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SOUTHEAST ASIA REGIONAL INITIATIVES FOR COMMUNITY EMPOWERMENT

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SEEDS OF MONOPOLY:

How Plant Variety Protection (PVP) Further Harms More Than It Protects Small Farmers

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At a glance:
What is Plant Variety Protection?

Plant Variety Protection or PVP grants exclusive rights to breeders, called Plant Breeders' Rights (PBR), over new plant varieties for purposes of commercial marketing and sale. It is a form of intellectual property right where the rights holders can prevent anyone from using the protected plant varieties that they have developed without their permission.[1,2]

How did the concept of PVP emerge?

In the late 19th century, there was a growth in seed trade and the development of breeders' associations in Europe; this was then followed by the establishment of various seed control systems and attempts to provide plant variety protection (PVP). Hence, **the provision of legal protection to plant breeders was first conceptualized in Europe in order to harmonize and streamline the method of PVP all throughout the continent.** It was in the United States of America, however, where the first law was enacted in 1930. The USA's Plant Patent Act (PPA) originally covered only asexually propagated plants and excluded major species of food crops to avoid the emergence of grain monopoly. European plant breeders then pushed for Plant Breeder's Rights (PBRs) which had a more comprehensive protection coverage compared to the PPA. **It is said that PVP was conceptualized to encourage breeders to dive more into research and develop new varieties.**[3]

What characersitics must a plant variety have to qualify for protection?

- **DISTINCT** - One or more of its important characteristics should be clearly distinguishable from any other variety of the plant when protection is applied for.
- **UNIFORM** - There should be consistency in specific features of the plant variety's sexual reproduction or vegetative propagation.
- **NEW** - The plant variety to be protected should be new (i.e. never been sold before) on the market for a specific period of time before the date of application.
- **STABLE** - The essential characteristics of the plant variety should be uniform and maintained over time, even after repeated reproduction or propagation.

Are all countries required to have a PVP law?

Only member countries of the World Trade Organization (WTO) are required to provide either a patent or an "effective sui generis" for the ownership of plant varieties under the agreement on Trade Related Aspects of Intellectual Property Rights (TRIPs). Sui generis in literal translation means "one of its own kind"; it is a unique system that would afford protection to intellectual property dealing with plant genetic resources and biotechnology.

However, members categorized as least developed countries (LDCs) need not rush to have some form of protection for their plant varieties since the TRIPS agreement exempts them from this obligation - at least until 1 July 2034 or any subsequent reviewal thereof.[4]

Is there a requisite form for a PVP law?

No specific form is required to be followed for drafting a PVP law. Countries can develop a sui generis system based on their needs and context. However, most of the PVP laws in existence are modeled after those developed by the International Union for the Protection of New Varieties of Plants (UPOV).

What is UPOV?

UPOV is an intergovernmental organization with headquarters in Geneva, Switzerland that promotes a system of plant variety protection.

The UPOV convention which was adopted in 1961 has been subsequently revised in 1972, 1978, and 1991. While the first two revisions did not substantially alter the system of protection, the 1991 version introduced significant changes. It expanded and strengthened the rights conferred to breeders while limiting the rights of farmers to save, use, and exchange seeds.[5]

Before the 1991 version, protection covered 5 species for new members of UPOV, which was expanded to 24 species upon 8 years of UPOV membership. With the 1991 version, all genera and species are progressively covered over a period of 5-10 years after accession. Another significant change is the extension of the period of minimum protection -- from 18 years to 25 years for trees and vines, and from 15 years to 20 years for other varieties. The three versions differ in several other aspects; however, compared to its predecessors, it has been alleged that the most recent one is more biased towards big breeders at the expense of smallholder farmers.[6]

The 1991 Act has broadened the scope of protection to cover ALL genera and species; increased the exclusive rights of breeders covering both production and reproduction (breeders' rights are extended to harvested material and even to products made directly from harvested material of a protected variety); reduced the farmers' privilege to merely saving (exchanging is no longer allowed); and narrowed down the breeders' exemption with the introduction of the concept of "essentially-derived varieties"[7]. These restrictions discourage countries to accede to UPOV 1991 and, in fact, several countries which acceded to the 1978 Act decided to stay there. Moreover, most countries joining UPOV even after the adoption of the 1991 Act chose to subscribe to (the provisions of) the 1978 Act. This prompted the UPOV to close the 1978 Act in 1999, giving no option to countries wishing to join UPOV but to adhere to the 1991 Act provisions.

Are countries required to adopt the UPOV model of PVP?

While all WTO members are bound to protect plant varieties, countries are given an important flexibility to choose the modality and level of protection since the only condition established in Art. 27.3 (b) of the TRIPS Agreement is to provide "effective sui generis" protection. Specifically, the UPOV Convention is not mentioned in the provision, which gives space for members to adopt other forms of sui generis protection that are not necessarily UPOV-compliant.[8]

Developed countries often require developing countries to accede to UPOV as a condition in free trade agreements and economic partnerships. Pressures for the latter to adopt UPOV have also been exerted in other contexts outside trade negotiations, in exchange for concessions such as foreign investments. Some countries, most especially developing and least developed ones, are being told that patents and some form of intellectual property rights (IPRs) are the key to attracting investments in seed industry and biotechnology which will consequently uplift their economy and enhance their food security. The already established UPOV-style PVP law can serve as a template for countries to achieve the requirement set forth by WTO.[9]

The pressure to enact a UPOV-style PVP law, the convenience of a ready-made PVP law, and the lack of research on other PVP systems that may be more appropriate are behind the popularity of the UPOV model. It is important to note, however, that the UPOV model is only one of several options. Countries can craft their own sui generis system[10] that is more flexible and suitable to their agricultural needs and environment.

It is significant that countries which are not members of the WTO are NOT required to adopt a PVP law. These non-member countries have good reasons for relying on free access to seeds, including reliance on the traditional practices of seed saving and exchange for their seed systems.

WTO members, on the other hand, need to protect plant varieties under the TRIPS Agreement. The Agreement, however, does not specifically define the concept of "plant varieties". Hence, member countries can adopt a narrow or broad definition of the concept, depending on their own context and their objectives with regard to seed development and distribution. This means that they may decide to use criteria for protection other than DUNS (Distinct, Uniform, New, and Stable). They can either limit or broaden the protection to plant varieties defined. They may also limit protection to a set of species or genera as well as differentiate the level of protection conferred to different categories of varieties.[11]

Why should countries shun the UPOV-Style PVP Law?

The rise in the number of countries adopting the UPOV-style PVP law does not necessarily mean that the system presents the most ideal protection for plant breeders. It has in fact been criticized for its several flaws:

1 The model is biased towards the interests of commercial breeders. The needs and interests of farmers particularly in developing and least developed countries are not considered. The broad exclusive rights conferred to breeders disregard farmers' rights as enshrined in the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA)[12] and the United Nations Declaration on the Rights of Peasants and People Working in Rural Areas (UNDROP).[13]

- Since most Farmer-Bred Varieties and Landraces (FVLs) cannot meet the requirement of uniformity and stability, the model will only promote commercially bred varieties geared for industrial agriculture rather than supporting diversity in smallholder agriculture.[14]
- Farmers are prohibited from exchanging the seeds they have harvested from PVP-protected varieties, which limits resource poor farmers' access to crop varieties that can potentially address their needs.
- There is no provision for the protection of FVLs against misappropriation.

2 UPOV's "one size fits all" model does not take into account the diverse and complex characteristics of agriculture and seed systems in developing countries wherein about 80-90% of the seed supply come from farm-saved seeds. The farmer seed systems are based on traditional practices of saving and exchanging seeds. Curtailing these long-held practices will greatly reduce the access of smallholder farmers to affordable and locally adapted seeds.

3 UPOV's agenda to facilitate trade by harmonizing PVP based on standards that essentially responds to the conditions prevailing in developed countries disregards the different realities in developing countries, particularly the needs of smallholder farmers who account for the largest part of food production and employment in many other countries.

4 PVP can be awarded even to plant varieties that have a minimal distinction from existing varieties. This allows granting of exclusive rights to breeders who have taken only the most recent step(s) in the long history of the development of a particular plant variety.

5 Granting protection to uniform seeds leads to the narrowing of genetic base on-farm which will consequently lead to vulnerability of the farming systems and contribute to loss of agricultural biodiversity.

6 The DUNS criteria does not automatically translate to better quality seeds or higher yields. Moreover, plant variety protection is a tool of private industry to justify investments in capital. Therefore, it does not address the needs of farming areas where private seed growers would find a limited market and few economic incentives. Where there is little chance for a return on investment, private seed growers cannot be relied on to commit their resources, much like the pharmaceutical industry's neglect of diseases that affect only a few people.[15]

More than being biased in favor of big seed companies and commercial breeders, this type of PVP law as characterized above erodes smallholder farmers' traditions, knowledge, and rights. The size of the global seed market was estimated at around USD 52 billion in 2014, and it has been significantly growing in value through the years, driven by genetic modification (GM) in particular.[16] **The UPOV-style PVP law paves the way for big seed companies to further expand their monopoly, leaving very little space and very few opportunities for smallholder farmers to grow in the area.**

What is the best model of a PVP Law?

An effective sui generis system is the most ideal model of a PVP law.

As previously mentioned, the UPOV-style PVP law prioritizes mainly the interests of commercial breeders to the detriment of farmers, particularly smallholders. Thus, an ideal alternative is an effective sui generis system that should be able to accommodate the following: balance the interests of commercial breeders, farmers, and society at large; recognize the crucial role of farmers' seed systems in the overall seed development and distribution process; uphold farmers' rights; protect traditional knowledge and culture; promote access to plant genetic resources in fair and equitable terms; and sustain agricultural biodiversity.[17] The ideal sui generis regime should have the following key elements:[18]

- **It should benefit the society as a whole.** Plant breeders are given incentives through PVP not only to compensate them for their efforts and investments but, ultimately, to give society the benefits of new discoveries and the expansion of our collective knowledge. Therefore, in any policy issue such as this, the ultimate question that must be answered is this: Does the social benefit outweigh the social cost? Given the important role of farmers in innovation, the costs to society of **limiting** their ability to create and access adaptable seeds from a diverse pool of genetic resources would be devastating.

- **It should recognize farmers' innovations.** Commercial breeders do not have a monopoly on innovation. Farmers innovate every day, developing new practices and breeding new varieties because they must. In fact, they are an indispensable part of the innovation process that sustains formal breeders. New farm-bred varieties and appropriate farming practices enable them to adjust to environmental challenges in order to put food on the family table and earn additional income.

Not recognizing farmers as plant breeders and innovators is inequitable for two main reasons: 1) all of formal breeders' breeding materials are derived, to some extent, from a farmer's variety; and 2) these breeding materials are usually obtained from farmers with little or no restriction. It is also unwise, especially for formal breeders in particular and humanity in general, because farmers' use of a diverse set of germplasm is an essential component of on-farm (germplasm) conservation. It ensures agricultural biodiversity, which is recognized as an essential resource to enable humanity to adapt to the many varied effects of a host of environmental problems.

- **It should protect traditional knowledge and culture.** Plant breeding is not the sole domain of commercial plant breeders and those who are academically trained in plant breeding. It is not a new practice as farmers have been doing it for centuries. But the practice has been greatly eroded by industrial agriculture to the detriment of agricultural biodiversity and small farmers' survival. The cultivation of traditional varieties along with their associated knowledge and farming practices should be preserved considering the importance of the continuous adaptation of seeds/propagating materials to the evolving agricultural ecosystem. It should also ensure the food, nutrition, and livelihood security of vulnerable communities and society as a whole.

- **It should not allow misappropriation of FVLs.** The PVP law should have a provision protecting FVLs against misappropriation. Formal breeders usually source breeding materials from farmers who, in good faith, provide them with little or no restriction. All of formal breeders' discoveries were built on the hard work of farmers. Many important so-called scientific breakthroughs in plant breeding are in fact not objective discoveries, akin to saying that Christopher Columbus "discovered" the Americas when the natives have made it their home for thousands of years prior to the colonizer's arrival.[19] The current trend of scouring the wild and small farmers' fields for native traits underlines the richness and potential of farmer breeding. These original native strains were often grown in less than ideal environments; not surprisingly, they are a rich source of traits such as cold tolerance or drought resistance,[20] which make them attractive to commercial breeders, the unscrupulous ones included.

- **It should allow commercial breeders to recover their investments without undermining farmers' rights.** PVP is not the only form of incentive for innovation. It may, in some cases, even be counterproductive because sometimes the best or easiest way of making money is not to come up with a better idea, but to form a monopoly or cartel and restrict competition.[21] Many developing countries have emerged as centers of agricultural biodiversity even prior to the introduction of plant variety protection or patents.
- **It should be suitable to the agricultural profile of the country.** The PVP regime should take into consideration the specific context of the country. It should be an integral part of national policies such as those relating to agricultural and rural development, protection of indigenous communities and traditional knowledge, environmental protection, poverty alleviation, and food and nutrition security. It should facilitate development and diffusion of new varieties based on the needs of smallholder farmers in particular and the conditions of the country in general.
- **It should respect, protect, and fulfill states' obligations** regarding the people's right to food,[22] and their right to enjoy the benefits of scientific progress and their applications.[23] It should be supportive of and not counter the countries' objectives and obligations under the Convention on Biological Diversity (CBD) and its protocols, the ITPGRFA, the UNDROP, and the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP).

Policymakers must not forget the collaborative nature of innovation. They must keep in mind that the design of an intellectual property system demands a balancing act, and the monopoly of profit is justified ONLY if it ensures a net social benefit.

The recognition and protection of farmers' rights should be the top priority of countries in the development and implementation of seed policies and programs. In this specific juncture where more and more countries are adopting the UPOV-style PVP law, it is critical to challenge UPOV, push for a genuine sui generis system, and stand with farming communities as they fight against corporate monopoly.

ENDNOTES:

[1] The Differences Between Plant Variety Protection and Patent Protection on Plants, PUBLICCITIZEN.

[2] As defined by the International Convention for the Protection of New Varieties of Plants (UPOV).

[3] Biswajit Dhar, Sui Generis Systems for Plant Variety Protection: Options under TRIPS, 2002.

[4] Responding to Least Developed Countries' Special Needs in Intellectual Property, World Trade Organization.

[5] Carlos M. Correa et al., Plant Variety Protection in Developing Countries: A Tool for Designing a Sui Generis Plant Variety Protection System: An Alternative to UPOV 1991, APBREBES, 2015.

[6] David Jefferson et al., Towards a Balanced Regime of Intellectual Property Rights for Agricultural Innovations, Journal of Intellectual Property Rights Vol 19, 2014.

[7] According to UPOV '91 Article 14 (5), essentially-derived varieties are varieties predominantly derived from the initial variety, clearly distinguishable from the initial variety, and conforms to the initial variety in the expression of essential characteristics that result from the genotype or combination of genotypes of the initial variety.

[8] Correa et al., Plant Variety, APBREBES, 2015.

[9] Ten Reasons Not to Join UPOV: Global Trade and Biodiversity in Conflict, GAIA/GRAIN, 1998.

[10] A unique system that would afford protection to intellectual property dealing with genetic resources or biodiversity.

[11] Correa et al., Plant Variety, APBREBES, 2015.

[12] International Treaty on Plant Genetic Resources for Food and Agriculture, FAO, 2009.

[13] United Nations Declaration on the Rights of Peasants and Other People Working in Rural Areas, 2018.

[14] Zoe Goodman, Seeds of Hunger: Intellectual Property Rights on Seeds and the Human Rights Response, 3D Trade – Human Rights – Equitable Economy, 2009.

[15] Normita G. Ignacio, Essentially derived varieties and the perspective of farmer-breeders: Paper presented in a Seminar on Essentially Derived Varieties, October 22, 2013, Geneva, Switzerland.

[16] Concentration in Seed Markets: Potential Effects and Policy Responses, OECD, 2018

[17] Correa et al., Plant Variety, APBREBES, 2015.

[18] Ignacio, Essentially derived, October 22, 2013, Geneva, Switzerland.

[19] Writing in the journal Nature Genetics, a team led by Yusaku Uga of the National Institute of Agrobiological Sciences in Tsukuba, Ibaraki Prefecture, describes finding a remarkable gene in a rice plant cultivated in the dry uplands of the Philippines. This strain, also called cultivar, is called Kinandang Patong. Its unique characteristic is roots that are deep and grow straight downward, boring into parched soil for water, as opposed to root systems that are shallow and grow out laterally in typical water-rich paddy fields. ("Roots breakthrough: drought resistant." Japan Times. Available at http://www.japantimes.co.jp/news/2013/08/05/national/roots-breakthrough-drought-resistant-rice/#.UikEFrsYy2U. Accessed on September 4, 2013) The RIL parent lines, IR64 and Kinandang Patong, were obtained by Dr. Yusaku Uga from the International Rice Research Institute (IRRI) and propagated in compliance with the Standard Material Transfer Agreement (SMTA). (Uga Y., K. Okuno and M. Yano (2011) Dro1, a major QTL involved in deep rooting of rice under upland field conditions. Journal of Experimental Botany 62: 2485-2494).

[20] Dr. James W. Friedrich. "Native traits: Technology Developed From the Natural Abundance of Ancestral Strains of Corn." Available at http://nativetraits.blogspot.com/p/introduction.html. Accessed on September 4, 2013.

[21] Joseph Stiglitz. "Economic Foundations of Intellectual Property", 57 Duke Law Journal 1693-1724 (2008).

[22] Article 11.1 and 11.2 of the International Covenant on Economic, Social and Cultural Rights (ICESCR).

[23] Article 15.1 (b) of the International Covenant on Economic, Social and Cultural Rights (ICESCR).

ABOUT THE PUBLISHERS

The Southeast Asia Regional Initiatives for Community Empowerment (SEARICE) is a regional non-government organization that promotes sustainable and resilient food systems through ecological agriculture with emphasis on the conservation and development of agricultural biodiversity; and advocates for policies that support, strengthen, and institutionalize community initiatives on sustainable and resilient food systems. It works in partnership with farming communities, local and national government units, civil society organizations, and academic and research institutions in Southeast Asia.

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