

Governance of Agrobiodiversity

The role of intellectual property rights in agriculture

In 2002, the UK company *Plant Bioscience* patented a procedure through the European Patent Office for the identification of broccoli plants that have an increased glucosinolate content. That patent, however, encompassed not only the use of special marker genes to breed broccoli, but also the vegetable plants and the broccoli seed obtained by means of this process. The seed and biotech firms *Limagrain* and *Syngenta* have filed oppositions to the patent. In general, *Syngenta* supports the wide-ranging patenting of breeding processes, and its purpose in bringing the case to court is presumably not to have it revoked, but in fact confirmed. Farmers' groups and development organisations, in contrast, stand in opposition to such undermining of the patent law.

Similarly far-reaching patents have been applied for in the field of animal breeding. In April 2009, farmers' groups and development organisations protested against the 'pig patents' applied for by *Monsanto*. They cover a gene test that can be used to identify pigs that grow and put on flesh particularly quickly. *Monsanto* further applied for patent protection of the animals selected by means of this method. Following public protests and a critical assessment by the patent office, *Monsanto* withdrew these wide-ranging claims and the patent was approved. In the same month, several objections were lodged, referring to the still unclear effects of the patent upon the free availability of the animals and the non-patentability of 'essentially biological processes'.

In 2009 and 2010, *Monsanto* applied for patents on pig and fish fattening products arising from processes in which feed is used that contains a certain proportion of omega-3 fatty acids derived from genetically modified soya, oil thistle, sunflower, oilseed rape or maize.

Eighty years of intellectual property rights in agriculture

Since genetic engineering became a part of breeding activities some 25 years ago patents on plants and animals or their parts, such as genes or gene sequences, have gained an increasingly important role. This development has attracted criticism, especially from civil society groups worldwide.

Intellectual property rights (IPR) in agriculture have existed for almost 80 years. In 1930 the USA enacted the first law in



Decisions with respect to intellectual property rights at an international level are negotiated by the World Intellectual Property Organisation (WIPO), such as at this high level conference of representatives of the least developed countries (LDCs) in 2008.
Photo: Mercedes Martínez/WIPO

this area, which made it possible to patent plants that were propagated vegetatively through bulbs or cuttings. A different path was taken in Europe. The UPOV Convention of 1961 (*Union internationale pour la protection des obtentions végétales – International Union for the Protection of New Varieties of Plants*) established protection of intellectual property rights for plant breeders, whilst at the same time permitting other breeders to use the material free of charge for their own breeding purposes (plant breeders' privilege). The traditional practice of farmers of breeding and exchanging seeds could also comprise the new, protected varieties since UPOV 1961 did not forbid such activities. This farmers' privilege had been recorded in writing in the 1991 version of UPOV, but with substantial restrictions. With these two privileges concerning the access to protected material, plant variety protection differs distinctly from patent law. However pressure is mounting from the biotechnology industry to align the level of protection in the field of plant breeding with patent law.

The current IPR rules support the political and economic imbalance between industrial and traditional breeding, as they only protect the interests of individuals, not those of collective innovation and knowledge systems. For traditional farmers and herders, the plants, animals and microorganisms they use is a common heritage for which they have a collective responsibility to propagate, safeguard and pass on to future generations. The IPR presently in force cannot protect their rights and needs.



National seed legislation adapted to rural agriculture is needed to preserve local farmers' breeding systems. This photo shows a female farmer sitting in front of a seed bank in India's Kolli Hills.

Photo: J. Chérfas/*Bioversity International*

Moreover, numerous studies have shown that strong industrial IPR systems do not serve primarily to promote innovation, as asserted by IPR theory, but increasingly to protect investment and fence off markets. This is one of the conclusions reached by the report on the assessment of the impacts of transgenic seed technology in developing countries prepared by the German Bundestag's Office of Technology Assessment and submitted in April 2009. As long ago as 2002, the Commission on Intellectual Property Rights (CIPR) set up by the British Government concluded that there was no evidence that strong intellectual property rights encourage autonomous agricultural research and development for the developing countries.

This conclusion also applies explicitly to plant breeder rights. Breeders of agricultural crop species were using such rights to protect their intellectual property long before patents were possible in this sector. According to the CIPR, the actual beneficiaries of IP rights are the seed industry and commercial farmers. Developing a commercial seed sector will not improve conditions for subsistence farmers. If IP protection systems are to foster innovation in the developing world, they need to be adapted to the specific circumstances on the ground. The trend towards high uniform standards mainly serves the trade interests of industrialised nations. This is the conclusion of a World Bank report published in 2006. In 2008 the European Commission's European Group on Ethics in Science and New Technologies (EGE) stated in its opinion on intellectual property rights in agriculture that the current system could 'pave the way for market predominance where a few companies control much of agricultural production. This would impact on innovation and the growth of local economies in developing countries'.

Protection of intellectual property rights for developing countries

With the establishment of the World Trade Organization (WTO) in 1995 the patenting of living organisms became relevant for the developing countries. Each country that joins the WTO automatically becomes a signatory to the TRIPS (Trade-Related Aspects of Intellectual Property Rights) Agreement, which establishes amongst other IPR patent protection in all industrial sectors, including agriculture. Living organisms can as a matter of principle be patented, but under Article 27.3b member countries are permitted to exclude certain kinds of invention, such as essentially biological processes for plant and animal breeding, as well as the plants and animals themselves, such as the European Patent Agreement, for instance, prescribes. However, WTO members are required to provide effective IPR for plant varieties, which can be established outside the patent law (*sui generis* system). Since 2000 the rules set out in Article 27.3 have been under review by the TRIPS Council. For years, many developing countries and specifically the African Group have been demanding a ban on the patenting of organisms in the TRIPS review.

Since 2006, in support of the implementation of the Convention on Biological Diversity (CBD) provisions on Access and Benefit Sharing (ABS) in relation to the use of genetic resources, several WTO members have been calling for more stringent disclosure obligations when patents are applied for under Art. 29. Some 110 developing and industrialised nations now endorse their demands. The USA, Australia, New Zealand and Japan on the other hand consider there to be no need to amend the text of the TRIPS Agreement.

Intellectual property rights, the CBD and the International Treaty

The review of the TRIPS Agreement mirrors the disputes that persist between the international regimes established by the WTO, CBD and the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA). Whilst the World Trade Organization's TRIPS Agreement establishes private trade-related IPR, the CBD and the International Treaty recognise the sovereignty of the signatory states over their biological diversity and establish rules of access to genetic resources and equitable benefit sharing (see also the Issue Paper entitled *The International Treaty on Plant Genetic Resources for Food and Agriculture – Status of Implementation*). The International Treaty governs the multilateral exchange of genetic resources for the most important food and fodder

plants and defines certain Farmers' Rights (see also the Issue Paper entitled '*Farmers' Rights and Agrobiodiversity*'). Farmers' Rights play a pivotal role in the debate on property rights and entitlements to genetic resources for agriculture. According to the International Treaty, the traditional knowledge of farmers needs to be protected and equitable benefit sharing from the use of genetic resources as well as the right to participate in decisions at national level need to be secured. While the Treaty does not limit the customary rights of farmers to re-use, exchange or sell farm-saved seeds it does not create international standards to safeguard this particular Farmers' Right. Dealing with this so called farmers' privilege in legal terms was left in the arena of the interests of commercial plant breeders. Through the national implementation of the 1991 UPOV Agreement binding rules may be established, but these must always observe the interests of the industrial IPR holders.

Both international regimes, the CBD and the International Treaty, regulate access and fair benefit sharing in relation to the use of genetic resources. In the context of the International Treaty a multilateral system had been adopted and is under implementation. The ABS Protocol of the CBD is to be finalised in 2010.

Although the Convention on Biological Diversity and the International Treaty recognise the achievements of indigenous peoples and farmers in terms of the creation and conservation of biological diversity, they do not create corresponding international, specific rights to decide about access and utilisation of their genetic resources and traditional knowledge. Moreover no concepts have been developed which legally define and protect traditional collective rights to genetic resources (in agriculture). Finally in 2007, the UN Declaration on the Rights of Indigenous Peoples described their material and intellectual rights over their genetic resources and traditional knowledge as a human right. Yet, generally recognised concepts for defining and protecting traditional community rights over (agro)genetic resources are lacking. Negotiations in this regard are under way at the World Intellectual Property Organisation (WIPO), concrete results however are still far away.

Effects on biodiversity and food security

The discrepancy between the insufficient legal recognition of Farmers' Rights and community rights and the increasing strengthening of industrial IPR causes adverse effects on the conservation of biological diversity in agriculture and on global food security. The industrialisation of agriculture accompanied by the introduction of IPR led to a dramatic de-



Members of the international farmers' movement *Via Campesina* protest at the World Food Summit in Rome in 2002. A large number of civil society groups worldwide oppose strong intellectual property rights in the field of breeding.

Photo: Aksel Nærstad/Development Fund

cline of biological diversity in the agriculture of the industrialised world. The patenting of genetic resources supplemented by the calls of the biotechnology industry to end the privileges in access to protected varieties will limit the freedom of both the conventional seed industry and farmers' breeding systems to use modern varieties to safeguard food supply. A similar development is to be feared in developing countries. In view of the lack of food security in many regions, and in the face of climate change, this would have serious consequences especially since agricultural biodiversity offers as yet unexploited possibilities for securing the world food supply in future (see on this also the Issue Paper entitled '*agrobiodiversity and Climate Change – A Complex Relationship*').

The right to food: Requirements upon intellectual property regulation

The state's obligation to respect, protect and guarantee the right to food must also be complied with in respect to IPR in agriculture, because farmers' access to seed is an essential condition for the implementation of the right to food. The UN Special Rapporteur on the Right to Food, Olivier de Schutter, outlines such obligations in his report published in 2009. The obligation to respect requires that nations do not adopt legislation or other measures which create obstacles for farmers to use informal seed systems. This obligation binds states to not set up any legislation or other measures that may pose obstacles to farmers to use informal seed breeding systems. States must also actively promote farmers' access to seeds and other resources, partly by supporting farmers' seed systems, in order to guarantee the right to food.

According to de Schutter, states should not be pressurised into joining the UPOV Convention. For instance, many free trade agreements between European states, the USA or Japan and developing countries stipulate the adoption of UPOV 1991, without taking the specific needs of the particular developing country into account. At farmer level, many state programs offer their support, such as credits, in a single 'package' which at the same time prescribes the purchase of protected modern varieties, thus contributing to the erosion of agrobiodiversity. De Schutter recommends carrying out impact assessments, with the aim of ensuring that the IPR system developed or chosen is compatible with the right to food. Such assessments can identify potential impacts of envisaged IP-related laws and measures on the right to food. They would ensure, prior to TRIPS implementation, that the IPR system selected serves development goals and does not impede smallholders' access to resources.

Summary and implications for development cooperation

Development cooperation advocates an equitable balance between the legitimate interests of both sides: those of commercial IPR holders on the one hand and those of traditional users and right holders on the other. It advises governments on the use of existing flexibilities of the TRIPS Agreement in the fields of biological diversity, agrobiodiversity, the handling of IPR on plant varieties and access to medicines.

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The 4th meeting of the Conference of the Parties to the Convention on Biological Diversity launched negotiations on the international ABS protocol (2004). Photo: Hartmut Meyer

There is as yet no consensus on how development cooperation is to strike a balance between the interests of the private sector – in this case the seed sector – and the equally valid interests of small farmers. In order to combat poverty and hunger and at the same time foster the preservation of biological diversity, development cooperation needs to position itself clearly in this respect. This issue paper is intended to promote discussion between the various stakeholder groups and foster consensus.

Further information:

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