How strong patent and plant variety protection affect food security

Patents trade and food

What is a patent?

A patent is a privilege granted by a government, allowing the holder to exclude others from making, using, importing and selling an invention. Patents provide the holder with an effective monopoly on a particular product or production process. These privileges apply in the countries where they are granted for a limited period (the minimum is now 20 years). To prevent some patents from harming the public interest, governments retain the right to over-ride them in certain circumstances (using a 'compulsory licence').

The patent system is meant to provide incentives for the research and innovations which society might need. However, there is debate about whether the patent system is the most effective way to achieve this and whether it should be extended to life forms. Many patent-based industries base much of their research on previous public sector innovation, fail to address research needs in areas where there is no market, and even use patents to block new research and competition.

Next year's harvest

In many countries, farmers select, save and re-use seeds from one year to the next. However, current trends toward allowing patents on plants or their genes, and other forms of protection, could prevent them from doing so freely.

Especially in developing countries, farm-saved seeds form the basis for the next year's harvest and help ensure food security for millions of people in rural communities. However, under global trade rules, agriculture in many developing countries has become subject to patents and other forms of plant variety protection for the first time.

Today, a handful of large corporations increasingly control the global market for seeds. These companies aim to prevent farmers from freely re-using seeds, by patenting plants or their genes.

Smaller and more traditional seed breeding companies generally prefer not to use patents but other forms of plant variety protection or plant breeders' rights. Although less restrictive than patent protection, plant variety protection can still prevent farmers from saving and re-using seeds unless explicit provision is made for this in national laws. In trade negotiations, developing country governments are coming under pressure to adopt stronger rules on both patents and plant variety protection.

One international trade deal is particularly important: the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS). This accord, which is overseen by the World Trade Organisation (WTO), has been heavily criticised by developing countries, in part, because it requires these countries to introduce patenting of microorganisms and some form of plant variety protection.

Increasingly, rich countries are pushing their poorer trading partners to adopt rules which are even stricter than those in TRIPS. Bilateral and regional trade deals frequently contain mandatory, burdensome requirements on patents and plant variety protection which poor countries must accept in order to gain access to markets in developed countries. Such deals could remove the limited flexibility developing countries have to tailor their laws to meet their needs within TRIPS rules.

US yellow bean patent

American seed producer and farmer Larry Proctor obtained a US patent on the yellow Mayocaba bean that he found in Mexico. This enabled him to prevent Mexican farmers from exporting this bean to the USA, or to require royalty payments on imports. Mexican farmers, who suffered economic hardship as a result, have had to engage in a costly and difficult legal struggle to try to get the patent revoked.

Patents on life forms

Patents are meant to protect inventions, not discoveries found in nature. However, many governments allow patents to be granted on various life forms, their genes, and isolated and purified compounds found in nature and plant and animal cells.

The rules in this area set out by the WTO TRIPS agreement have been fiercely debated. The agreement requires governments to allow patents on "microorganisms" - although there is no definition given of this term.

Governments are free to decide whether to allow patents on plants and animals. However, they must provide some kind of legal protection for plant varieties. This may be patents or a specially designed system for plant variety protection or both.

These rules are currently under review at the WTO, but developed countries are unwilling to restrict what is patentable. In the USA, patenting of life forms is widespread – and an essential element in commercial biotechnology. In Europe, genetically engineered (GE) plants and animals can also be patented. Many other developed countries also permit patents on GE materials and processes, as do some developing countries. However, African governments consider that no patents should be allowed on life forms and want TRIPS changed to reflect this. They have recently re-iterated this position in the WTO.

Seed fair in Kenya

Breeders' rights or Farmers' Rights?

Jane Kirambia, with her Sorghum crop, Kenya

Commercial plant breeding companies want stronger plant variety protection laws to protect their interests but not necessarily patents.

A widely used model for plant variety protection laws, the UPOV* convention, was developed first in Europe in the 1960s. It creates Plant Breeder's Rights. These rights favour commercial and formal breeders over the traditional breeding done by farmers. Other national rules on seed quality and what varieties are allowed to be sold also affect what farmers grow.

Although UPOV allows a 'farmers' privilege' to save, use and exchange but not sell seeds, governments must explicitly include this in their national laws.

Farmers in poorer countries have criticised the UPOV approach, saying that saving, growing, exchanging and reselling seeds are part of their fundamental rights. In addition, rules on plant variety protection and patents must not compromise their ability to continue these traditional practices.

Some commercial plant breeders favour the UPOV approach because it contains a 'breeder's exemption' that allows them to do more research and breeding on protected varieties, unlike patents. These companies have helped persuade rich country governments to push poorer countries to adopt laws based on UPOV rather than develop their own alternatives.

Some developing countries such as India and Namibia have nonetheless opted for alternative systems of plant variety protection. While often based partially on the UPOV system, these systems seek to meet specific national development needs. They can include strong Farmers' Rights, rather than a 'privilege', and protection for local and indigenous communities.

*International Union for the Protection of New Varieties of Plants

Taking patent privileges too far?

In Canada, a dispute between Monsanto and farmer Percy Schmeiser has gone to the Supreme Court. Schmeiser is alleged to have grown unlicensed GE canola (oil seed rape or rape seed) which contained Monsanto patented genes. He claims that patented seed found on his land was probably blown there by the wind.

An American farmer, Kem Ralph, has become the first person to be jailed for illegally saving seed, also in a breach of contract case with Monsanto. Should saving seed be illegal? The boundaries of what we allow and disallow are being redefined by the powerful.

The European Patent Office has been criticised for awarding an extremely broad patent, held by Monsanto, that claimed all genetically engineered soybeans. Such broad patents allow patent holders to exclude others from a wide range of activities. They also arguably contribute to greater concentration of control in the food industry, limit research, raise prices, and negatively affect small farmers' access to and control over seeds.

…rces for food and agriculture that originated elsewhere"

Preamble, International Treaty on Plant Genetic Resources for Food and Agriculture, 2001

Long-term food security:

protecting agricultural biodiversity

Rice

Maize

Potatoes

"With the adoption of the TRIPS agreement, developing countries have been obliged to adopt the protection of plant varieties, by patents or by other means, without any serious consideration being given to whether such protection would be beneficial, both to producers and consumers, or its possible impact on food security."

UK Commission on Intellectual Property Rights, *Integrating Intellectual Property Rights and Development Policy*, p58

Agricultural biodiversity consists of thousands of varieties of plants and breeds of animals and microorganisms that we use for food, or which are important in maintaining our capacity to produce food.

Farm-saved seeds contribute to long-term food security worldwide. Because traditional farmers actively conserve plant varieties and breed new ones, they are constantly developing plants that are better adapted to local climatic and ecological conditions. They also safeguard varieties that have potentially valuable traits or resistance to diseases.

Strong legal protection for patents and plant varieties may undermine agricultural biodiversity and instead promote monocultures. The privileges they provide are often granted to a few large-scale firms in the agricultural sector that focus on a few plant varieties and chemical inputs that can be used in the same form worldwide. As farming becomes based on fewer crop varieties, it becomes increasingly susceptible to pests, diseases and climatic variations.

Ensuring vibrant farming practices that maintain and develop agricultural biodiversity in the fields is the best way to ensure long-term food security. Another way is to keep seeds and germplasm from different varieties of plants in the public interest in international agricultural research centres. The plant collections in these centres have recently been brought together under a new global agreement which aims to maintain the open exchange of plants upon which agriculture and food security depends.

The agreement - the International Treaty on Plant Genetic Resources for Food and Agriculture - was adopted by the UN Food and Agriculture Organisation in November 2001. However, key decisions still need to be made about its practical application. By establishing a shared pool of patent-free crops which can be freely exchanged between countries, and safeguarding Farmers' Rights, it is hoped that agricultural biodiversity and food security can be maintained in the future.

Cassava

Potato gene bank

Chickpeas

Ways forward...

Questioning the rules

There is a need for greater public involvement in policy making on the privileges society grants to patent holders. Attention from the media and public health advocates has already had an impact in important fields such as access to medicines.

A wider range of interest groups need to engage in policy-setting and decision-making on these issues for real change to happen. Only then are we likely to get rules on patents that reflect the broader public interest and the needs of the poor. In the long term, this requires a fundamental reform of the decision-making processes that set public policy.

Getting involved

1. Are other organisations near you involved in the debate? These could include labour unions, environmentalists, businesses, faith-based organisations, farming bodies, law associations, health advocates, universities, or consumer groups. If not, suggest they start thinking about these issues and looking at how they affect people locally and globally.

2. What actions might you usefully take to influence decision-makers? This might involve contacting parliamentary representatives, government departments and ministries. You might be able to raise awareness about the issues at stake, for example, by writing a letter to a local or national newspaper.

Indian farmers taking part in a farmers' jury

On-line resources:

Food and Agriculture Organisation (FAO)
http://www.fao.org/
Consultative Group on International Agricultural Research (CGIAR)
http://www.cgiar.org/
International Treaty on Plant Genetic Resources for Food and Agriculture
http://www.fao.org/ag/cgrfa/itpgr.htm
IPRs on line
http://www.iprsonline.org
GRAIN
http://www.grain.org/
ActionAid
http://www.actionaid.org
ETC Group
http://www.etcgroup.org/
UK Commission on IPRs
http://www.iprcommission.org/
UK agricultural biodiversity coalition
http://www.ukabc.org
Intermediate Technology Development Group
http://www.itdg.org/
International Seed Federation (ISF)
http://www.worldseed.org
Crucible Group
http://web.idrc.ca/en/ev-1248-201-1-DO_TOPIC.html
Forum on the Patenting of Life
www.fpl-fbv.ca

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The Quaker United Nations Office (QUNO) in Geneva and Quaker International Affairs Programme (QIAP) in Ottawa are working in cooperation on these issues. QIAP and QUNO seek to promote greater equity and justice in world trade to benefit the poor and support protection of the environment, by working with government representatives at the World Trade Organisation (WTO), inter-governmental organisations and public interest organisations in Geneva, Ottawa and elsewhere.

For more information, see the other briefing papers in this series. These and other resources are available on our websites or on request from one of the addresses below.

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