

# INTELLECTUAL PROPERTY RIGHTS, BIOTECHNOLOGY AND DEVELOPMENT

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DEMOCRATISING BIOTECHNOLOGY

**D**eveloping countries are being urged to implement strong intellectual property rights (IPRs) in order to enable poor farmers to take advantage of genetically modified crops. IPRs are claimed to provide a vital stimulus for trade, investment, innovation and technology transfer for development. However, for many developing countries, the costs of implementing IPR regimes outweigh the benefits and may even undermine development in the long term. IPRs do little to stimulate private research into crops and traits of importance to food security in poor countries, and tend to hamper public research that could address these needs.

Biotechnology companies argue that IPRs provide a vital incentive for investment in expensive biotechnological research and development, and provide the necessary safeguards to encourage them to commercialise their genetically engineered products in developing countries. Largely in response to industry pressure, harmonised standards of IPR protection have been agreed at the global level, chiefly through the World Trade Organisation's (WTO) Agreement on Trade-Related Intellectual Property Rights (TRIPs), which requires developing countries to implement strong domestic IPR regimes.

Influential voices in international agricultural research and policy networks have also urged developing countries to implement TRIPs as part of a suite of enabling policies to promote agricultural biotechnology. However, claims that IPRs are essential prerequisites for innovation in, and technology transfer to, developing countries do not stand up to close scrutiny.

A recent study, by the independent UK Commission on Intellectual Property Rights (CIPR), confirms that IPRs may benefit those developing countries that already possess a fairly high level of manufacturing and innovation capacity, but bring few benefits for the poor. For the poorest countries, the costs of strong IPRs outweigh the benefits in the short term, and potentially in the long term as well.

IPRs do little to stimulate investment where there is no likely lucrative market for the end product. Thus, while IPRs may succeed in generating private investor interest in cash crops produced in developing countries, they are not effective in stimulating investment in subsistence crops and traits relevant to poor farmers or food security. In addition, patents may restrict farmers' conventional rights to save and exchange seeds. The experiences of some North American farmers, who have been sued by biotech firms for breaching their contracts and infringing company patents, vividly testifies to this likelihood.

The CIPR recommends that developing countries should tailor their IPR regimes to their national circumstances and developmental priorities, taking full advantage of the flexibility the TRIPs Agreement allows. Among other recommendations, they are advised to

- exclude plants and animals from patent protection;
- explicitly allow farmers to save, re-use and possibly even sell and exchange harvested seeds;
- allow access to protected varieties for further research and breeding; and
- resist further attempts in international fora to entrench a global, 'one-size-fits-all' IPRs standard.

However, few developing countries appear to be following this approach. For some, the reasons may be associated with a lack of expertise, leading to a lack of awareness about the available options and the possible advantages of using them. Such countries tend to be the ones most reliant on multilateral, bilateral and even private 'capacity-building' support, which generally promotes strong IPRs models. In addition, many developing countries have foregone TRIPs flexibilities in order to preserve key bilateral trade, aid and investment relationships with wealthy countries, which support stronger IPRs.

Larger and economically more powerful developing countries like India have been more creative in developing IPRs legislation that is tailored to their needs, including provisions allowing farmers to save, use, resow, exchange, share and even sell their seeds. However, such '*sui generis*' solutions are likely to be challenged by industry and it remains to be seen whether they will survive

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judicial scrutiny. In developed countries, courts and patent offices have generally interpreted intellectual property laws in a manner that supports the biotechnology industry's demands for strong IPRs. At the international level, *sui generis* IPRs regimes may be vulnerable to legal challenges through the WTO, which is ill-equipped to reconcile trade objectives with socio-economic and environmental considerations (see Briefing 7).

### THICKETS OF PATENTS

Scientific innovations build on existing knowledge that has accrued over generations. IPRs allow innovators to claim exclusive rewards for each incremental step they have contributed. When genetic engineering is applied to plants, successive layers of IPRs accumulate over the plant material itself, as novel varieties with desirable traits are used as the basis for further R&D. The rapid accumulation of IPRs over germplasm and enabling technologies has caused a rapid increase in transaction costs, as IP owners have to be identified, licences negotiated or disputes litigated.

This has led to a number of consequences for the biotechnology sector, with implications for the conduct of agricultural research of relevance to developing countries, including:

- Dramatic consolidation among biotech firms, keen to avoid lengthy negotiations for technology licences and/or patent litigation.
- Hampering the exchange of data, plant material and enabling technologies among researchers in both public and private sectors.
- Increasing the costs of administering the IPR system, as patent offices have been inundated with applications from firms and universities seeking to build a 'defensive' patent portfolio.

The private sector has responded to the 'IPR thicket problem' by buying access to as wide a portfolio of patents as possible. Solutions for public sector researchers, in both developed and developing countries, are more difficult to find. The idea of a common pool or clearing-house of publicly-owned IP is being seriously considered in influential policy circles, aimed at facilitating the protection, transfer and even commercial exploitation of public IP. This apparently pragmatic approach brings its own legal, administrative and political difficulties, with cost implications. In particular, it requires public-sector research institutions to expend their scarce resources on developing their IPR-management capacity.

### Policy responses

The policy consensus – that strong IPRs are good for development – seems to be entrenched. Nevertheless, it is coming under increasing scrutiny, and perhaps the criticisms and recommendations for reform will be heeded. However, the political willingness to acknowledge its flaws, and to take on its champions, is conspicuously absent. So long as this situation continues, the result is likely to be the further entrenchment of technological inequality and the undermining of development in the long term. In order to avoid this undesirable outcome, the following policy responses need to be considered urgently:

- greater scrutiny of the developmental effects of IPRs, particularly the linkages with poverty and food security.
- in particular, attention needs to be paid to the impacts of strong IPRs on public good research, especially the tendency for patent rights to inhibit the exchange of knowledge and technology and divert scarce resources away from front-line research.
- proposals for reform of the TRIPs regime, currently under consideration, should preserve the rights of WTO members to tailor their IPRs regimes according to their particular circumstances, especially with regard to the special needs of poor farmers.
- multilateral and bilateral donors, international and philanthropic organisations should provide effective support to developing countries to design and implement IPRs laws that support their developmental priorities.

*This briefing was written by Dominic Glover (IDS) and Farhana Yamin (FIELD). It is based on paper 24 and draws on papers 21 and 28 (see publications list).*

*These are available at: [www.ids.ac.uk/biotech](http://www.ids.ac.uk/biotech)*

See also:

*CIPR. 2002. Integrating Intellectual Property Rights and Development Policy. London: CIPR*

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Institute of Development Studies  
University of Sussex  
Brighton BN1 9RE, UK.  
Tel: +44 (0) 1273 606261  
Fax: +44 (0) 1273 621202/691647

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