

A developing Country may want to enhance IP protection when it actually needs it

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Abstract

As the common sense goes, developing countries are supposed to accept reinforced Intellectual Property systems either by external inducement or misguided evaluation of the proportion in which the system may benefit its society. Obviously, after the intertwining of commerce of goods, services and investment under the WTO 1994 Agreement, the evaluation may be – wise or misguidedly – driven by considerations entirely extraneous to what trademarks, patents, etc. may signify to the country’s economy or well being. In certain specific cases, however, the kind of IP protection which serves the country’s own interests may require (or not) an actual enhancement upon the minimum levels required by the TRIPs agreement. This study indicates a case where Brazil might be so motivated, and draws some parameters for evaluating this need.

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The Brazilian new Plant Variety Protection proposal

The Brazilian Government has just drafted a bill amending the Plant Variety Protection (“PVP”) Statute passed in 1997. This amendment represents an important re-thinking of the system, in a divorce of sorts from the Brazilian original standpoint following the implementation of TRIPs requirements, and an appraisal of the draft could shed light on a new—and independent—third-world assessment of how Intellectual Property Rights (“IPRs”) can be adjusted to meet local interests and needs.

A difficult protection to choose

When each country accepted TRIPs’ terms to conducting business, a Plant Variety protection – of some kind – came with the bundle. However, the treaty did not impose the choice of the UPOV model, as Josef Drexel notes:³

As to the protection of plant varieties, the provision states an option for WTO Members. They can either provide for patent protection or “an effective *sui generis* system – thereby alluding to the concept of plant breeders’ rights as provided for by the UPOV Convention,⁴ without mentioning it – or protection by a combination of the two IP rights.⁵ Developing countries have a strong interest in Art. 27.3(b) TRIPS, which is basically twofold. Firstly, developing countries want to make sure that the farmers’ privilege of the UPOV Convention⁶ according to which UPOV member states may allow farmers to use crop for bringing out new seeds on their own land can be considered part of an “effective” *sui generis* system of protection.

Brazil had settled for PVP rights long before TRIPs: the 1945 Industrial Property Code included varieties among the protectable technologies, notwithstanding the failure to enact specific legislation.⁷ Even though this early example was generally similar to the 1930 American Plant Variety

3 Josef Drexel, *The Evolution of TRIPS: Toward Flexible Multilateralism*, published in French in KORS, J.; REMICHE, B. ADPIC, première décennie: droits d’auteur et accès à l’information. Perspective latino-américaine. L’Accord ADPIC: dix ans après. Belgica: LARCIER, 2007

4 Convention for the Protection of New Varieties of Plants of 2 November 1961, revised in 1972, 1978 and 1991. The different versions are available at <http://www.upov.int/en/publications/conventions/index.html>. The Convention establishes an international organisation, the so-called Union pour la protection des obtentions végétales (UPOV).

5 Such a dual system of patent and plant variety protection exists in the U.S.

6 See Art. 14(2) of UPOV Convention 1991.

7 See Pontes de Miranda, *Tratado de Direito Privado*, vol. XVI, 442-448. The Plant Variety protection anticipated by the Code should be implemented through an Executive Decree, according to the Art. 219 of Decree-Law 7903/45.

Protection Act,⁸ its roots can be traced back to a national tradition in agricultural research established in the early XIX Century.⁹

When the 1930 US Act inaugurated the PVP system, a number of Brazilian agricultural research institutions were active and in production. Some of them would remain quite interested in IP protection in the 90's,¹⁰ and, as such, would be instrumental in building the momentum that led to Federal Law no. 9,456 of 1997 (the "1997 Statute").

The effects of Plant Variety Protections (PVPs)

In 1999 Brazil adopted the text of the 1978 UPOV Convention ("UPOV 1978"), barely two years after the enactment of the 1997 Statute and the inception of PVPs. This led to an adjustment of most of the provisions in the 1997 Statute to conform to UPOV 1978. Now, ten years later, changes to the 1997 Statute have been proposed, a number of which to conform its terms to some, but not all, of the UPOV 1991 standards (the "2009 Draft Amendment")¹¹.

What are the distinctions between the 1978 and the 1991 versions? Aaron Cosby so describes¹²:

Scope of protection. Under UPOV 1978, commercial use of reproductive materials of the protected variety is not allowed. In other words, a farmer could not purchase a protected variety, and grow seed from it for subsequent sale, since it could be used to reproduce the protected variety. UPOV 1991 offers the same protection, but in some cases takes it further, to the products of the protected variety. According to this restriction, if permission has not been properly obtained for the growing of a protected variety, the products of the crop (e.g., fruit from protected tree varieties) are also accorded IP protection.

Duration of protection. UPOV 1978 provides for a minimum of 15 years of protection, while UPOV 1991 extends this to 20 years.

8 Townsend-Purnell Act, 35 USC, Par. 161-164 (1976).

9 By coming to Rio de Janeiro in his oceanic flight from the Napoleonic armies, King John VI of Portugal created in 1808 the first Government agricultural research center, the Botanical Garden, with the specific task of adapting imported varieties to the local environment. See Kirsten Schultz, *Tropical Versailles: Empire, Monarchy, and the Portuguese Royal Court in Rio de Janeiro, 1808-1821* (New World in the Atlantic World), Routledge, 2001.

10 Especially the Instituto Agronômico de Campinas (IAC), the Escola Superior de Agricultura Luiz de Queirós (ESALQ), the Universidade Federal de Viçosa and the Federal Government main research corporation, EMBRAPA.

11 This article has considered a number of academic studies on the effects of the PVPs in Brazil, specially CARVALHO, Sergio Medeiros Paulino de; SALLES-FILHO, Sergio L. M.; PAULINO, Sonia R.. Propriedade intelectual e organização da P&D vegetal: evidências preliminares da implantação da Lei de Proteção de Cultivares. *Rev. Econ. Sociol. Rural*, Brasília, v. 45, n. 1, Mar. 2007. Available from <http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0103-20032007000100001&lng=en&nrm=iso>. access on 28 May 2009. doi: 10.1590/S0103-20032007000100001 and Sergio Paulino de Carvalho, Sergio Luiz Monteiro Salles Filho, Antonio Marcio Buainain, A institucionalidade da propriedade intelectual no Brasil: os impactos da política de articulação da Embrapa no mercado de cultivares no Brasil, *Cadernos de Estudos Avançados*, Rio de Janeiro, 2005 p. 35, found at http://www.ige.unicamp.br/geopi/documentos/propriedade_intelectual.pdf, visited at 22/5/2009 (Referred as Paulino et alii (2005)); Marcos Paulo Fuck, Maria Beatriz Bonacelli, Sérgio Paulino de Carvalho, PROPRIEDADE INTELECTUAL EM MELHORAMENTO VEGETAL: Brasil e Argentina frente às possibilidades de mudanças institucionais, *Informações Econômicas*, SP, v.38, n.9, set. 2008 found at <ftp://ftp.sp.gov.br/ftpiea/publicacoes/tec5-0908.pdf> (Fuck et alii).

12 The Sustainable Development Effects of the WTO TRIPS Agreement: A Focus on Developing Countries, Institute for Sustainable Development, Winnipeg, Canada

Farmers' privilege. Farmers' privilege refers to the right of farmers using a protected variety to retain the seed from their crop for reuse, without paying royalties again to the breeder—a burden which would be particularly difficult for poor farmers. UPOV 1978 allows for farmers' privilege, while UPOV 1991 leaves it at the discretion of the national government.

Breeders' exemption. Breeders' exemption refers to the practice of allowing breeders free access to protected varieties for research purposes—a measure devoted to fostering increased innovation. UPOV 1978 allows for such an exemption. UPOV 1991 allows only a limited application of this exemption. If the resulting improved variety is deemed to be “essentially derived” from the original protected variety (i.e., sufficiently genetically similar) then, while the breeder of the new variety may be granted IPRs, IPRs over the new variety are also granted to the breeder of the original variety. It is not yet clear how “essentially derived” will be defined in practice. This last element of UPOV 1991 might be thought to benefit traditional farmers, since a number of improved commercial varieties might be deemed to be essentially derived from land races. However, since there is no protection for such land races in the first place under UPOV, this potential protection for varieties derived from them is not available either.

Why changing now?

The draft amendment comes at a time when the Brazilian commercial agriculture has reached high levels of competitiveness, driven, significantly, by innovations developed locally¹³. Since the time – much less than twenty years ago today – when any clairvoyant would foresee a highly concentrated seed market dominated by multinationals and express sincere doubts that PVPs (or patents, for that matter) would do anything for local research organizations, what has changed?

More importantly, if they are doomed by globalization and market concentration, why did the local agricultural research community bother driving the effort back in 1997?¹⁴ Why do they bother today?

Before the 1997 Statute, Embrapa issued a document¹⁵ recommending the adoption of process patents in biotech and agricultural technologies, and a UPOV-style PVP system. PVPs were necessary since most of the varieties then employed by farmers had been developed by national research institutes,

13 The Economist, The harnessing of nature's bounty, Nov 3rd 2005: “Brazil has yet to produce a Nokia, but farming provides the outstanding examples of Brazilians inventing technologies rather than importing them. Since the late 19th century agricultural research has “received special attention from the state,” observes Guilherme Leite da Silva Dias, an economist at the University of São Paulo. While planners carved out “market reserves” to defend local industry from competition during the 1970s, Embrapa underwrote the education of its scientists at American and European universities. The conquest of the cerrado is the fruit of breakthroughs like the invention of soya varieties that thrive in tropical conditions. In sugar, a 1970s programme to fuel cars with sugar-based alcohol rather than gasoline combined with Brazilian brainpower to create a high-tech cluster based in the state of São Paulo. In addition to producing the world's lowest-cost sugar and alcohol the state is developing spin-offs that lower the cost further and extend the product line. Bagasse, the crushed dregs of sugar cane, is being burnt for energy and mixed with urea to feed cattle. Eventually it could yield more alcohol and provide the raw material for biodegradable plastic. The top of the sugar chain is flex-fuel cars, which burn alcohol and gasoline in any combination and account for nearly two-thirds of the new cars sold in Brazil”.

14 Barreto de Castro, Luiz A., Propiedade intelectual e patente industriais, implicações para a agropecuaria brasileira, en la publicación del Seminario de Políticas de Propiedad industrial de inventos biotecnológicos y de uso del germoplasma en América Latina y el Caribe. Caracas, 1990

15 Castro, op. Cit.

that, due to the lack of royalties and appropriate funding, were in financial distress.

Furthermore, the additional income would allow them to retain highly trained personnel and avoid their poaching by multinational corporations.

Brazilian agribusiness: a case of localization, not homogeneity

Brazilian commercial agriculture, a system largely based on intensive, technology-dependent processes, was responsible for 23% of the national GDP in 2007 (generating over US\$300 billion). In spite of the large product portfolio offered by the global life sciences corporations (which base their strategy on trademark, not agriculture),¹⁶ Embrapa has managed to achieve success by focusing on customization and adaptation of plant varieties to local environments:

One of the foundations of innovation in agriculture consists of the idea that the sector is location-specific in its technologies and its products. There are few opportunities where one can copy or directly transfer technologies and products from one country to another without adaptation and without considering differences in climate, soil, vegetation, and culture. This idea is even more relevant for technologies developed for countries with temperate climates that one wants to apply in tropical countries. This was the case of Brazil in the conquest of the *cerrados* (Brazilian savannahs). There was no technology specific to agriculture in the *cerrados*; the solution was to adapt forms of agriculture being used elsewhere to this large system. This idea is mirrored in the expression tropical technology.¹⁷

The same strategy was extended to genetic research:

“One of the big merits of Brazilian agricultural players and agriculture and cattle raising research in recent decades has been the incorporation of the *cerrados* into agricultural production, both for grains and for cattle raising. Together with the *cerrados*, research has tropicalized crops traditionally associated with a more amenable climate. Researchers in the genetic improvement of soybeans have developed varieties adapted to low latitudes and created resistance to important diseases. The availability of human resources concentrated in one center (Londrina), the availability of germplasm, and an extensive network of experimentation with the participation of public and private institutions were essential factors in the advance of the genetic improvement of soybeans.”¹⁸

This was not a solo flight for Embrapa and other Government research agencies. Research compacts built up by producers themselves also play an important role in this context. According to an industry overview report,

16 Ducos, op. Cit., p. 84

17 MIA et al (Editors). The Brazil Competitiveness Report 2009. Geneva, World Economic Forum, 2009. p. 89.

18 MIA et al (Editors). The Brazil Competitiveness Report 2009. Geneva, World Economic Fórum, 2009. p. 92.

“in R&D the agricultural sector has benefitted from constant investment by Embrapa (...). In addition to Embrapa, private R&D was constant and ever-growing. Fundação Matto Grosso and Fundação ABC are examples of research centers financed by producers, (...). There have also been successful cases in partnerships between producers and universities. (...) The first priority was grain production. The selection of different varieties adapted to distinct regions, climates and soil, as well as pest resistance, allowed the development of agriculture in environments such as the *cerrado*, the north-east (exceedingly dry) and the south.”¹⁹

Embrapa’s success, according to same, was due to a “focused” approach, which meant addressing specific problems caused by local issues (e.g climate, soil) or sanitary concerns, that allowed the development of varieties suited to the *cerrado* and the “boom” in grain production.²⁰

Even though Embrapa has long been concerned with the development of small scale, familiar producers, their most expressive results have been in agribusiness, taking Brazil to the number one spot in sugar and soy, and a prominent position in other commodities.

The report shows concerns, however, with the assurance of a continued trajectory in agricultural R&D, and points both the need for continuous coordination between market and research, and an adequate IPR framework.²¹

It would appear that a PVP system similar to UPOV could, and did, benefit national interests, inasmuch as product patents for plant varieties would not—and did not. Patent grants do not stimulate breeders. On the contrary: extensive patent rights, as applied to plant variety inventions, or the protections described in UPOV 1991 stymie variety selection and improvement²²

The arguments against PVPs

The arguments against the adoption of any protection whatsoever for plant varieties may be easily anticipated. In a nutshell: any exclusive protection introduces a synchronic economic inefficiency, in the sense that access to some portions of the germplasm is immediately restricted in favor of protecting a *private* investment in plant technology²³.

19 MB ASSOCIADOS. O Sucesso na Agroindústria: o que se pode aprender? São Paulo, FIESP, julho de 2004, Available at: www.fiesp.com.br/download/publicacoes/economia/referencias_5.pdf, p. 15

20 Idem, *ibid*.

21 Idem, p. 16.

22 CORREA, C.M. Patentes y Biotecnología: Opciones para America Latina, Revista de Derecho Industrial, Buenos Aires, janeiro-abril de 1990, pp. 7-53, (p. 26).

23 The arguments against PVPs are listed in Paulino et alii (2005).

On the other hand, the lesser protection afforded by the UPOV system was exactly what made it preferable, as stated in an oft-quoted remark, contemporaneous to the TRIPs Agreement:

The original UPOV Convention laid down the rules for PBR that would have to be included in national laws in order for countries to qualify for membership. In essence, plant breeders are given a limited monopoly over the reproductive material of the variety. Even if it may seem only a nuance, this entails an important difference with patents, since patent holders claim ownership to the germplasm, technology and industrial processes, while breeders - in the original UPOV concept - can only control multiplication and sale of seeds. UPOV has also provided - until the 1991 version discussed below - special protection for farmers and the continued free access to plant genetic resources. Farmers have been allowed to continue with their ancestral costume of saving seeds for the coming seasons and informally exchanging them with other farmers, even from protected varieties, and this right is called the farmers' privilege. Plant breeder and Netherlands genebank director, Jaap Hardon, described this free availability of germplasm once as a "constitutional right" in agriculture. "A right going back 12'000 years to the dawn of agriculture and the domestication of all these crops we grow or have grown." For the same reason, breeders have been allowed to make use of protected varieties' genetic material to develop new lines without having to pay royalties or ask permission. This right is included in UPOV as breeders' exemption. Without the possibility to freely exchange germplasm there is maybe agribusiness but not agriculture.²⁴

Real impact of PVPs on the Brazilian agriculture

According to academic studies on the effect of introduction of the 1997 Statute,²⁵ the impact of PVP on specific crops did not entail a significant cost increase for farmers.²⁶ This was apparently due to the significant presence of farmer cooperative research units, which do not operate on a royalty-return rationale, and also to the ample availability of protected varieties supplied by informal sources or non-protected varieties of market-acceptable products.²⁷

24 Grain, June 1996, UPOV: Getting A Free Trips Ride?, <http://www.grain.org/seedling/?id=161>

25 Particularly Paulino et al (2005).

26 Paulino et al (2005) "A participação dos royalties no custo total de produção tende a ser baixa. Uma estimativa para a cultura da batata, na qual a batata semente tem uma alta participação nos custos de produção, em torno de 35,3%, a introdução de royalties da ordem de 3% elevaria a participação da batata semente nos custos de produção para 36%. Embora em termos absolutos o aumento do desembolso por hectare seja considerável, em torno de R\$ 63,00, levando-se em conta a produção, estimada em 24 t/ha, os royalties, neste exemplo hipotético, representarão entre R\$ 0,10 e R\$ 0,15 por saca de 50 kg. Outras simulações, com arroz de sequeiro, feijão de sequeiro, feijão irrigado, milho, soja e cana-de-açúcar, mostram que os custos finais de produção são acrescidos entre 0,23% (cana-de-açúcar) e 0,99% (feijão de sequeiro), quando pagos royalties de 5% para cultivares protegidos (BIOTECNOLOGIA Ciência e Desenvolvimento, 2003)"

27 Paulino et al (2005) "As sementes de cultivares protegidas produzidas sem autorização do titular conformam um mercado que oferece, pelo menos em princípio, o mesmo tipo de semente da legalizada a um preço menor, já que não incidem royalties sobre as sementes "ilegais". Wetzel (2003b) chama a atenção de que muitas dessas sementes não autorizadas são produzidas por agentes econômicos com grande capacidade de indução na utilização das suas

Some authors believe that the impact of PVPs on costs would be significant if the ratio between protected and unprotected varieties is tipped towards the prime.²⁸

Higher prices and steadier returns for innovative technologies would be the standard argument to justify creating PVP statutes or amendments thereto. Until now, however, Embrapa has stated the need for IP protection on a rather dogmatic conviction.²⁹

Was Embrapa wrong?

The arguments on which Embrapa's pre-1997 document was based warrant an examination in perspective. Conventional wisdom would have it that the intense privatization of agricultural biotechnology witnessed in OECD countries³⁰ casted doubts on the possibility that a UPOV-based PVP regime would ensure increased income to Brazilian research centers, most of which were publicly owned.

By 1997 the world seed market was estimated at US\$ 24.5 billion,³¹ and the top four commercial seed corporations had secured 51% of all approved field releases.³²

However, since the enactment of the 1997 Statute, most of the PVPs were requested by – and granted to – local institutions. As of 2008, foreign private institutions obtained protection for 412 varieties, as opposed to 635 granted to Brazilian institutions (365 of which were public).³³

It would then appear that once PVPs were assured, Brazilian companies would not be able to compete, both in research and on the market. In 2004

sementes (representantes do capital comercial, grandes produtores, ex-sementeiros), além de disporem de canais de distribuição e articulação com os clientes”.

28 SANTINI, G. A. A reestruturação da indústria de sementes no Brasil: o novo ambiente concorrencial dos segmentos de milho híbrido e soja. Dissertação de Mestrado em Engenharia de Produção, Departamento de Engenharia de Produção, Universidade Federal de São Carlos: São Carlos, 2002

29 EMBRAPA – Empresa Brasileira de Pesquisa Agropecuária. Deliberação Nº 14/2000, de 05 de maio de 2000, relativa à cooperação técnica com parceiro da iniciativa privada. Brasília, Embrapa, EMBRAPA – Empresa Brasileira de Pesquisa Agropecuária. Deliberação Nº 15/2000, de 05 de maio de 2000, relativa à cooperação técnica com parceiro da iniciativa privada. Brasília, Embrapa.

30 According to the CGIAR, agriculture research spending in industrialized countries added to US\$ 22.8B, 45% of which by the public sector; in developing countries, US\$14B, 92% of which by the public sector. (CGIAR: Annual General Meeting 2006). Specifically for the seed market, according to the USDA, “By the end of 2002, USDA had issued 2,584 PVP certificates (excluding certificates of foreign origin) for the four major field crops: 1,078 for soybeans, 648 for corn, 568 for wheat, and 290 for cotton. The private sector holds nearly all of the certificates for corn, 84-87 percent of those for cotton and soybeans, and two-thirds of those for wheat. In addition to new varieties protected by certificates, USDA and some land-grant universities have developed and released varieties that are freely available.” (<http://www.ers.usda.gov/AmberWaves/February04/Features/HaveSeed.htm>)

31 CORNEJO-FERNANDEZ, Jorge. The Seed Industry in U.S. Agriculture: An Exploration of Data and Information on Crop Seed Markets, Regulation, Industry Structure, and Research and Development. Agriculture Information Bulletin No. (AIB786) 81 pp, February 2004, retrieved at: <http://www.ers.usda.gov/publications/aib786/>.

32 UNCTAD, Op. cit, p. 28.

33 Source: SNPC/MAPA 2008, apud Abrasem, 2008.

the top four corporations in commercial seeds held 29% of a US\$25.2 billion industry.³⁴ Between 2001 and 2005, companies from within the Monsanto group alone obtained 55% of all approved field releases.³⁵

In spite of the above, the efficiency of regional innovation has allowed Brazilian institutions to shine, contrary to the global trend. Plant varieties developed locally have accounted for most of the Brazilian grain market. Embrapa alone was responsible for 44% of recommended soy varieties for the 2007/2008 crop. Brazilian institutions jointly accounted for 72% of same.³⁶

According to the USDA, success factors in Brazilian agribusiness include:

“(…) First, substantial undeveloped, but highly viable land remains available for agricultural production.

Second, a strong domestic demand from a large, increasingly urbanized population is bolstered by an outlook for steady per capita income growth.

Third, rapidly growing domestic poultry and pork sectors represent a robust source of demand for grains and protein meals.

Finally, an extensive national agricultural research network that already has a proven track record, especially with soybeans, of successful varietal development and adaptation to tropical conditions.³⁷

This last remark is central in our contentions. A national research policy based on localization seems to be a central characteristic to the need – or at least the leeway – of an enhanced IP PVP regime.

Diversified innovation in plant R&D has long been established as a relevant factor in protecting biodiversity. That, however, isn't the end of it. Taking the USDA hint, it may be argued that regional innovation can constitute a competitive advantage, as plant varieties better adapted to the local environment account for larger yields and economies of scale.

Or, perhaps, a *uniformized* IP system would be detrimental to obtaining maximum efficiency of new agricultural technologies:

“Different developing countries have different IPR needs and capacities: [t]he terms “Third World” and “developing countries” being thrown about

34 UNCTAD. Tracking the trend towards market concentration: the case of the agricultural input industry, 2006, available at www.unctad.org/en/docs/ditccom200516_en.pdf, accessed on 5/26/2009, p. 9.

35 Idem, p. 29.

36 Source: SNPC/MAPA 2008, apud Abrasem, 2008. According to Paulino et alli, op. cit., Brazilian publicly-funded institutions keep a central role: those agencies and local, specially farmers cooperative research units, held in 2007 circa 60% of all issued PVPs.

37 SCHNEPF, Randall D.; DOHLMAN, Erik and BOLLING, Christine. Agriculture in Brazil and Argentina: Developments and Prospects for Major Field Crops. In: Agriculture and Trade Report No. (WRS013), Economic Research Service, USDA, 85 pp, December 2001. Available at: <http://www.ers.usda.gov/publications/wrs013/> . p. 61.

during this symposium are nets that capture fish of all sizes—from nuclear powers with extensive commercial agricultural production systems and sophisticated agricultural research capacity (e.g., India and Brazil) to rural countries that have rather limited research capacity or are on the brink of starvation (e.g., Myanmar and North Korea). *So, we must differentiate. A one-size-fits-all approach to IPRs is neither feasible nor desirable. Countries will have different needs and capacities and what is best for one is unlikely to be best overall, and thus unlikely to be best for society.*³⁸

Indeed, the issue of determining appropriate incentives remains. The importance of incentivizing regional innovation has led to the inevitable conclusion that any suggested policies “must take into account that [c]urrent IP systems do not provide incentives to innovations generated at the community level.”³⁹

Commingling with the beasts

In recent years, Embrapa’s relations with multinational enterprises acting in the Brazilian marketplace have been, if anything, most amicable.⁴⁰ The frequent joint R&D efforts are testament to a clearly collaborative and not contentious mood⁴¹. This somewhat unexpected behavior for a developing country research agency might also be a relevant factor in its present success and even in the relative significance of IP rights:

“Obviously, there is a huge gap in what developing countries need and how technologies will flow with respect to having different types of IPRs associated with them. Take the example of maize technology development in Brazil—is it any different from what has happened with maize innovations in Iowa? Both the local and international private-sector companies are there in Brazil. The Brazilian NARES (Embrapa—Brazilian Agricultural Research Corporation) develops maize inbreds and licenses them to a “club” of these companies—different members of this club will get Embrapa inbreds in a given year—during which they have exclusive use. Embrapa is certainly

38 Cantrell et al. Perspectives on the IPR Needs of Developing Countries. Paper presented at the Symposium on Intellectual Property Rights for the Public Good: Obligations of U.S. Universities to Developing Countries, University of Minnesota, 29 April 2004, available at: www.riceweb.org/media/speeches/IPR/Minnesota%20IPR%20paper--final.pdf retrieved on 5/21/2009. p. 6-7.

39 The Crucible Group. PEOPLE, PLANTS, AND PATENTS: The Impact of Intellectual Property on Trade, Plant Biodiversity, and Rural Society. Available at http://www.idrc.ca/en/ev-28299-201-1-DO_TOPIC.html.

40 In the initial years of the present Federal Administration, Embrapa’s attitude towards its multinational competitors was met with acerbic criticism from some leading members of the ruling Worker’s Party (which despite its name is not a conventional leftist political organization).

41 See the joint research agreement with Monsanto at <http://www.embrapa.br/imprensa/noticias/2006/novembro/foldernoticia.2006-11-03.7341198208/noticia.2006-11-09.2979729959/?searchterm=monsanto>, visited 27/5/2009. According to Paulino et al., op. cit., “A articulação institucional promovida pela Embrapa, organizando parcerias voltadas tanto para o desenvolvimento de novas variedades proprietárias, assim como licenciando essas e demais variedades desenvolvidas individualmente pela empresa federal são exemplos de que é possível tratar a propriedade intelectual como elemento de interação, que facilita uma invenção/inovação circular entre os diversos agentes econômicos e atores que participam do processo de inovação, tanto no que diz respeito à relação público/privado, quanto público/público. Dessa forma, os principais agentes (pesquisa pública, empresa multinacional e organização de produtores rurais) estabelecem complementaridade em suas trajetórias”.

acting in a developed-country scenario in this respect. So, have the changes in the use of IPRs for germplasm made any difference in maize in Brazil? We don't think so."⁴²

This study, however, will not take into consideration any network effects (and their impact on innovation) resulting from Embrapa's collaborative strategies.

The proposed changes

Who set the 2009 Draft Amendment in motion? Even though Embrapa could have carried some weight in the suggestions, the Brazilian PVP Registrar was the one that sponsored the proposal through the federal legislative course.⁴³

An analysis of the proposal may enlighten what lessons the 12 years of experience since the 1997 Statute seem to offer.

Emphasize the broader scope of protected varieties

The proposal is to amend Article 1 of the 1997 Statute to read that all varieties are subject to protection.⁴⁴

UPOV 1978 is reputed to limit the scope of the varieties to those indicated beforehand by the granting authority. The 1997 Statute did *not* make use of the possibility of limiting PVP rights, and the Registrar is just wrong to maintain their notion that it did.⁴⁵

Extending the term of protection

In the 1997 Statute, the protection is limited to 18 and 10 years, respectively, for trees and vines, and remaining varieties. The proposal is to extend the respective terms to 25 and 20 years.⁴⁶

There are no economic studies to show efficiency gains or losses resulting from this extension, however, it is a response to the gut reaction of every IP holder in the world. On the other hand, it is not clear whether this extension would favor development through "essentially derivative" varieties.

42 Cantrell et al. Perspectives on the IPR Needs of Developing Countries. Paper presented at the Symposium on Intellectual Property Rights for the Public Good: Obligations of U.S. Universities to Developing Countries, University of Minnesota, 29 April 2004, available at: www.riceweb.org/media/speeches/IPR/Minnesota%20IPR%20paper--final.pdf retrieved on 5/21/2009. p. 6-7.

43 Brazil has an Executive Joint committee (GIPI) to assess all IP-related policies and legislative proposals to be sent to Congress or remitted to the President for veto purposes. The PVP draft was approved by this committee on early 2009.

44 Art. 1º Esta Lei dispõe sobre o direito de proteção de cultivares de todos os gêneros e espécies vegetais, na forma estabelecida a seguir.

45 Denis Borges Barbosa, Uma Introdução à Propriedade Intelectual, Lumen Júris, 2003: "It should be noted that there is no limitations as to the object to be protected, as the American statute does (Townsend-Purnell Act, 35 USC, Par. 161-164 (1976)), in which are excluded from the statute purview the plants propagated by tubers, *stricto sensu*. This article follows UPOV 1991, as UPOV 1978 protected only such species or genders listed in the national Law".

46 Art. 11. A proteção da cultivar vigorará pelo prazo de vinte anos a partir da data de emissão do seu respectivo certificado, excetuada a proteção de árvores e videiras, para as quais a vigência será de vinte e cinco anos.

Brazilian constitutional reasoning is, however, averse to extending the term of already granted IP protections. This is confirmed by the vast number of rulings issued by the Federal IP Court (the Brazilian equivalent of the U.S. Federal Circuit court), stating that patent extensions should not be allowed on the grounds that the public has a vested right to freely enter the market as of the IPR's expiration.

Extending the PVP to the product

Under the UPOV 1978 model the present protection is limited to the reproductive material (germplasm). In case of infringement, crops cannot be seized as evidence (except if crop and germ are the same).⁴⁷ The proposal extends same to the product itself and any product that uses the variety as an ingredient or component.⁴⁸ The stated purpose here is to improve piracy curtailing mechanisms and to increase the returns of research institutions.

The rather imperfect wording of the proposal states that “§ 1 - when the holder is prevented by any reason whatsoever to enforce the right provided in this article, its right shall extend...to the commercial product issuing from the crop, including to the whole of parts of plants” and “§ 2 in case it is impossible to enjoy from the right stated in § 1, then the holder's right shall extend to any product made directly from the material obtained from the crop”.

The proposal tries to address the “right to access” by stating that this added protection would not affect “the third party who, in commercial production, has acted in good faith”. Good faith is a presumption under Brazilian law and a burden for the plaintiff – at least in theory – to disprove. In the real world, extensive patent and trademark litigation practice has shown that courts presume every alleged violator of IPRs as acting in bad faith or, even worse, that good – or bad – faith is immaterial in ascertaining the violation of an IPR.

This is certainly a most serious change. PVPs are held to be a lighter version of IPRs exactly on account of the limitation on the exclusive rights to seeds or comparable elements of the plant complex. As previously noted, this softer IPR was deemed to be in line with the farmers' “constitutional right” to access, a feature to be added to the extended breeder's exception of re-utilization of the seeds.

47 Article 9 - The protection shall afford its holder the right to commercial reproduction on the territory of Brazil, third parties being prohibited during the term of protection from producing for commercial purposes, offering for sale or marketing propagating material of the plant variety without his authorization.

48 Art. 8º A proteção assegura a seu titular o direito à propagação comercial da cultivar, sendo vedada, durante o prazo de proteção, a comercialização, a doação, o acondicionamento para fins de propagação e o armazenamento para fins comerciais de material de propagação de cultivar protegida, independentemente da utilização de sua correta denominação, sem autorização prévia e expressa do titular. § 1º Quando o titular for impedido, por qualquer razão, de exercer o direito previsto no caput, seu direito se estenderá ao produto comercial da colheita, inclusive às plantas inteiras e às partes de plantas. § 2º Na impossibilidade do exercício do direito previsto no § 1º, o direito do titular estender-se-á a qualquer produto feito diretamente do material obtido da colheita. § 3º O disposto nos §§ 1º e 2º não se aplica ao terceiro que, no segmento da produção comercial, agiu de boa-fé.

This proposal addresses a general economic problem arisen from the concept of IP. The paucity of IP users allows for efficient control: as preventing a massive surge of free-riding is inefficient (if not impossible), plaintiffs can choose the illegal competitor to strike, and, with one finger, close the dick spillage.

That is precisely the strategy that makes Intellectual Property effective: shooting at the gatekeepers.⁴⁹ The sheer numbers of farmers sometimes create an impossible enforcing situation for plant variety holders, the lack of assets makes street peddlers unviable defendants in infringement actions, and the expenditure of scarce tax-payer money is required to call for criminal enforcement. Those are known Intellectual Property failures.

Would this change actually benefit the development of plant technology in a manner compatible with the Brazilian economy of present times? Would it help to change the current context with a positive outcome for their proponents?

Our contention is that its impact on the local economy would be more favorable to non-Brazilian stakeholders. Embrapa and other Brazilian research institutions, both public and private, lack experience in IP litigation. They are not enforcement-savvy, and, similarly to their IP-generating government research counterparts, do not make use of harsher enforcement measures, even when available. This brings us to a very basic question: are royalties the best way to assure returns to government-induced innovations?

The difficulty in enforcing IP rights against a diffuse, somewhat broad range of infringers is a major obstacle to the efficiency of any IP system. If the purpose of a PVP system is to keep a softer approach to both sides of the fence, targeting this broader basis might create a peculiar efficiency issue. A possible solution, on the other hand, could be choosing specific gatekeepers (distributors, seeding companies, etc.) as targets of an enhanced protection mechanism.

By adding a new power to exclude any commercial product issuing from the crop, including to the whole of parts of plants and any product made directly from the material obtained from the crop the Amendment draft seeks to elect new gatekeepers, downstream the distribution chain. The underlying idea is - apparently - that anyone getting a pirated variety and being exposed to legal suit would filter out the upstream supplier⁵⁰.

49 Reinier H. Kraakman, Gatekeepers: The Anatomy of a Third-party Enforcement Strategy, 2 J. L. Econ. & Org. 53, 53-54 (1986).

50 The wording of such proposed change, however, seems to require that the PVP holder shows he was prevented from enforcing its rights upstream as a procedural must. This requirement would make the gate keeper less exposed to direct attack.

Curtailing the breeder's exception

The proposal is to limit the applicability of breeder's exceptions, by means of which "a small rural producer, [who] multiplies seed, for donation or exchange in dealings exclusively with other small rural producers, under programs of financing or support for small rural producers conducted by public bodies or non-governmental agencies, authorized by the Government.(...)"⁵¹ is not in infringement of exclusive protection rights.

As a counterpart to this restriction, the proposal adds traditional populations or communities and family farmers to the list of persons entitled to the existing exceptions.

According to the Registrar's proposal, the lack of a legal definition for "small producers" amplifies the exceptions beyond the intent of the law, affecting the protection's efficacy.

Therefore, the 2009 Draft Amendment opts for the same definition employed by income tax law to define exempt producers. This, according to the Registrar, amounts to 80% of the producers (though much less of the total production area).⁵²

Again, there are no comprehensive studies to show us if this exclusion makes economic sense, either as to the transaction costs of enforcement or the social impact of the change.

51 The 1997 provision reads: Article 10 The breeder's right in the plant variety shall not be deemed infringed by a person who: (i) stores and plants seeds for his own use on his premises or on the premises of third parties of which he has possession; (ii) uses or sells as food or raw material the product of his planting, except for the purposes of reproduction; (iii) uses the plant variety as a source of variation in genetic improvement or in scientific research; (iv) being a small rural producer, multiplies seed, for donation or exchange in dealings exclusively with other small rural producers, under programs of financing or support for small rural producers conducted by public bodies or non-governmental agencies, authorized by the Government. (...) (3) For the purposes of the provisions of item (ii) of the first paragraph above, a small rural producer is one who simultaneously meets the following requirements:(i) he exploits a parcel of land as owner, titleholder, leaseholder or partner; (ii) he employs up to two permanent staff, the enlistment where necessary of eventual third party assistance being admissible when dictated by the seasonal nature of agriculture and livestock breeding; (iii) he does not hold, under any title, an area exceeding four fiscal modules calculated in accordance with the legislation in force; (iv) he has at least 80 per cent of his annual gross income derived from agriculture and livestock breeding or exploitation; and (v) he resides on the property or in a nearby urban or rural community.

52 "Art. 10, (...) §1º Para fins do disposto no inciso III deste artigo, o integrante de povos ou comunidades tradicionais, o agricultor familiar ou o pequeno agricultor deve atender, simultaneamente, os seguintes requisitos: a) explorar parcela de terra na condição de proprietário, possuidor, usufrutuário, arrendatário, parceiro ou beneficiário do Programa Nacional de Reforma Agrária; b) residir na propriedade ou em aglomerado urbano ou rural próximo; c) manter até dois empregados permanentes, sendo admitido ainda o recurso eventual à ajuda de terceiros, quando a natureza sazonal da atividade agropecuária o exigir; d) não dispor, a qualquer título, de área superior a 4 (quatro) módulos fiscais, quantificados segundo a legislação em vigor; e) obter receita bruta anual inferior ou equivalente ao limite estabelecido para a não obrigatoriedade de preenchimento do Demonstrativo da Atividade Rural para efeitos de imposto de renda; e f) obter, no mínimo, 70% (setenta por cento) da renda familiar da exploração agropecuária e não agropecuária do estabelecimento, reduzindo-se essa proporção a, no mínimo, 30% (trinta por cento), caso a renda familiar anual seja igual ou inferior a doze salários mínimos, excluídos os benefícios sociais e os proventos previdenciários decorrentes de atividades rurais. "

No limitations for ornamental varieties

According to the draft, none of the limitations should apply to ornamental varieties. There are significant local stakeholders producing ornamental varieties, and export interests are indicated as a determinant in this change.

Nevertheless, one must repeat the same caveat: there are no studies entertaining a balance of gains and losses in this context.

Change in the compulsory license mechanism

The 1997 Statute allows compulsory licensing of protected plant varieties after the third anniversary of grant of a PVP. Compulsory licenses are granted on the grounds of either lack of use (in a remission to the 1996 Intellectual Property Code),⁵³ dependency, or antitrust (in which case a compulsory license may be requested anytime, under the Antitrust Act of 1994 (Federal Law n° 8.884/94)).⁵⁴ In all three cases, CADE, the antitrust authority, has jurisdiction to mandate the licensing.⁵⁵

The draft amendment proposes that authority for granting such licenses be transferred to the President. Under the Registrar's rationale, this would allow compulsory licensing to be decided on a political, in addition to a market-related, basis. As per the draft, grants are mandated by presidential decree, and the agencies (both antitrust and the Registrar) are to be consulted only in an advisory capacity.⁵⁶

One can only wonder if there is an economy-related point to be made here. It is hard to classify the concept of having to bring a run of the mill dependency

53 Federal Law n° 9,276/96.

54 Article 28 - The plant variety protected under this Law may be the subject of a compulsory license, which will ensure: (i) the availability of the plant variety on the market, at reasonable prices, when the maintenance of a regular supply is being unduly hindered by the holder of the protection rights in the plant variety; (ii) the regular distribution of the plant variety and the maintenance of its quality; (iii) reasonable remuneration of the holder of the protection rights in the plant variety. Sole Paragraph. When assessing undue restriction of competition, the authority shall comply with such of the provisions of Art. 21 of Law No. 8,884 of July 11, 1994, as are applicable. Article 29 - A compulsory license shall be understood to mean the act of the competent authority whereby, at the request of a party having a legitimate interest, the exploitation of the plant variety is authorized, independently of any authorization by its holder, for a period of three years, renewable for equal periods, without exclusive rights and against remuneration as provided by regulation. Article 30 - The request for a compulsory license shall contain, in particular: (i) the qualifications of the applicant; (ii) the qualifications of the holder of the right to protection of the plant variety; (iv) the reasons underlying the request, due regard being had to the provisions of Article 28 of this Law; (v) evidence that the requester has attempted, unsuccessfully, to obtain a voluntary license from the holder of the plant variety; (vi) evidence that the requester is financially and technically capable of exploiting the plant variety.

55 A recent Brazilian trial court decision apparently verified the misuse due to excess of powers regarding plant varieties "Judge Victor Luiz Barcellos Lima, summoned summarily from the Appellate Court granted today (11/1) a preliminary decision as required by Cooperativa Triticola Mista Campo Novo, establishing the suspension of payment of R\$ 1,20, per bag of soy, as royalty to Monsanto do Brasil Ltda. The decision is the first in the country in this sense.(...) Indicated that the Cooperativa's request is base don the Law of Cultivar Protection (n° 9.456/97), that grants IP rights, including the referred to genetic modification, "with regards to the plant reproduction material, not being extended to all soy production". In accordance to Judge Victor Barcellos Lima, there is no IP right upon soy production and the preliminary injunction is mandatory". Proc. 70010740264 (Adriana Arend). The injunction was denied by the Appellate Court.

56 Art. 41. O Presidente da República, ouvido o Ministro da Agricultura, Pecuária e Abastecimento, poderá, a qualquer tempo, conceder, de ofício, licença compulsória, temporária e não exclusiva, para a exploração dos direitos.

license to the attention – and perusal – of the commander-in-chief himself as anything other than an insane proposition. Even the US legal system, which generally frowns upon the grant of compulsory licenses by the executive branch, vests the power to do so in PVP cases in the Secretary of Agriculture.⁵⁷

It should be noted, incidentally, that a *regional* system of dispute resolutions regarding plant varieties was introduced in Brazil in 2001.⁵⁸

Other proposed changes

In order to improve registration practices and procedures, the Registrar also introduced some ancillary changes.

(a) The 1997 Statute mandates that distinctiveness, uniformity, and stability (DUS) tests be performed by the applicants. However, few prospective holders are technically capable of performing adequate tests, forcing the Registrar to impose retesting due to poor methods. This delays the registration process. The 2009 Draft Amendment stipulates that the Registrar will accredit testing facilities (and any person - including prospective holders - can seek accreditation), to ensure minimal standards in testing. Prospective holders must either perform tests themselves (according to methods pre-approved by the Registrar) or request that an accredited person (or entity) do so.

b) The 1997 Statute requires the Registrar to keep live samples of each registered variety. As the Registrar lacks the means or resources to keep live samples, they are usually left in prospective holders' safekeeping. However, this is in violation of the statute. According to the 2009 Draft Amendment, Registrar can require that prospective holders keep live samples, while they keep seeds and DNA samples for confrontation, should the need arise.

Criminalizing PVP copying

Under present Brazilian law, violating a patent is a crime, as is infringing trademarks, copyrights, and so forth. The 1997 Statute refrained from creating a PVP infringement-related crime. The proposal aligns the PVP system to the

57 97.700 Public interest in wide usage. (a) If the Secretary has reason to believe that a protected variety should be declared open to use by the public in accordance with section 44 of the Act, the Secretary shall give the owner of the variety appropriate notice and an opportunity to present views orally or in writing, with regard to the necessity for such action to be taken in the public interest. (b) Upon the expiration of the period for the presentation of views by the owner, as provided in paragraph (a) of this section, the Secretary shall refer the matter to the Plant Variety Protection Board for advice, including advice on any limitations or rate of remuneration. (c) Upon receiving the advice of the Plant Variety Protection Board, the Secretary shall advise the owner of the variety, the members of the Plant Variety Protection Board, and the public, by issuance of a press release, of any decision based on the provisions of section 44 of the Act to declare a variety open to use by the public. Any decision not to declare a variety open to use by the public will be transmitted only to the owner of the variety and the members of the Plant Variety Protection Board.

58 MERCOSUR/CMC/DEC N°1/99, introduced in Brazil through Decree n° 4,008, dated 11/12/2001. Francisco Eugênio Machado Arcanjo, Propriedade Intelectual e Mercosul, Informativo N° 6, available at http://www.camara.gov.br/Mercosul/Informativo/info_6.htm, visited on 10/8/2004.

patent standard: the actual prosecution shall be contingent on the PVP holder pressing formal charges.

Does Brazil actually need it?

The Registrar is an agency of the Brazilian Department of Agriculture, not supposed to take sides with PVP holders. Therefore, one should assume that 2009 Draft Amendment as approved by the Federal IP Joint Committee expressed a balanced interest of all stakeholders.

Nevertheless, just before being sent to the Congress, in early May 2009, the draft was delayed, reportedly by action of non-governmental organizations opposing its appreciation by the legislative. Interesting as it may be, we have no intent of engaging in a political science analysis of why it is necessary that civil society reach a full consensus on a proposal to amend the PVP Statute even before congress has had a chance to look at it.

Our goal, however, is to evaluate whether the choices expressed by the 2009 Draft Amendment are compatible with the general IP rationale and the peculiar mechanisms of the Brazilian system.

Contrary to innovation outputs in other industry sectors, *local* innovations in agricultural technology are of particular importance to the economy. Moreover, they are the product of a tradition in government-funded research, the competitive vitality of a mostly unsubsidized production system, relevant linkages to the global market as exporters of agricultural commodities, and the predominantly local control of commercial agricultural enterprises.

As the data shows, it seems to be fair to conclude that this particular brand of agricultural innovation has greatly profited from its emphasis on regional and even micro-localized environments. Even though tropicalization may, to some extent, have helped in reinforcing the proverbial serendipity of our biodiversity, its main *raison d'être* was certainly the pursuit of a market objective.

In spite of the creation of such value in locally developed technologies, the presence of international stakeholders in Brazil has never been thwarted. Local PVP holders compete *and* collaborate with foreign participants in the development of marketable solutions. Localization and joint venturing has not precluded those foreign competitors from playing an important –even crucial– role in the Brazilian market: competition is high in connection with certain crops, whereas others reveal Brazilian players' upper hand.⁵⁹

59 For instance, in the soy market Brazilian seeders and technology seem to prevail, while in corn and cotton the foreign providers are prevalent. See <http://cimilho.cnpmembrapa.br/inicio/mostranoticia.php?codigo=22>, visited 27/5/2009.

Therefore, any analysis of the effects of a change in the statutory structure must take into account possible effects on both local and foreign PVP holders.

The external conditioning to changes

As stated, Brazil is supposed to have some sort of legal mechanism to protect varieties. Patents would do under the TRIPs standards, even though meeting grant requirements could prove too hard to cover the multiple interests at stake. Furthermore, the level of protection could also be too high for a regimen supposed to be soft enough to accommodate farmers' interests. PVP rights, even by UPOV 1978 standards, would satisfy international legal requirements, at least for the time being. One must bear in mind, however, that UPOV 1991, while establishing a higher standard (from a holder's standpoint), still does not reach the same level afforded by patents. There are, therefore, no international legal constraints to *enhancing* the level of protection by modifying PVP rights.

On the other hand, meeting constitutional requirements in issues such as aggravated criminal rules,⁶⁰ extensions to downstream products and constrained limitations, to name a few, should be given special consideration. Any of these issues could attract a balancing of interests analysis.⁶²

The lower levels of novelty and contribution to society required for PVP grants should be counter-balanced by the imposition of lower restraints on farmers (this, as previously discussed, is a pregnant difference to patents). Causing an imbalance of rights and obligations could be found unconstitutional under the rather strict standards of review generally applicable to legal monopolies.⁶³

60 A State Appellate court (Tribunal de Justiça de Minas Gerais, Número do Processo: 1.0459.05.023524-9/001(1), Relator: Alexandre Victor de Carvalho, Data de Julgamento: 15/04/2008) has recently found that criminalizing copyright violations is against the Brazilian Federal Constitution, as such infraction is not felt by the society as non-infringing penal-level statutes.

62 The same consideration could possibly be brought as to US PVP mechanisms, as notes Joshua Sarnoff in his 2006 unquotable but inevitable essay *Shaking the Foundations of Patentable Subject Matter, or Taking Exclusions for Science, Nature, and Ideas, Principles of Invention, and Parker v. Flook Seriously*: "Thus, not only may many utility patents be invalid, but many plant variety protection certificates for sexually reproduced plants and many patents for asexually reproduced plants (and other forms of sui generis protection) may be suspect. See 7 U.S.C. §§ 2321-2583 (2000); 35 U.S.C. §§ 161-64 (2000). Although I do not here elaborate on the novelty standard for plants, there are reasons to suspect it may be unconstitutional."

63 See Denis Borges Barbosa, Karin Grau-Kuntz E Ana Beatriz Nunes Barbosa, *A Propriedade Intelectual Na Construção Dos Tribunais Constitucionais*, Lumen Juris, 2009. *Bonito Boats v. Thunder Craft Boats*, 489 U.S. 141 (1989): "The Patent Clause itself reflects a balance between the need to encourage innovation and the avoidance of monopolies which stifle competition without any concomitant advance in the 'Progress of Science and useful Arts.' (...) "From their inception, the federal patent laws have embodied a careful balance between the need to promote innovation and the recognition that imitation and refinement through imitation are both necessary to invention itself, and the very lifeblood of a competitive economy. (...) The federal patent system thus embodies a carefully crafted bargain for encouraging the creation and disclosure of new, useful, and nonobvious advances in technology and design in return for the exclusive right to practice the invention for a period of years".

The axis of analysis

We contend that changes should be evaluated under a set of premises:

- (a) considering the changes are a *voluntary* enhancement of protection vis-à-vis TRIPs or any other international requirement, they should answer to particular Brazilian needs;
- (b) under international standards (the *national treatment* principle applicable both under the Paris Convention and TRIPs), the effects of such changes should not be *negatively* discriminatory or detrimental to foreign holders;
- (c) an increase in PVP holder powers not matched by any increase in their duties *should not* imbalance the constitutionally sanctioned construction of IP rights;
- (d) changes should respond to objective and impersonally determined shortcomings of the present legislation.
- (e) changes should constitute a potentially efficient solution to the perceived shortcomings of the present legislation.

Taking for granted that parameters (a) to (c) will necessarily be dealt with during the course of legislative procedure, we now turn to items (d) and (e).

Term extension

Longer protection terms are only sensible when their object yields small returns due to long development cycles. Brazilian researchers, however, have expressed that the problem is defective enforcement, not insufficient return periods. While claiming for a supplementary term is the knee-jerking reaction of any holder, the grant of a longer period may fail the litmus imposed by the applicable balance of interests.

It is our understanding that neither is this proposal justified by any historical or environmental particularity, nor is it beneficial to the stated purposes of the 2009 Draft Amendment.

Targeting the product not the farmer

Marching a well chosen (and liable) few to the stocks of infringement whilst the frolicking crowd is spared does make sense, provided they are able to somehow affect the crowd's behavior. To the extent that the chosen few act as upstream or downstream filters, their supplying of non-infringing inputs or refraining to buy infringed goods may serve as an efficient approach in overcoming the gatekeeper problem.

The idea of aiming at upstream and downstream targets as a reasonable mechanism to tackle the central shortcoming of the law (as voiced by providers) seems a fair proposal. Doing so does not necessarily cause imbalances – as it merely implements efficiently what the 1997 Statute did not.

This dislocation of liability, justifiable by its putative efficiency, should not be compromised by its half-hearted approach. If the 2009 Draft Amendment wants to pick someone to curb piracy, it must do so in a clean and unabashed way: language such as “when the holder is prevented by any reason whatsoever to enforce the right provided in this article” goes against efficiency. The statute should simply make the prospective filters responsible.

Making the small clear

Breeder’s exception is a highly cherished concept and one of the arguments that sold the 1997 act to the public. Clarifying the concept of “small producer” may be instrumental to enforcement, but leaving the task to the evolution in case law would be a wiser means to such end. Should Brazilian providers have the guts and drive to seize their day in court, that would be a better alternative.

In theory, the clarification does not swerve the balancing of the 1997 Statute, but the proposal may stir societal reactions on a misguided assumption that it did. Creating a clear and straight dislocation of liability (as we contended above) would probably have enhanced the economic value of DPV to the needed level without the potential for causing such a disturbance.

On the other hand, the extension of the exception to Indian tribes, household farmers and traditional communities would help on the political correctness front.

In the manner of conclusion

The peculiar nature of agricultural research and business in Brazil defies the conventional wisdom according to which PVPs are always detrimental to developing countries. The comparative efficiency of localized technology, which resulted from a long established, mostly government funded research environment may actually justify providing IP protection as a Brazilian autonomous interest.

On the other hand, conventional wisdom may not be so far off the mark, considering that Brazilian agricultural technology and business – at least for the time being – are not exactly measurable by developing country standards.

Local technology providers found UPOV 1978 level PVPs disappointing, probably on account of their very nature: a softer alternative to patents. Even though the local enforcement system may not be perceived as particularly efficient, it is sufficiently adequate to make IPRs work nicely – insofar as patents go.

The 1997 Statute lacked one weapon available in the patent arsenal, namely, the possibility of criminal enforcement. This could be added to a new model without changing the basic balance of applicable interests.

The other comparative distinction is that patent owners generally face a limited number of possible infringers. The gatekeeper rationale makes patents easy to enforce. By choosing millions of farmers as prospective violators of PVP rights, a UPOV 1978 model is somewhat self-defeating: that is the same problem with post-internet copyright.

Therefore, perfecting the enforcement of PVP rights serves the agricultural technology providers, both national and foreign, well. One way of perfecting them is to focus on a limited number of targets capable of filtering the effects of the larger group's infringing behavior. That device does not necessarily cause an imbalance of interest that a constitutional analysis and bare common sense would advise against.

However, excessive protection beyond the true needs for inducing new plant technology in the current Brazilian environment must be provided with a prudential restraint. Bringing extensions needlessly to the Brazilian legal system just because they are stipulated in UPOV 1991 is not justifiable. Creating a goodwill crisis by restraining a much cherished breeder's exception would seem to be a *faux pas*.

The fact that in Brazil the local holders voice their interest for a more efficient PVP system is a very interesting event. It shows *again* that IP as a whole may be felt as a reasonable tool for development, provided that both local and foreign technology providers get a fair deal – or think they do. The Swiss have done it with their patent system somewhere in the early XX Century. Brazil is doing it now, specifically in their PVP system.