzania either through patents[10] or utility certificates.[11] The law defines an invention as a solution to a specific problem in a field of technology which may relate to a product or a process.[12]

#### 2.2.2 Patentability of Plants

The extent of coverage of plant patents under the patent law of Tanzania can be examined by looking at what the law considers to be inventions that are excluded from patentability. Section 7(2)(b) of the 1987 Patent Act provides that plant varieties or essentially biological processes for the production of plants, other than microbiological processes and the products of such processes, are not patentable.

On the face of these exclusions, plants varieties and essentially biological processes are not to be patentable under Tanzanian law. However, the fact that the 1987 Act leaves open the possibility of patenting microbiological processes and the products of such processes suggests an opportunity under the Act for the patentability of a new variety of plant which has been developed through biotechnological applications.

### 2.3 ETHIOPIA

#### 2.3.1 Patents

The patent legislation in Ethiopia currently in force comprises two principal instruments: the Inventions, Minor Inventions and Industrial Design Proclamation No. 123/1995 and the Inventions, Minor Inventions and Industrial Design Regulations No. 12/1997. Proclamation No. 123/1995 defines an invention as an idea of an inventor which permits in practice the solution to a specific problem to the field of technology.[13] According to Proclamation No. 123/1995, in order to be granted a patent, an invention must be new, must involve an inventive step and must be industrially applicable.[14]

---

[6] Ibid., section 21(2)
[7] Ibid., section 22
[8] Ibid., section 26 (a)
[9] Ibid., Section 26 (b)
[10] 1987 Patent Act of Tanzania Section 8
[11] Ibid., section 73
[12] Ibid., section 7(1)
[13] Innovations, Minor Innovations and Industrial Designs, Proclamation No. 123/1995, Chapter 1 (2) (3)
[14] Ibid., Chapter 2, Section 1 (3) (1)

#### 2.3.2 Patentability of Plants

The extent to which the Ethiopian patent law considers plant patenting can be assessed through its provisions on non-patentable subject-matters. According to the Proclamation No. 123/1995, the list of non-patentable subject matters includes plant varieties or essentially biological processes for the production of plants.[15] Ethiopia appears to have excluded plant varieties from its patent regime. Furthermore, although the law excludes essentially biological processes for the production of plants from patentability, it does not clearly specify whether or not biotechnology-based micro-biological processes and the products from these processes such as new varieties of plants may be patentable. The 1997 Innovations, Minor Innovations and Industrial Designs Regulations do not yield any further clarification on this. This situation raises the question of how applications for patents over biotechnology-based agricultural inventions are treated in Ethiopia.

### 2.4 UGANDA

#### 2.4.1 Patents

Patents are governed by the Industrial Property Act 2014. This Act protects inventions among other forms of industrial properties. For an invention to be patentable under this law, it must be new, involve an inventive step and should be industrially applicable.[16]

#### 2.4.2 Patentability of Plants

The extent to which the Ugandan patent law considers plant patenting can be assessed through its provisions on non-patentable subject-matters as expressly contained in the Industrial Property Act, 2014. Section 13 (a) of the 2014 Act expressly curtails the patenting of plant varieties as provided for in the law providing for the protection of plant varieties.[17] However, the parts of such plants or the products of a biotechnological process may be patentable. Furthermore, the 2014 Act excludes from patentability inventions contrary to public health and safety and environmental conservation.[18] The fact that parts of plants and the products of biotechnological processes may be patented under Ugandan law suggests that there is an opportunity under the law, for the patentability of plant biotechnology inventions.

## 3.0 SOUTHERN AFRICA

### 3.1 SOUTH AFRICA

#### 3.1.1 Patents

In South Africa the principal law governing the protection of patents is the Patents Act No. 57 of 1978 which was amended with the promulgation of the Patents Amendment Act No. 58 of 2002. There was a supplementary amendment to the Patents Act, the Patents Amendments Act No. 20 of 2005, its central focus being the introduction of a declaration alongside the patent application for an invention that is based on the utilisation of indigenous resources and traditional knowledge, stating that the invention derives from such resources and providing proof of prior authorization from the resource holders that they may be used in the inventive process. Like most patent regimes across the world, an invention is patentable in South Africa if it is new, involves an inventive step and is capable of being used or applied in trade or industry or agriculture.[19]

#### 3.1.2 Patentability of Plants

---

[15] Ibid., Chapter 2, Section 1 (4) (1)
[16] Industrial Property Act 2014 Uganda, Section 9
[17] Ibid, Section 13 (a)
[18] Ibid., Section 13 (b)
[19] Patents Act No. 57 of 1978 of South Africa, Section 25 (1)

The Patents Act No. 57 of 1978 provides a list of elements that cannot be patented in South Africa. The Patent Act excludes from patent protection any variety of plant or any essentially biological process for the production of plants, not being a micro-biological process or the product of such a process.[20] The Patents Act excludes any variety of plant or any essentially biological process for the production of plants. Plant variety patenting per se is, therefore, not available under the South African regime. But the Patents Act permits the protection of microbiological processes and the products of such processes. In this respect, it is expected that the process of developing a genetically engineered micro-organism is patentable as well as the plants which will incorporate such a micro-organism.

## 3.2 MOZAMBIQUE

### 3.2.1 Patents

The law currently in force in Mozambique governing the protection of patent rights is Decree No. 04/2006 of 12/April/2006 which is the Industrial Property Code. The Industrial Property Code defines a patent as a right granted through the protection of an invention which, in turn, is defined as an idea that finds a practical solution to a technical problem. According to the Code, an invention may consist of a product or a process or may consist of both a product and a process.[21] For the purpose of patent protection, the Code provides for the common basic requirements that the invention must fulfil along the lines of most intellectual property jurisdictions across the world, which is that to be patented an invention must be new, involve an inventive step and be industrially applicable.[22]

### 3.2.2 Patentability of Plants

Decree No. 04/2006, the Industrial Property Code of Mozambique, provides for some exclusions from patentability, which include, among others, inventions that are contrary to public safety or public health. In relation to living things, the Code provides that all or parts of living beings shall not be patented. However, microbiological processes or products obtained from such processes are patentable.[23] Although there is exclusion of all or parts of living beings from patentability, implying that plants or parts of plant are not patentable under the current regime in Mozambique, the patenting of microbiological processes or products obtained from such processes may lead to the patenting of genetically engineered plants.

## 3.3 MALAWI

### 3.3.1 Patents

Patent law in Malawi is governed by the Patents Act, Chapter 49:02 of 1958. The Act entered into force in 1958 and was revised in 1986 to form the current version. The Act applies to the protection of inventions which are defined to mean any new useful art (whether or not producing a physical effect), process, manufacture, or composition of matter which is not obvious, or any new and useful improvement thereof which is not obvious, capable of being used or applied in trade or industry and includes an alleged invention.[24] In this definition are embedded the basic requirements for a patentable invention which are newness, non-obviousness and the industrial applicability of the invention.

### 3.3.2 Patentability of Plants

[20] Ibid., Section 25 (4)
[21] Decree No. 04/2006 of April 12, 2006 of Mozambique, Article 1(b) and (c)
[22] Ibid., Article 24
[23] Ibid., Article 30(2)
[24] Patents Act Chapter 49:02 Malawi, Section 2

Fulfilment of the definition of patentable invention does not automatically qualify an invention for patent in Malawi, because there are instances where the Registrar may refuse to grant a patent. In accordance with the Act, the Registrar may refuse to grant a patent over an invention if it appears that such an invention is frivolous on the grounds that it claims as an invention anything obviously contrary to well established natural laws.[25] Furthermore, the Act states that 'if it appears to the Registrar that any invention in respect of which an application for a patent is made might be used in any manner contrary to law, he may refuse the application unless the specification is amended by the insertion of such disclaimer in respect of that use of the invention, or such other reference to the illegality thereof, as the Registrar thinks fit'.[26] The patent regime of Malawi does not contemplate patentability of plant varieties or biotechnological processes for the production of new varieties of plants. However, since Malawi is a member of the Harare Protocol on Patents and Industrial Designs that is administered by ARIPO, it should be noted that the Registrar may accept patents applied for and granted by ARIPO that mention Malawi. Using the ARIPO application process, it therefore appears possible, at least in theory, that patents for new plant varieties produced through biotechnological processes may be considered in Malawi.

## 4.0 WEST AFRICA

### 4.1 NIGERIA

#### 4.1.1 Patents

The law currently in force governing the protection of inventions in Nigeria is the Patents and Designs Act Chapter 344 of 1971, Laws of the Federation of Nigeria, as amended in 1990. Pursuant to the Act, for an invention to be patentable, it has to be new, it must result from an inventive activity and must be industrially applicable.[27]

#### 4.1.2 Patentability of Plants

The Nigerian Patents and Designs Act has identified a number of instances where a patent cannot be granted over an invention even if this invention fulfils all the patentability criteria. Patents cannot be obtained for principles and discoveries of a scientific nature.[28] Also, patents cannot be obtained in respect of plant varieties, or essentially biological processes for the production of plants other than microbiological processes and their products.[29] From this provision it is clear that plants are not patentable unless derived from micro-biological process.

### 4.2 GHANA

#### 4.2.1 Patents

The law governing the protection of inventions in Ghana is the Patents Act No. 657 of 2003. The Act defines a patent as a title granted to protect an invention, which in turn is defined as an idea of an inventor which permits in practice the solution to a specific problem in the field of technology and may relate to a product or a process.[30] An invention so defined can only be qualify for a patent if it is new, involves an inventive step and is industrially applicable.[31]

#### 4.2.2 Patentability of Plants

Not all inventions may be granted patents in Ghana even if they fulfil the patentability requirements. Notable among the inventions that cannot be patented in Ghana are plants

[25] Ibid., Section 18(1)
[26] Ibid., Section 18(2)
[27] Patents and Design Act Chapter 344 of 1990 Nigeria, Sections 1 and 2.
[28] Ibid., Section 1(5)
[29] Ibid., Section 1(4)
[30] Patents Act No. 657 of 2003, Ghana, Section 1(1) and (2).
[31] Ibid., Section 3(1).

other than micro-organisms, biological processes for the production of plants other than non-biological and microbiological processes, and plant varieties.[32] Plant varieties are, therefore, excluded from patent protection in Ghana. However, it appears that non-biological processes and microbiological processes for the production of plants are patentable.

## 5.0 REGIONAL

## 5.1 AFRICAN REGIONAL INTELLECTUAL PROPERTY ORGANIZATION (ARIPO)

ARIPO was established pursuant to the Lusaka Agreement in 1976.[33] The objective of ARIPO includes the promotion, harmonisation and development of intellectual property laws, and related matters of its members.[34] ARIPO has a membership of 19 (mainly Anglophone) countries including but not limited to AATF Biotechnology Project Countries Kenya, Tanzania, Uganda, Mozambique, Malawi and Ghana. [35]

### 5.1.1 Patents

ARIPO's Harare Protocol on Patents and Industrial Designs and the enabling regulations provide the basis for ARIPO's system of registration of patents.[36] It should be stressed that the Harare Protocol follows the customary TRIPs-based requirements for patentability, which are that, for an invention to be patentable, it has to be new, to be derived from an inventive step and to be industrially applicable.[37]

### 5.1.2 Patentability of Plants

There is no specific endorsement of plant patenting or the protection of new varieties of plants through patents in the Harare Protocol. However, the Protocol provides for the possibility of patenting a micro-biological process or a product of such a process on condition that if a micro-organism is the product of the microbiological process, the micro-organism must be, before acceptance, dealt with in the manner prescribed by regulations.[38] Though the Harare Protocol does not expressly refer to plant patenting, by keeping the window open for the protection of a micro-biological process and a product of such a process, there is clearly a distinct possibility for the patenting of genetically modified crops through the Harare Protocol.

## 5.2 AFRICAN INTELLECTUAL PROPERTY ORGANIZATION (OAPI)

OAPI is an intellectual property organization with 17 Member States mainly from French-speaking countries in Central and West Africa including AATF Biotechnology Project Country Burkina Faso. It was created pursuant to the 1977 Bangui Agreement.

### 5.2.1 Patents

Annex I of the 1999 Revised Bangui Agreement provides for the regulation and protection of patent rights within OAPI. Reflecting the approach of the TRIPs Agreement, the substantive criteria for patentability of an invention are based on the

---

[32] Ibid., Section 2 (e) and (f)
[33] Lusaka Agreement on the Creation of the African Regional Intellectual Property Organization (ARIPO), adopted at Lusaka, Zambia, 9 December 1976
[34] Ibid., Article 3
[35] https://www.aripo.org/member-states/
[36] Protocol on Patents and Industrial Designs within the Framework of the African Regional Intellectual Property Organization, adopted on 10 December 1982, at Harare, Zimbabwe and Regulations for Implementing the Protocol on Patents and Industrial Designs within the Framework of the African Regional Intellectual Property Organization, 25 April 1984. (https://www.aripo.org/wp-content/uploads/2020/01/Harare-Protocol-2020-Edition-1.pdf)
[37] Ibid., Section 3 (10) (a)
[38] Ibid., section 1(A).

novelty[39] inventiveness,[40] and industrial applicability[41] of the invention over which legal protection through patents is sought.

### 5.2.2 Patentability of Plants

Addressing non-patentable subject-matters, Article 6(c) of the 1999 Revised Bangui Agreement stipulates that patents shall not be granted on inventions having as their subject-matter plant varieties or essential biological processes for the breeding of plants, other than microbiological processes and the products of such processes. Similar to the observation made earlier in relation to the ARIPO Harare Protocol on Patents and Industrial Designs, the OAPI Bangui Agreement appears to have left a window open for the possibility of patenting genetically modified crops, which can, therefore, include plant varieties that incorporate specific genes which have been created through biotechnological processes.

## 6.0 CONCLUSION

As indicated in the introduction, Article 27(3) (b) of the TRIPS Agreement allows governments to exclude plants and essentially biological processes from patenting but micro-organisms, non-biological processes and products of such processes are eligible for patents. Nonetheless, plants have to be eligible for protection either through patent protection or a *sui generis* system or a combination.

Despite the fact that the protection of plant biotechnology through intellectual property has always been riddled with controversy centred on the perceived threats to public health, safety, environment and food sovereignty, this review of legislation on the protection of plant biotechnology through intellectual property rights establishes that AATF's Biotechnology Project Countries have institutionalized patent laws for protection of plants.

In terms of promoting or attracting investment by the private sector in agricultural biotechnology in such countries, this development appears to be an important boost to the confidence of the plant biotechnology sector. Owners of plants with desirable traits are often reluctant to permit their varieties to be exported to places where plant variety protection is not available.

Improved access to plant biotechnology varieties is important when those varieties offer specific advantages. A variety may be, for example, more resistant to drought, insects, or other agricultural constraints. It may also be more appealing to customers since it retains its appearance and freshness longer than another variety.

By having access to such plant biotechnology varieties, AATF's TELA Maize and Pod Borer Resistant Cowpea Project partnerships have developed and are in the process of commercializing drought-tolerant and insect-protected maize and insect-protected cowpea varieties in order to enhance food security in Sub-Saharan Africa. About 3,454,013 farmers used new plant varieties (including plant biotechnologies) generated through AATF collaborations in 2018 and 2019.

A balanced and effective intellectual property system that protects both creativity and the public interest is the best guarantor of access to such varieties. Especially since the United Nations World Food Programme has warned that an additional 130 million people could face acute food insecurity by the end of 2020 due to the Covid-19 Pandemic.[42]

---

[39] Agreement Revising the Bangui Agreement of March 2, 1977, on the Creation of an African Intellectual Property Organization* (Bangui (Central African Republic), February 24, 1999), Annex 1 Article 3

[40] Ibid, Annex 1 Article 4

[41] Ibid, Annex 1 Article 5

[42] https://www.wfp.org/news/wfp-chief-warns-hunger-pandemic-covid-19-spreads-statement-un-security-council, 21 April 2020, accessed on 20 November 2020 at 5:18PM East African Time

Further, as observed by the World Economic Forum, the arrival of the novel coronavirus has worsened what was already a huge global food security challenge.[43]

***

**Dr. Marcelin Tonye Mahop** is an intellectual Property Rights consultant, with a PhD earned from the Queen Mary Intellectual Property Research Institute (QMIPRI), Centre for Commercial Law Studies (CCLS), Queen Mary University of London. He has more than 15 years' experience of research and consultancy on IPRs, in particular in the area of IPR application to biotechnology innovations, specifically agricultural biotechnology and genetic resources utilization within the framework of the implementation of the 1992 UN Convention on Biological Diversity (CBD), its 2010 Nagoya Protocol on Access and Benefit Sharing and the FAO Plant Treaty. Dr. Mahop has published broadly on IP with his 2010 book 'Intellectual Property, Community Rights and Human Rights: The Biological and Genetic Resources of Developing Countries' published by Taylor & Francis: London and New York and the co-edited 2012 book: 'Extending the Protection of Geographical Indications: Case Studies of Agricultural Products in Africa' published by Earthscan from Routledge: Oxford and New York. Dr. Mahop is currently a research fellow at the University of Leeds researching on the processes of formulation and implementation of climate smart agriculture policies, paying special attention to the extent to which these policies accommodate and promote the use of biotechnological innovations in the agriculture sector in the interest of food security, economic development and climate resilience in Africa. He is a citizen of Cameroon.

**Alhaji Tejan-Cole** holds a LL.M degree in Legislative Drafting from the University of the West Indies and a LL.M degree in Intellectual Property Law from the University of South Africa. He has served as Legislative Counsel in Sierra Leone and in the Caribbean nation of Belize where he helped draft the country's WTO/TRIPS implementing legislation. In 2003, he was appointed as Deputy Registrar for Intellectual Property in Belize, a position which he held until his appointment with the AATF. Alhaji has authored several publications and conducted capacity building on intellectual property law, and has led negotiations for the access and development of technologies by AATF such as agricultural biotechnologies, the Agridrive App and the Samawati Electronic Intellectual Property Research Notebook. He has also served as legislative drafting consultant for the World Intellectual Property Organization. He is a citizen of Sierra Leone.

**Aprinah Magarinah Shikoli** is an Advocate of the High Court of Kenya, She does consultancies in matters relating to intellectual property rights for various organizations including the AATF. Aprinah is currently working as a Senior State Counsel in the Office of the Attorney General and Department of Justice in Kenya. She is a holder of a Bachelor of Law Degree from the University of South Africa (UNISA) (Class of 2008). She later attended the Kenya School of Law where she obtained her Higher Diploma in Law (Class of 2012). Before attaining her Master of Laws in Intellectual Property Rights majoring in Plant Variety Protection from the University of Nairobi, Aprinah had done short courses in IPRs including on Genetic Resources and Intellectual Property Rights at the University of Sweden (Uppsala). Aprinah is a citizen of Kenya.

[43] https://www.weforum.org/agenda/2020/05/how-is-covid-19-affecting-food-security/, 26 May 2020, Beatrice Di Caro, Digital Media Specialist, World Economic Forum, accessed on 20 November 2020 at 5:28PM East African Time

**Howard Okiror is** an Advocate of the High Court of Kenya, and holds a Bachelor of Law Degree from the Catholic University of Eastern Africa (CUEA), a Post Graduate Diploma in Law from the Kenya School of Law, a Master's Degree in Intellectual Property from the Africa University (WIPO/ARIPO Academy) Zimbabwe, several professional certificates on Intellectual Property issued by WIPO Academy and is currently finalising on his Master of Business Administration at CUEA. Prior to joining AATF, he worked at the Kenya Copyright Board, a state corporation under the Office of the Attorney General and Department of Justice (Kenya), as a Legal Counsel and Copyright Prosecutor where he was involved in advising government and training the public on issues surrounding copyright and related rights, and also conducted prosecution for copyright infringement cases. Prior to joining government, Howard worked as a commercial and litigation lawyer with the firms of Yunis Mohammed & Associates and Muriithi & Ndonye Advocates respectively. Howard is a citizen of Kenya.

**The African Agricultural Technology Foundation (**AATF) is a foundation designed to facilitate and promote public-private partnerships aimed at removing any barriers that have prevented smallholder farmers in Sub-Saharan Africa (SSA) from gaining access to existing agricultural technologies that could improve food security and reduce poverty. AATF was incorporated in Kenya in April 2003 and operates projects in most of SSA.