THE TRIPS AGREEMENT: WHO OWNS AND CONTROLS KNOWLEDGE AND RESOURCES?

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Background

In 1994, at the conclusion of the Uruguay Round negotiations, the World Trade Organization (WTO) Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPs) became binding international law. [1] Under the TRIPs Agreement, all members of the WTO were required to bring their national laws into conformity with the new international treaty – either by 2000 or by 2004, depending on their level of development.

Previously, intellectual property rights (IPRs) – which generally take the form of patents, trademarks or copyrights and grant exclusive monopolies over an invention or other useful knowledge for periods of time ranging from 3-20 years or more – had fallen under the domain of national law. Different countries had different IPR laws, each one a balance between industry's desire to capitalize on its investments and the rights of society to benefit from the knowledge and resources of the nation. India, for example, denied patents on agricultural and pharmaceutical products, on grounds they are essential to the public welfare – although it did allow patents on the formulae and mechanics of food and drug processing. Brazil and Argentina used their IPR laws to encourage a strong pharmaceutical sector and affordable drugs. Ultimately, each nation's economic and social development strategy was at stake.

The WTO established new legislative and judicial powers at the international level and added new issues – investment policies and intellectual property rights – to the scope[2] of the trade rules known as the "GATT," the General Agreement on Tariffs and Trade. The pharmaceutical and agri-chemical industries were directly involved in the crafting of the new IPR rules during the Uruguay Round, serving as an "Intellectual Property Committee" advising the Reagan Administration.[3] The sweeping new TRIPs Agreement would enable transnational corporations to monopolize new markets around the world, instead of holding monopoly patent rights in only one country. In addition, the new rules would facilitate the privatization and monopolization of resources formerly considered part of the public domain[4] – such as plants, seeds, genes and knowledge itself.

A series of rapid mergers and acquisitions within the agri-chemical and pharmaceutical sectors followed, leading to the booming new biotechnology sector. Of 1,500 seed companies in the world in 1995, just 24 held a combined market share of more than 50%. Of the 24, eight were transnational corporations. By 2000, after years of merger-mania, the top ten companies controlled 33% of the $23 billion seed market and 90% of the $31 billion agrochemical market.

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[1] The TRIPs Agreement text in full can be reached at:
http://www.wto.org/english/tratop_e/trips_e/t_agm0_e.htm

[2] The scope was expanded by, as India's trade representative to the GATT, the WTO's predecessor, put it, "a simple semantic strategy of prefixing the adjective 'trade-related' to any area of national competence."

[3] Former officials of these companies now serve in high positions with the Bush Administration.

[4] When asked decades ago who would control the new vaccine for polio, its inventor Jonas Salk replied "Well, the people I would say. There is no patent. Could you patent the sun?"

At the top of the list was Syngenta – formed by the merger of Novartis and Zeneca – with $5.9 billion of annual sales. (Novartis itself was formed in 1996 by the merger of Sandoz and Ciba-Geigy.) In second place was Monsanto, bought up by Pharmacia but then spun-off after the biotech connection became more of a liability than an asset to the drug company. About two-thirds of Monsanto's $3.9 billion in sales that year were from Roundup, the herbicide for which the first two popular biotech crops were designed: Roundup Ready corn and Roundup Ready soybeans. More than 90% of all genetically engineered crops in the field are considered the proprietary property of Monsanto.

In addition, the biotechnology and pharmaceutical companies have stocked their own seed banks with the world's genes, sending teams of ethnobotanists into remote areas to collect samples of rare plants or to ask traditional healers about their use of the local flora. Once a little bit of the genetic material is safely stored in the bioprospecting company's gene bank, they can propagate or clone it, or develop a synthetic chemical substitute to meet all of their commercial production needs.[5] The local community then has no control over future uses of its genetic and intellectual resources, and even the best compensation deals yield a mere fraction of the monetary value that a successful product can bring to the commercial enterprise.

Controversy and Stalemate

When developing countries finally agreed to the Uruguay Round package of agreements, including the new powers of the WTO, they were well aware of the potential problems and successfully built-in a review process to monitor and, if necessary, address the impacts of the TRIPs Agreement. The entire agreement was to be reviewed every two years with "regard to the experience gained in its implementation" and "in the light of any relevant new developments which might warrant modification or amendment." In addition, the most controversial section governing the patenting of life was to be reviewed in 1999.

Both of these reviews were initiated but have not been concluded, years later. The stakes – control over vast economic and biological resources as well as food security, human health, human rights[6] and development policy – are just too high. Heading towards the WTO's Fifth Ministerial Meeting in Cancun, at least five elements of TRIPs are subject to debate:

- Article 27.3(b) requires that patents be made available for all micro-organisms and all genetically-engineered organisms, and either patents or an "effective *sui generis* system"[7] of private property protection for plant varieties – enabling agri-chemical/biotechnology corporations to acquire ever-greater control over the seed stock and cropping systems of more and more countries. The *sui generis* option has stimulated a lot of thinking about alternatives to patents on life – including outright prohibition[8], generating creative

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[5] Summing up these issues in 1994, the FAO's Assistant Director-General Obaidullah Khana referred to such bioprospecting as "biopiracy."

[6] The U.N. Office of the High Commissioner for Human Rights and the U.N. Sub-Commission on the Promotion and Protection of Human Rights have found "apparent conflicts" between TRIPs and the human rights to food, health and self-determination.

[7] *Sui generis* means, in Latin, "of its own kind." The term "effective," of course, entails subjective judgement and opens the door to disputes.

[8] In June 2003, the African Group of WTO Members reiterated its 1999 position that that "patents on life forms are unethical and the TRIPs Agreement should prohibit them." This position statement includes a proposal to establish within TRIPs a mechanism for the legal protection of traditional knowledge as a matter of "cultural rights as well as of preserving the invaluable heritage of humankind that biological diversity and traditional knowledge constitute."

legislation[9] in numerous countries as well as proposals to limit its applicability.[10] In addition to its impact on agricultural practices and biodiversity[11], this section of TRIPs raises questions about the WTO's legal relationship with other international agreements such as the Convention on Biological Diversity[12] and the International Treaty on Plant Genetic Resources [13]as well as the customary rights of farmers[14] and local communities to protect their traditional practice and knowledge.[15]

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[9] Model legislation drafted by the Organization for African Unity provides a comprehensive *sui generis* alternative to patents, including how nation-states should respect and compensate local communities for their roles in the development of plant varieties: http://www.oau-oua.org . Ecuador's Constitution recognizes "collective" IPRs and the five-nation Andean Community – Bolivia, Colombia, Ecuador, Peru and Venezuela – has enacted a series of regional intellectual property laws that conform with TRIPs while acknowledging the rights of local communities to protect their knowledge and resources: http://www.comunidadandina.org/normativa/dec/dectema14.htm . Brazil and Costa Rica have also legislated protection for the rights of communities over their knowledge and resources.

[10] The U.S., for example, proposed that the Union for the Protection of New Varieties of Plants (UPOV) – that supports the patenting of plant varieties and creates restrictive Plant Breeders' Rights limiting Farmers' Rights to save, sell, exchange and re-use seed – be designated the only acceptable "effective *sui generis* system."

[11] The commercial goal of developing plants with only the most marketable traits leads to a decline in the pool of genetic diversity. In the U.S. alone, a survey of seed banks showed that some varieties of non-commercial crops such as chufas, martynia and rampion have been lost entirely. When all possible uses of a patented trait are monopolized, further research and development on the genetics of that trait are stifled – limiting the genetic diversity of plants bred to express such a trait. Furthermore, plant breeding programs are designed to produce genetic uniformity, in order to meet the legal requirements of UPOV, which means that, over time, distinct varieties will become less and less distinct.

[12] Article 16.5 of the 1992 Convention on Biological Diversity (CBD) requires cooperation to ensure that IPRs "are supportive of and not counter to its objectives" – namely, the conservation and sustainable use of biological diversity and the equitable sharing of the benefits of its use. Article 8 (j) encourages national legislation to "respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities...and promote their wider application with the approval and involvement of the holders of such knowledge..." Article 19.3 created the framework for negotiation of what has now become the Cartagena Protocol on Biosafety, governing trade in genetically engineered organisms.

[13] Article 12.3(d) of the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGR) prohibits IPRs on plant genetic resources, "their genetic parts or components, in the form received" from the worldwide "multilateral system" of public seed banks, including those managed by the U.N. Food and Agriculture Organization and those managed by national governments or public universities – that is, all plant genetic resources for food and agriculture that is currently in the public domain. Of course, "in the form received" implies that reproductive materials that are then genetically engineered may be patentable. Article 9 of the ITPGR defines "Farmers' Rights" to save, use, exchange and sell farm-saved seed, but gives the authority for legislating and implementing Farmers' Rights to the states.

[14] The U.N. Food and Agriculture Organization back in 1989 defined Farmers' Rights as "rights arising from the past, present and future contributions of farmers in conserving, improving and making available genetic resources." Yet in the U.S., hundreds of farmers have been sued by transnational biotechnology companies for patent infringement, on grounds they have pirated the companies' proprietary DNA. Most farmers have agreed to settle the lawsuits out of court and pay monetary compensation to the companies, finding themselves unable to prove they never purchased the proprietary seed or, more often, unable to afford the costs of concluding the litigation.

[15] Customary international law derives from the general and consistent practice of states due to a sense of legal obligation. Customary law and law made by international agreement have equal authority as international law, although by agreement states may assign a higher priority to one or another. The World Intellectual Property Organization (WIPO), the United Nations Educational, Scientific and Cultural Organization (UNESCO) and the United Nations Food and Agriculture Organization (FAO) are all grappling with the legal and ethical challenges of reconciling private property rights with Farmers' Rights

- Articles 8, 30 and 31 enable governments to make exceptions to the monopoly rights of patent-holders in order to achieve the right balance between the interests of both producers and users of knowledge – most immediately affecting the producers of pharmaceutical drugs and the sick.[16] However, these articles lack specificity, leaving considerable scope for interpretation and dispute. The 2001 Doha Declaration on TRIPs and Public Health[17] clarifies much of this ambiguity, affirming "flexibilities" for governments to license the production of patented drugs on a compulsory basis. But the problems of countries with little or no capacity to manufacture drugs were not solved; proposals to allow them to import patented drugs produced in other countries under compulsory licensing were blocked by the U.S. government in Doha. Since then, the U.S. government has continued to refuse terms agreed by every other government – disputing which drugs would be allowable under this type of "parallel import" system.

- Articles 22, 23 and 24 allow governments to protect the good name of products from certain regions in their countries – like Burgundy wine from Burgundy, France – through the use of trademarks or "geographical indications." However, this section emphasizes and offers "additional protection" for "wines and spirits," while producers of other regionally-recognized products – such as Basmati rice from India and Pakistan or Jasmine rice from Thailand[18] – are seeking the extension of this additional protection to other goods.

- Articles 7, 8, 40 and 66 emphasize that technology transfer is one of the primary goals of intellectual property protection. In fact, Article 7 declares the "Objectives" of the TRIPs Agreement in one simple sentence: "The protection and enforcement of intellectual property rights should contribute to the promotion of technological innovation and to the transfer and dissemination of technology, to the mutual advantage of producers and users of technological knowledge and in a manner conducive to social and economic welfare, and to a balance of rights and obligations." Article 40 sets forth licensing and other remedies to balance the monopolistic or "anti-competitive" effects of IPRs – acknowledged as "adverse" to trade and technology transfer. Article 66 requires developed countries to "provide incentives" encouraging technology transfer to least-developed countries. Yet developing countries point out that these provisions have not been "operationalized," while the privatization and monopolization of knowledge and resources has advanced swiftly.

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and other customary rights of traditional communities relative to community-based knowledge and resource systems.

[16] Nineteen pharmaceutical companies sued the government of South Africa for patent infringement when that government sought to import AIDS drugs from countries manufacturing affordable generic medicines. The suit was dropped after AIDS activists there generated a massive global campaign in support of the government's policies. Similarly, the U.S. government dropped its threats of filing a WTO dispute against the Brazilian government's public health policy subsidizing the manufacture and distribution of free and low-cost AIDS drugs to people in need, regardless of patents.

[17] The text of the Doha Declaration on TRIPs and Public Health states the WTO members' agreement that TRIPs "does not and should not prevent members from taking measures to protect public health." It can be read in full at: http://www.wto.org/english/thewto_e/minist_e/min01_e/mindecl_trips_e.htm .

[18] Farmers and government officials from India, Pakistan, and Thailand have mounted campaigns to revoke U.S. patents and trademarks awarded to the Rice-Tec Company of Texas on varieties of the especially aromatic Basmati and Jasmine rice strains perfected by South Asian farmers over thousands of years. India claims to have lost hundreds of millions of dollars per year in export revenues due to Rice-Tec's capture of this rapidly growing market. ActionAid estimates that hundreds of varieties of rice have been patented.

- Numerous articles – including 7, 8, 40, 41, 65, 66, 67 and 71 – purport to ensure the public interest alongside the creation of private property rights over knowledge and resources. Developing countries, however, claim severe frustration over the failure to implement these articles, while accelerated implementation of others – primarily through unilateral pressures and bilateral or regional negotiations[19] – is the norm.

In Cancun

Formally, the TRIPs review processes, triggered by the terms negotiated during the Uruguay Round, are undertaken by the TRIPs Council as part of the day-to-day work of the WTO – not tied to the new negotiations mandated by the Doha Ministerial Meeting of 2001. The TRIPs Council consists of all members of the WTO, who convene quarterly to discuss issues arising from the process of implementing the 1994 Agreement. Numerous documents have been exchanged by groups of countries arguing these issues since 1999, without resolution.

In Doha, new negotiations were mandated under what is being called the "Doha Development Agenda," particularly implementation of the "Doha Declaration on TRIPs and Health." The Doha deadline for addressing the problem of countries without the capacity to manufacture generic drugs was "the end of 2002" – a deadline that was not met. As a result, pressure is on to resolve this matter before delegates travel to Cancun or, at the very least, by the conclusion of the Cancun Ministerial Meeting.

The Doha Agenda also mandated the establishment of a "registration system" for geographical indications applicable to wines and spirits, giving the TRIPs Council the task of handling the negotiations with the Cancun meeting as a deadline. Regarding the extension of "additional protection" for other regionally-recognized products, the Doha negotiators gave the TRIPs Council as well as the WTO's over-arching Trade Negotiations Committee (TNC) the responsibility of finding an acceptable consensus by the end of 2002 as part of the "implementation" negotiations – a bundle of 100 or more issues critical to developing countries. So far, the TNC has made little progress on these issues, too – with the Cancun Ministerial's success or failure hanging in the balance.

Indeed, the Draft Cancun Ministerial Text[20] issued July 18 by the Chairman of the General Council, the WTO's central body, is in his own words, "somewhat skeletal in nature" reflecting "how far we still have to go in a number of key areas to fulfill the Doha mandates." While the pressure and publicity of each WTO ministerial meeting, like any other deadline, can bring recalcitrant negotiators to accommodate others, it is highly uncertain whether the final Cancun Declaration will ultimately settle the TRIPs issues that have been outstanding since the middle of the Uruguay Round.[21]

Nonetheless, there has been some progress. In September 2002, the European Union started showing a more flexible stance towards the concerns of developing countries with regards to

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[19] In recent trade negotiations and agreements, such as the Free Trade Area of the Americas or the US-Chile FTA, the U.S. government has introduced "TRIPs-plus" provisions. The U.S. government also uses bilateral diplomatic techniques (such as the U.S. Watch List) to pressure developing country governments to implement TRIPs ahead of agreed schedules, and to adopt "TRIPs-plus" provisions that even more aggressively promote highly restrictive patent protection for seeds and other life forms.

[20] The full text of the Draft Cancun Ministerial Text, dated July 18, 2003, is available at: http://www.tradeobservatory.org/library/uploadedfiles/Preparations_for_the_Fifth_Session_of_the_Mini.doc

[21] In 1989, developing country governments walked out of the Uruguay Round's "Mid-Term Review" meeting in Montreal in refusing to accept an IPR regime so detrimental to their national interests.

patents on life. This flexibility is based on the findings of the independent Commission on Intellectual Property Rights[22] established by the UK Government to examine how IPR regimes could be designed and improved to benefit developing countries. On the specific issue of patenting of staple foods, the report recommends that:

- Patents should not restrict farmers' rights to save, grow, exchange and sell seeds;
- Developing countries should have the right not to grant patents on plants and animals, including genes and genetically modified plants and animals;
- Governments should put in place measures to promote farmers' rights at a national level; and
- The current system allowing patents on traditional knowledge should be revised to protect poor communities from biopiracy.

Meanwhile, civil society organizations in dozens of countries continue their activism on these issues – health advocates focusing on the problem of access to medicines and implementation of the Doha Declaration on TRIPs and Public Health; farmers and food security activists joining forces in a global "no-patents-on-life" campaign; those dedicated to Third World development emphasizing the imbalances inherent to the 1994 TRIPs Agreement and the failure to implement those elements supportive of developing countries in the South. Alongside a few governments, many of these activists are calling not just for a few specific reforms but to rescind the TRIPs Agreement in its entirety. Their reasons: intellectual property rights should never have come under the jurisdiction of the WTO or any other trade negotiation in the first place; and the privatization and monopolization of knowledge and resources is wholly inappropriate public policy.

Conclusion

The proponents of TRIPs and other systems of private intellectual property rights assert that patents are essential for research and development. Without royalties guaranteed through IPRs, pharmaceutical and biotechnology companies argue that they could not afford to invest in the search for plants whose active ingredients may be the source of new life-saving drugs. Nor could they conduct research in genetic engineering, with which they will "feed the world."

But public interest advocates point out that patented drugs are far more expensive than their generic counterparts, generating windfall profits well beyond the actual costs of development. Likewise, patented genetically-engineered crops have cost farmers more money without resulting in higher yields, while the risks to ecosystems and human health have not been scientifically studied. In their turn, public interest scientists worry that researchers are increasingly reluctant to publish early discoveries in order to increase the likelihood that they (or, more often, their companies or universities) will be the first to patent a commercial result. In conjunction with other trade and investment policies, the global marketing of expensive patented seeds and medicines limits many communities' access to food and health. Furthermore, the privatization and monopolization of seeds, medicinal herbs, plants, and other forms of life raise profound ethical and moral questions.

The Cancun Ministerial Meeting of 2003 offers the WTO a chance to rectify serious imbalances in the distribution of knowledge and resources. Are governments up to the task?

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[22] The full text of the Final Report of the UK Commission on Intellectual Property Rights is available at: http://www.iprcommission.org/graphic/documents/final_report.htm

[BOX] CORN AND BEANS: THE CASE OF MEXICO

Corn

As Monsanto's patent on "Roundup," its best-selling chemical herbicide was scheduled to expire in 1999, the company genetically engineered a new variety of corn that could withstand intensive spraying of Roundup. They then sold the patented "Roundup-Ready" corn subject to a technology licensing agreement obliging farmers to use only Monsanto's name-brand Roundup – making the use of a competitor's name-brand variety or the chemically-identical generic varieties of the herbicide ("glyphosate") illegal. The licensing agreement also made it illegal for farmers to save and re-use harvested seed from Roundup Ready crops, and committed Roundup Ready corn purchasers to allow random inspections by agents hired by Monsanto (including Pinkerton detectives) to verify compliance with the terms of the agreement. Violations were subject to a fine worth 100 times the purchase price of the seed.

A few years later, more than one-third of the U.S. corn crop was genetically engineered and, as a result of trade liberalization, Mexican imports of U.S. corn – at prices 30% below the cost of production – had increased by a factor of 18! Mexico changed from being a net exporter to a net importer of corn in the 1980s, a process that accelerated when Mexico joined the GATT in 1986 and then the North American Free Trade Agreement (NAFTA) in 1994. NAFTA required that Mexico dismantle its agricultural support programs and open its market to lower-price corn from the U.S. Many Mexican farmers were unable to compete with cheaper corn dumped from abroad and driven out of business.

Genetic engineering experiments on corn had been going on in Mexico throughout the 1990s. Field trials of Bt corn were first approved in Mexico in 1995, and then halted in 1997 for fear of endangering native corn varieties known as "landrace" varieties. In 1999, the Mexican government created an Inter-ministerial Commission on Biosafety and Genetically Modified Organisms, CIBIOGEM, in 1999 to oversee the import, export, testing, and release of genetically engineered organisms. The Secretariat of Agriculture, Livestock, Rural Development, Fisheries and Food (SAGARPA) issues certificates for the importation, movement and release of genetically engineered organisms and ensures compliance with biosafety regulations during field trials.

But in September 2002, the Mexican government confirmed that that nation's invaluable stock of diverse corn varieties was contaminated with genetically engineered DNA, almost certainly derived from these imports from the U.S. As one of the world's centers of genetic origin and diversity for corn, the contamination of Mexico's stock of indigenous corn could threaten the planet's food security. All crops require periodic cross-breeding with wild relatives to sustain the genetic diversity essential to vigorous reproduction. And scientists fear that genetic erosion jeopardizes each species' capacity to adapt to changing conditions like the devastation of war, global warming, desertification or floods.[23] As the gene pool erodes further and further, a global catastrophe could occur and famine could become widespread.

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[23] After the floods in Southern Africa in 2000, a group of scientists from the region, including plant breeders, geneticists, and biotechnology experts, issued a public letter in which they requested relief organizations not to send genetically engineered or patented seed. "Inappropriate seeds," they explained, "can undermine agro-biodiversity and thus food security for years." Instead, they urged the international community to "support efforts to reconstitute locally adapted planting material and quality seed material/varieties, like indigenous land races or farmers' varieties appropriate to the various ecosystems."

Beans

At a rural market in Sonora, Mexico in 1994, a U.S. businessman named Larry Procter bought a bag of beans and brought them back to the U.S. The owner of a small seed company named POD-NERS, Procter planted the beans, selected the yellowest ones from that harvest and planted them again. After a few generations of selecting the yellowest for re-sowing, he applied for a patent on what he called the "Enola" bean – claiming private monopoly rights over the use of all dry beans of this particular shade of yellow.

The U.S. Patent and Trademark Office awarded the patent[24] as well as a U.S. Plant Variety Protection (PVP) certificate[25] in 1999. Armed with these IPRs, Procter then sued two companies – Productos Verde Valle and Tutuli Produce – demanding royalty payments of six cents per pound and disrupting the livelihoods of thousands of farmers in Northern Mexico.[26] Two years later, Procter sued sixteen additional small seed companies and farmers in Colorado for patent and PVP infringements.

In turn, the International Center for Tropical Agriculture (CIAT) in Colombia, one of the international institutions cooperating in the multilateral system of public gene banks, challenged the patent with the support of the U.N. Food and Agriculture Organization (FAO). CIAT holds some 260 samples of yellow dry beans including six found to be "substantially identical" to those claimed by Procter. The Mexican government, too, conducted a DNA analysis of POD-NERS' and found them to be genetically identical to the yellow "azufrado" and "mayocoba" beans widely grown in northern Mexico. Even in the application for the PVP certificate, Procter acknowledged that the "Enola" bean "is most likely a landrace from the azufrado-type varieties."[27] Under the terms of a1994 agreement between the FAO and the international gene banks and the International Treaty on Plant Genetic Resources, the azufrado and other dry yellow beans are held "in trust" in the public domain and not eligible for IPRs.

The U.S. Patent and Trademark Office is due to rule on the CIAT/FAO challenge to Procter's IPRs on dry yellow beans very soon. For updated information, check the website of the ETC Group, the Action Group on Erosion, Technology and Concentration: http://www.etcgroup.org .

They insisted that this solution was best not only for the immediate regeneration of production systems after the severe flooding, but also for the medium and long term. In every case, they emphasized that farmers know how to use locally adapted seed; they don't need cash or chemicals to use them; and they can be re-sown and spread readily for continual adaptation under local conditions.

[24] U.S. Patent No. 5,894,079.

[25] Plant Variety Protection (PVP) certificates award a form of monopoly control to plant breeders that is less restrictive than a patent, allowing other plant breeders and researchers to utilize the breeding material but not for commercial purposes.

[26] According to Miguel Tachna Felix of the Agricultural Association of Rio Fuerte in Sinaloa, Mexico, its 22,000 members "had been exporting this yellow bean and others to the United States for over four years when POD-NERS received their patent, based on erroneous claims. When they got the patent, they sent a letter to all the importers of Mexican beans in the United States, warning that this bean was their property and that if they planned to sell it they would have to pay royalties to POD-NERS. For us, this meant an immediate drop in export sales, over 90%, which affected us tremendously. And it wasn't only one bean variety, but also others, because it created fear among bean importers... Our farmers have suffered great economic losses, but what really matters to us is that this legal challenge establishes a precedent to prevent similar injustices, so that it won't be possible to continue patenting public germplasm, the patrimony of all humanity, and that it will prevent these materials from being patented by anyone." [As cited in ETC Group press release, January 5, 2001.]

[27] Application for U.S. Plant Variety Protection Certificate #9700027.