

Freeing Trade at the Expense of Local Crop Markets?: A Look at the Trans-Pacific Partnership's New Plant-Related Intellectual Property Rights from a Human Rights Perspective

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I. Introduction

On October 16, 2014, a new draft of the intellectual property chapter of the Trans-Pacific Partnership (TPP) was leaked.² The TPP is a free trade agreement currently being negotiated in secret between the governments of Australia, Brunei Darussalam, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore, United States, and Vietnam. The intellectual property chapter released in October contains a plant-related intellectual property provision proposed by the United States and Japan that could pose a serious threat to food security within the lower-income parties to the TPP. Intellectual property rights (IPRs) on plants endow plant breeders and seed manufacturers with varying degrees of control over the propagating materials (seeds, tissue cultures, cuttings) and sometimes harvested materials (fruits, foliage, flowers) of any new plant variety they create.

The newly released chapter reveals that the TPP will require signatories to make patents on plants or plant-related inventions available as well as accede to the 1991 version of the International Convention for the Protection of New Varieties of Plants (1991 UPOV). Currently, most nations, including the majority of parties negotiating the TPP, set their own plant protection policies without interference from international authorities. Most nations have not acceded to the 1991 UPOV, and only a handful offer patents on plants or plant-related inventions.³ If implemented, the new provisions of the

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² *Secret TPP Treaty: Intellectual Property Chapter Working Document for all 12 Nations with Negotiating Positions*, WIKILEAKS (Oct. 16, 2014), <http://wikileaks.org/tpp-ip2/tpp-ip2-chapter.pdf> [hereinafter *Secret Trans-Pacific Partnership Agreement (TPP) – IP Chapter*].

³ Under the World Trade Organization's (WTO) Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS), member nations are permitted to "provide for the protection of plant varieties either by patents or by an effective *sui generis* system or by any combination thereof." Agreement on Trade-Related Aspects of Intellectual Property Rights art. 27.3(b), Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, 108 Stat. 4809, 1869 U.N.T.S. 299, http://www.wto.org/english/docs_e/legal_e/27-trips.pdf [hereinafter Agreement on Trade-Related Aspects of Intellectual Property Rights]. Furthermore, some of the parties to the TPP have already signed free trade agreements with the United States (Australia, Canada, Chile, Korea, Mexico, Peru, and Singapore). However, these agreements allow the parties more flexibility with respect to plant-related patents.

TPP would force many of the negotiating parties—in particular, the less wealthy states—to dramatically alter their domestic laws. For example, the new TPP language will prohibit farmers from saving and exchanging many varieties of seeds—a practice vital to the livelihood and welfare of traditional farming communities—and most likely increase multinational control of the farming industry in TPP nations. This short piece examines the TPP’s new plant-related language and its implications for the human right to food within TPP signatory nations.

II. The TPP’s Provision on Plant-Related Intellectual Property

Article QQ.E.1⁴ of the TPP’s chapter on intellectual property outlines the scope of patentability under the agreement. The United States and Japan have proposed a provision reading: “each Party shall make patents available for inventions for plants and animals.”⁵ Alternatively, Japan and the United States propose the language: “[c]onsistent with paragraph 1, each Party confirms that it makes available patents for plant-related inventions,”⁶ with a footnote explaining that “[f]or greater certainty, no Party shall be required to make patents available for plant varieties that are protectable in that Party under the International Convention for the Protection of New Varieties of Plants [1991] (UPOV Convention).”⁷ The other parties to the TPP oppose this language and instead propose that plants be listed among the materials a party may exclude from patentability, *i.e.*, among the list of materials for which the parties do not have to offer patent protection.⁸ Furthermore, article QQ.A.8.1(c) provides that all parties to the TPP must accede to the 1991 UPOV. Therefore, under the proposals from the U.S. and Japan, the TPP would force the negotiating parties to either make patents on plants available in addition to protecting plant varieties under the 1991 UPOV *or* make patents available for plant-related inventions in addition to protecting plant varieties under the 1991 UPOV. Currently, six of the twelve TPP signatories have not acceded to the 1991 UPOV, and only three parties make plant patents available, as the table below demonstrates.

⁴ *Secret Trans-Pacific Partnership Agreement (TPP) – IP Chapter*, *supra* note 2, art. QQ.E.1.

⁵ *Id.* art. QQ.E.1.3.

⁶ *Id.*

⁷ *Id.* art. QQ.E.1.3 n.55.

⁸ *Id.* art. QQ.E.1.4(b).

The Current Membership Status of TPP Parties to International Agreements that Provide for Plant-Related Intellectual Property Protection ⁹			
Trans-Pacific Partnership Party	TRIPS Signatory ¹⁰	UPOV 1991 Signatory ¹¹	Patent Protection for Plants
Australia	✓	✓	✓
Brunei	✓	✗ ¹²	Unclear ¹³
Canada	✓	✗	Canada does not grant patents on “higher life forms,” a term that includes plants, but will grant patents on plant cells and genes. ¹⁴
Chile	✓	✗	✗
Japan	✓	✓	✓
Malaysia	✓	✗	✗
Mexico	✓	✗	✗
New Zealand	✓	✗	No patents on plant varieties
Peru	✓	✓	✗ ¹⁵
Singapore	✓	✓	Unclear ¹⁶
United States	✓	✓	✓
Vietnam	✓	✓	No patents on plant varieties ¹⁷

⁹ This table originally appeared in Burcu Kilic, Hannah Brennan, and Peter Maybarduk, 40 YALE J. INT’L L. ONLINE 34 (2015), available at <http://www.yjil.org/docs/pub/o-40-killic.pdf>.

¹⁰ *Members and Observers*, WORLD TRADE ORG., http://www.wto.org/english/thewto_e/whatis_e/tif_e/org6_e.htm (last visited Sept. 30, 2014).

¹¹ *Members of the International Union for the Protection of New Varieties of Plants*, INT’L UNION FOR PROTECTION NEW VARIANTS PLANTS (June 10, 2014), <http://www.upov.int/export/sites/upov/members/en/pdf/pub423.pdf>.

¹² However, Brunei will join the UPOV by 2015. Intellectual Property Office of Brunei Darussalam, *Intellectual Property Regime*, BRUNEI-PATENTS, <http://www.brunei-patents.com.bn/index.php/about-us/ip-regime> (last visited Sept. 30, 2014).

¹³ Brunei’s current patent law neither explicitly includes nor excludes plants from its provision on patentable subject matter. See Brunei Darussalam Patent Order 2011, Part III, WORLD INTELL. PROP. ORG. (Oct. 17, 2011), <http://www.wipo.int/edocs/lexdocs/laws/en/bn/bn027en.pdf>.

¹⁴ See *Monsanto Canada Inc. v. Schmeiser*, [2004] 1 S.C.R. 902 (Can.) (explaining that patents on plant genes and cells are valid but patents on plants are not); *Harvard Coll. v. Canada*, (Commissioner of Patents), 2002 S.C.C. 76, 5, 7 (“Since patenting higher life forms would involve a radical departure from the traditional patent regime, and since the patentability of such life forms is a highly contentious matter that raises a number of extremely complex issues, clear and unequivocal legislation is required for higher life forms to be patentable. The current Act does not clearly indicate that higher life forms are patentable.”).

¹⁵ The Andean Pact countries, which include Peru, have chosen not to grant patents on plants. Decision 486: Common Intellectual Property Regime, art. 20 (Sept. 14, 2000), available at <http://www.wipo.int/edocs/lexdocs/laws/en/can/can012en.pdf>.

¹⁶ *What is a Patent?*, INTELL. PROP. OFF. OF SING., <http://www.ipos.gov.sg/AboutIP/TypesofIPWhatisIntellectualProperty/Whatisapatent.aspx> (last updated Dec. 12, 2013).

III. Patents on Plant-Related Inventions

A patent grants its holder the right to exclude all others from manufacturing, using, or selling the product on which the patent was granted. A plant patent can be described as a patent on a plant as a whole, whereas a patent on a plant-related invention would be a patent on a particular aspect or feature of a plant, such one of its genes. Some patent systems allow individuals to obtain patents on both plants and features of those plants. For example, the seed manufacturer Monsanto inserted an herbicide-resistant gene into the genome of a soybean plant, enabling that soybean plant to resist a certain type of herbicide. Monsanto was able to obtain patent protection on both the herbicide-resistant gene and the soybean plant into which it was inserted in United States,¹⁸ which offers patent protection on plants and plant-related inventions. The patent on the plant excludes others from the use and sale of the pesticide-resistant plant; the patent on the gene (the plant-related invention) excludes others from the use and sale of any organism containing that gene.

IV. 1991 UPOV

The International Convention for the Protection of New Varieties of Plants (UPOV) requires its signatories to provide plant variety protection to breeders for the creation or discovery of any plant that is novel, distinct, homogenous, and stable.¹⁹ Under this agreement, breeders and multinational seed manufactures can obtain exclusive rights over the propagating materials of plants they create, whether these plants were bred through traditional cross-breeding techniques (more common among farmers in the developing world) or genetic engineering. The 1991 UPOV also specifies that certain discovered plant varieties qualify for protection.²⁰ These exclusive rights are known as breeders' rights.

Once a breeder or seed manufacturer has obtained plant variety protection on a plant, the 1991 UPOV allows this rights holder to exclude all others from producing or reproducing the protected plant, offering that plant for sale, and exporting or importing the plant.²¹ Importantly, these exclusive rights apply not only to the plant's propagating

¹⁷ Vietnam Intellectual Property Law 50/2005, Art. 59(5); *see also* Nguyen Nguyet Dzung, *Vietnam Patent Law Substantive Law Provisions and Existing Uncertainties*, 6 CHI.-KENT J. INTELL. PROP. 138, 142 (2007).

¹⁸ U.S. Patent No. 5,633,435.

¹⁹ International Convention for the Protection of New Varieties of Plants, art. 5(1), Mar. 19, 1991, <http://www.upov.int/en/publications/conventions/1991/act1991.htm> [hereinafter *UPOV 1991*].

²⁰ *Id.* art. 1(iv).

²¹ *Id.* art. 14(1)(a).

materials, but also to its harvested materials in certain circumstances.²² This provision enables breeders to gain greater control over trade in processed foods, ornamentals, and other high-value commodities. Finally, the 1991 UPOV permits member states to obtain both a breeders' right and a patent on a particular variety of plant.²³

Nevertheless, the 1991 UPOV does provide for two important exceptions to the exclusive rights granted to breeders and seed manufacturers. First, Article 15(1)(ii) requires member states to allow breeders to use and experiment with protected plant varieties for the purpose of creating and marketing new varieties.²⁴ This provision preserves farmers' ability to create new beneficial crops, therein maintaining and enhancing biodiversity. Second, Article 15(1)(i) allows farmers to plant the seeds of protected plant varieties on their land for noncommercial purposes without the breeders' prior authorization.²⁵ However, this privilege does not permit farmers to sell or exchange seeds with other farmers for propagating purposes.²⁶ Therefore, this privilege only protects a farmer's right to use protected plants as food source for himself and his family; it does not enable a farmer to sell or trade a protected variety to others.

These two exceptions render the 1991 UPOV significantly less restrictive than patent protection, which does not permit exceptions for experimentation or personal consumption. Therefore, the TPP's real significance with respect to plants lies in its new requirement of patent protection on plants or plant-related inventions.

V. Implications of Heightened Plant-Related Intellectual Property Rights for the Protection of the Human Right to Food

Article 11 of the International Covenant on Economic, Social, and Cultural Rights²⁷ and Article 25 of the Universal Declaration of Human Rights²⁸ protect the right to food. Article 11 further provides that all people have the right "[t]o improve methods of production, conservation and distribution of food by making full use of technical and scientific knowledge, . . . by developing or reforming agrarian systems in such a way as

²² *Id.* art. 14(2).

²³ LAURENCE R. HELFER, FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS, INTELLECTUAL PROPERTY RIGHTS IN PLANT VARIETIES INTERNATIONAL LEGAL REGIMES AND POLICY OPTIONS FOR NATIONAL GOVERNMENTS 26 (2004), available at <http://www.fao.org/3/a-y5714e.pdf>.

²⁴ UPOV 1991, *supra* note 19, arts. 15(1)(ii), 14(5)(a).

²⁵ *Id.* arts. 15(1)(i).

²⁶ JAYASHREE WATAL, INTELLECTUAL PROPERTY RIGHTS IN THE WTO AND DEVELOPING COUNTRIES 141 (2000).

²⁷ G.A. Res. 2200A art. 11, U.N. GAOR 3d Comm., 21st Sess., Supp. No. 16, at 48, U.N. Doc. A/6316 (1966) [hereinafter ICESCR].

²⁸ Universal Declaration of Human Rights art. 25, G.A. Res. 217A, U.N. Doc. A/810 (1948).

to achieve the most efficient development and utilization of natural resources.”²⁹ Therefore, critically, this covenant not only guarantees the right to food, but also to methods of food production.

Worldwide, at least 1.5 billion individuals depend on small-scale farming for their livelihoods.³⁰ For such farmers, saving, selling, and exchanging seed in informal markets is pervasive and essential to the viability of their farming practices.³¹ Often accounting for 98% of seed supply in developing nations,³² informal seed-trading systems enable farmers to access a stock of different plant genes. These supplies of seed varieties are crucial to the improvement and conservation of traditional varieties that are well adapted to local environments. Accordingly, these informal seed supply systems play “a fundamental role in ensuring household food security.”³³

Implementation of the 1991 UPOV and/or plant patents (no matter if they are on plants or plant-related inventions) will enable breeders and multinational seed manufacturers to remove many previously unprotected varieties of plants from the public domain and bar exchange of these varieties on informal seed markets,³⁴ greatly impacting the breadth of seeds available in these markets.³⁵ Because plant patents as well as 1991 UPOV prevent farmers from selling and exchanging protected seeds, such IPR provisions prevent farmers from cultivating and selling improved crops that have been granted protection.³⁶ As a recent report found, “[f]rom a human rights perspective, restrictions on the use, exchange and sale of protected seeds could adversely affect the right to food, as seeds might become either more costly or harder to access. These restrictions could also affect other human rights, by reducing the amount of household

²⁹ ICESCR, *supra* note 27, art. 11.

³⁰ Special Rapporteur on the Right to Food, *Report on Seed Policies and The Right to Food*, General Assembly, ¶ 24, U.N. Doc. A/64/170 (July 23, 2009) (by Olivier De Schutter), available at http://www.srfood.org/images/stories/pdf/officialreports/20091021_report-ga64_seed-policies-and-the-right-to-food_en.pdf [Hereinafter De Schutter, *Report on Seed Policies*].

³¹ BERNE DECLARATION, OWNING SEEDS, ACCESSING FOOD: A HUMAN RIGHTS IMPACT ASSESSMENT OF UPOV 1991 BASED ON CASE STUDIES IN KENYA, PERU, AND THE PHILIPPINES 7, 24 (2014), available at https://www.evb.ch/fileadmin/files/documents/Saatgut/2014_07_10_Owning_Seed_-_Accessing_Food_report_def.pdf [hereinafter BERNE DECLARATION].

³² *Id.*

³³ Claudio Chiarolla, *The Right to Food and Intellectual Property for Plant Genetic Resources*, in RESEARCH HANDBOOK ON HUMAN RIGHTS AND INTELLECTUAL PROPERTY 13 (Edward Elgar ed., 2014); see BERNE DECLARATION, *supra* note 31, at 7.

³⁴ See BERNE DECLARATION, *supra* note 31, at 7 (“There is an important interaction between the formal and informal sectors whereby seeds from the formal sector are integrated into the informal sector by seed saving, exchange and sale of farm-saved seeds. Small-scale farmers also use “improved” varieties, which in some cases are protected by plant breeders’ rights.”).

³⁵ Chiarolla, *The Right to Food*, *supra* note 33, at 13; see BERNE DECLARATION, *supra* note 31, at 7.

³⁶ See BERNE DECLARATION, *supra* note 31, at 7, 14; GEOFF TANSEY, THE FUTURE CONTROL OF FOOD 41 (2008).

income which is available for food, healthcare or education.”³⁷ The Special Rapporteur on the Right to Food further warned that “[t]he oligopolistic structure of [the breeders’] market may result in poor farmers being deprived of access to seeds[,] productive resources essential for their livelihoods, and it could raise the price of food, thus making food less affordable for the poorest.”³⁸ Accordingly, the U.S. and Japan’s plant-related intellectual property provision could threaten the right to food in Pacific-rim nations through the disruption it would cause to informal seed markets and traditional farming practices.

The typical response to this criticism of plant-related intellectual property rights is that farmers are not required to purchase protected seed varieties just because they are available. As the Special Rapporteur on the Right to Food has explained, however, this contention “presupposes that farmers have real alternatives to acquiring their seed from the commercial system.”³⁹ Unfortunately, “the coexistence between farmers’ seed systems — operating at local or community levels between farmers, and mostly informal — and commercial seed systems is sometimes problematic. . . . Farmers often receive commercial varieties as part of a package that includes credit (often vouchers), seed, fertilizer and pesticide. In many cases, acceptance of such packages is the only way farmers can access credit in rural areas. They need to accept the whole package in order to do so.”⁴⁰ Thus, governmental involvement in seed and fertilizer distribution complicates the seed supply system such that avoidance of commercial seed varieties is often infeasible.

Increased intellectual property protection of plant varieties may also skew incentives in the seed industry in ways that reduce genetic diversity among plants, causing harm to developing nations.⁴¹ Plant variety protection does not encourage breeding related to minor crops with small markets “because the likelihood of good returns on breeders’ research investment is small even with the legal protection provided by [plant variety protection].”⁴² Instead, intellectual property rights on plant varieties create incentives for breeding major crops with significant commercial

³⁷ BERNE DECLARATION, *supra* note 31, at 7.

³⁸ De Schutter, *Report on Seed Policies*, *supra* note 30, at ¶ 27; *see also* BERNE DECLARATION, *supra* note 30, at 7 (“In the case of protected varieties, seed costs drive production expenses further up. From a human rights perspective, higher production costs pose a risk for cash-strapped farmers as they affect the stability of their household budget and compete with other essential household expenditures, including for food.”).

³⁹ De Schutter, *Report on Seed Policies*, *supra* note 30, at ¶ 36.

⁴⁰ *Id.*

⁴¹ *Id.* at ¶ 24 (“[T]he expansion of surfaces cultivated with commercial seeds accelerates crop diversity erosion, as an increasing number of farmers grow the same crops, using the same, ‘improved’ varieties on their fields.”); TANSEY, *supra* note 36, at 41; S. Ragavan, *To Sow or Not to Sow: Dilemmas in Creating New Rights in Food*, in AGRICULTURAL AND BIOTECHNOLOGY AND INTELLECTUAL PROPERTY: SEEDS OF CHANGE 318, 323-24 (J. Kesan ed., 2007).

⁴² TANSEY, *supra* note 36, at 41.

potential. This trend is already visible: very little research has been directed towards developing new varieties of foods important in the developing world, such as tropical maize, sorghum, millet, banana, cassava, groundnut, oilseed, potato or sweet potato.⁴³ Accordingly, implementation of the 1991 UPOV and a system of plant patents in TPP nations may further reorient crop development towards the needs of farmers in rich countries at the expense of farmers in developing countries.⁴⁴

VI. Conclusions

The UN Special Rapporteur on the Right to Food has decried the increasing pressure on low- and middle-income countries to adopt national legislation that increases intellectual property protection on plants.⁴⁵ More specifically, he has criticized free trade agreements that require the introduction of patent protection for plants or legislation implementing the 1991 UPOV.⁴⁶ A recent report from a network of NGOs, including the Third World Network and the Berne Declaration, echoed this criticism, noting that governments in industrialized nations regularly pressure developing countries into introducing stringent intellectual property protection for plants.⁴⁷

The TPP's current provision on plant intellectual property rights is not only an example of that mounting pressure, but also, in and of itself, would serve to augment it. In requiring parties to implement the 1991 UPOV Agreement and make plant patents available, the TPP further normalizes the pressure on developing nations to jeopardize farmers' rights and food security in favor of unclear gains in biotechnical research and development. Ascension to the 1991 UPOV will force many TPP parties to trade away the food security of their populations for the benefit of breeders—primarily large multinational corporations.⁴⁸

⁴³ See *id.*; De Schutter, *Report on Seed Policies*, *supra* note 29, at ¶ 34.

⁴⁴ De Schutter, *Report on Seed Policies*, *supra* note 29, at ¶ 34.

⁴⁵ *Id.*, at ¶ 40 (“This convention prohibits the commercialization of varieties which are essentially derived from a PVP-protected variety (article 14 (5)), and farmers are now prohibited from exchanging or selling seeds saved from the harvest of protected varieties (article 15). In order to circumvent these limitations, developing countries where the function of traditional, farmers' seed systems is most important both for the prevention of genetic erosion and for the livelihoods of farming communities should design *sui generis* forms of protection of plant varieties which allow these systems to flourish, even if this means adopting non-UPOV compliant legislation.”).

⁴⁶ *Id.*, at ¶ 18.

⁴⁷ BERNE DECLARATION, *supra* note 31, at 46.

⁴⁸ Harbir Singh, *Plant Variety Protection and Food Security: Lessons for Developing Countries*, 12 J. INTELL. PROP. L. 391, 396 (2007) (“Data on the North American seed market revealed that in case of hybrid corn and soybean, top five companies account for 69% and 51% share, respectively. In case of cottonseed, Monsanto alone controls 84% of the market on account of its purchase of Delta and Pine Land.”).