

*Plant Intellectual Property, Food
Security and Human Development:
Institutional and Legal Considerations*

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Plant variety protection: a neglected intellectual property right?

‘The importance of food security to human survival and the widespread interest in intellectual property in genetic materials suggest that PVP [plant variety protection ...] should be a subject of widespread interest by scholars and policymakers. *In fact, nothing could be further from the truth.*’

Laurence Helfer

1. World Bank (2006) *Intellectual Property Rights: Designing Regimes to Support Plant Breeding in Developing Countries*. (China, Colombia, India, Kenya, Uganda)
2. UPOV (2005) *UPOV Report on the Impact of Plant Variety Protection*. (Argentina, China, Kenya, Poland, S. Korea)

Intellectual property protection for plants: the international law

- ▶ TRIPS Article 27): “.... All fields of technology” “Members shall provide for the protection of plant varieties *either* by patents *or* by an effective *sui generis* system *or* by any combination thereof.”
- ▶ The UPOV Convention.
- ▶ Paris Convention for Protection of Industrial Property silent on patentable subject matter.

Plant varieties as *new* subject matter

1. **Accretion** – treating plant varieties as patentable inventions
2. **Emulation** – creating an alternative system (Europe: CPVR & national PVP laws, *no* patents)
3. **Accretion *and* emulation** – providing patents and one or more *sui generis* systems (US: PPA, PVPA & patents. *Issue of coexistence*)

Appropriating plant breeding innovations: Legal and technological problems and solutions

	Self-pollinators	Cross-pollinators	Asexual reproducers
Examples	Wheat, rice, sorghum	Maize, millet, pulses	Fruit trees (cutting, grafting)
Key features	Breed true	Do not breed true	Can be rapidly reproduced
Obstacle to appropriation	Harvested seed can be replanted	Deleterious effects of inbreeding	Easy to copy
Legal solution	PVP, patents (where available) contracts/licences	Trade secrecy (hybrids), PVP, patents (where available) contracts/licences	PVP, patents (where available), contracts/licences
Continuing obstacles to appropriation	<ul style="list-style-type: none"> • Farmers' reproduction and use • Competitors' reproduction, use, further improvement • Difficult to enforce rights 		
Technological solution	Terminator technology (under development)	Hybrids (where feasible)	

Patents v PVP

- ▶ Novelty
 - ▶ Inventive step/ non-obviousness
 - ▶ Industrial application

 - ▶ Novelty (commercial)
 - ▶ Distinctiveness
 - ▶ Uniformity/homogeneity
 - ▶ Stability
- Breeders' exemption & Farmers' privilege*
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Whose interests? National stakeholders and the geography of PVP applications

	Applications by residents			Applications by non-residents			Total		
	1999	2004	2008	1999	2004	2008	1999	2004	2008
Argentina	85	123	263	122	88	79	207	222	342
Kenya	16	16	28*	45	5	64*	61	61	92*
Netherlands	757	337	490	143	124	261	900	461	751
New Zealand	57	53	69	112	96	88	169	149	157
South Africa	53	86	103	153	226	192	206	312	295
USA (PVPA)	400	291	366	30	36	59	430	327	425
Global total	6,689	7,875	8,253	3,312	4,161	4,379	10,001	12,036	12,632

“Personally, I believe that the UPOV convention strikes a good balance between breeders, farmers and society needs – mainly because of the Breeders Exemption, which gives every interested party access to the genetic make-up of a variety. The patent system (on biotechnological inventions) however does not have this exemption and therefore not this balance, leading to situations that big companies can monopolise certain crops, which can lead to monopolistic behaviour such as a slower rate of innovation and higher prices.”

Marien Valstar, Plant Propagation Material Officer,
Netherlands Ministry of Economics, Agriculture and
Innovation



World Bank study conclusions

'the ease of implementing PVP seems to be overestimated. In all cases, effectiveness of PVP still being tested and refined, cases illustrate that establishing PVP law and putting into practice are two separate challenges.'

'not only do IPRs in plant breeding have to be seen in the context of wider range of agricultural policies, but IPR regimes themselves must be carefully tailored to specific situations... important that countries recognize that they have choices in designing legislation consistent with TRIPS ... still opportunities for debating and interpreting the Agreement itself. The UPOV Conventions offer some important advantages for fulfilling the requirements for a *sui generis* system *but they do not exhaust the possibilities.*'

Principles for PVP in developing countries

to provide incentives and attract research investment ...

1. towards supporting breeding targeted to the nutritional needs of the whole populace without unduly disrupting existing traditions and farming systems.
 2. to support the development of non-food or luxury food crops for sale on national and international markets that can generate wealth that to the greatest extent possible is captured at local and national levels.
 3. to encourage the growth of a domestic breeding industry.
 4. to encourage foreign firms to transfer their high-quality varieties and to set up facilities to adapt these to local conditions.
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Does UPOV promote such principles? political and institutional issues

1. Is UPOV a European plant breeders' club?
history of UPOV, designed by and for breeders, ASSINSEL, Sec-Gens usually Europeans, regulatory capture, separation between breeders and farmers, industrial/ high-input agriculture, disparagement of US PVP system, assumption that MVs must drive out "old varieties" that may be better in marginal, poor, high-risk environments.
2. Is the Convention too inflexible?
Convention very detailed cf Paris, TRIPS. Have to have PVP system in place, must be approved by UPOV before become member. Harmonisation effect. India, Peru and Thailand diverge.
3. Is UPOV too paternalistic.
4. *Too much advocacy?*
5. Are developing countries accepting the UPOV model without due consideration to their needs and interests? ("just sign on the dotted line?")
UPOV Office promotes UPOV as the sui generis system, sidesteps Geneva diplomats, non-breeder and business NGOs discouraged.