A Critical Reflection on the Legal Framework Providing Protection for Plant Varieties in Ethiopia

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1. Introduction

In 2006, Ethiopia issued the first law providing protection for plant varieties with the main objective of boosting agricultural production and productivity by recognizing and rewarding the efforts and investments of plant breeders. This article seeks to analyze that law. The analysis centers around two main issues. First, the article assesses the law particularly in the light of its own objectives. While rewards or incentives for breeders constitute an important objective, whether the provisions of the law adequately reflect this is one important issue this article has attempted to address. Second, since 2003 Ethiopia has been in the process of accession to the World Trade Organization (WTO) and as part of this process it would be required to provide protection for plant varieties either through a patent, an effective *sui generis* system or a combination of the two systems as prescribed by the Agreement on Trade-Related Aspects of Intellectual Property Rights (the TRIPS Agreement) - one of the major agreements of the WTO. Ethiopia's law may be regarded as a *sui generis* system as envisaged by the TRIPS Agreement and the other important area of analysis in this article is whether or not the key provisions of the law are in conformity with the TRIPS Agreement. In that light, the article attempts to make a preliminary examination of the salient provisions of the Ethiopian legal framework providing protection for plant varieties in the light of the provisions of the TRIPS Agreement. In addition, the article attempts to identify conceptual deficiencies, gaps and limitations in the law and makes some recommendations for possible action.

The article is organized as follows. The first section sets the context for examination of the main issues of discussion in the subsequent sections by making a cursory look at the emergence and development of intellectual property (IP) protection for plant-related innovations as well as by outlining the relevant TRIPS provisions on the subject. It then takes up the thorny issue of when and under what conditions a plant variety protection would be considered 'effective' for the purpose of the TRIPS Agreement. This will be followed by a detail examination of the different elements of the Ethiopian legal framework on protection of plant varieties based on the guidelines of effectiveness of a *sui generis* system outlined in the previous section. The paper concludes by providing critical insights into and perspectives on the Ethiopian legal framework by raising a range of issues related to the harmony between the objectives of the law and its actual provisions as well as to its compatibility with the TRIPS Agreement.

2. Emergence and development of IP protection for plant-related innovations

For centuries, plant varieties had been developed and used in agriculture through

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traditional plant breeding where private ownership of such varieties through intellectual property rights (IPRs) had not featured prominently as an issue. Even with the emergence of modern plant breeding, plant varietal development had historically been taken as the responsibility of the public research institutions. As the varieties were developed as public good, the issue of IPR protection of the varieties was not high on the agenda. IPR protection for plant varieties became an important issue with the emergence of commercial plant breeding, the understanding being such a protection plays an important role to promote and reward innovation in plant breeding.[1] But from the very beginning the issue of IPR protection for plant-related innovations had been controversial. On the one hand, such innovations are borne in seeds which can make myriads of copies of themselves in the natural growth process; the release of a propagating material of a plant enables the reproduction of the variety without any further control of the breeder and the commercial breeding sector asserted that without IPR protection for such innovations the breeder would be in danger of loosing benefits from his many years of research and breeding efforts. On the other hand, it was not clear if allowing monopoly rights over plant-related innovations through IPRs would be in the public interest since such a protection would restrict access to the protected varieties. Furthermore, from a technical point of view, given the self-replicating nature of plants, it was not clear if such innovations would fit into the hitherto existing traditional IPRs which were created for machine-related innovations.

In the face of increased pressure from the emerging commercial plant breeding and seed industry in the United States (U.S.) and Europe for the creation of a mechanism to reward plant breeding, two different approaches emerged. The first was a bold experiment to accommodate plant-related innovation within the existing patent system and the second, an attempt to develop a different reward system out of the patent system. The *US Plant Patent Act*, the fist ever law providing IPR protection for plant-related innovations, came into force in 1930.[2] The Act was indeed innovative in the sense that it attempted to modify the existing patentability criteria for inventions to suit plant-related innovations.[3] However, the scope of application of the Act was limited to asexually propagated plants (such as through budding, grafting and layering), fruit and ornamental species. Needless to say, it did not prevent use of the protected variety as parental material for sexual propagation.[4] All the sexually-propagated species (those grown from seeds) and the majority of the asexually-propagated species being excluded from the scope of the law and that the right holder was not entitled to prevent the use of the protected variety for propagation

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[1]A.J. van Wijk, D.J.F. Eaton & N.P. Louwaars , 'Framework for the Introduction of Plant Breeders' Right in the Developing Countries' (Unpublished Wageningen Centre for Genetic Resources, 2003) 13.

[2]The Plant Patent Act of 1930, 35 U.S.C. 161-164.

[3]Thus in recognition of disclosure of innovations relating to living things, the law requires disclosure "as complete as is reasonably possible", Ibid, at 162.

[4]V. Henson-Apollonio, *Intellectual Property and Patent Regimes in Biotechnology and their Impact on Agricultural Development in Developing World*, in P. Christou & H. Klee (Eds), Handbook of Plant Biotechnology, (WILEY Publishing, Hoboken, NJ, 2004) 27.

even for commercial purposes, the incentive it promised for the commercial breeders was limited and the precursor Patent Act was far from being a truly patent law for plant-related innovations. A specific law on the protection of plant varieties outside the patent system came in the U.S. only in 1970 when the *Plant Variety Protection Act* was issued.[5]

The advent of modern biotechnology[6] has brought a different dimension to the development of protection for plant-related innovations. The 1970s saw a rapid scientific breakthrough in the life sciences including the refinement of the recombinant DNA techniques, sequencing of the genome of a virus, the cloning of human genome.[7] These and other scientific developments were increasingly viewed as a great potential for producing new products and processes of considerable economic significance and IPR protection was increasingly viewed as a critical tool to ensure returns from investments made in the area.

The modest beginning of extending patent protection for a genetically modified microorganism (GMOs) following the 1980 slim majority (5:4) decision of the U.S. Supreme Court in *Diamond v. Chakrabarty*[8] which for the first time recognized

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[5]The Plant Variety Protection Act of 1970 (PVPA), 7 U.S.C. 2321-2582.

[6]The Convention on Biological Diversity (CBD) defines biotechnology as "Any technological application that uses biological system, living organisms, or derivatives thereof, to make or modify products or processes for specific use" (The Convention on Biological Diversity adopted at Rio in 1992 came into force in 1993, U.N Doc. UNEP/Bio. Div/N7-INC.S/4. Article 2 'Use of Terms'). On the other hand, the Food and Agricultural Organization (FAO) defines modern biotechnology as "...a range of different molecular technologies such as gene manipulation and gene transfer, DNA typing and cloning of plants and animals." See Food and Agricultural Organization (FAO) , 'FAO Statement on Biotechnology' (Rome, 2000) available at http//:www.fao.org (accessed on 12 May 2010) .

[7]The scientific breakthrough was achieved because of the discovery of the Deoxyribonucleic acid (DNA), the substance which carries the hereditary characteristics, by Waston and Crick in 1953 followed in 1973 of the demonstration by Stanley Cohen Herbert Boyer that DNA from different species could be assembled and inserted into another (host) organism through a process known as recombinant DNA (rDNA) technology. See in general Mill, O., Biotechnological Inventions: Moral Restrains and Patent Law (ASHGATE Publishing, 2005) 15.

[8]*Diamond v Chakrabarty*, 447 U.S. (United States Supreme Court Reports) 303, 100 S. Ct. (Supreme Court Reporter) 2204 (1980). Before 1980, the policy of the US Patent Office was to refuse applications for patents on living organisms. The basis for refusal was the long-standing "products of nature" doctrine, which specified that although processes devised to extract products found in nature could be patented, the products themselves were not patentable subject matter because they were not inventions. Accordingly, when Ananda Chakrabarty applied in 1972 for a patent on a living bacterium capable of consuming oil slicks, the application was refused. Chakrabarty appealed, and in 1979 the case reached the US Supreme Court. In June 1980, by a close majority, the Supreme Court held that Chakrabarty had a right to a patent on the microorganism under the existing patent law. The majority noted that the relevant distinction was not between animate and inanimate things, but between products of nature and human-made inventions; patentable subject matter included "everything under the sun that is made by man", including living

patentability of a living organism *per se*[9], expanded to an animal (an Oyster) in 1987.[10] The *Harvard Onco-Mouse* (a genetically modified mouse which was highly susceptible to cancer because it had a human oncogene) became the first mammal to be considered an 'invention' by the U.S. Patent and Trademark Office (USPTO) in 1988.[11] The current state of the law in the U.S. offers opportunities for plural regimes of protection for plant-related innovations: utility patents, Plant Patent Act (PPA) and Plant Variety Protection Act (PVPA). Patents are also available to microorganisms, genes, cells and DNA as well as human body.

In Europe though the need to provide some form of protection for plant breeders was long recognized, the patent system was regarded as inappropriate to protect plant-related innovations because, among other things, it was understood that plant-related innovation would not meet the patentability criteria such as novelty and inventive step.[12] A different approach was accordingly adopted to reward plant

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organisms produced using genetic technology.

[9]Actually, the US Patent Office had granted a Patent to Louis Pasture in 1873 for purified yeast, which is regarded by many as the first patent on life forms. But even if it is true that the patent was granted for "yeast free from organic germs of disease, as an article of manufacture" (US Patent 141'072), it was granted with the understanding that the claim relates to inanimate things. As noted the understanding in the US before *Diamond v Chakrabarty* was that living things were "products of nature" not patentable inventions. That is why the USPTO had refused to recognize living matter as a patentable subject matter until the decision in *Diamond v Chakrabarti.* It is to be noted that the claimed invention in *Diamond v Chakrabarty* was the bacterial strain itself not useful products derived therefrom which makes it a living thing *per se* claim. Pasture's patent attracted little attention at the time probably because it was taken as an isolated incident not capable of setting precedence as biotechnology had not yet began to show its breakthroughs at the time.

[10]*Ex parte* Allen, 2 U.S.P.Q.2d (1987). In this case the patent applicants developed a method for producing a new variety of sterile polyploidy oysters of the *Crassostrea gigas* species. Even if the patent examiner rejected the patent claim as the new variety of oyster was not manufactured by man which decision was confirmed by the USPTO though for a different reason (not satisfying the 'obviousness' requirement under 35 U.S.C 103), the Board of Patent Appeals and Interferences reversed the holding reiterating the Supreme Court's strong language in Chakrabarty, "anything under the sun that is made by man is patentable." The understanding was that the particular oyster had not existed before and was thus a patentable subject matter under 35 U.S.C 101 (2 U.S.P.Q.2d at 1428). From this time on the USPTO has taken the position that non-naturally occurring non-human multi-cellular living organisms including animals are patentable subject matter within the scope of 35 U.S.C 101 (See USPTO Rule published in 1077 Off. Gaz. Pat. Office 24 on Apr. 21, 1987).

[11]Harvard Onco-Mouse, 447 USP.307. The USPT granted U.S. patent No. 4,736,866 to a transgenic non-human mammal, a genetically engineered mouse. Harvard scientists isolated a gene that causes cancer in mammals, including humans, which was then injected into already fertilized mouse ova. Some of the mice produced this way developed breast cancer within a few months of their birth. The mice would enable scientists to monitor both the course of the disease and its causes.

[12]M Llwelyn, 'The Legal Protection of Biotechnological Inventions: An Alternative

breeders at the beginning through different non-IPR mechanisms such as protected seals for seeds from the original breeder, and monetary rewards, and later through a plant breeder right (PBR). The individual measures of the European countries to provide protection for plant breeding were harmonized through the *International Convention for the Protection for New Varieties of Plants*[13] (the UPOV Convention). The *European Patent Convention* (EPC)[14] has unequivocally banned patent protection for plant varieties and currently all countries which make up the EU but Greece are members of the UPOV. The *Directive of the European Parliament and of the Council on the Legal Protection of Biotechnological Inventions*[15] (the European Biotech Directive) has expanded patentability of biological materials with a view to creating a more favorable condition for the development of modern biotechnology. Actually, the European Biotech Directive has come up with a clear position on life patenting that no invention should be refused patents merely because a living matter is involved.[16] Though, true to the tradition in Europe as embodied in the EPC, the European Biotech Directive provides that plant and animal varieties are not themselves subject to patents, invented plants and animals are patentable in as much as the claim is not directed to a plant or animal variety as such.[17]

On the other hand, even if developing countries have long recognized the critical role of modern varietal improvement to their agricultural development, they have sought to achieve this objective through publicly funded research systems both at the national and international levels where IPRs play a little role.[18] For a range of moral/ethical and policy considerations, most of these countries used to exclude living things in general from patentability and only few had a law providing PBR protection for plant varieties. As of 1995, when the WTO agreements entered into force, there were only seven developing countries with IPR regimes for plant varieties, none of them a Least Developed Country (LDC).[19]

Approach'(1997), 3 European Intellectual Property Review 117.

[13]The International Convention for the Protection of New Varieties of Plants of December 2, 1961 as revised on November 10, 1972, on October 23 1978 and on March 19, 1991. UPOV is the French acronym of the organization administering the conventions, *L'Union internationale pour la protection des obtentions végétales.*

[14]Article 53.b, Convention on the Grant of European Patents (European Patent Convention), done at Munich, 5 October 1973.

[15]Directive 98/44/EC of the European Parliament and the Council of 6 July 1998 on the Legal Protection of Biological Inventions, Official Journal of the European Communities, I. 213/13, 30 July 1998.

[16]The recitations of the European Biotech Directive clearly recognize that biotechnology is a high risk investment and requires legal protection for innovations in the field with a view to encourage investment, productivity and industrial development.

[17]See Article 4(1) and 4(2), the European Biotech Directive.

[18]See in general R.E Evenson & D. Gollin, Crop Variety Improvement and its Effect on Productivity: The Impact of International Agricultural Research,(CABI Publishing, 2003).

[19] They are Argentina, Chile, Uruguay, Colombia, Mexico, Zimbabwe and Kenya. See Jaffe and van Wijk 'The Impact of Plant Breeders' Right in Developing Countries', Technical Paper of the Special Program on Biotechnology and Development Cooperation (Ministry of Foreign Affairs of the Netherlands, 1995) 23.

With the coming into force of the TRIPS Agreement, it has become an obligation for all WTO Members to provide protection for plant varieties either through patents, an effective *sui generis* system or a combination of the two.

3. The TRIPS Agreement and Plant-related innovations: setting the context

Article 27.1 of the TRIPS Agreement provides the basic principle that members should provide patent protection for all types of inventions in any field of technology. Then the second sub-article provides inventions which may optionally be excluded from patentability. In particular, Article 27.3(b) of the TRIPS Agreement provides as follows:

> Members may also exclude from patentability plants and animals other than microorganisms, and essentially biological processes for the production of plants or animals other than non-biological and microbiological processes. However, Members shall provide for the protection of plant varieties either by patents or by an effective *sui generis* system of any combination thereof.

In relation to plant-related innovations, there could be different options under Article 27.3(b) including the following: to exclude plants and plant varieties from patentability and provide protection for plant varieties by a *sui generis* system; to not exclude plants and plant varieties from patent protection; to not exclude plants from patentability but provide an effective *sui generis* system of protection for plant varieties.

Although the breadth of Article 27.3(b) remains controversial, it is nonetheless one of the areas where the TRIPS Agreement has apparently provided flexibility to WTO Members to design their own plant variety protection taking into account their specific needs if they opt for the *sui generis* system. It is to be noted that the TRIPS Agreement has not even attempted to provide a general guideline as to what the *sui generis* system should look like, let alone to prescribe minimum standards of protection, save the vague requirement that such a system be 'effective.'

However, despite the apparent flexibility, Article 27.3(b) seems to have accomplished one important task: it has forced all WTO Members-including developing countries and LDCs that did not have plant varieties protection regimes before- to look for a mechanism for protection of plant-related innovation within a defined time frame; one obvious impact of this being the increase in membership to UPOV, the only *sui generis* plant variety protection system at the international level. The fact that the UPOV has been a readily available mechanism coupled with the understanding that it is generally regarded as compatible with the TRIPS Agreement might have persuaded a number of WTO Members to accede to the UPOV. Membership to this Convention has increased from 27 in 1994 to 68 by November 2010.

Nonetheless, what is stated above may not necessarily lead to the conclusion that the TRIPS Agreement was the *raison d'être* for developing countries in general and LDCs

in particular to look for a mechanism for protection of plant-related innovations. Actually, a number of these countries had embarked upon economic liberalization, including in the agricultural sector, in the 1980s and 1990s, before the TRIPS Agreement entered into force, where IPR protection in general and protection of plant varieties in particular was taken as part of the package of economic liberalization in the agriculture sector.[20] In some of these countries, plant variety protection was thus foreseen even before the term *sui generis* was inscribed in the WTO vocabulary. It would therefore be difficult to make the whole issue of protection of plant-related innovations as purely the invention of the TRIPS Agreement. This state of affair necessitates viewing the issue of plant variety protection in the context of the broader global socio-economic order since the end of the Cold War which has been propelled by globalization including economic reforms through economic liberalization.

3.1. The *sui generis* option for protection of plant varieties

As noted before, the *sui generis* system has been taken as a preferred option for protection of plant varieties in developing countries in general and the LDCs in particular including Ethiopia. An understanding of this system is in order for the analysis of the Ethiopian legal regime on the subject.

Sui generis is a Latin term defined as 'of its own kind/genus or unique in its characteristics.'[21][The authenticity of Wikipedea for academic writing is highly controversial given its open access. There are dictionaries for Latin Maxims; Black's Law also defines Latin Maxims including '*sui generis*'] In the TRIPS context, the term *sui generis* may be understood in two different ways. First, it is a peculiar type of IPR designed to provide protection for plant varieties taking into account the peculiar nature of plant-related innovations (biological nature). Second, it may also mean a special kind of IPR for plant varieties designed taking into account the particular needs and interests of the country in question, subject to the mandatory provisions of the TRIPS Agreement, if any. The peculiarity of the system could thus relate both to the subject matter of protection and the needs and priorities of the particular country that provides it. This being a flexible system, a country may design its *sui generis* system taking into account a range of policy issues such as the state of the domestic seed industry, the state and capacity of the public breeding sector, the state

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[20]For example in India the need for protection for plant-related innovations was discussed during the late 1980s and early 1990s and such a protection was foreseen by the 1988 Seed Policy of the Country which mirrored the reforms the country started in the agricultural sector. See A. Ramana , 'India's Plant Variety and Farmers' Right Legislation: Potential Impact on Stakeholder Access to Genetic Resources', (EPTD Discussion Paper No.96, 2003). In China, too, reforms in the Agricultural and seed sectors started almost at the same time as in India where PBRs were foreseen as one component of the reform. See K. Bonwoo, *et al.*, 'The Economics of Generating and Maintaining Plant Variety Rights in China' (EPTD Discussion Paper No.100, 2003). In Ethiopia, PBR protection was foreseen by the 1992 National Seed Industry Policy at a time where the country has embarked upon economic reforms.

[21]See Wikipedia, the Free Encyclopedia; available on line at http://en.wikipedia.org/wiki/Main_Page (accessed on 5 October 2010).

and capacity of the private breeding sector, the national seed supply system, the nature and state of the farming community, agricultural needs of the country, the state and capacity of biotechnology and impact on research and development (R&D), international technology transfer, and farmers' position and role in the economy.[22]

3.1.1. UPOV as a *sui generis* option under TRIPS

The UPOV Convention provides a kind of IPR for plant breeders which are commonly known as plant breeders' rights (PBRs). There are three Acts of UPOV: the 1961 Act, the 1978 Act and the 1991 Act where the rights of the breeder have been strengthened by each subsequent Act. In order for a plant variety to be eligible for protection under the UPOV Conventions it should not only be new but also distinct, uniform and stable ('DUS'). The 1961 and 1978 Acts of UPOV require members to provide protection for varieties of limited species and genera but protection should progressively extend to more species and genera;[23] the subject matter of protection was limited to the reproductive or vegetative propagating material of the variety.[24] The acts requiring the authorization of the breeder were limited to the acts of sale or offering for sale and the production for commercial marketing of the reproductive or vegetative propagating material of the variety.[25] Different exceptions and limitations to the rights of the breeder such as the farmers' and breeders' exceptions[26] were envisaged with a view to achieving different public policy objectives; patent and PBR protection (dual protection) was prohibited[27] and the rights of the breeder lasts for 15 years (18 years in case of trees and vines).[28]

The 1991 Act of UPOV has introduced fundamental changes to the system with a view to enhancing the right of the breeder. The major changes brought by the UPOV 1991 Act include: possibility of double protection of plant varieties through patents and PBR;[29]its application to all species and genera;[30]extension of the subject matter of protection to essentially derived varieties and under some circumstances to the

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[22]See the International Plant Genetic Resource Institute (IPGRI), Key Questions for Decision Makers: Protection of Plant Varieties under the WTO TRIPS Agreement (Rome: Italy, 1999).

[23]UPOV 1961 and 1978 Acts, Article 4.

[24]Ibid, Article 5.1.

[25]Ibid.

[26]While farmers' exception is inferred from the fact that the acts requiring the authorization of the breeder are the commercial production of the variety, the breeders' freedom to use the variety for the purpose of developing another variety is clearly provided for, with some limitations, under Articles 5.2 and 5.3 of the 1961 and 1978 Acts respectively. Article 9 of the two acts also makes provision on the possibility of limiting the rights of the breeder.

[27]UPOV 1961 and 1978 Acts, Article 2.1.

[28]Ibid, Article 8.

[29]This is in contrast to Article 2(1) of UPOV 1978 Act which clearly prohibits double protection.

[30]UPOV 1991 Act, Article 3. This is again in contrast to Article 4(1) of UPOV 1978 Act which sates that the convention may apply but not required to all species and genera.

harvested material and even to products made from the harvested material;[31] expansion of the acts requiring the authorization of the breeder;[32] inclusion of the farmers' privilege as an optional exception with conditions;[33]extension of the minimum period of PBR protection from 15 to 20 years;[34] and inclusion of a national exhaustion rule.[35]

There have been concerns from developing countries and the LDCs in particular that the UPOV Convention neither mirrors their peculiar situations nor addresses their interests. This is especially true of the 1991 Act which has significantly enhanced the rights of the breeder and severely limited the possibility of exceptions and limitations to protect public interest such as the possibility of farmers to save and exchange among themselves seed from a protected variety which is crucial for agricultural development in such countries. Undoubtedly, the UPOV system in general reflects the economic structure prevalent in the developed countries. It is the manifestation of the growing needs of commercial breeders to protect their improved varieties. It may not thus fit well into the realities of developing countries and LDCs.

Even if UOPV is not mentioned in the TRIPS Agreement and hence cannot be taken as the standard to evaluate the effectiveness of the *sui generis* system, it still is relevant in the whole discussion about *sui generis* system for protection of plant varieties for a range of reasons. First, it could be taken as one ready-made *sui generis* option WTO Members may wish to adopt. In this sense, accession to the UPOV Conventions could avoid the hurdle of drafting a new system of protection for plant varieties while ensuring its TRIPS compatibility. Furthermore, it is the only plant variety regime at the international level with rich experience in protection of plant varieties for about five decades. Members may thus prefer to accede to the Convention rather than looking for an entirely new system which is not yet tested in practice. Second, UPOV could be taken as a basis for the *sui generis* system and some of its principles could easily be adapted to the peculiar needs of each country. This indeed is what the practice shows. Several PBR laws have taken some of the principles of UPOV either as they are or by modifying them to specific needs. Actually, no *sui generis* system has yet been developed which is entirely different from UPOV Conventions. The *sui generis* systems developed so far have been informed by the UPOV Conventions and some principles have even been taken directly from the latter. This is the case in Ethiopia as well as we shall see later in this article. Third, there are already demands in the TRIPS Council, in the context of the

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[31] Ibid, Articles 14(2), (3) and (5).

[32]Acts requiring the authorization of the breeder now include production or reproduction (multiplication), conditioning for the purpose of propagating, offering for sale, selling or other marketing, exporting, importing, and stocking for any of the above purposes (Ibid, Article 14(1)).

[33]Ibid, Article 15(2).

[34]See UPOV 1978, Article 8 and UPOV 1991, Article 19(2).

[35]UPOV 1991, Article 16.

review of Article 27.3(b), that UPOV be specifically mentioned under Article 27.3 (b) as the only TRIPS-compatible *sui generis* system.[36] Though it is difficult to predict the outcome of the review at this stage it is not unimaginable that the UPOV would be the standard for the *sui generis* system under Article 27.3(b). Fourth, post-TRIPS practices of developed countries also suggest that UPOV has been taken as a TRIPS-compatible *sui generis* plant variety protection and, as we shall see later in this article the future seems towards further harmonization of IPRs and it is not unimaginable that plant variety protection could be harmonized along UPOV standards. Fifth, the controversy surrounding the effectiveness of a *sui generis* system may not continue indefinitely and it could probably be resolved by the WTO Dispute Settlement Body (DSB) where interpretation along the UPOV line cannot be ruled out.

3.1.2. The effectiveness of the *sui generis* system

It is submitted here that three important considerations should guide the interpretation of the term 'effective' under Article 27.3(b) of the TRIPS Agreement. First, in interpreting the term note should be taken of the rationale for providing the *sui generis* system as one option for protection of plant varieties under the TRIPS Agreement. The *sui generis* system was the result of a compromise among different interests where WTO Members were given sufficient flexibility to design their law in an area they consider critical, taking into account their different policy objectives. Any interpretation of the term 'effective' should not thus diminish or go against the carefully balanced flexibility under Article 27.3(b). In that light, the objectives (Article 7)[37] and principles (Article 8)[38] of the TRIPS Agreement should be used to interpret the provisions of the agreement including the term 'effective.' This would mean that Members would have sufficient flexibility to design their system with a view to achieving the objectives of the TRIPS Agreement. Second, the *sui generis* system should be an IPR, a right in property and should consequently exhibit the peculiar characteristics of a property right in intangibles. *Inter alia*, it should allow the plant breeder to say no to third parties in relation to some acts affecting the protected variety. Third, the *sui generis* system is foreseen in the context of the WTO and should thus naturally mirror the general tenor of the multilateral trading system by incorporating the fundamental principles of the WTO.

The UPOV claims that its Conventions provide an effective *sui generis* system for the protection of new varieties of plants, as required by Article 27.3(b) of the TRIPS Agreement.[39] Some WTO members have also tried to define the effectiveness of the

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[36]See for example, US submission to the TRIPS Council, WT/GC/W/107, 3 November, 1998.

[37]Article 7 states that "the protection and enforcement of intellectual property rights should contribute to the promotion of technological innovation and to the transfer and dissemination of technology, to the mutual advantage of producers and users of technological knowledge and in a manner conducive to socioeconomic welfare and to the balance of rights and obligations."

[38]The relevant part of Article 8 states that the Members could take measures to promote the public interest in sectors of vital importance for their socioeconomic and technological development.

[39]UPOV, 'Submission to the TRIPS Council on the Review of Article 27.3(b)',

sui generis system in terms of UPOV standards. A similar view has been echoed by the International Seed Federation which asserted that to be effective, a plant variety protection should as a minimum conform to the requirements of the 1991 Act of UPOV.[40] However, the TRIPS Agreement which is characterized by extensive reference to preexisting international treaties has not done so when it comes to the UPOV Conventions. The absence of a reference to the UPOV though it predates the TRIPS negotiation should be interpreted to mean that WTO Members did not wish to make use of the UPOV standards to determine the effectiveness of the *sui generis* system under the TRIPS Agreement. It has been asserted that the UPOV was not mentioned in the TRIPS Agreement because while the 1978 Act was considered obsolete, the 1991 Act had not entered into force at the time of the adoption of the Agreement.[41] However, the assertion does not hold water in view of the fact that the TRIPS Agreement has even referred to the Washington Treaty on integrated circuits, a treaty which has never entered into force.[42] Thus, any attempt to define the *sui generis* system in terms of the UPOV standards amounts to re-enactment of Article 27.3(b) of the TRIPS Agreement, but that obviously requires renegotiation of the provision.

Another attempt to define the effectiveness of the *sui generis* system has come from William Lesser, who argues that an effective *sui generis* system for protection of plant varieties should be viewed as the parallel of patents in the field of biological inventions, the only reason for providing a *sui generis* being the special nature of biological inventions.[43] Lesser asserted that "A plant breeder right system that parallels the checks and balances of major patent systems is... considered to be effective within the TRIPS context."[44] The implication of this contention is that the *sui generis* system would be 'effective' when it provides similar protection to patents except the difference attributed to the special nature of biological inventions. The same view was implied, though not directly stated by the WTO Secretariat in its attempt to explain the difference between a patent and a *sui generis* system as the later provides "more flexibility to adapt to particular circumstances arising from the technical characteristics of inventions in the field of plant varieties such as novelty and disclosure."[45]

The above interpretations reduce the flexibility in the *sui generis* system only to the

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IP/C/W/347/Add.3, 11 June 2002.

[40]International Seed Federation, 'ISF View on Intellectual Property' (Bangalore, 2003), available at http://www.worldseed.org/isf/0n_intellectual_property.html (last accessed on 4 May 2011).

[41]J. Watal, Intellectual Property Rights in the WTO and Developing Countries (Klwer International, The Hague, 2002) 140.

[42]Treaty on Intellectual Property in Respect of Integrated Circuits, Done at Washington, D.C., 26 May 1989 (commonly referred to as the Washington Treaty).

[43]See W. Lesser, 'An Economic Approach to Identifying an Effective *Sui Generis* System for Plant Variety Protection' (2000) 16 Agribusiness, 96-114.

[44]Ibid.

[45]See WTO Document WT/CTE/W/50 of 20 May 1997.

technical nature of plant-related innovations. But as noted at the beginning of this Section, flexibility of the *sui generis* system relates both to the nature of the innovation and to the peculiar circumstances of the countries that design it. Under this interpretation, even the UPOV Conventions may fail the test of effectiveness in the eye of the above interpretation. For example, viewing the effectiveness of the *sui generis* system only from the point of view of the technical (biological) nature of the innovations may well go against the farmer's and breeder's exemption recognized under UPOV because these exemptions are neither recognized under the patent system nor can they be justified on account of the biological nature of the innovations.

Actually, the technical-oriented interpretation does not answer the question why the patent system should be taken as a reference for evaluating the effectiveness of the *sui generis* system while the TRIPS Agreement allows WTO Members to exclude that option altogether. This patent-PBR nexus is obviously against the letter and spirit of Article 27.3(b). There is no *a priori* reason to make parallels between the patent and the *sui generis* systems in order to determine the effectiveness of the latter under Article 27.3(b). The interpretation will go not only against the idea that the *sui generis* system provides sufficient flexibility for members to design their PBR law but also the understanding on the part of both WTO and developed countries that the UPOV Convention, which allows flexibilities and exceptions beyond those accommodated by the patent system, is nonetheless effective for the purpose of the TRIPS Agreement.

Still another view is that effectiveness refers to the availability of effective enforcement and judicial remedy for the rights.[46] One may say that effective enforcement without effective standards makes little sense. But then the question is does the effectiveness refer to the standards of the rights to be provided by the *sui generis* system? An affirmative answer to this question encounters two problems, at least. First, it has to also show what level of rights is required for the system to be effective.[47] This again presupposes the existence of minimum standards for the *sui generis* system which, as we noted earlier, is not the case. Second, the implication of this interpretation will be against the very rationale of Article 27.3 (b). As stated earlier, the Agreement does not seek to harmonize minimum standards of protection as far as the *sui generis* system is concerned. If the effectiveness requirement under Article 27.3(b) were to be interpreted as referring to the standards of protection, then it amounts to indirect harmonization of minimum standards since such an interpretation necessarily implies the existence of some general standards of protection. This will be against the letter and sprit of Article 27.3. (b) as it significantly diminishes the flexibility inherent in the Article which is the outcome of compromises of different interests of Members. What should then be the elements of effectiveness?

As an IPR, the effective *sui generis* system should include the basic elements of a

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[46] IPGRI (1999) *supra* note 22.

[47] See D. Leskien and M. Flitner, 'Intellectual Property Rights and Plant Genetic Resources: Options for *sui generis* system', (1997), 6 Issues in Genetic Resources, 341.

property right. First, it should define the subject matter of protection, that is, a 'plant variety' because the TRIPS Agreement requires protection for a 'plant variety' and defining the subject matter is thus mandatory. But there is no further obligation to define it in one way or the other. It is up to each Member to define what a 'plant variety' is. Adopting the UPOV definition, though it is the accepted practice at the moment, is, however, optional. Second, the criteria for the protection should clearly be defined, otherwise what is protected and what is not remains unknown. Again there is no obligation to follow the UPOV 1991 standard. But as a matter of fact, so far no *sui generis* system has emerged with other criteria than those provided for in the UPOV (novelty and DUS).[48] Third, the right of the breeder in relation to the protected subject matter should be defined, or else the breeder would not be able to know what acts in relation to the protected subject matter require his/her authorization. This is obviously an important element of a property right including IPR. But again there is no specific standard in relation to the scope of the right; it is basically up to each Member to define the standard taking into account its own public policy objectives. While there is no minimum threshold as such, there should, nonetheless, be a clearly defined right to the breeder where he can exclude third parties in relation to some acts. Broadening or narrowing the rights could be made taking into account the special situations and interests of each Member. Fourth, as a system envisaged by a WTO Agreement it should obviously include the core principle of the trading system: national and most favored nation treatments. Fifth, the exceptions, exemptions and limitations to the right should be clearly defined. There are no as such clearly defined limits on such exceptions, exemptions or limitations even if the current practice is to provide exceptions in favor of farmers and breeders as well as compulsory license for reasons of public interest.[49] Obviously, the exceptions and exemptions should not be too broad to make the right of the breeder meaningless because in that case it would be difficult to talk of protection of the right of the breeder as such. If the exceptions, exemptions and limitations are broadly defined, there should be compensation for the breeder otherwise the right would be deprived of its meaning as a property right. Six, the period of protection should be determined. There is no minimum period as such though most PBR laws provide more than 15 years protection. Seventh, there should be an administrative and judicial procedure and infrastructure to allow the breeder to enforce his rights and take action in case the rights are infringed. This is not special to IPRs; it is available to any property right under the due process principle. But it will be particularly important under the TRIPS Agreement given its emphasis on enforcement of IPRs. In the absence of effective enforcement providing for the rights would become meaningless.

If a *sui generis* system is designed as a property right regime in accordance with what is stated in the foregoing paragraphs, it will be difficult to challenge it as being not effective under the TRIPS Agreement.

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[48]That is what a study on 33 PVP Laws has revealed. See Centre for Agricultural Economics and Policy Research, 'Plant Variety Protection: Lessons from a Cross Country perspective' (Policy Brief 11, New Delhi, 2003).

[49] Ibid.

4. Protection of plant-related innovations in Ethiopia

4.1. Agriculture in Ethiopia

The Ethiopian economy relies heavily on agriculture which constitutes about 50 percent of the GDP, 90 percent of export and 84 percent of total employment. Agriculture in Ethiopia is dominated by small-scale farmers who account for 95 percent of the cultivated land, mainly for subsistence needs.[50] This makes agriculture more than a mere economic activity; it is a source of livelihood, food security, culture and communal wellbeing. The farming practice is outdated, and in most cases dependent on low yielding traditional technologies, with limited use of improved seeds, fertilizer and chemicals. It is also vulnerable to the vagaries of nature as it is primarily rain-fed. As a result agriculture in Ethiopia is characterized by low level of productivity and the country has always been suffering from persistent food shortages and at times famine. For a variety of reasons, the disproportionately large number of the farming community has not been able to feed the country.

Successive regimes in the country took agriculture at the centre of socio-economic development with a varying degree of emphasis, though.[51] The current Government has made rural-centered agricultural development as the overarching development policy of the country where food security and poverty alleviation have been given top priority.

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[50]Ibid, at 84.

[51]Fostering agricultural development with a view to meeting domestic demand, as well as a source of foreign exchange has been a prominent issue in the development policies the country knows of since the 1950s. Although the subsistence agriculture was considered obsolete and more attention was given to the industrial sector in the first five-year development plan of the country (1957-1961) which was adopted during the Imperial period, the need for providing utmost attention to the small holders' peasant agriculture, the source of livelihood for the majority of the people, was taken as indispensable for overall development of the country in the second five year development plan of the Imperial regime (1963-67). But the latter policy document emphasizes that large-scale farming is the way to transform the country's agriculture and the economy in general. See Imperial Ethiopian Government Ministry of Finance and Development (1957), "First Five Year Plan", Addis Ababa; Imperial Ethiopian Government Ministry of Finance and Development (1962), "Second Five Year Plan", Addis Ababa.

The Military Marxist junta that came to power by overthrowing the Imperial order had taken several measures in the agriculture sector. In consonant with the Marxist ideology it decided to pursue, it vowed to eliminate exploitation of the proletariat through ownership and control of the major means of production. Chief among the measures taken by the military junta, otherwise known as *Derge*, was the March 1975 Rural Land Proclamation which dismantled the hitherto land tenure system by nationalizing all rural land and redistributing it to the peasants. The *Derge* recognizes the key role of the agriculture in its National Democratic Revolution (1976), its overall development policy. Accordingly, it took several measures to transform the agricultural sector though with little success. It was at this time that Ethiopia saw the Great Famine of 1984 which clearly shows the failure of the agrarian reform taken by the then government.

Since 1991 Ethiopia has been taking different reform measures in the economy including in the agriculture sector. Import tariffs have been reduced, prices have been deregulated, export subsidies have been abolished, the seed and agricultural input sectors have been liberalized and opened for the private sector, and subsidies for agricultural input such as fertilizer, herbicide and insecticide have been abolished- to mention some of the major reform measures. On the other hand, the country's drive to food security and economic development has demanded greater attention to agricultural research.[52] Government's major policies from the *Rural Development Policy and Strategy*[53], to the *Agricultural Research Policy*[54] to *Science and Technology Policy*[55] all recognize agricultural research as a key tool for enhancing agricultural productivity, ensuring food security and promoting economic development in general. In recognition of the weak state of agricultural research in the country the *Rural Development Policy* states that the major emphasis in the short and medium terms should be on the selection and adaptation of the available foreign technology to the country's situations rather than on the development of entirely new technologies which not only requires significant capacity and resources but also takes longer time.

Private agricultural R&D accounts only for about 0.5 percent of the total agricultural R&D investment[56] and as things stand now agricultural R&D in the country is almost exclusively the task of the public institutions.

4.2. The seed sector

The seed supply system in the country is largely based on informal seed exchange and sell by and among farmers in informal market networks outside the formal or commercial market. Small farmers account for more than 85 percent of the seed supply in the country while the remaining is taken care of by the formal seed sector comprising mainly of public research and higher learning institutions.[57] Both the formal and informal seed sectors were operating without any policy guidance until 1992 when the first *National Seed Industry Policy* (NSIP) of the country was adopted.[58] The NSIP has foreseen the development of a healthy seed industry in the country

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[52]C. Bonte-Freidheim *et al* , 'Financing Agricultural Research: the Challenge Ahead' ISNAR Briefing paper No.11 (The Netherlands: The Hague, 1994).

[53]Government of Ethiopia, 'The Rural Development Policies, Strategies and Instruments of the Federal Democratic Republic of Ethiopia', unofficial translation from Amharic to English by the Ministry of Information (Addis Ababa, Ethiopia, 2002).

[54]Government of Ethiopia, 'Agricultural Research Policy of Ethiopia', (Addis Ababa, Ethiopia, 1997).

[55]The Transitional Government of Ethiopia, 'Science and Technology Policy of Ethiopia' (Addis Ababa, Ethiopia, 1993).

[56]M. Nienke and M. Solomon, 'Agricultural Science and technology Indicators', ASTI Country Brief No.9, IFPIR-ISNAR (Rome, Italy, 2003), p. 2.

[57]K. Tafesse, 'Towards seed industry development in Ethiopia', (FAO, Rome), available at http://www.fao.org/ag/agp/agps/georgof/Georgo17.htm (accessed on 11 October 2010).

[58]The Transitional Government of Ethiopia 'National Seed Industry Policy of Ethiopia' (Addis Ababa, Ethiopia, 1992).

and envisaged the participation of the private sector in the seed sector (both in the production and distribution or supply system). Although the NSIP recognizes the role of the private sector and envisages their participation in the seed sector, it also provides that in the short and medium terms the public sector will continue to play the major role in the seed production, multiplication and supply system.[59] It is recognized that the role of the private sector in seed production and supply is negligible and the public sector will continue to be the major producer and supplier of seeds.[60] The NSIP has also made it clear that the public sector will be responsible for the production and supply of seeds which do not attract the attention of the private sector but are important for the peasantry.[61] It also recognizes the informal seed sector and provides for its organization at the community/village level.[62]

The NSIP is the fist document that has foreseen the adoption of different laws in the plant breeding and seed sector: seed law to regulate seed trade, control seed quality and standards, and a law providing for plant breeders' and farmers' rights. While the former law was issued in 2000, the latter followed in 2006.

Despite the reforms in the agricultural sector, the role of the private sector in plant breeding and seed supply remains negligible and the Ethiopian Seed Enterprise (ESE), a public institution, has remained the dominant actor in the formal seed sector.[63] The only visible private seed company is the Pioneer Hi-bred which has been incorporated as Pioneer Hi-bred Ethiopia (PHE) but its role in the seed sector has remained very limited. PHE has been engaged in the production of hi-bred maize where it produced about 1,517.6 MT in 2002, negligible compared to the 100,000 MT estimated seed need in the country.[64] Even the ESE was able to produce about 20, 171.6 MT in the same year which is only 12 percent of the market.[65] Reports show that the farmers were not willing to buy even the limited produce of the ESE and PHE for different reasons and their sale has been declining over the years. In 2002, for example, the ESE and PHE managed to sell only 18 percent and 16.5 percent of their available stock respectively.[66] This is a clear indication that the seed production and supply system in Ethiopia relies heavily on the informal seed sector. The seed law which was foreseen by the NSIP was adopted in 2000 as the Seed Proclamation.[67] The Seed Proclamation requires that, any person wishing to engage in the production, processing, distribution or marketing of prescribed seeds must

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[59]Ibid, Section 4.14.

[60]Ibid, Section 12.1.

[61]Ibid, Section 5.05.

[62]Ibid, Section 5.04.

[63]Tefesse *supra* note 58.

[64]Beniot Raymakers, 'Consequences of Reduction in Agricultural Input Sale in Ethiopia', UN Emergency Unit for Ethiopia, available at http://www.africa.upenn.edu/EUE/M_eue.html (accessed on 2 November 2010).

[65]Tafesse *supra* note 58.

[66]Raymakers, *supra* note 65.

[67]Proclamation No.206 of 200, Seed Proclamation, *Federal Negarit Gazeta*, 6th Year No.36 (June 2002).

first obtain a competence assurance certificate from the National Seed Industry Agency - the institution empowered to implement the Proclamation.[68] A new variety of any plant species should be approved named and registered based on the terms and conditions set out by the Release Committee.[69] Any prescribed seed on sale should have a label specifying that it is certified and showing the variety name, type of crop and the day of production and testing.[70] However, the Seed Proclamation does not apply to seed produced by a farmer and directly sold to another farmer except where the farmer advertises the sale of seeds.[71] Imported seeds should, among other things, confirm to Ethiopian seed standards and requirements, labeled and packed and comply with the law on quarantine.[72] There is also a specific requirement for genetically modified (GM) seeds: such seeds may only be imported if they are "in conformity with provisions of the law issued regarding the importation of genetically modified plants and other pertinent directives."[73] Even if the requirement in the Seed Proclamation is not specific, it appears that it is referring to biosafety regulations. Ethiopia has already put in place biosafety regulations in the form of the Biosafety Proclamation.[74] Interestingly, there is no equivalent requirement for GM seeds produced locally and it is not clear why such a requirement applies only to imported seeds. The law also bans the import and sell of seed whose second generation cannot germinate or seed which has terminator gene technology.[75]

4.3. Plant variety protection

4.3.1. The need for plant variety protection in Ethiopia

The issue of IPR protection for plant varieties is new to Ethiopia as is in most developing countries though such a law was envisaged by the Seed Industry Policy

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[68]Ibid, Article 6.

[69]Ibid, Article 4.

[70]Ibid, Article 6.

[71]Ibid, Article 3.

[72]Ibid, Article 15.

[73]Ibid, Article 15.5.

[74]Proclamation No 655 of 2009, Biosafety Proclamation, *Federal Negarit Gazeta*, 15th Year No.36 (September 2009). The Biosafety Proclamation provides that any person wishing to engage in any transaction involving GMOs should secure either the advanced informed agreement or the authorization of the concerned authority as appropriate (Article 8.1). Thus all acts involving GMOs are subject to AIA or authorization from the concerned agency except for contained use which would be determined by directive to be issued by the Authority (article 8.13). In principle the law applies to transactions involving the release into the environment of GMOs for use as pharmaceutical, food, feed or processing unless otherwise determined by the Authority under a directive (Article 3). It also provides in a separate provision that the "precautionary principle" is the guiding principle in the implementation of the law and underlines the need for caution particularly when "there is scientific uncertainty about the risk." The draft law also provides rules on specific issues such as risk assessment and management, labeling and traceability, liability, etc. Detailed discussion of the law is however beyond the scope of this paper.

[75]Seed Proclamation, Article 15.6.

as far back as 1992. After several years in the making the first ever law on protection of plant varieties was finally enacted in January 2006 as a Proclamation to Provide for Plant Breeders' Right[76] (the PBR Law). Even if the law has already come into force, it is still important to raise the question why plant variety protection (PVP) has emerged as legislative issues in the country in the first place, not least because the answer to the question would enable us understand the policy the law is supposed to promote. Different reasons could necessitate the adoption of a PVP law:

- To address the demand from the domestic plant breeding/ seed sector;
- The urge to promote and encourage the domestic plant breeding and seed sectors;
- The urge to attract foreign investment in the plant breeding/seed sectors;
- To meet treaty obligations (such as TRIPS, UPOV, CBD etc); or
- As part of economic liberalization/reforms of a country.

Historically, PBRs have their roots in the emergence of private industry in the area of plant breeding and seed sectors.[77] However, this does not seem the case in Ethiopia. In the 1990s policy changes were introduced in the agricultural sector as part of the overall economic reform program the country has embarked on. Till then, plant breeding as well as the seed multiplication and supply were entirely carried out by the public institutions. As noted earlier, despite the reforms in the agricultural sector, the reality even today is that plant breeding and the seed production and supply still remains by and large in the hands of the public institutions. The role of the private sector in agricultural R&D and seed production and supply has been very limited. Unlike in other countries where a strong private sector influenced or even shaped PVP laws, the private sector in Ethiopia was not in a position to demand such a law or to influence its development. Rather, it is the PBR Law itself that seeks to promote the emergence of the private sector in the area.

In the same vein, agricultural R&D in Ethiopia is publicly funded and guided by the country's priority for food security and poverty alleviation where the role of PBR has not clearly been recognized and articulated. The public institutions have shown little interest in IPR issues in general, far from demanding or influencing the enactment of the PBR Law. In view of this, it is difficult to conclude that the PBR Law of Ethiopia has been a direct outcome of the demands of the domestic plant breeding/ seed industry.

Attracting foreign investment in the area of plant breeding and introducing new varieties to the country may also be taken as one of the driving forces behind the introduction of the PBR Law. Though nothing to that effect has been directly stated in the preamble, it was clearly stated in the Parliamentary Committee Report during the deliberation and adoption of the PBR Law by House of Peoples' Representatives (HPRs) that: "The Proclamation [to provide for Plant Breeder's Right] would

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[76]Proclamation No.481 of 2006, Proclamation to Provide for Plant Breeders' Right, *Federal Negarit Gazeta*, 12th Year No.12 (February 2006).

[77]See in general Kloppenburg, J.R, First the Seed: the Political Economy of Plant Biotechnology, (Cambridge University Press, 1988).

encourage investment and pave the way for the utilization of new plant varieties released abroad."[78] Nonetheless, how far the PBR Law would serve this purpose is an open question which would be taken up later in this article.

Treaty obligation could also be an important consideration for the adoption of the PBR Law. Ethiopia has already ratified the *Convention on Biological Diversity* (CBD)[79] and the *International Treaty on Plant Genetic Resources* (ITPGR),[80] both with direct relevance to and impact on the issue of protection of plant-related innovations. Further, Ethiopia is in the process of accession to the WTO and as part of the accession it needs to provide for protection of plant varieties as required by Article 27.3 (b) of the TRIPS Agreement. The Parliamentary Committee Report stated above asserts that the PBR Law will facilitate the country's accession to the WTO.[81] However, despite the assertion of the Parliamentary Committee, the Ethiopian PBR Law does not directly or indirectly indicate that it is meant to meet the requirements of the TRIPS Agreement. Actually, the law was envisaged back in 1992- before the country made the decision to join the WTO and even before the TRIPS Agreement itself came into being and the term *sui generis* was inscribed in the PVP vocabulary. The PBR Law could not thus be a direct response to the TRIPS Agreement though the latter might have added the impetus to the process of its adoption. It being envisaged in 1992, at the time when the country embarked on economic reforms, the PBR Law should basically be understood and best explained in the context of the broader economic reform the country has embarked on since 1991.

Though the emergence of PVP in Ethiopia should basically be understood in the context of the changes in policy environment in the 1990s, it does not follow that the law has not been influenced in one way or the other by regional and global developments. Actually, its provisions appear to be the result of the interplay of international, regional and national political and economic developments in relation to defining property rights over GRs. As such, the TRIPS Agreement, the UPOV, the ITPGR, the CBD and the *African Model Law for the Protection of the Rights of Local Communities, Farmers and Breeders and for the Regulation of Access to Biological Resources* (the African Model Law)[82]have all influenced or in some instances directly

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[78]Report of the Rural Development, Natural Resources and Environmental Protection Standing Committee of the House of Peoples' Representatives, as quoted by Walta Information Centre, 'House discusses and endorses two bills' (Addis Ababa 3 January 2006).

[79]The Convention on Biological Diversity adopted at Rio in 1992 came into force in 1993, U.N Doc. UNEP/Bio.Div/N7-INC.S/4.

[80]The International Treaty on Plant Genetic Resources for Food and Agriculture, adopted in November 2001 by FAO Conference (Resolution 3/2001) and came into force on 29 June, 2004.

[81] Ibid.

[82]The Organization of African Union(OAU) (now African Union, AU) Summit of Heads of State and Government, adopted this Model Law in Ouagadougou in 1998, and recommended that it be the basis of national laws in member countries. See J. A. Ekpere, 'The OAU's Model Law for the Protection of Communities, Farmers and Breeders and for the Regulation of Access to Biological Resources: An Explanatory Booklet' OAU Scientific,

constituted key elements of the Ethiopian PBR Law. The latter was adopted in 2006, three years after the country has decided to join the WTO, and the TRIPS Agreement should obviously have been one important consideration in shaping its provisions. As we shall see later, plant varieties are protected by and large on the basis of the UPOV standards of protection, part of the farmers' rights provisions is taken from the ITPGR, while the provisions dealing with the scope of and limitations to the rights of the breeder are largely taken from the African Model Law.

The PBR Law should therefore be understood from the broader national, regional and global political and economic contexts from which it emerged and by which it has directly or indirectly been informed.

4.3.2. Protection criteria

Under the PBR Law, PBR is available to a 'plant variety.' The definition of a 'plant variety' is directly taken from Article 1(VI) of the UPOV 1991 Act. A 'variety' is defined as "a plant grouping within a single botanical taxon of the lowest known rank, which can be: defined by the expression of the characteristics resulting from a given genotype or combination of genotypes; distinguished from any other plant grouping by the expression of at least one of said characteristics and considered as a unit for being propagated unchanged."[83] But not all plant varieties are capable of protection; protection is limited to a 'new plant variety' which is separately defined in terms of the standards of protection under the UPOV system: novelty, distinctiveness, stability and uniformity or homogeneity.

One peculiar feature of the Ethiopian PBR Law is that it does not have a specific provision dealing with the criteria of protection for plant varieties. The criteria are simply included in the definition of a 'new plant variety.'[84] Thus the criteria for protection are determined by the definition of a 'new plant variety' rather than by a specific provision in the body of the law. The effect is that a variety would be 'new', when, in addition to being novel, it is distinct, stable and homogenous. While the

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Technical and Research Commission (Addis Ababa, Ethiopia, 2000).

[83]The PBR Law, Article 2.7.

[84]A new plant variety is defined as a variety which:

a/ is, by reason of one or more identifiable characteristics, is clearly distinguishable from all varieties the existence of which is a matter of common knowledge at the date of application for a plant breeders' right;

b/ is stable in its essential characteristics, in that after repeated reproduction or multiplication at the end of each cycle, remains true to its description;

c/ having regard to its particular features of sexual reproduction or vegetative propagation, is sufficiently homogenous or is a well-defined multi-line; and

d/ its material has not been sold or otherwise disposed of to others by the breeder for the purposes of commercial exploitation of the variety:

i/ in the territory of Ethiopia, earlier than one year before the date of filing of application for plant breeders' right with the Ministry; or

ii/ in the territory of any other state, earlier than six years in the case of varieties of tree, fruit tree, or grape vines, or in the case of varieties of other species, earlier than four years before the date of the application.

reason for such an approach is unclear, the eligibility criteria are at the heart of the whole plant variety protection system and are therefore too important to be left for a definition. Even ordinarily, to say that a variety is 'new' only when it is distinct, stable, uniform and novel makes little sense and such understanding goes beyond the ordinary meaning of the term 'new.' It is not clear why the PBR Law has taken this approach rather than stating the criteria of protection in the body of the law clearly.

The PBR Law does not use the term 'novel' but provides the novelty criterion under the UPOV as one element of the definition of a 'new plant variety.'[85] The central point is that the variety for the protection of which an application is filed should not have been sold or disposed of for purposes of commercial exploitation for a definite period before the application was made. The law provides no exception to the novelty requirement unlike UPOV 1978 Act. Nevertheless the requirement is that the variety should not have been sold or disposed of for purpose of "commercial exploitation." Under UPOV 1978 Act, disposing of the material for small-scale processing, trials, or for testing by authorities are acts taken as exceptions that would not affect the novelty of the variety.[86] Under the PBR Law such acts would not affect the novelty of the variety as they are not done for 'commercial exploitation.' Thus, the definition of novelty in terms of the "commercial exploitation" of the variety accommodates more exceptions than the one under UPOV 1978 which merely lists a few exceptions to novelty. Under the Ethiopian PBR Law, the breeder can publicly use the variety for any purpose other than "commercial exploitation" without any fear of losing novelty.

It appears that discovered varieties are not protected under the PBR Law. This emanates from the definition of a 'breeder' as a person who "has bred and developed a new plant variety". Under UPOV 1991 a 'breeder' is defined as a person "who bred or discovered and developed a plant variety" which appears to include discovered and then developed varieties.[87]

Crafting and implementing a PBR system is a task of enormous legal and technical complexity. By adopting the criteria of the UPOV which have been tested and practiced over four decades, the Ethiopian PBR Law avoided any possible legal, scientific and technical complexity that may arise in a newly crafted system of PBR protection. The PBR Law does not provide the list of species or the number of species it covers. Rather it empowers the Ministry of Agriculture and Rural Development (the Ministry) to determine the species to be covered as well as to revise the list from time to time.[88] While the PBR Law appears to foresee a gradual expansion of the species to be included in the list, it does not fix the minimum number of species to be covered which makes it incomplete and unenforceable until such time that the Ministry comes up with the list of species to be covered thereby.

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[85]PBR Law, Article 5.d.
[86]UPOV 1978 Act, Article 6.1(b).
[87]UPOV 1991 Act, Article 1(IV).
[88] Ibid, Articles 3.1 and 3.2.

The TRIPS Agreement does not determine the minimum number of species which should be covered by the *sui generis* and it is for each member to determine the number of species to be covered in the system based on its public policy objectives. The Ethiopian PBR Law could not thus be challenged as incompatible with the TRIPS Agreement in this regard as long as the number of species it covers is determined. In the last couple of years, the Ministry has been in the process of developing a regulation with a list of species to be covered which is expected to be completed soon.[89] Because of the absence of the regulation with a list of species foreseen by the PBR Law, there is so far no registration carried out and no certificates have been issued by the Ministry.[90]

4.3.3. Protected subject matter and scope of the right of the breeder

Article 5 which is directly taken from Article 30 of the African Model Law defines the scope of the breeders' right. It determines two important issues: first, the subject matter of the right of the breeder; second, the scope of the right of the breeder. It reads as follows:

Article 5. Scope of the right

1. Subject to the exemptions and restrictions provided for in this Proclmation, a plant breeders' right entitles the holder an exclusive right to:

a. sell, including the right to license other persons to sell, plants or propagating material of the protected variety; and

b. produce, including the right to license other persons to produce, propagating material of the protected variety for sale.

2. The carrying out of the activities referred to in sub-article (1) of this Article by other persons with respect to a protected vareity is prohibited unless with the authorization of the holder.

In terms of subject matter, the breeder's right is thus limited to 'plants' or 'the propagating material.' In this regard the PBR Law seems to have basically followed the UPOV 1978 Act where the right of the breeder is limited to the reproductive and vegetative propagating material (as in the Ethiopian law though the latter uses the term 'plant' rather than 'vegetative propagating material'). As discussed earlier, under UPOV 1991 Act, the right of the breeder could also extend to the harvested material from the protected variety and even to products made directly from the harvested material.

By limiting the rights of the breeder to the productive and vegitatively propagating material of a protected variety, the PBR Law rightly avoided the possible excessive control by the breeder of the chain of transactions involving the variety as well as the

[89]Interview with Mr. Mesfin Kebede, Variety Release and Registration Performer, Ministry of Agriculture, 2 August 2011. Mr. Mesfin disclosed that a project designed to develop a regulation and to revise the PBR Law itself is being carried out by the International Development Law Organization (IDLO) which is expected to be completed by the end of 2011.

[90] Id.

complexity that may ensue in the PVP system in a country where capacity is limited. A *sui generis* system may not be challenged as an ineffective under the TRIPS Agreement as long as it provides protection in relation to the propagating material of the protected variety. Under the PBR Law the right of the breeder does not extend to the so-called 'essentially derived varieties.'[91] The extension of the breeder's right to essentially derived varieties may have advantages and disadvantages. In the Ethiopian context, there is an absolute need to encourage even minor adaptations of the domestic breeders. The domestic breeding industry has to start from the scratch and develop gradually through adaptations to existing varieties. As noted, the PBR Law seeks to encourage an almost nonexistent domestic breeding industry, and the lack of recognition of adaptations to existing varieties even if essentially derived from protected varieties may discourage the emergence and development of a domestic plant breeding industry and thus goes against the objective of the PBR Law itself. On the other hand, the extension of the rights of the breeder to essentially derived varieties creates complexity in the PVP system in Ethiopia where capacity is limited. It may also give the breeder control over a wide range of subject matter thereby preventing others from using the protected variety.

It is to be noted that the principle of essential derivation could not be used to protect "farmers' varieties"[92] and even most of the varieties developed by the public agricultural research institutions in Ethiopia since the principle, at least as enshrined under UPOV 1991, applies only to varieties derived from protected varieties. While farmers' varieties are not protected varieties under the Ethiopian PBR Law, public research institutions have generally been reluctant to protect their varieties. The UPOV principle of essential derivation may be modified to exclude varieties which are essentially derived from farmers' varieties and varieties developed by the public research institutions though such varieties are not themselves protected. While that is certainly possible, the Ethiopian PBR Law has not attempted to do so. This would have indeed been one mechanism to protect the "farmers' variety." One reason for not doing so could be that the whole issue of essential derivation would create complexity in the system in Ethiopia where capacity and experience is lacking.

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[91]Under Article 14(5) (b) of UPOV 1991 Act the right of the breeder is extended to 'essentially derived varieties.' A variety is deemed to have been essentially derived from another variety (the initial variety) when:

i. it is predominantly derived from the initial variety, or from a variety that is itself predominantly derived from the initial variety, while retaining the expression of the essential characteristics that result from the genotype or combination of genotypes of the initial variety;

ii. it is clearly distinguishable from the initial variety and

iii. except for the differences which result from the act of derivation, it conforms to the initial variety in the expression of the essential characteristics that result from the genotype or combination of genotypes of the initial variety.

[92]"Farmer variety" is defined as "a plant variety having specific attributes and which has been discovered, bred, developed, nurtured by Ethiopian farming communities or a wild relative about which Ethiopian farming communities have common knowledge" (Article 2.8 PBR Law).

Even in relation to the propagating material, acts requiring the plant breeder's authorization are limited. The authorization of the breeder is required for the *sell* of the propagating material and *production* of the propagating material *for sale*. It means that the authorization of the breeder is not required for importing, exporting, advertising, stocking, etc. of the protected variety as in UPOV 1991.[93] The law also differs from UPOV 1978 Act where the authorization of the breeder is required for the purpose of commercial marketing, the offering for sale and the marketing of the propagating material.[94] The offering for sale of the protected variety for example does not require the authorization of the breeder under the Ethiopian PBR Law. What is more, the use of the term 'sell' rather than 'commerce' or 'commercial marketing' as in the UPOV 1978 Act may be interpreted as implying a further limitation to the rights of the breeder. 'Marketing' includes but not necessarily limited to sell as it may involve other transactions than the sell of the variety. However, the act which requires the authorization of the breeder is limited to 'sell', that is a direct exchange of the protected variety for money. What is intended seems the exclusion of the use of the variety for commercial purposes which may not necessarily be an immediate sale of the variety.

In the same vein, the act which requires the authorization of the breeder is to 'produce' the propagating material and it is not clear if this includes reproduction (multiplication) of the protected variety. UPOV 1991 clearly requires authorization of the breeder for both 'production' and 'reproduction' (multiplication).[95] In this light, the omission of 'reproduction' in the law could be interpreted as intentional limitation of the acts requiring the authorization of the breeder. On the other hand, such a restriction of the acts requiring the authorization of the right of the breeder could render the already restricted right of the breeder almost meaningless. Thus, it is submitted that the word 'produce' should be viewed as including 'reproduce' as well. Strictly speaking, reproduction is still production of the protected variety. In any case, not all production or reproduction of the variety requires authorization of the breeder; authorization is required for the production or reproduction of the protected variety for sale. Arguably, production/reproduction of the protected variety for marketing, rather than for direct sale, does not require authorization of the breeder.

As discussed earlier, to the extent that the PBR Law has given exclusive rights to the breeder, though limited, it may not possibly be challenged as inconsistent with the TRIPS Agreement. The question is whether or not the law stands true to its own objectives.

4.3.4. Exemptions to the right of the breeder

Article 6 of the law which deals with exemption to the right of the breeder is directly taken from Article 31 of the African Model Law. The following acts have been taken as exemptions to the rights of the breeder under Article 6.1:

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[93]UPOV 1991 Act, Article 14.1.

[94]UPOV 1978 Act, Article 5.1.

[95]UPOV 1991 Act, Article 14.1(a) (i). UPOV 1978 Act does not specifically mention "reproduction" or "multiplication."

- propagate, grow and use a protected variety for purposes other than commerce;
- sell plants or propagating material of the variety as food or for any other use that does not involve growing the plant or propagating material of the protected variety;
- sell plants or propagating material of a proteced variety as they are within a farm or any other place where plants of the variety are grown;
- use plants or propagating material of the variety as an initial source of variation for purpose of developing another new plant variety except where the person makes repeated use of plants or propagating material of the variety for the commercial production of another variety;
- sprout the protected variety for use as food for home consumptioin or for the market;
- use the protected variety in further research, breeding or teaching;
- obtain, with the conditons of utlisation, the protected variety from genebanks or plant genetic resources centres.

Looking at the 'exemptions' stated above, the first observation is that most of the acts in the list are not within the scope of the right of the breeder under Article 5. In such cases the exemptions are made to rights which do not exist in the first place. For example, the rights of the breeder do not extend to the non-commercial use of the variety because the acts requiring his/her authorization are limited to sell and to produce the variety for the purpose of sale. Thus, stating the non-commercial use of the variety as an exemption makes little sense because the right from which the exemption is sought does not exist. On the other hand, providing exemption for the non-commercial use of the variety seems to suggest that all commercial uses of the variety require authorization of the breeder. Nonetheless, as stated earlier, that does not seem the case and the acts requiring authorization of the breeder are narrowly defined (sell and produce for sale) and do not seem to cover all commercial uses of the variety.

Similarly the use of the variety for breeding *per se*, research, and teaching is not within the scope of acts requiring authorization of the breeder under Article 5. Even whether or not the breeder's exception, that is the use of the the propagating material as initial source for developing another variety, is truly an exemption under the PBR Law is questionable. The use of the variety as initial source to develop another variety even if it is for commercial/marketing ends may not necessarily be covered under the narrowly defined acts requiring the authorization of the breeder under Article 5: to 'sell' or to 'produce for sale' of the protected variety. The commercial breeder may use or multiply the protected variety for commercial purposes but not as such for direct sale and the acts which require authorization of the breeder are the production of the variety for the purpose of sale. In this sense one may argue that under the Ethiopian PBR Law the right of the breeder to use the protected variety as initial source for developing another variety is not exception because it is not included in the acts requireing authorization of the breeder in the first place. The phrase "except where the person makes repeated use of plants or propagating material of the variety for the commercial production of another variety" under Article 6 seems to have little meaning for the same reason.

Similarly, the use of the protected variety for food or other purpose which does not require the use of the variety as a propagating material is of course out of the perview of the plant variety protection and thus it is not within the right of the breeder. Indeed, it seems that the only act in the list which could have required authorization of the breeder thereby constituting a sensible exemption is the sale of the plants or the propagating material where the variety grows since such an act involves direct sale of the propgating material. But even in that case, the exemption does not apply to the farmers, who are the most likely users of the exemption, since, as will be discuused later, farmers have the right to sell seeds of any protected variety except as certified seed traders.

4.3.5. Restriction on plant breeder's right

Apart from the exemptioins discussed above there are aslo cases where the rights of the breeder could be restricted. Article 7 which is again taken from Article 33 of the African Model Law, lists reasons for which the breeder's right may be restricted by the Ministry on account of 'public interest.' The Article states as follows:

1/The Ministry may, when public interest so requires, due to the following grounds, put restriction on the exercise of a plant breeders' right.

a) problems arises due to competitive practices of holders;
b) food security, nutritional or health needs, or biological diversity are adversely affected;
c) a high proportion of the protected variety offered for sale is being imported;
d) the requirements of the farming community for propagating material of a particular protected variety are not met; and
e) it is considered important to promote public interest for socio-economic reasons and for developing indigenous and other technologies.

2/ When the Ministry decides to put restrictions on the exercise of the plant breeders' right, it shall:

a) give to the holder the copy of the decision setting out the particulars of the restriction;
b) give public notice of the restriction;
c) specify the compensation to be awarded to the holder;

3/ Where the holder is dissatisfied with the compensation decided to be paid, he may lodge his appeal in accordance with Article 34 [Article 30] of this Proclamation.

Even if the grounds for restriction of the breeders' right are seemingly listed in an exhaustive manner, they are defined in broad and general terms. The ground for restricting the breeders' right "to promote public interest for socio-economic reason" may, for example, be interpreted broadly to cover a wide-range of issues. The restriction is to be made on the exercise of the plant breeder' rights, that is, on the acts requiring the authorization of the breeder: selling and producing for sale of the propagating material.

The scope of the restriction of the exercise of the rights of the breeder is far from clear. It appears that the restriction could range from temporary suspension to total ban on the exercise of the rights. If, for example, the restriction is to be imposed because "biological diversity is adversely affected" by the exercise of the right of the breeder, then, the measure could go as far as banning the exercise of the rights of the breeder in relation to a particular variety. However, the restrictions under Article 7 are to be made on account of public interest and only upon payment of compensation. What is more, the amount of compensation to be fixed by the Ministry is subject to judicial scrutiny. Article 7 is additional to another restriction, a compulsory license, which is treated separately under Article 8.

As noted, the scope and meaning of this restriction is far from clear; nor is its purpose. In some of the cases, merely restricting the breeders' right makes little sense; some of the grounds for restriction of the rights of the breeder could be better handled by other laws than the PBR Law even without the need for paying compensation to the breeder.

a) Where problems arise due to competitive practices of holders

The first ground for restricting the exercise of the breeders' right is when a problem arises from the anticompetitive practices of the right holders. The PBR Law does not define "competitive practices", nor does it provide for practices which are prohibited as anticompetitive in the realm of plant variety protection. In Ethiopia, the issue of competition is governed by the *Trade Practices and Consumer Protection Proclamation (the TPCPP)*[96] the scope of which is applicable to all persons involved in any commercial activity, thus including plant breeders.[97] The *TPCPP* generally defines anticompetitive practices and prescribes measures that could be taken against any person engaged in anticompetitive practices. The relationship between the restriction of the breeders' right for anticompetitive reasons and the *TPCPP* is far from clear.

One possible interpretation of this paragraph of Article 7 is that the *TPCPP* is the appropriate law that governs the issue of competition and the remedies thereof because the PBR Law neither defines anticompetitive practices nor provides special cases of anticompetitive practices in the context of plant breeding. Thus, the issue of anticompetitive practice including in plant breeding would be determined in accordance with the provisions of the *TPCPP*. When an anticompetitive practice is established in accordance with the provisions and procedures of the *TPCPP*, the Ministry could then take its own measures, that is, restrict the exercise of the right of the breeder, in addition to the measures that might have been taken in accordance with *TPCPP*.

But then the question that begs an answer is whether or not compensation should be paid for restricting the exercise of the right of the breeder on account of anticompetitive practices which have duly been established in accordance with the

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[96]Proclamation No. 685 of 2010, the Trade Practices and Consumer Protection Proclamation, *Federal Negarit Gazet* 16th Year No. 49 (August 2010).

[97]Ibid, article 4.

appropriate law. Anticompetitive practices bring with them administrative measures or even a criminal responsibility under the *TPCPP*, but they entail payment of compensation for the breeder when the Ministry invokes them to restrict the right of the breeder. This makes little sense and there is no reason to pay compensation in such cases to the extent that the measure is directed at and limited to remedying the anticompetitive practices of the breeders. Many jurisdictions consider anticompetitive practices as abuse of IPRs and provide rules for different measures to remedy the problem. Compensation for the IPR holder for abuse of his rights is simply unjustifiable. Even in case of patents, an IPR that entitles stronger rights to an inventor, compulsory licenses could be issued by a government to remedy anticompetitive practices with limited compensation or in some cases even royalty-free.[98] Similarly, under the TRIPS Agreement 'the need to correct anticompetitive practices may be taken into account in deciding the amount of remuneration' to be paid to the patent owner when his/her right is restricted through a compulsory license which could be interpreted to mean that a compulsory license could be granted to address anticompetitive practices of patent owners upon payment of less compensation than the normal or even without any compensation.[99] Payment of compensation for restricting the rights of the breeder on account of anticompetitive practices is not thus justified. The PBR Law should have clearly defined anticompetitive practices as abuse of PBR entailing restriction of the rights of the breeder without any compensation. As the PBR Law stands now, the anticompetitive practices of PBR holders could only be taken into consideration in fixing the amount of compensation but the possibility of doing so without payment of compensation has not been foreseen. The problem with Article 7 appears to be that it was taken directly from the African Model Law and incorporated into the Ethiopian PBR Law without making it compatible with other laws of the country.

Another important issue that needs to be determined in the context of this paragraph is the relationship between competition and IPR (PBR). IPR holders could engage in anticompetitive practices which may result in short supply of goods and services or in the high prices of such products and services. The appropriate remedy in such cases is to look for a mechanism for more production and supply of the product or service in question, and the most appropriate tool to achieve this purpose is grant of a compulsory license. Indeed, one of the important purposes of compulsory licenses even in some of the developed countries is to remedy anticompetitive practices. For example, even if a compulsory license is not as such envisaged under the U.S. patent law, courts in that country have in several occasions granted compulsory licenses to remedy anti-competitive practices.[100] Even under the TRIPS Agreement anticompetitive practices of IPR holders have been taken as one ground for the grant of a compulsory license even without the need for prior negotiation with the patent

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[98]See for example W. Fugate, Foreign Commerce and Antitrust Laws, 4th ed. (Boston, Little Brown and Co. 1991). Article 31k of the TRIPS Agreement provides flexibility in relation to compulsory licenses on account of anticompetitive practices both in terms of the procedures and in fixing the amount of the remuneration.

[99]The TRIPS Agreement, Article 31k.

[100]See in general Motta M., Competition Policy: Theory and Practice (Cambridge 2005)

holder unlike in all other cases where prior negotiation is a prerequisite for a grant of a compulsory license.[101] However, the Ethiopian PBR Law's remedy in case of anticompetitive practices is 'restricting the exercise of the right of the breeder,' not a compulsory license (at least not so stated), which is a matter separately treated under Article 8 of the law. But what is the meaning and purpose of merely restricting the right of the breeder in such cases? It is not the purpose of IPR (PBR) law to regulate anticompetitive practices as such; nor is it the competence of the Ministry to restrict the right of the breeder as a punitive measure or as a penalty for anticompetitive practices. The only way to make some sense of this is to say that 'restricting the rights of the breeder' is a kind of compulsory license which could be granted without following the standard procedures for the grant of a compulsory license as prescribed under Article 8.

b) Food security, nutritional or health needs or biological diversity are adversely affected

Food security, nutrition, health, biological diversity or the environment in general are important public policy issues for any nation. Measures taken by governments to address these issues have always been taken as legitimate. Even under the WTO Agreements, measures intended to address issues such as nutrition, health or the environment could be justified even if such measures may ordinarily be against the rules of free trade.[102]

The Ethiopian PBR Law has taken these concerns not as grounds for the exclusion of varieties from PBR protection but for the restriction on the exercise of the rights of the breeder which have already been granted. Once a PBR (an IPR in general) is granted issues such as food security, nutrition, health, biodiversity could be taken care of by other laws such as the seed law or biosafety regulations. For example, in relation to GM crops which are generally viewed as having a potential adverse effect on health, biological diversity or the environment, the Biosafety Proclamation provides detailed rules on risk assessment on health, food security and biological diversity before approval is granted. In the case of non-GM seeds, the Seed Proclamation takes care of these issues. Furthermore, there are environmental impact assessment requirements for projects before their implementation.[103] These and other laws would address the concerns once PBRs are granted and measures could accordingly be taken in accordance with those laws even without payment of compensation. Resorting to restricting the exercise of the rights of the breeder which has already been granted with payment of compensation does not seem to be the

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[101]The TRIPS, supra note 99.

[102]See for example Article XX of GATT 1947.

[103]Proclamation No.299 of 2002, the Environmental Impact Assessment Proclamation, *Federal Negarit Gazeta*, 9th Year No.11 (December 2002) prohibits commencement of projects and approval of policy and legal instruments without obtaining authorization from the relevant environmental body upon undertaking environmental impact assessment (article 3.1). Any licensing agency is required, prior to issuing an investment permit or a trade or an operating license for any project, to ensure that authorization is secured from the relevant environmental agency (article 3.3).

appropriate mechanism to address the issues.

Interestingly, the PBR Law does not provide for rules on exclusion of varieties from PBR protection. Even if public order or morality as a ground for excluding varieties from PBR protection is not as such foreseen under the UPOV, several national PVP laws have already used public order or morality including nutrition, health, biological diversity or environmental concerns as a ground for exclusion of varieties from PBR protection. The Indonesian law,[104] for example, prohibits protection for varieties to be used for purposes conflicting with social order, ethics or morality, religious norms, health and the protection of the environment. Similarly, the Malaysian law[105] states that no PVP should be granted to varieties which may affect public order or morality or have an adverse impact on the environment. Unfortunately, the Ethiopian PBR Law has not made use of this option.

c) A High proportion of a protected variety offered for sale is being imported
Under Article 5 of the PBR Law the authorization of the breeder is not required for the importation of the protected variety into Ethiopia. Thus, the restriction in this paragraph could not obviously be on the breeder's right to authorize the importation of the variety since such a right does not exist in the first place.

However, this paragraph does not deal with the issue of importation and sale of the protected variety as such. Though not clearly stated, the paragraph seems to indirectly require the breeder to exploit the variety in Ethiopia (produce it locally) rather than importing it altogether. The Ethiopian PBR Law seeks to achieve this purpose by restricting the exercise of the rights of the breeder. Again, restricting the right of the breeder in such cases makes little sense because the problem could only be remedied by the local production of the variety. Restriction would give sense in this case only if it means the restriction of the right of the breeder to authorize the production or multiplication of the protected variety by allowing others to produce the variety locally under a compulsory license. A compulsory license in this case could be granted without the need to go through the procedures under Article 8.

Actually, under Article 10.1 of the PBR Law, the plant breeder is entitled to a plant breeder's right irrespective, among other things, of whether the variety is bred locally or abroad. It seems that there is no discrimination between varieties bred locally or outside the country for the purpose of PBR protection. But once PBRs are granted some of the rights of a breeder could be restricted if a high proportion of a protected variety offered for sale is imported, to ensure indirectly that the variety is locally produced. Requiring local exploitation of a patented invention has remained controversial under the TRIPS Agreement; however, such a requirement is absolutely possible in the more flexible *sui generis* system.

d) The Requirements of the farming community for propagating material of a particular protected variety are not met
Two possible scenarios could be envisaged as a ground for restricting the right of the

[104]The Plant Variety Protection Act of Indonesia, No.29 of 2000, Article 3.
[105]The Protection of New Plant Varieties Act of Malaysia 2004 (Act 634), Section 15.

breeder under this paragraph. The requirements of the farming community may not be satisfied in terms of quantity (below the amount needed by the farming community) or in terms of quality (below the quality required by the faming community).

If the problem is quantity, then the solution would not be the mere restriction of the right of the breeder but more production or reproduction of the variety, and that could be achieved through a compulsory license under Article 8. Actually, the same reason justifies a grant of a compulsory license under Article 8, but while under Article 7.1(d) the restriction is to be made because the requirements of "the farming community" are not met, in Article 8 it is because the requirements of the "general public" are not met. It appears that while the needs of the farming communities is taken more seriously and a compulsory license could be granted in order to meet their needs even without going through the ordinary procedures for the grant of a compulsory license, the normal procedure under Article 8 should be complied with in relation to a compulsory license for the purpose of meeting the needs of the general public other than the farming communities.

The second situation where this paragraph could possibly be invoked is when the requirement of the farming community is not met in terms of the quality of the propagating material. There may be a need to ensure that the propagating material possesses the necessary quality to the satisfaction of the farming community. While that is absolutely important, it is questionable that the PBR Law is the appropriate mechanism to achieve the purpose. Ensuring the quality of the seed or a propagating material is precisely what the purpose of the Seed Proclamation is, and it is to ensure the quality of the propagating material that the Seed Proclamation prescribes different rules on testing and certification of seeds. The issue of quality should thus be left for other pertinent laws than the PBR Law and payment of compensation for restricting the rights of the breeder in such cases is again not justified.

e) It is important to promote public interest for socioeconomic reason and for developing indigenous and other technologies

This is a very general ground for restricting the right of the breeder and it certainly is difficult to delimit its scope. In principle, any restriction on the rights of the breeder may be justified on socio-economic grounds and this may create uncertainty and unpredictability in the PVP system. Even if such a very broad and vague ground for restricting the right of the breeder were necessary, it is still questionable if the PBR Law (IPR) is the appropriate mechanism to achieve the objective. It is not clear, for example, how the objectives of promoting public interest for socioeconomic reasons and promoting indigenous and other technologies could be achieved by a mere restriction of the rights of the breeder.

In general Article 7 raises a plethora of issues and suffers form lack of clarity; some of the grounds for restriction could have been taken care of by other laws even without payment of compensation and the meaning and objective of some of the other grounds for restriction remain unclear.

It is to be noted that while the payment to be made in the case of a compulsory license under Article 8 is 'remuneration' the one for restriction of the right of the breeder under Article 7 even for reasons of anticompetitive practices of breeders is 'compensation', which should in principle be equal to the damage caused by or resulting from the restriction.

Article 7 states that a breeder, who is not satisfied with the amount of compensation fixed by the Ministry could lodge an appeal to the Federal High Court. It appears that appeal is possible only in relation to the amount of compensation and not on the decision to restrict the right of the breeder as such. On the other hand, Article 30 states that appeal to the Federal High Court is possible from a decision on the 'granting', 'refusal', 'revocation' or 'restriction' of a plant breeders' right. Under this Article appeal is possible even from a decision on restricting the breeder's right. There appears to be inconsistency between Article 7 which allows appeal only from a decision on the amount of compensation and Article 30 which allows appeal even in relation to the very decision to restrict the rights of the breeder. Article 30 deals specifically with appeal and thus should have precedence over Article 7 with the effect that appeal is possible both against the decision to restrict the rights of the plant breeder and the amount of compensation fixed by the Ministry.

The *sui generis* system should provide a property right to the plant breeder in the sense that it should allow the breeder to exclude third parties in relation to some acts or to claim compensation in the case of exploitation of the variety without his consent. To the extent that the Ethiopian PBR Law provide for the restriction of the rights of the breeder, albeit on vaguely stated grounds, only upon payment of compensation just like any other private property the amount of which is subject to judicial scrutiny, it would be difficult to challenge it as ineffective under Article 27.3(b) of the TRIPS Agreement?.

4.3.6. Compulsory license

A compulsory license is another arsenal at the hands of the Ministry to protect the "public interest." A compulsory license on account of "public interest" is a well-recognized principle in the IP laws of many jurisdictions and also under the UPOV Conventions. Under the Ethiopian PBR Law a compulsory license is granted by the Ministry on application of any interested party provided three cumulative conditions are met. First, the holder of the plant breeder right should not be producing and selling the propagating material of the protected variety in sufficient amount to meet the needs of the public. Second, the holder of the right should have refused to license others to produce and sell the protected variety (or not willing to do so). Third, there should exist no condition under which the right holder may be expected to give a permit for the use of the protected variety (such as when he unequivocally so stated). When these cumulative conditions are complied with the Ministry would determine the amount of remuneration to be paid to the right holder by the applicant for the license, the duration of the license (minimum three and maximum five years which could however be renewed if the conditions that warrant the compulsory license still exist), and other conditions as appropriate. A compulsory license does not provide an exclusive right for the licensee; nor does it

preclude the right holder from using the variety or from granting licenses to others.[106]

Article 8 does not state the possibility of taking an appeal from a decision granting a compulsory license or on the amount of remuneration fixed by the Ministry. Article 30 on the other hand states that appeal to the Federal High Court is possible from a decision on the 'granting', 'refusal', 'revocation' or 'restriction' of a plant breeder's right. One may argue that a compulsory license is in a way a 'restriction' of the right of the plant breeder and is thus covered by Article 30. However, the PBR Law has made different provisions in relation to restriction of the right of the breeder (Article 7) and a compulsory license (Article 8) and it could be said that a compulsory license being treated differently from restriction of the right of the breeder, 'restriction' under article 30 refers only to article 7. But why the law should allow appeals when the right of the breeder is restricted under Article 7, but not when the right of the breeder is restricted through a compulsory license under Article 8? It is submitted that a compulsory license being a restriction on the property right of the breeder, some judicial scrutiny at least in relation to the amount of remuneration should be possible and Article 30 needs to make a specific reference to grant of a compulsory license as one ground for appeal, at least on the amount of compensation fixed by the Ministry.

4.3.7. Farmers' rights

As noted, small farmers in Ethiopia are responsible for over 90 percent of crop production, largely using farmer-developed varieties exchanged in the informal seed market networks. The farmer-developed varieties and the informal seed system are therefore the foundation of agriculture in the country. Recognizing this and providing rules for its protection is only natural in the country's socio-economic context.

The Ethiopian PBR Law deals with farmers' rights in a separate part (Part Five). Consistent with the conceptualization of farmers' rights under the ITPGR and the African Model Law, the farmers' rights under the PBR Law emanate from the past, present and future contribution of local farmers for the conservation and sustainable use of plant genetic resources which is the basis of breeding for food and agricultural production.[107] This seems to suggest that the conceptualization of farmers' rights under the PBR Law is beyond the issue of use of plant varieties by farmers as it encompasses the broader elements of the right as enshrined under the ITPGR.

The PBR Law provides two categories of rights to farmers in relation to plant varieties. First, Article 28(1) (a) provides for the right of farmers to use, save, exchange and sell 'farmers' varieties.' These rights of farmer are not however defined in relation to the plant breeder or the protected plant variety as such. Rather, they relate to a "farmer variety" which is defined as "a plant variety having specific attributes and which has been discovered, bred, developed, nurtured by Ethiopian farming communities or a wild relative about which Ethiopian farming communities

[106]The PBR Law, Article 8.4 and 8.5.

[107]The PBR Law, Article 27.

have common knowledge."[108] However, the PBR Law has attempted to grant rights to farmers on "farmers' variety" without actually providing a system of protection for such varieties. One option should have been to provide PVP protection for such varieties. But as discussed earlier, the "farmers' varieties" may not satisfy the standard PVP protection criteria. Even if they do, given the tradition of free exchange and sharing of genetic resources among Ethiopian farmers, a property law approach towards "farmers' variety" would not obviously be an appropriate mechanism for the protection of such varieties. Even in India, the only country to provide PVP protection for farmers' varieties, the plausibility and implication of such an approach is being widely debated.[109] The Ethiopian law did not attempt to provide PVP protection for "farmers' varieties." In this light, the right of farmers in relation to "farmers' varieties" is not different from the right of communities to access and use GRs under the Access Law. The PBR Law should have envisaged a system of protection for "farmers' varieties," which may not necessarily take the form of a property right, so that they would be entitled to benefit (sharing) for use of their varieties by others. The African Model Law, for example, envisages the possibility of protection of intellectual property rights of farmers through a variety of certificates for plant varieties developed or identified by communities which may not necessarily satisfy the requirements of the standard PVP protection.[110] Once such a mechanism of protection is in place, a system of remuneration or fund could be created for the use of the varieties by someone other than the farmers themselves. The system could even allow farmers to prevent PBR protection of their varieties or even varieties essentially derived from the "farmers' varieties. The farmers right in relation to "farmers' varieties" as it stands now thus makes little sense.

Second, the PBR Law has also granted farmers some rights in relation to the breeder or the protected varieties. The first element of the farmers' right in relation to the protected varieties is the right to use such varieties to develop farmers' varieties.[111] Read together with Article 28.1(a), farmers have the right to use any protected variety to develop farmers' varieties, and then to save, use, and even sell farm-saved seed of such varieties. This is similar to the so-called the breeder' exception as known to the UPOV model PVP systems allowing use of protected varieties as an initial source to develop other varieties. But under the PBR Law, the beneficiaries are farmers and it is defined as a right rather than as an exception to the breeders' right. Actually as discussed earlier, it seems that such use of a protected variety falls outside the acts requiring the authorization of the breeder under Article 5. The second and most important element of the right of farmers in relation to the protected varieties is the right 'to save, use, multiply, process and sell farm-saved seed of protected variety.'[112] The only limitation on these rights of farmers is that

[108]Ibid, Article 2.8.

[109]Ramanna, A., 'India's Plant Variety and Farmers' Rights Legislation: Potential on Stakeholders Impact on Access to Genetic Resources', International Food Research Institute (Washington DC, 2003) 2.

[110]The African Model Law, Article 25.2.

[111]The PBR Law, Article 28.1(b).

[112]Ibid, Article 28.1(c).

they may not sell farm-saved seed of the protected variety 'in the seed industry as a certified seed.'[113] Consequently, saving, using, exchanging and selling farm-saved seeds of a protected variety are defined under the PBR Law as rights of farmers not merely as exceptions to the rights of the breeder.[114] This seems to suggest the idea that in Africa the 'breeders' right should be subjugated to farmer's right,' one of the fundamental ethos of the African Model Law.[115]

Part Five of the PBR Law dealing with farmers' rights, while apparently standing on the broader conception of farmers' right as enshrined under the ITPGR and the African Model Law, is actually limited to the issue of use of plant varieties by farmers. 'Farmers' right' under the ITPGR is a broad concept with a cluster of rights, the right in relation to use of plant varieties being just one element. For example, the PBR Law does not envisage a mechanism of benefit-sharing or participation of farmers in decision making in the PVP system while these are important elements of farmers' right under the ITPGR. In other words, the PBR Law defines the farmers' right only in relation to the plant breeder not in relation to the sate. The Access Law has already provided for the right of communities to benefit sharing from the use of their GRs and the great majority constituting communities in Ethiopia being farmers, one may argue that the latter's right to benefit sharing has already been recognized under the Access Law. Nonetheless, conceptually 'farmers' right' is a distinct right of its own which stems from the past, present and future contribution of farmers for the conservation and sustainable use of plant GRs and the PBR Law should have included the important elements of the right under the ITPGR.

The right applies to 'farmers,' a concept which is not defined by the PBR Law. Under the ITPGR the right specifically refers to 'local farmers' who have for long conserved and preserved GRs and continue to do so.[116] Article 27 of the PBR Law also states that "Farmers' Rights stem from the enormous contribution that local farmers have made..." suggesting that the right attaches to local farmers.

The right to sell seed of a protected variety is not limited to farmer-to-farmer sale, except that the seed should be farm-saved. The only limitation on the right is that farmers may not sell such seed in the seed industry as certified seed. On the other hand, the Seed Proclamation excludes from its application only farmer-to-farmer sale of seed.[117] This means that the sale of seeds by farmers to non-farmers is regulated by the Seed Law as certified seed trade. To the extent that the PBR Law prohibits the

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[113]Ibid, Article 28.2.

[114]But see also Article 6 which makes an exception to the right of the breeder in favor of farmers.

[115]See Twolde B. Gebre Egziabher, 'The African Model Law for the Protection of the Rights of Local communities, Farmers and Breeders and for the Regulation of Access to Biological Resources and International Law and Institutions, Ethio-Forum Conference, Ethiopian Social Rehabilitation and Development Fund (Addis Ababa, 2002) 19.

[116]Article 9.1 of the ITPGR uses the language "...enormous contributions that the local and indigenous communities and farmers..."

[117]The Seed Proclamation, Article 3.2.

sale of the protected variety by farmers in the formal seed market, the right is indirectly limited to farmer-to-farmer sale of the protected variety, otherwise it would become a commercial seed trade regulated by the Seed Proclamation which is excluded from the farmers' right provisions of the PBR Law.

Ethiopia has different rights and obligations arising from different international treaties to which it is a party, and there is an obvious need to ensure that the *sui generis* system accommodates these rights and obligations. From a broader policy perspective given agriculture is basically subsistence and seed saving and exchange is the basis for about 85 percent of the seed supply system in the country, strict limitations on farmers' practices of seed saving, use and exchange would naturally have a negative impact on the maintenance of the livelihood bases of the farming community as well as the agricultural system in general which is at the centre of socio-economic development in the country. Nonetheless, the broad definition of the farmers' rights under the PBR Law in relation to the protected varieties raises two important issues: first, whether or not such a broad definition of the farmers' rights affects in anyway the effectiveness of the PBR Law in the eyes of the TRIPS Agreement. Second, whether or not such an approach matches with the objectives of the PBR Law and the context in which it was envisaged. Both issues would be examined later in this article.

4.4. Enforcement of the breeder right and opposition

The PBR Law provides that acts done in relation to the protected varieties which require authorization of the breeder without securing such authorizations would constitute infringement of the right of the breeder.[118] An infringement of the rights of the breeder brings with it civil as well as criminal liabilities. As a civil remedy, the breeder can demand cessation of the act of infringement (injunction) and may also claim compensation.[119] The PBR Law also provides for a severe penalty for infringement of the rights of the breeder which ranges from confiscation of the seed or the propagating material which is the proceed of the infringement to a term of imprisonment up to three years, or a fine up to five thousand Birr, or both.[120] As noted earlier, availability of enforcement mechanisms for the rights of the breeder constitutes an important element in evaluating the effectiveness of the *sui generis* system and one may say that the PBR Law provides an effective enforcement mechanism.

The PBR Law provides that anyone can lodge opposition to an application for a plant breeder's right.[121] Accordingly, any person who believes that the granting of such a right will be contrary to public interest or that the variety does not fulfill the requirements of protection or that the applicant is not entitled to PBR, may lodge an opposition to the Ministry. There is no need to show a vested interest in the form of personal injury for lodging an opposition. The right to opposition under Article 13

[118]The PBR Law, Article 24.
[119]Ibid, Article 25.1.
[120]Ibid, Article 29.
[121]Ibid, Article 13.

could be a crucial arsenal at the hands of any interested party such as non-governmental organizations (NGOs) to check that farmers' varieties and other plant varieties in the public domain are not privatized without improvements being made by the breeder. The specific conditions and procedure are to be determined by regulations.[122] However, there should be clear guidelines on the implementation of this provision so that it will not create excessive and unnecessary burden on the breeder. Interestingly, one of the grounds for opposition under Article 13 is when the applicant "considers that the granting of the plant breeder's right will be contrary to public interest." This assumes that plant varieties could be excluded from PBR protection on account of public interest. But as discussed earlier, the PBR Law does not provide for provisions that exclude plant varieties from PBR protection; it only provides grounds on which an already granted PBR may be limited or restricted on account of public interest (Article 5). It is not thus clear how an opposition could be lodged on this ground as long as it is not specifically taken as a ground for excluding plant varieties from PBR protection. It is also to be noted that opposition under Article 13 is against the grant of a PVP; not to a right which has already been granted. While as a matter of logic there is no reason why the right to lodge an opposition should not extend to a PBR right which has been granted for public interest reasons, the PBR Law does not seem to have clearly foreseen that possibility.

4.5. Institutional framework

The implementation of the PBR Law is simply entrusted to the Ministry. However, issues involved in PVP transcend the knowledge and domain of one specific institution. Even though placing the PBR Law under the Ministry which after all deals with agriculture and potentially possess specialized skills and expertise in plant breeding (variety testing and related issues could be taken as a right approach), plant variety protection involves not only technical plant breeding but also other expertise in such diverse fields as IP, law, international trade. Thus, ideally, establishing an administrative structure comprising different technical and scientific domains would have been the best option. This could have been achieved by establishing an independent office for that purpose either outside or within the Ministry itself. The first option, though the best, should however be considered from the point of view of financial and technical feasibility. It could be possible to make the office financially self-sufficient but it is difficult to predict at this stage how far breeders will be interested in seeking PVP in Ethiopia and the financial challenge remains a possibility. The Ministry is a huge government organ which also administers different institutions under it. The Institute of Biodiversity Conservation and Research (IBCR) and EARO- the potential public plant breeders- are administered under the Ministry. The latter is thus a regulator, decision maker and breeder, and conflict of interests could be unavoidable unless the office is organized independently.

The PBR Law does not foresee the possibility of participation of different stakeholders in decision-making both from within the different government

[122]Ibid.

institutions and other stakeholders such as farmers since the entire decision-making power is centralized and given to a single government ministry. Even if the idea of establishing an independent organ will not be feasible in the short term for financial and technical reasons, a mechanism could be created within the existing structure allowing participation of different stakeholders in the decision making process.

4.6. Critical reflections on the PBR Law in the light of its objectives and the TRIPS Agreement

The rationale for the enactment of the PBR Law as encapsulated in the preamble is utilitarian. It is recognized that the development of plant breeding requires considerable efforts and investment and that it is necessary to recognize, encourage and provide an economic reward for such efforts and investments. It is considered that recognizing, encouraging and rewarding efforts in plant breeding would play a significant role in improving agricultural production and productivity-a priority policy agenda of the country which has for long been grappling with food insecurity. Furthermore, it was clearly stated in the Parliamentary Committee Report during the deliberation and adoption of the PBR Law in the House of Peoples' Representatives (HPRs) that: "The Proclamation [providing for the Plant Breeder's Right] would encourage investment and pave the way for the utilization of new plant varieties released abroad."[123]

Indeed, the two most important potential benefits of IPR protection for plant-related innovations defined in utilitarian terms are facilitating transfer of improved varieties from abroad and providing incentive for private investment in plant breeding.[124] The understanding is that only if an effective plant variety protection system is in place that breeders from abroad will be encouraged to make long term investments in a country.[125] It is asserted that breeders would not introduce their new varieties to countries where their interests are not secured and PBRs can provide the additional incentive necessary for foreign companies to introduce their varieties into a new market.[126] The investment could benefit the recipient country through access to varieties with superior characteristics that boost agricultural productivity. Similarly, it is generally considered that PBRs could encourage local innovation in plant breeding and the development of new varieties thereby benefiting the country that provides the protection.[127]

Nonetheless, whether these benefits would accrue from PBR protection *per se* remains an open question. Since PBRs could only be one among several factors that may have impacts on plant breeding, it is difficult to single out in precise terms their impact on plant breeding. Researches on the impact of PBRs on plant breeding remain inconclusive. A number of authors have attempted to assess the impact of

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[123]Report of the Rural Development, Natural Resources and Environmental Protection Standing Committee of the House of Peoples' Representatives *supra* note 79.

[124]C.S Srinivansen , 'The International Trends in Plant Variety Protection' (2005) 2 Journal of Agricultural and Development Economics, 82-220.

[125]van Wijk, *et al supra* note 1.

[126]Ibid.

[127]Ibid.

PBR on plant breeding[128] but failed to come up with a definitive conclusion. Studies on the impact of PBRs on plant breeding in the context of developing countries, particularly LDCs are even fewer. As noted earlier, few developing countries provided PBR before the coming into force of the TRIPS Agreement. Even after the coming into force of the TRIPS Agreement, developing countries and LDCs were given a transition period to implement their TRIPS obligations and while some of them have already enacted PBR laws it is difficult to analyze the impact of such laws at this early stage since plant breeding is a long time undertaking and its impact could only be assessed over time.

The often-quoted study made in the context of developing countries is the one by Jaffe and van Wijk.[129] The authors examined the impact of PVP on R&D in a few Latin American countries. While this study has in fact found that investment has increased between 1896 and 1992, it also indicated that the incentive to investment in plant-breeding came more from the economic reforms and liberalization of the market rather than from the introduction of PBRs. Furthermore, even if the study has indicated that the introduction of PBR has increased access to foreign varieties in those countries, the access was subject to restrictions in some cases such as on the export of the varieties. On the other hand, the study concluded that there was little evidence showing that the introduction of the PBR in those developing countries stimulated innovation in the local plant breeding industry. This research was conducted in the context of middle income developing countries with moderate private research and commercial breeding industry; it is thus difficult to draw conclusions from it for all the developing countries, particularly the LDCs.

Farmers are the major players in both plant breeding and the seed supply system in most developing countries including Ethiopia. Any study on the impact of PBR in the developing countries would not thus be complete without including the impact of PBR on the farmers, both in terms of availability of improved varieties and access as well as on their ability to save and use the protected varieties. Actually, another study by van Wijk concluded that there is little evidence suggesting that PBR has led to the availability improved varieties for farmers.[130] On the other hand, transfer of

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[128]See W.H. Lesser, 'Assessing the Implication of Intellectual Property Rights on Plant and Animal Agriculture' (1997) 78 American Journal of Agricultural Economics, 1584-1591; C.S. Srinvansen, ' Plant Variety Protection Innovation and Transferability: Some Empirical Evidence' (2004) 28 *Review of Agricultural Economics*, 445; D. Rangnekar 'Access to Genetic Resources, Gene-Based Inventions and Agriculture' (Commission on Intellectual Property Rights, Study Paper 3a, 2002); N.P. Louwaars, *et.al*, 'Impact of Strengthened Intellectual Property Rights on Plant Breeding Industry in Developing Countries', World Bank Report (Washington DC, 2005); T. Swanson, 'Property Rights Issues Involving Plant Genetic Resources: Implications for Ownership for Economic Efficiency', CSERGE Working Paper, 2003, 98-113.

[129]Jaffe and van Wijk, 'The Impact of Plant Breeders' Right in Developing Countries', Technical Paper of the Special program on Biotechnology and Development Cooperation (Ministry of Foreign Affairs of the Netherlands, 1995).

[130]J. van Wijk, 'How does stronger protection of intellectual property rights affect seed supply? Early evidence of impact,' 13 Natural Resources Perspectives, Overseas

varieties could only be effective in similar agro-climatic conditions. Even if it is assumed that the PBR encourages the introduction of varieties developed abroad, there still is another limitation. Plant varieties are highly location-specific in their agronomic performance and a variety developed for one environment is unlikely to perform well in another environment mainly owing to adaptations to agro-climatic conditions and to local pests and pathogens.[131] Transfer of varieties could only be effective in similar agro-climatic conditions and the use of foreign-bred varieties in Ethiopia would be minimal given the great variation in agro-ecology in the country. A more recent research has attempted to evaluate the impact of PBRs in breeding in five developing countries and concluded that:

> It is early to attempt a statistical or even a quantitative analysis of the impact of intellectual property rights on plant breeding and seed production in the developing countries. In most developing countries the introduction of IPRs for plant breeding is a recent event which coincides with serious of other matters that have been set in motion, including the liberalization of domestic agricultural markets, increased globalization and a reduction of public expenditure for agricultural research and seed production. All of these trends have a marked effect on the seed and plant breeding sectors.[132]

In the African context, a study in the horticulture industry in Kenya and Uganda shows that the role of PBRs in attracting investment is minimal.[133] While Kenya had a PBR law from as far back as 1975[134] Uganda saw a massive investment in the sector without PBR laws in place.[135] Even in Kenya, it appears that investors were not capitalizing on the PBRs. Ethiopia has also been witnessing significant increase in foreign investment in the horticulture sector in the last few years even before the country put in place a PBR law. In fact, investors have been moving to Ethiopia, to a country that until recently did not have a PBR law, from Kenya, one of the few African countries members to the UPOV and which has had a PBR law in place since 1975. The important reasons for the flow of investment in the area include: availability of cheap labor, weather condition, credit facility and better transport facility.[136]

Development Institute, November 1996; available at http://www.oneworld.org/odi/nrp/13.html (accessed 11 October 2010).

[131]R.E Evansen, Analyzing the Transfer of Agricultural Technology', in J.R Anderson (ed.) Agricultural Technology: Policy Issues for the International Community (CAB International, 1994).

[132]Louwaars *et al*, *supra* note 129.

[133]Id.

[134]The Seeds and Plant Varieties Act (Cap 236 of the Laws of Kenya).

[135]See P.K. Asea and D. Kaija, 'Impact of Flower Industry in Uganda' ILO Working Paper 148 (Geneva: Switzerland, 2000).

[136]See Ethiopia, 'Trade and Transformations: Diagnostic Trade Integration Study' Vol. I; available at http://www.integratedframework.org/files/ethiopia_dtis-vol1_july04.pdf (accessed 6 October 2010).

Most flower varieties in developing countries are imported from developed countries and are protected in the source countries. They are also protected indirectly by controlling the export market rather than through PBR. Such varieties are also usually protected by other IPRs such as trademarks. Needless to say, commercial flower production requires significant infrastructure (greenhouse, irrigation, etc) and is thus out of the reach of small-scale farmers and the local market for flowers in such countries is also very negligible. These and other reasons make PBR less significant for investors in those countries. The same could be said in relation to other high value export oriented varieties such as fruits and vegetables.

The role of the PBR Law to attract investment in food crops appears even slim. In a country where smallholding and resource-poor farmers constitute 85 percent of the population and commercial farming is limited, plant breeding is obviously commercially less attractive because, as the only private seed company in the country, Pioneer Hi-bred Ethiopia, has indicated, farmers will not be able to buy its seeds even once.[137] It is indeed unlikely that the resource-poor farmers in the country will become commercial customers for the commercial breeders. The domestic market potential is thus obviously not attractive for private investment and PBRs alone may not provide sufficient incentive for the commercial sector. Indeed, owing to lack of domestic market potential and the difficulty in enforcing IPRs, the private sector has shown little interest in the development of varieties in food crops in the developing countries. Even in Kenya where the breeder has stronger rights along the line of UPOV 1978 Act, commercial breeders focus on export sector varieties such as cut flowers, fruits, vegetables and tobacco.[138] In that country only one out of 136 plant variety protection applications was for food crops.[139] The head of the Kenyan Plant Variety Protection Office also disclosed that the greatest beneficiary of PBRs in Kenya has been the horticulture industry.[140]

Even if IPRs were to provide the necessary incentive, whether the Ethiopian PBR Law provides sufficient incentive is also questionable. The acts requiring authorization of the breeder are very limited and the limited rights of the breeder are further subjected to extensive and broadly stated limitations and exceptions. This is further compounded by the right of farmers to freely use, exchange and even sell any protected variety. Under such circumstances, it would certainly be difficult to make the conclusion that the PBR Law provides adequate incentive for investment in plant breeding in Ethiopia to the extent that PBRs are important for such investments. It thus appears unrealistic to expect PBR-induced flows of private investment in plant-breeding especially in relation to the food crops. In relation to such crops, it is very likely that the private sector will continue relying on hybrids

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[137]Shawn, M., 'Getting Genes: Rethinking Seed System analysis and reform for Sorghum in Ethiopia' unpublished PhD Thesis, Wageningen University (The Netherlands, 2005).

[138]D. Kuyek, 'Intellectual Property Rights in African Agriculture', available at http://www.grain.org (accessed on 8 October 2010).

[139]Ibid.

[140]E. Sikinyi, 'Experiences in Plant Variety Protection under the UPOV Convention', WIPO Document, WIPO-UPOV/SYM/03/9, of October 21, 2003.

which provide effective protection than PBRs in the Ethiopian context whereas varietal development in food crops in the country as 'public good' would remain to be the task of the public agricultural research institutes.

What is stated above shows one of the paradoxes of the PBR Law: informed by the tenets of the African Model Law, it tries to limit commercial control over seed in the country by restricting the rights of the breeder. It is reported by the drafters of the African Model Law that there was a specific request from the UPOV to include incentive for the breeder as one main objective in the Model Law, but it was not accepted.[141] Incentive for the breeder was not as such a fundamental objective of the African Model Law. The Ethiopian law is different in that respect as incentive is indeed its central objective.[142] The problem of the Ethiopian PBR Law thus emanates from the fact that it has taken most of the provisions of the African Model Law, which give little attention to incentive for the breeder, and try to apply them in Ethiopia where the main objective is providing incentive for breeders. The provisions of the African Model Law and its philosophy were brought to Ethiopia without being reconfigured in line with the policy objectives that informed the adoption of PBR Law. This seems to have created a tension between the objectives of the PBR Law and its provisions.

The role of the PBR Law to encourage the development of the domestic private breeding/seed sector is also questionable. To begin with, the PBR Law cannot encourage something which does not exist; it should seek to create it. Actually, researches conducted on the impact of PBR in developing countries show that the emergence and development of domestic seed sector owes little to PBR and the industry has generally emerged without such laws.[143] In other words, PBR laws have little influence for the emergence of the private sector though they may be of help to encourage an already existing one. Even if PBRs were important for the emergence of the domestic industry, it would be questionable again if the Ethiopian PBR Law, which as we saw provides limited rights with full of exceptions, and limitations, provides sufficient incentive for the emergence and development of the sector.

The Parliamentary Committee Report during the deliberation and adoption of the PBR Law stated above also asserts that the PBR Law will pave the way for the country's accession to the WTO. This calls for the determination of the issue as to whether the PBR Law is 'effective' *sui generis* system in the eyes of the TRIPS Agreement. As noted, there are so far no agreed standards set by the TRIPS Council or the dispute settlement body of the WTO to evaluate the effectiveness of the *sui generis* system. This article has outlined the minimum requirements that an effective *sui generis* system should comply with and the discussions in this article show that it would be difficult to consider the PBR Law as ineffective as long as it meets certain general conditions. In relation to national treatment and MFN, which are elements of

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[141]Tewolde *supra* note 115.

[142]Interestingly, the preamble does not mention anything about the need for protecting farmers despite the fact that the farmers' rights are dealt with in a separate part in the law.

[143]Louwaars *et al, supra* note 129.

the effective *sui generis* system, Article 10(1) of the PBR Law states that whether the breeder is an Ethiopian national or a foreigner, an Ethiopian resident or not, the variety was bred locally or abroad, he is entitled to plant breeder rights. This Article however, deals with the grant of the right of the breeder and does not, strictly speaking, state unequivocally that Ethiopians and foreigners would be treated in the same way or equally not only in relation to the grant of the right of the breeder but also in the exercise of the rights. There may be a need to make this point clear in the law. No provision in the PBR Law gives preferences or special advantages to nationals of a particular country and it is therefore consistent with the MFN rules. Does the Ethiopian PBR Law provide a property right for the breeder? The law defines its subject matter (a plant variety), delimits the subject of the right (propagating material), determines the acts requiring authorization of the breeder (sell and produce for sale), provides different civil and criminal remedies for infringement of the right of the breeder. It thus exhibits the basic elements of a property right and as argued earlier, in the absence of an agreed standard against which the *sui generis* system should be evaluated, a member could not be challenged because the subject matter or the scope of the right of the breeder is limited as long as it has provided a property right regime for the protection of plant varieties. As the analysis in this article shows, it would be difficult to challenge the PBR Law as incompatible with the TRIPS Agreement in many areas.

An issue may, however, arise in relation to the wide exceptions provided for by the law. Apart from other exceptions, farmers, who are the main or even the only potential consumers of the protected variety, are all allowed without exception not only to save and use but also to exchange and sell any protected variety. Is there any limitation to this right of farmers? It may, of course, be argued that the right of farmers in relation to a protected variety is limited in two ways. First, the right applies only to farm-saved seed of a protected variety. Second, even then farmers are prohibited from selling such seed in the seed industry as certified seed which ostensibly is meant to protect the commercial interest of the plant breeders. While the limits on the right will have little impact in practice because as noted earlier over 90 percent of the seed supply in the country is dependent upon informal networks, in law the right could be said to have been limited and this may be taken as a legitimate defense for any possible challenge on the effectiveness of the PBR Law in this regard. It could further be argued that the farmer right provisions are in line with the objectives of TRIPS as encapsulated under Article 7 which, *inter alia*, call for the 'mutual advantage of producers and sellers' and the 'balance of rights and obligations.' Given the extremely crucial role farmers play in plant breeding and the seed supply system in the country, providing for their protection is only natural. There is absolute need to ensure that farmers in Ethiopia continue to access improved varieties, breed new ones and maintain genetic diversity in their communities while at the same time providing protection for the commercial interests of the plant breeder. A further limit to address this potential challenge would have been to limit the farmer's right only to small or subsistence farmers as these are the group of farmers who have been customarily reusing farm-saved seed and lack the financial means to access new varieties on a year-by-year basis. This is

indeed an approach that would put a further legal limit to the exception but without significant practical impact in the Ethiopian context since 85 percent of the farmers are subsistence, anyway.

Apart from a potential question that may be raised on the effectiveness of the PBR Law in the country's accession to the WTO (a question which may be defended as outlined above), the scope of the rights of the farmer may also raise the issue as to whether the law provides sufficient incentive for the commercial breeder as stated in the preamble. If all the farmers, probably the only consumers of the seeds from protected varieties, are allowed without exception to save, use, exchange and sell seeds of any protected variety, who will be the customers for the commercial breeders? Where is the incentive?

One option to address this concern would have been to define the scope of the right of the farmers depending on the kind and importance of the particular variety for farmers. Accordingly, the right could include saving, using, exchanging and even selling in relation to food crops while limited to saving, using and exchanging in case of commercial varieties. This approach would have served both the objectives of protecting farmers and providing incentives for the breeders. In this way, while breeders will have limited influence in relation to food crops they would have stronger rights in relation to other varieties especially in the export sector. It should be noted that encouraging export is an important policy objective stated both in the Rural Development and Agricultural Research Policies of the country and one mechanism to translate this into reality is providing adequate incentive to export-oriented breeders and building a modern plant breeding industry aiming at the global market in addition to protecting the traditional sector with a local market focus.

Accommodating the different interests of the different stakeholders does not come in the way of the *sui generis* system envisaged by the TRIPS Agreement; in fact, it is why a *sui generis* system. But whether the Ethiopian law strikes the necessary balance among the different interests and stakeholders is questionable. As noted earlier, there is an absolute need to ensure that farmers in Ethiopia continue to access GRs, breed new varieties and maintain genetic diversity in their community through exchange of genetic resources. But there is also a need to maintain a balance between the rights of the breeder and those of the framers if the objectives of the law are to go by.

5. Conclusion

In general, the PBR Law is an important development towards recognizing the efforts of plant breeders and providing them some economic benefits thereby enhancing agricultural production and productivity. As a *sui generis* system, the PBR Law has attempted to create a balance of rights among the different stakeholders in plant breeding as well as to protect the public interest in general. As stated in the introduction part, this article sought to address two major issues: first, whether or not the PBR Law is true to its objectives and second, whether or not the law could be regarded as compatible with the provisions of TRIPS Agreement on the subject. In

relation to the first, the article, having analyzed the key provisions of the PBR Law, has concluded that in most cases the objectives have not been adequately reflected in the provisions of the law. In relation to the second, except in few cases where questions may be raised as to the effectiveness of the PBR Law, the main provisions of the PBR Law have been found to be consistent with the TRIPS Agreement. Even in relation to the few cases where there may be a potential challenge as to the effectiveness of the PBR Law, the article has attempted to suggest different arguments to address the challenges.

The analysis in this article has also shown that the PBR Law suffers from both conceptual/substantive and technical defects.

It is suggested that the law needs a revision with a view to addressing the shortcomings along the lines suggested in the article- to clarify conceptual confusions, inconsistencies and ensure coherence between its objectives and its provisions. Above all, the law will remain unenforceable until such time that the Ministry comes up with a list of species to be covered by the law. In the absence of such a list it is as if there is no law on the subject altogether. It is hoped that the on-going work on the development of a regulation with a list of species will be completed soon and the PBR Law will become enforceable.

Glossary of Acronyms

CBD: Convention on Biological Diversity

DSB: Dispute Settlement Body

DSU: Distinct, Stable and Uniform

GMO: Genetically Modified Organism

HPR: House of People's Representatives

IPR: Intellectual Property Right

ITPGR: International Treaty on Plant Genetic Resources

LDC: Least Developed Country

NSIP: National Seed Industry Policy

PBR: Plant Breeder's Right

PVP: Plant Variety Protection

TPCPP: Trade Practices and Consumer Protection Proclamation

TRIPS Agreement: Agreement on Trade-Related Aspects of Intellectual Property Rights

UPOV: International Convention for the Protection of New Plant Varieties

WTO: World Trade Organization

Glossary of technical terms

Asexually propagation (vegetative propagation): multiplication without passage through the seed cycle such as budding and grafting.

Biological diversity: totality of genes, species, and ecosystems of a particular region

Breeder: a person who breeds and develops a new plant variety

Plant breeder rights: legal rights accorded to a plant breeder

Plant variety: a group of plants that is distinguished from other groups by a specific characteristic or set of characteristics

Propagating material: any part or product from which another plant with the same essential characteristics can be produced

Sexual propagation: multiplication by seed

Sui generis: of its own kind or unique in its characteristics