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# Global rules, patent power and our food future: controlling the food system in the 21st century

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## Abstract

The rules affecting our food future have been rewritten since the early 1990s, often in remote international bodies. This paper briefly outlines the nature of today's food system, discusses some of these rules and focuses on the dynamics of rule making in the World Trade Organisation, in particular around patent, plant variety protection, trademark, copyright and other forms of 'intellectual property' and their impact on our food future. It draws on work with negotiators dealing with the Trade-Related Aspects of Intellectual Property Rights Agreement (TRIPS) in WTO and its role in globalisation.

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**Key words:**

Intellectual property rights regimes, WTO, patents, biotechnology

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## Introduction[1]

Since the early 1990s, the international rules affecting food and agriculture have been changing as a result of negotiations at a range of international fora dealing with trade, the environment and food and agriculture. The results of this process are only slowly becoming felt but are likely to affect farmers and consumers everywhere. One of the most hotly debated issues in these negotiations has been that of 'intellectual property' (IP) – things such as copyright, patents, plant breeders' rights and trade secrets. The most wide-ranging and controversial set of rules on IP is contained in the Trade-Related Aspects of Intellectual Property Rights Agreement (TRIPS), which all members of the World Trade Organisation (WTO) must abide by sooner or later.

Some forms of IP are used to help shape our eating habits while others underpin many controversial developments in modern biotechnology, especially genetic engineering. We meet IP as consumers, for example, when we respond to adverts that encourage our children to want to eat certain food products or in places that are branded. Brands are trademarks, a form of IP that can provide some guarantee about the nature of the product or service on offer but can also be, when linked to advertising and marketing, a powerful influence on what we buy. If gardeners buy a rose or other ornamental plant from a garden centre, they may find a note attached saying they are not allowed to take cuttings or otherwise propagate the plants they buy. The same may be the case for vegetable growers, with restrictions placed on their saving seed. This is possible because the holders of another form of IP, in this case plant breeders rights, can legally exclude people from doing things they might otherwise have done, like replant seed.

"'Intellectual property' is a twentieth-century generic term used to refer to a group of legal regimes which began their existence independently of each other and at different times in different places".[2] These different forms provide creators and inventors with legal protection from someone copying or using their work or invention without permission. Some protect the intellectual knowledge behind technological innovations (patents) and others protect creative works such as books, films and music (copyright). They also include trademarks such as those connected with branded goods, geographical indications like Stilton cheese and champagne, and trade secrets such as the formula for Coca Cola. These different forms of IP are an invented kind of intangible property – yet just as valuable as oil, gold or land for some. Societies construct the rules governing them through political processes dependent on power plays for their outcomes. They are not like a natural phenomenon such as gravity waiting to be discovered.[3] In today's knowledge-based market economy, control of so-called 'intellectual property rights' (IPRs) helps in controlling markets, and influences the distribution of wealth and power.

Historically, IP rules have been a matter of national decision-making based on national economic development needs. Individual states pursued their national interest with international treaties usually originating in Europe and the United States and which were then adopted by interested states. Countries copied technologies from each other, selectively offered patent rights, for example, to domestic inventors over foreign nationals, or simply did not allow any patents on some products such as medicines. Some did not fully adopt the international rules. For example, until the mid-1980s the USA protected the domestic printing industry by denying copyright to foreign authors unless their books were printed domestically. Today, patents still must be applied for in each country, although there are mechanisms to

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[1] I have taken this opportunity of visiting and speaking at the IIIS to draw together some elements, largely verbatim, from various earlier writings published in different places into this background paper. These include *Trade, Intellectual Property, Food and Biodiversity: Key issues and options for the 1999 review of Article 27.3(b) of the TRIPS Agreement*, Quaker Peace and Service, London, 1999, available on www.quno.org; 'IPRs, food and biodiversity - Quaker UN Office work and concerns identified there', paper presented at World Bank NGO Agricultural Science & Technology Roundtable Discussion, 16 April 2001, Washington DC; *TRIPS with everything? Intellectual property and the farming world*, Food Ethics Council, Southwell, UK, November 2002; "Global Intellectual Property Rights: A New Factor in Farming" in *Agriculture and the WTO*, World Bank, Washington DC, 2003; "Comment: Whose rules, whose needs? Balancing Public and Private Interests" in Keith E Maskus and Jerome H Reichman, eds, *International Public Goods and Transfer of Technology under a Globalised Intellectual Property Regime*, Cambridge University Press, 2005, pp662-668

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[2] Drahos P (1996) *A Philosophy of Intellectual Property*, Aldershot: Dartmouth, p 14

[3] Christopher May (2000) *A Global Political Economy of Intellectual Property Rights – The New Enclosures?*, Routledge, London

enable companies to apply for them in many countries at a time through the World Intellectual Property Organisation (WIPO). WIPO was the place where international discussion and negotiations about IP was held—until TRIPS. Under WIPO countries were free to sign up to each of the various agreements individually – and that was the problem for those industries and countries that wanted a global IP regime in their economic interests.

The strengthening and extension of the IP regime has led to a range of concerns over the impact of the new IP regime on low- and middle-income countries, especially in their effects on health – from access to AIDS drugs in Africa to basic diagnostic techniques for screening for breast cancer.[4] Similar concerns are being raised about food by a range of academics and development agencies such as Action Aid and Oxfam. These include IP's effects on who does what research and development, how and whether smallholder farmers can continue farming, especially in low- and middle-income countries, and the increasing concentration of power in the various sectors of the food system. Others concern the way in which these rules were agreed and extended globally and the continued pressures for developing countries to adopt ever higher standards of IP protection. A central issue is whether the new IP regime strikes the right balance of interests between those affected by it, and whether it is embedded in a broader regime that can curb the tendency to monopoly and abuse that IP can give rise to (such as cartels).

The UK government recognised the complexities and concerns about IP in its White Paper on International Development in 2000 and set up a Commission on Intellectual Property Rights (CIPR) to consider "how intellectual property rules might need to develop in the future to take greater account of the interests of developing countries and poor people".[5] The Commission reported to the Secretary of State for International Development in the Department for International Development (DFID) in September 2002 and noted that "Developing Countries…negotiate from a position of relative weakness….The immediate impact of intellectual property protection is to benefit financially those who have knowledge and power, and to increase the cost of access to those without."[6]

Concerns about the impact of IP in food are part of a larger concern about how the current IP regime affects society. The proponents of a strong IP regime globally argue they provide the necessary incentive, proper reward and required security for investment in R&D to produce life-improving innovations. James Boyle, professor of law at Duke Law School, argues that their effects will be widespread and not as beneficial as their proponents suggest. He helped draft the Bellagio Declaration which suggested that: "The blandishments of the international information industries notwithstanding, more intellectual property rights may actually mean *less* innovation, less heterogeneity in culture and environment and a less informed world of public debate."[7] IPRs, he argues, are being used as part of a new round of enclosures in what were formerly the 'global commons' – including genetic information encoded in the genes of people, plants, animals and microorganisms.[8]

Others see stronger, global, IPRs resulting in a new form of "feudalism". This is because they will alter social relations in ways that mean individuals never 'own' entities like software or seeds. Instead purchasers are only licensed by their corporate rights holders to use them in very limited ways and are excluded from socially important acts normally associated with real property – the ability to lend, share, give away or sell it.[9] Thus, the issues surrounding IP go far beyond my focus here on food and agriculture.

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[4] "The people vs patents" p 3 and Sylvia Pagan Westphal, "Your money or your life", p 29-33, *New Scientist*, 13 July 2002, vol 175 no 2351

[5] "Eliminating World Poverty: Making Globalisation Work for the Poor", Cm5006, HMSO, 2000, p 47

[6] Commission on Intellectual Property Rights (2002) *Integrating Intellectual Property Rights and Development Policies*, London, September (IPR Commission), available online at www.iprcommission.org, p7

[7] James Boyle (1996) *Shamans, Software & Spleens – Law and the Construction of the Information Society*, Harvard Univ Press, Cambridge, Mass, p197

[8] James Boyle (2001) "The Second Enclosure Movement and the Construction of the Public Domain", paper presented at Conference on the Public Domain, Duke University School of Law, 9-11 November, www.law.duke.edu/pd

[9] Peter Drahos with John Braithwaite (2002) *Information Feudalism – Who owns the knowledge economy*, Earthscan, London

**IP in the food system**

The effects of the globalisation of IP rules on the nature and structure of the food system are likely to be extensive. The various forms of IP are tools used by various actors – input suppliers, traders, manufacturers, processors, distributors and caterers rather than farmers and consumers – largely in the industrialised world's food system. It is competition between the larger players that is largely driving the current direction of change. This complex web connects various components including the biological, economic and political, and social and cultural:

*Biological factors :* the living processes used to produce food and their ecological sustainability.

*Economic and political factors:* our food has a history based on the interplay between these factors which affect the power and control which different groups exert over the different parts of the system and its shape today.

*Social and cultural factors:* our personal relations, community values and cultural traditions affect our approach to and use of food.

The various actors use whatever tools they can to control their operations and cope with the pressures they face, including:

*Science and technology* - technological developments do not necessarily depend on a correct scientific understanding of why something works. However, scientific advances may underpin development of new technologies, as for example, in electric lighting and biotechnology. Patents are increasingly important here.

*Information* - the spread of global media, broadcasting similar images across the world, helps fuel product globalisation and reinforce brand images, usually protected by trademarks or copyright.

*Management* - work organisation has shifted from craft-based, small-scale production to a large-scale, mass-production phase which now often uses just-in-time manufacturing and stocking techniques. There is pressure for business methods to be patentable as they are in the USA.

*Laws, rules, and regulations* - the prevailing norms and laws governing activities in the system result from the way particular interests are able to shape the legal framework.

Within this web, the various actors are engaged in a struggle over who will have *power* and *control* over the future supplies of food, and how the *benefits* and *risks* arising from different activities will be distributed. IP affects these factors and is related to how the different actors manage their operations.[10]

Of course, there are differences within any group of actors, e.g. between small and large farmers or corner shop and multiple retailers. These differences affect how well each can use the different forms of IP, as does the market structure. In industrialised countries such as the UK, there is a growing economic *concentration* of market power, with fewer and fewer companies, which control larger and larger shares of the market - from input provision to farmers to retailing to the public. The ability of those with the greatest market power to use forms of IP is generally greater than smaller enterprises.

Food-related businesses in industrialised countries face a basic constraint – what economists call a limited demand – earlier than in other sectors. We can only eat so much. We can, in the affluent world, have two cars and three or four TVs but we cannot double or treble our food consumption for long without major health problems. Indeed, in some industrialised countries the food systems are becoming dysfunctional, and leading to populations with rising levels of obesity as the pressures increase on people to overeat given their lifestyles. For example, in the USA the rate of adult obesity rose from 12% to 18% between 1991 and 1998.[11] These biological limits also mean businesses face pressures including:

1 increased competition for the money spent on food – with brands (trademarked, IP protected) being used to help differentiate products or sellers in the market and brand advertising used to attract and retain consumers, even from a very young age

[10] Geoff Tansey and Tony Worsley (1995) *The Food System- A Guide*, Earthscan, London

[11] M Nestle (2002) *Food Politics*, Univ California Press, Berkeley, LA, London, p8

2 increased use of technology to generate greater returns to investment – which may involve use of IP such as patents on products or processes for making them.[12]

It also leads firms to expand into global markets and to seek ever better tools for control over their activities. For those seeking to sell into global markets there is a strong desire for sets of rules – and standards - that operate globally rather than nationally. Thus, they have a considerable and not unexpected interest in helping shape the global rules to their benefit.

***What types of IP affect food?***

Trademarks, geographical indications, and trade secrets are widely used. The use of trademarks is often linked to other tools for control such as brand advertising. Greater efforts to protect brands and increase market share are increasingly likely. In 1993, the chairman of Unilever, the Anglo-Dutch multinational, called brand equities 'the most valuable items in our stewardship' and saw 'the power of our brands as the engine of long-term growth'. During that year, the company spent almost 12 per cent of turnover (£3284m) on advertising and promotional investment. In 2000, Unilever announced plans to dispose of three quarters of its 1600 brands to focus on just 400 around the world. More recently, its chairmen said "We are focused increasingly on driving the growth of our leading brands and dealing with other brands in ways which create value for shareholders".[13]

As the reach of the market, especially an increasingly globalised market, goes further into low- and middle-income countries so too will the major actors make use of various forms of IP as part of their business development strategy. In urban societies served by multiple retailers and saturated by advertising and media images, unless producers have a major brand they will not get on the retailers shelves. Normally, only the top two or three brands actually do.

For some products, a combination of widely advertised branded [trademark] products and trade secrets – Coca-Cola being the most famous – are used. Others may develop certification schemes to show that those people supplying the good have followed a particular practice, e.g. organic production or artisanal methods. The ability of small producers to find markets for their often unadvertised products is very different from those whose supply chains lead into globally promoted branded products.

For other producers, producing a product in a particular way or region, a designated name, linked to the region and method of production, provides a marketing tool that allows them to capitalise on their uniqueness. These geographical indications (another form of IP) are of considerable importance in some foods, e.g. Roquefort cheese, Parma ham. Such designation normally comes out of a well-established activity that has national recognition and produces products sought after by consumers.

These are the forms of IP we commonly come across in our shopping as consumers. But for rich world farmers who buy seed, fertiliser, feeds, and equipment, and for researchers developing new breeds, varieties and products for them to use, the key forms are patents and plant breeders rights. They are what will increasingly influence food production. While they have been used in the urbanised, industrialised countries for a few decades, they are still very new in many poorer, low and middle income countries. Here, there are concerns that exposure to the full range of IP tools being wielded by the large firms, which are sophisticated in their use, may have a major adverse impact on people's livelihoods and food security.[14]

***IP and biotechnology***

Modern biotechnology provides a new set of tools for technological control of the basic inputs for farmers, the plants and animals they grow. Its development is intimately linked to the nature of the types of IP available to the developers. Patents, in particular, are closely linked to biotechnological innovation

[12] OECD (1971) *Food Policy*, OECD, Paris

[13] A Burgmans & N Fitzgerald, chairmen of Unilever, *Annual Report*, 2002

[14] See, for example, Action Aid's Food Rights campaign, www.actionaid.org

and have contributed to the development of modern biotechnology.[15] It includes a number of different areas such as:

- *Cloning* – the process of producing genetically identical individuals from a cell. This can range from taking cuttings from a plant to (as in the case of Dolly the sheep) taking a nucleus from a single animal cell and transplanting it into a recipient cell with its own nucleus removed, and the resulting cell allowed to develop into a mature animal.
- *Genomics* – the study of the complete DNA sequence (genome) of a given organism.
- *Marker assisted breeding* – the use of DNA markers, rather than characters or traits, to speed up the process of selective breeding of plants or animals for agricultural use.
- *Genetic engineering (recombinant DNA technology)* – deliberate insertion of genes into a DNA molecule using the techniques of modern molecular biology producing so-called GMOs (genetically modified organisms).

What unites the various competing businesses developing products and processes in this area is a growing use of IP such as patents and plant breeders rights (PBRs) to protect their investments – and litigation between some to settle disputes.[16] Indeed, without these forms of IP, while research would undoubtedly go on, the way and speed with which its results were developed and commercialised would almost certainly be different.

The potential of GM to open up new market opportunities all over the world led to an expansion of private sector interest in agricultural research in developed countries. This has happened at the same time as public sector financed research and development in agriculture has declined and moved away from that of practical benefit to farmers. Instead, policy makers are favouring private sector activities in this area.

In future, the structure and properties of GM crops will be linked more closely to the interests of food processors as well as to those producing proprietary chemicals that might be used to trigger specific traits or be used without damaging the crops. Similar developments are likely with GM animals, which are already being used as living drug factories (so-called 'bioreactors'). Certain forms of IP are vital for the private-sector-led transformation of the basic inputs into agriculture – the plants and animals farmers grow. The firms involved want a set of rules and regulations to permit them to secure benefits from their R&D. If they can, companies naturally want to stop others from copying – or buyers reproducing – their new products. This can be done in two ways. One is by legal means, through IP rules where they can be enforced. The other is technologically, by breeding hybrids or by attempting to develop technologies that will stop seeds germinating or specific traits being activated without a purchased input – these are genetic use restriction technologies (GURTS) also dubbed 'terminator' and 'traitor' technologies.[17]

The potential of modern biotechnology drew new players into the business of seed production, largely from the chemical and pharmaceutical industries. They have invested billions of dollars over the past two decades in agricultural biotechnology research and development (R&D) and want to see returns on this investment. To do so means the crops they have developed *must* be grown commercially. These companies have a long history of using patents as business tools and require some form of control over their rights to both the research tools they have developed and to prevent reuse of their products, such as seeds, without their permission or further payment. They were one of the important interest groups keen to allow for patenting of living organisms and stood behind the main players pushing for changes in the IP rules internationally, i.e. the pharmaceutical, recording, software and film industries.[18]

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[15] John Barton (2003) "Intellectual Property, Biotechnology, and International Trade: Two Examples," in Cottier, Thomas, Petros Constantinos Mavroidis, and Marion Panizzon, Editors; *Intellectual Property: Trade, Competition, and Sustainable Development The World Trade Forum*, Volume 3, University of Michigan Press

[16] John H Barton (1998) "The Impact of Patent Law on Plant Biotechnology Research", *Intellectual Property Rights III Global Genetic Resources: Access and Property Right*s, Crop Science Society of America, Madison Wisconsin

[17] See, for example, papers on http://www.etcgroup.org

[18] See Peter Drahos (1995) "Global Property Rights in Information: The Story of TRIPS at the GATT", *Prometheus*, 13: 6-19, 1995, and Drahos with Braithwaite, *op cit*

## The transformation of TRIPS

Prior to TRIPS, countries could decide whether or not to provide any form of IP in agriculture. Most developing countries did not. As a result of TRIPS, developed and developing country members of WTO must adopt the same, relatively high, minimum levels of intellectual property protection. This removes from developing country members options used historically by developed country members to adopt varying levels of IPRs, according to their needs. The Agreement is one of the three pillars of the WTO - the others being trade in goods and trade in services. By placing IPRs in the WTO and making them subject to its binding disputes procedure, proponents of a strong IPRs regime have made it possible for non-compliant WTO Members to face trade sanctions in any area if they fail to live up to its rules. This is arguably the main reason why IPRs were put into WTO instead of the existing body promoting IPRs, the World Intellectual Property Organisation (WIPO). The TRIPS Agreement also includes rules on domestic enforcement procedures and remedies for the first time in any area of international law. In reality, TRIPS rules were developed with very little public involvement and introduced into the WTO against strong, but in the end, futile opposition from developing countries. They had good reason to be concerned.

### *IP and economic development*

The ordinary concept of property itself is not a natural phenomenon but a socially constructed one. For some indigenous peoples or religious views, the idea of ownership of land, for example, a fundamental in most current ideas of tangible property, was literally 'non sense' and did not figure in their way of seeing the world. The idea of creating an intangible form of intellectual property, which developed centuries ago in Europe, is 'entirely a legal construction'.[19] In other words, human beings, at least those with power in society constructed it. To be socially acceptable in European society, for example, the notion of intellectual property also required a society secularised enough to accept that creative genius was a personal trait not a divine gift, that intellectual products had to have a commercial value in their own right and that private rights had to be distinguishable from those of sovereigns.[20]

Historically, two main moral and philosophical arguments for rewarding creative and innovative people have been used. One stems from the view of the nineteenth-century German philosopher Hegel – that an idea belongs to its creator because the idea is a manifestation of the creator's personality or self. The other was advanced by John Locke, the seventeenth-century English philosopher - that the value added through labour should be rewarded with property.

Today, in practice in industrialised countries, the rationale for protecting the intangibles created by intellectual property is essentially utilitarian – with the utility focussed on promotion of innovation on the assumption this bring benefits for all. A piece of knowledge about how to make something, for example - unlike a physical object such as a piece of bread – can be used by one person without limiting its use by others. Sharing knowledge with others, then, does not reduce the amount of knowledge you have, unlike sharing a piece of bread. However, it might reduce the advantage you may have if you are the only one to know something or allowed to use what you know. The widest possible dissemination of new knowledge makes for the greatest economic efficiency. But if everybody is free to use new knowledge, inventors have little incentive to invest in producing it. The various forms of IP stop that (usually temporarily) by transforming knowledge from a shared public good into a private good. This gives the holders of IP enhanced market power and means they can recoup their expenditure in creating new knowledge to produce innovations through monopoly pricing. Creative minds and innovative firms thus have an incentive to engage in inventive activities. The IP regime, then, plays an important role in underpinning private sector led innovation, and also in the ability of firms to establish and maintain market power.

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[19] Christopher May (2002) presentation to Commission on Intellectual Property Rights Conference "How Intellectual Property Rights Could Work Better For Developing Countries And Poor People" 21–22 February, London, transcript on their web site, see also his book, *op cit*

[20] W Lesser (1997) "The Role of Intellectual Property Rights in Biotechnology Transfer under the Convention on Biological Diversity", ISAAA Briefs 3, Ithaca, NY, web: http://www.isaaa.cornell.edu

This argument provides the main rationale for the protection given by patents, copyright, plant breeders' rights and other types of IP. The various forms of intellectual property in different countries differ in terms of the subject matter that may be eligible for protection, the scope and duration of protection, and possible exemptions to exclusive rights. This reflects the fact that they are a concession granted by a society, through the laws it constructs, which advantage a specific group for broad social goals (increasing creativity and inventiveness), and try to balance the interests of producers and users of intellectual works.[21]

In an extensive study reviewing the main justifications for IP – whether for reward to authors or to promote innovation - political scientist Chris May claims that their real purpose today is protecting investment. In some countries this is identified with the national interest. Indeed, the US when negotiating to put new IP rules into the WTO in TRIPS saw them as a way "to retain its competitive advantage in the global system" .[22] This is not seeing them as a way of transferring up-to-date technology but rather of maintaining the gap to ensure national advantage. However, May argues that the gap is legitimised by using IP justified on the basis "not of advantage, but of the rights of the individual knowledge innovators".

The EU clearly sees IP playing a role in helping secure its members' economic interests in the development and application of modern biotechnology.[23] The European Commission, together with the Council, was asked by the European Council in Stockholm in March 2001 to "examine measures required to utilize the full potential of biotechnology and strengthen the European biotechnology's sector's competitiveness" as a knowledge-based economy. Among the measures proposed by the European Commission in a 30-point action plan is "Creating a strong, harmonized and affordable European intellectual property protection system" as one support for this.

Drahos warns against thinking of IPRs as rights rather than as privileges: "Unlike real property law, intellectual property law posits rights in abstract objects…intellectual property rights are rule-governed privileges that regulate the ownership and exploitation of abstract objects in many fields of human activity… [they] are liberty-intruding privileges of a special kind…they promote factionalism and dangerous levels of private power. From the point of view of distributive justice, their scope should be limited…there are strong reasons for supporting private property rights, but we should do so in a contingent, consequentially-minded way…guided by a philosophically defensible view of the role of property in social life and democratic culture" .[24]

### *Compromise and contention*

So, in practice, the various forms of IP are "a compromise between preserving the incentive to create knowledge and the desirability of disseminating knowledge at little or no cost"[25] but getting that balance right is hard. Consequently, the effects of IP are quite contentious and disputed.[26] Moreover, a system developed for innovation in inanimate objects has been extended gradually, and recently, into living organisms, and with genetic engineering that has accelerated into a rush since 1980. For some, the whole idea of extending IP into the living world is intrinsically wrong. For others, the problems only arise should there be adverse consequences.

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[21] Based on C A Primo Braga (1990) 'Guidance from Economic Theory,' in W E Siebeck (ed), *Strengthening Protection of Intellectual Property in Developing Countries: A Survey of the Literature*, World Bank Discussion Paper, no 112, Washington, DC; C A Primo Braga, C Fink, and C P Sepulveda (1999), Intellectual Property Rights and Economic Development, World Bank Discussion Paper, and David Downes (1998) 'The 1999 WTO Review of Life Patenting Under TRIPS', Center for International Environmental Law, Washington DC, web: http://www.econet.apc.org/ciel/

[22] May (2000) op cit, p119

[23] Commission of the European Communities (2002) "Life sciences and biotechnology - a strategy for Europe" report to the Council, the European Parliament, the Economic and Social Committee and the Committee of the Regions. The full report is available at http://europa.eu.int/comm/biotechnology/pdf/policypaper_en.pdf

[24] Drahos (1996) op cit, pp 1 &5

[25] World Bank(1998) *Knowledge for Development - World Development Report 1998/99*, OUP, p33

[26] See Graham Dutfield (2002) "Literature survey on intellectual property rights and sustainable human development", available at http://www.ictsd.org/unctad-ictsd/ - see also Policy Discussion Paper: *Intellectual Property Rights and Development* on the same site

With patents, for example, although they are supposed to provide benefits to their owners and society at large, in reality, "the basic patent bargain works only in theory. In practice, both sides cheat," argues Professor of Information and Organisation at Sheffield University, Stuart Macdonald.[27] "Most obviously, the patent affords protection only when the patentee can afford to enforce his rights, which may mean that the poor have no protection at all…And if society cheats in not providing the protection the inventor has a right to expect from the patent system, the inventor cheats too. Only in theory does the inventor provide society with the information of invention: in practice, he discloses the information required by the patent system, not the information required by society to replicate and develop his invention." This raises questions both about the justice of the system if it is not equitable in its functioning and about whether its application fails to meet the objectives for which it is designed. Currently, patents are also very unevenly distributed globally, as "industrialised countries hold 97% of all patents worldwide" .[28]

Clear evidence that the patent system has stimulated the development of new products and technologies, which otherwise would not have been developed, is only available for a few sectors (such as pharmaceuticals). In other sectors, patents are sometimes considered to have mainly anti-competitive effects: they serve to secure and strengthen the position of market leaders and limit the entry of new competitors. Indeed, they were used in this way in the 19th century.[29] In the extreme, they may actually slow the pace of innovation if a dominant firm possesses a powerful pool of patents that limits the ability of other firms to further improve existing products and technologies and acts in an anti-competitive way.

Although policymakers have sought to limit the adverse effects of patents through revised IP legislation, competition policy, and other business regulations, the anti-competitive implications of patents remain a cause of concern, for example if patent pooling and cross-licensing between a few firms in effect creates a cartel keeping others out.[30] Such concerns have regained momentum with the emergence of patents on biotechnology products and processes that cover fundamental research tools, human genes, GM plants, and other living organisms.

***In industrialised countries***

Today, the industrialised countries' IP regimes provide quite high levels of protection and these were developed piecemeal as it suited the economic development needs of the particular country. In theory, stronger patent rules should encourage more research and development (R&D) in countries where they operate. But there is only limited empirical evidence that, even in industrial countries, stronger IP protection leads to increased investment in R&D. This is partly because of the difficulty of separating cause and effect - IP may stimulate more investment, but countries that invest more in R&D may demand more protection.

Although IP rules restrict direct imitation, they can assist in the diffusion process of new knowledge within and between economies. Patents, for example, provide published information, which, if it is properly disclosed, other researchers can also use to develop innovations. The World Bank found that the level of IP protection appears to positively influence the degree of foreign direct investment (FDI), the vertical integration of multinational firms, and direct technology transfers through technology sales and licensing agreements. However, according to other studies, the relationship between protection and FDI is not well established.

There are costs related to the granting of intellectual property protection (IPP). Since they increase the market power of right's owners, this may lead to higher consumer prices. Indeed, the rationale for patents in the pharmaceutical industry, for example, is that the exclusive rights they confer allows the industry to charge high prices for products and so recoup its R&D costs. Once drugs go off-patent and generic suppliers enter the market prices fall, often dramatically. IPP also, according to the World Bank

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[27] Stuart Macdonald (2001) "Exploring the Hidden Costs of Patents" Occasional Paper 4, Quaker UN Office, Geneva, available on www.quno.org

[28] UNDP (1999) *Globalization with a Human Face - Human Development Report 1999*, OUP for UNDP, p68

[29] Reese V Jenkins (1975) *Images and Enterprise: Technology and the American Photographic Industry 1839 to 1925*, Johns Hopkins University Press, Baltimore

[30] Drahos (2002) p 52ff

'shift bargaining power toward the producers of knowledge, and away from its users'.[31] Stronger IPP may lead to a higher cost of acquiring knowledge and so may adversely affect follow-on innovations that draw on inventions whose patents have not yet expired. They may even 'slow the overall pace of innovation'[32] as can happen when firms use patent clustering and bracketing to try and prevent others from competing with their product. "'Clustering' means "building a patent wall around a product", preferably consisting of a large quantity of interlocking patents. 'Bracketing'means surrounding a competitor's key patent with so many of one's own that that it cannot be commercialised."[33]

It is difficult to determine the scope of the different forms of IP - the length and breadth of protection - so as to maximise social welfare and to achieve a fair distribution of benefits. Too weak protection may lead firms to invest less than socially desirable in the creation of new knowledge. Overly stringent protection may lead to wasteful R&D spending as firms compete to be first to innovate, which may make public R&D more socially desirable than private R&D. Only rarely will 'a single level of protection for all technologies or sectors maximise domestic welfare' as the trade off between the economic benefits of innovation and imitation will depend upon the sector involved.[34] This makes it difficult to achieve the right equitable balance both within countries and between countries with very different circumstances.

US economist Keith Maskus acknowledges that "there are legitimate reasons to be concerned about the highly protective standards that have emerged recently in the United States and the European Union. These laws and judicial interpretations provide broad patent protection for software and biotechnological inventions. They also promote extensive rights in the formulation of databases, which could have a negative effect on scientific research. It remains to be seen whether such standards tilt the balance within those jurisdictions toward the private rights of inventors and away from the needs of competitors and users."[35]

Overall, the economic effects from stronger IPP are far from simple or agreed. However, it seems clear that companies will not use GM to modify plants and animals unless they can recoup their investment in research and product development. Patents were developed for manufactured goods, where companies can expect repeat business as fashions change or items wear out. New plant varieties and many biotech goods, however, are living organisms which can reproduce themselves and so may not require repeat purchases. To ensure a return on investment and a future income stream from these inventions, companies want IP rules, especially on patents and plant variety protection, to be extended globally to cover the original material and subsequent generations of newly-developed life forms such as new plant varieties. An alternative for some crops may be to breed varieties that will not reproduce. Such seeds would not require legal agreements or enforcement officers to stop farmers reusing them, as are currently being used in North America and parts of Europe.

***In low- and middle-income countries***

The effects of IP protection become even more complex when producers and users of knowledge are in different countries with different economic levels of development. Theoretically 'it is far from clear that all countries should be required to maintain the same level of intellectual property protection'.[36] If a country has limited innovative capabilities and primarily consumes foreign innovations, stronger IPRs protection may lead to 'at least short-term consumer welfare losses and may discourage imitation and adaptation by competitors, which themselves constitute valuable economic activities'. For example, in some poor countries with patent systems like India, patent protection was not allowed on certain products, such as pharmaceuticals. The absence of patents enabled their infant industries to examine and

[31] World Bank (1998) pp35

[32] World Bank (1998) pp34-5

[33] Dutfield, op cit, intro to section 5, quoting from paper by Rivette, K. G. and D. Kline (2000) Rembrandts in the Attic: Unlocking the Hidden Value of Patents. Boston, Harvard Business School Press.

[34] Michael J Trebilcock and Robert Howse (1995) "Trade Related Intellectual Property (TRIPS)" in *The Regulation of International Trade*, Routledge, London, pp250-1

[35] Keith E. Maskus (2000) *Intellectual property Rights in the Global Economy*, Institute for International Economics, Washington DC, pp 237-8

[36] Trebilcock and Howse, op cit

copy products and develop local production capacities - as the now industrialised countries did in the 19th and 20th centuries. This may have inhibited inward investment but it may also have produced net economic benefits for the country.

IP rules can also disadvantage poor countries "by increasing the knowledge gap and by shifting bargaining power toward the producers of knowledge, most of whom reside in industrial countries!" .[37] While accepting the point, some see such a view of IP as far too narrow, equating knowledge producers with commercial and research-based producers. They consider the focus should be more on the role played by farming communities in poorer countries in producing knowledge about plants and animals.[38]

IP also poses poorer countries with a challenge because "so many industrial-country firms are acquiring strong intellectual property positions, often covering fundamental research tools as well as marketable products, that it may prove hard for new firms and researchers to elbow into this new global industry" .[39] Maskus argues "It is not to early to claim that they [current minimum patent requirements] are inappropriate for developing economies and net technology importers."[40] Inappropriate or not, minimum levels of IP protection now apply to many low- and middle-income counties. They also face a confusing range of fora where negotiations take place.

### A confusion of fora

TRIPS is not the only Agreement concerned with IPRs and food. The Convention on Biological Diversity (CBD), agreed at the Rio Earth Summit in 1992, and the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA), finally agreed in November 2001 after seven years of difficult negotiations, both deal with IPRs in part of their text. The International Union for the Protection of New Varieties of Plants (UPOV after its French title) and the World Intellectual Property Organisation (WIPO) are also relevant (See Annex) .[41] The most wide-ranging agreement, however, is TRIPS.

Different ministries and interests are involved in negotiating at these different fora and there is considerable difficulty in achieving coherence between them – or at least avoiding outright conflicts or contradiction. This was highlighted in an aptly titled report "Why Governments Can't Make Policy - The Case Of Plant Genetic Resources In The International Arena" .[42] It reviewed decision-making in Brazil, France, Germany, India, Kenya, The Philippines, Sweden, and the USA and found it to be a problem in all countries. It said "The combination of a complex international negotiation process and a complex set of issues with tremendous long term social, economic and political impact is the perfect setting for a breakdown of international consensus on the issues of genetic resources". It also poses a challenge in many countries for developing greater coherence between different ministries.

### The TRIPS Agreement

TRIPS originated from a small number of major business interests with a handful of corporations and lobbyists responsible for drafting its terms and pushing, via various developed country governments, the agreement through the Uruguay Round and into the WTO.[43] "It was not just arrogance on the part of James Enyart, director of international affairs at Monsanto Agricultural Company, which led him to boast that 'Industry [ie the IPC] has identified a major problem for international trade. It crafted a

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[37] World Bank (1998) op cit, pp35

[38] Solomon Tilahun and Sue Edwards (eds), *The Movement for Collective Intellectual Rights*, Institute for Sustainable Development, Addis Ababa and The Gaia Foundation, London, 1996

[39] World Bank (1998) op cit

[40] Maskus, op cit, p 238

[41] See Geoff Tansey, *Food security, biotechnology and IPRs – unpacking some issues around TRIPS*, Quaker UN Office, Geneva, 2002, available on www.quno.org

[42] Michel Petit et al (2001) "Why Governments Can't Make Policy - The Case Of Plant Genetic Resources In The International Arena". International Potato Centre (CIP) Lima

[43] See Peter Drahos (1995) "Global Property Rights in Information: The Story of TRIPS at the GATT", *Prometheus*, 13: 6-19; Peter Drahos with John Braithwaite (2002) *Information Feudalism*, Earthscan, London; and Susan K Sell (2003) *Private Power, Public Law: the Globalization of Intellectual Property Rights*, Cambridge University Press, Cambridge

solution, reduced it to a concrete proposal and sold it to our own and other governments.' It was also the truth"[44]

TRIPS is law for all members of the WTO, sooner or later (least developed country members had until 2006 to comply but obtained an extension to that deadline for 7.5 years in 2005). It requires them all to adopt the same, relatively high, *minimum* levels of intellectual property protection) including for patents and plant varieties. Higher levels of protection are allowed, but not lower ones. TRIPS also requires countries to introduce a legally binding enforcement mechanism to ensure its provisions are adhered to, and its provisions are backed up by a dispute settlement mechanism in WTO with sanctions in any area of the WTO regime for non-compliance with its rulings. It is these binding dispute settlement and sanctions provisions that make WTO a uniquely powerful international institution. Ignoring the rules in the other agreements carries no threat or sanction. Ignoring those in WTO does.

It has been argued that the minimum, 'one size fits all', approach of TRIPS is a problem. This is because the various forms of IP were designed to be of benefit to the social and economic welfare of countries, and could be adopted as and when they suited their development needs. Since conditions vary greatly between countries, variations in the types of IP and conditions applied to them may make more sense for people's well-being there. At an individual level, it is like saying that everyone must take a minimum size 8 shoe – larger ones are permitted but not smaller ones, despite the fact many peoples' shoes sizes begin well under size 8. This international extension of the IP regime is a revolution in the history of IP. It stops low- and middle-income countries doing what most richer countries did, i.e. copy others' technology to catch up, only adopting specific forms of IP when it suited them and choosing the level of protection they provided to suit their needs.

The current international IPR regime, unlike, for example, that in the environmental arena, has been developed by a small set of actors with relatively little involvement of civil society as a whole. These actors have been drawn mostly from the legal and industrial fields and, as "epistemic communities," are very influential in writing the rules. Such communities consist of professionals (usually recruited from several disciplines) who share a commitment to a common causal model and a common set of political values. "The dominant core of the epistemic community of intellectual property is comprised of [sic] transnational elites with important intellectual property portfolios to protect – and their lawyers" .[45] This relatively small group represents powerful corporate interests that want to have a strong international IP regime.

Despite the opposition from some low- and middle-income countries, TRIPS ended up in WTO because these countries lacked the negotiating muscle to prevent it but they did manage to gain some concessions and maintain some room for flexibility in interpreting the rules it laid down. They had to accept it as part of the overall package to come out of the Uruguay Round with the hope that the advantages gained in agreements on textiles and agriculture would provide benefits outweighing what was lost from accepting TRIPS – both in royalty flows out of their countries and in the cost of implementing the Agreement. For many low- and middle-income countries, however, the full implications of the TRIPS Agreement were far from clear at the time they signed up to WTO and are only now becoming so. This is in part due to the disparity in negotiating capacity between the industrialised countries and low- and middle-income countries in these kinds of international negotiations.

In general, negotiations dealing with the environment, food, and latterly trade, have had a wider range of civil society participation in their deliberations, both domestically and internationally, than has been the case with those dealing with intellectual property. Only now are the broader interests catching up with the changes that have been made in IP.

***TRIPS and farming***

Prior to TRIPS, countries could decide whether or not to provide any form of IPP in agriculture. Most low- and middle-income countries did not. The US only did so in plant breeding from the 1930s, when it passed a Plant Patents Act with a restricted coverage of crops. The Europeans did not wish to have patents applied to plants and developed an alternative for plant varieties that became UPOV, but this

[44] Graham Dutfield (2002) "Trade, Intellectual Property and Biogenetic Resources: A Guide to the International Regulatory Landscape", Background paper, Dialogue on Trade, Biological resources and Intellectual Property Rights, Dhaka, 18 April. The IPC was the Intellectual Property Committee set up by over a dozen CEO's of US corporations in March 1986

[45] Braithwaite and Drahos, op cit, p75

only took effect in the 1960s. Only since the 1980s has the patenting of living organisms and parts of them such as genes flourished in some industrialised countries. It is patents and plant variety protection (PVP) that are the most important forms of IP for farming.

Under TRIPS, all WTO Members must allow patents to be available for any inventions, whether products or processes, in *all fields of technology* without discrimination. Some countries, such as the USA, wanted no exception to this during the TRIPS negotiations, but others such as India and Brazil, were strongly opposed, for example, to granting patents on lifeforms or medicines.

In order to conclude the negotiations, a compromise was agreed using deliberately ambiguous language, which is not defined in the Agreement. Article 27.3(b) permits WTO Members to exclude from patentability:

> "plants and animals other than micro-organisms, and essentially biological processes for the production of plants or animals other than non-biological and microbiological processes. However, Members shall provide for the protection of plant varieties either by patents or by an effective *sui generis* system or by any combination thereof. The provisions of this subparagraph shall be reviewed four years after the date of entry into force of the WTO Agreement."

This gives WTO members discretion about whether or not they allow plants, animals, biological processes for the production of plants or animals and plant varieties to be patentable. However, Members must provide patent protection for micro-organisms and non-biological and microbiological processes for the production of plants and animals. Members must also either grant patent protection for plant varieties or provide protection by means of an effective *sui generis* (of its own kind) system. A *sui generis* system means the form of IP protection is designed for that particular thing, not simply an existing form of IP protection such as patents extended to that thing. The issue of exceptions to Article 27.3(b) was up for review in 1999 but the review has still not been completed owing to continuing disagreements.

The final language used was open to various interpretations – especially since no terms are defined in the TRIPS Agreement - unlike in the CBD. This provides what some negotiators call 'constructive ambiguity' and, as far as low- and middle-income countries are concerned, some degree of flexibility. It is a bit like saying that every country must allow ball games to be played on grass pitches but then allowing countries to decide on the size and shape of the ball, and the size of the pitch.

The interpretive flexibilities in TRIPS mean countries can still exercise some discretion about how they frame their patent rules and need not permit the patenting of plants and animals – and indeed some are using this exception, eg Argentina, Brazil, Andean Pact countries.[46] While they need to permit patenting of microorganisms, they may define these narrowly and disallow the patenting of naturally-occurring microorganisms, as again many are doing, and only allow patenting on microorganisms that have been genetically-engineered.[47]

In the agribiotech area at present, companies mostly seek patent protection in the US, Canada, Western Europe, Japan, Australia, some countries in S E Asia like Taiwan and the Philippines, and the large economies in Latin America, but very few in Africa,. However, thanks to the way the terms can be defined and interpreted nationally, things that may be patented in the USA, such as plants and animals, may not be permitted to be patented in other countries. Thus, holders of US patents on plants and animals might not be able to get patents on the same things in other countries, even if they applied for them, if they cover materials outside the scope of the national patent law in question.

There is a catch, however. Under TRIPS rules, if a patented product, or products produced using patented processes, is produced in a country where these patents do not apply and is then exported to a country where they do, then those products could be barred from being imported into that country by the patent holder. Thus, there is a clear economic incentive not to use patented products or processes for things that will be exported to countries where patents are held on the products or processes concerned. The major

[46] Bolivia, Columbia, Ecuador, Peru and Venezuela

[47] Margaret Llewelyn and Mike Adcock (2000) "Micro-organisms: definitions and options under TRIPS", available on www.quno.org

commodity crops, where private R&D sees major opportunities, are likely to pose much greater difficulties for researchers in developing countries and the International Agricultural Research Centres (IARCs) than crops of local, regional or subsistence significance where there may be less commercial interest. However, even here, if some of these are patented in industrialised markets that could block exports of what may be niche products there.

***R&D priorities***

The importance of patents and plant variety protection (PVP) is increasing in part due to changes in the funding of R&D for agriculture. Until relatively recently, agricultural R&D was largely publicly funded. Research results were given to farmers through extension services. The financial returns for publicly financed R&D into improved farming productivity are high for both developing and developed countries. The US economy, for example, benefited from its investment of $134 million worth of support to international wheat and rice research aimed at developing countries by up to $14.7 billion according to research by the International Food Policy Research Institute in Washington DC.[48]

In the OECD countries, private spending now accounts for about half of R&D. In many cases governments have moved away from near-market research, which has immediate applicability on farms, to focus spending on basic research which underpins future private R&D efforts. In some countries resources have shifted into areas supporting agribusiness and food processing which "may have reduced rather than increased the rate of return to public sector research" according to IFPRI researchers.

One concern about patents is their effects on the flow of breeding materials - animals and plant germplasm. To date, the focus has been on plants. There is evidence that the strengthening of IPRs is leading to restrictions on the flow of germplasm and so inhibits the development of new plant varieties, particularly by the publicly-funded institutions such as those supported internationally by the CGIAR. The seed industry itself is concerned about this reduced flow and recognises the need to ensure it is maintained.

The private sector, naturally, invests in areas where it can hope for a return - with much work in agrochemicals. Today, former agrochemical companies have expanded to become biotechnology/seed companies (or life science companies including pharmaceuticals) moving downstream to add value to their products. Huge investments have gone into this area - over $8 billion per year in the USA alone, according to Ismail Serageldin, a vice president of the World Bank and former Chairman of the Consultative Group on International Agricultural Research. He is concerned that this private proprietary science will focus on crops and innovations that will find rich markets and ignore those of interest to poor, small farmers. Moves to a greater private sector role in breeding would need to be balanced by continued public service activity geared to their needs.

There is some concern among researchers over the effects of the extension of copyright on access to educational materials and databases. More generally, since education is one of the prime areas for public investment that bring major returns in increasing productivity if the extension of copyright affects access to education especially by the poor it may have deleterious effects. There may need to be special consideration for knowledge affecting our food security and ensuring the flow of information is not inhibited to the detriment of farmers, researchers and others involved in food production.

***Geographical indications and other IPRs***

Although patents and PVP are likely to have the most direct effects on agriculture, the major actors in the food system use a mix of IPRs in their businesses. Many companies make strong use of trademarks, and a focus on brands and substantial marketing investment to secure their markets. The use of trademarks is often linked to considerable brand advertising. Greater efforts to protect brands and increase market share is increasingly likely by companies operating globally. There has been a spate of mergers and acquisitions in the food industry over the past decade, which is still continuing, as firms gear up to serve global markets and also to counter the growing power of multiple retailers. Achieving some kind of brand identity is a major challenge for small farmers and Traditional Knowledge-based producers selling into markets dominated by brand advertising.

[48] Philip G Pardey et al (1996) *Hidden Harvest: U.S. Benefits from International Research Aid,* IFPRI, Washington DC

David Downes and others in a study of geographical indications and trademarks and five case studies of essentially niche products (kava, Rooibos tea, quinoa, Basmati Rice, and neem) concluded that "Both geographical indications and trademarks show the greatest potential [to benefit local producers] where traditional small-scale production is still present, on the supply side, and where end-use products are marketed directly to consumers. In other words, they are less likely to be appropriate when the product is a commodity traded primarily in bulk" .[49]

How far the use of geographical indications (GIs) will affect agricultural producers is unclear. The economic costs and benefits of any extension of GIs into food are not clear. GIs are likely to be of use to traditional communities producing products that could have a niche market domestically and abroad. They first of all need to be protected locally, however (Article 22 of TRIPS). There is considerable disagreement among developing countries about the economic benefits of extending stronger protection to geographical indications to foodstuffs and this is under discussion at WTO. Some, such as India, favour this, believing they will gain from having protection for a range of products such as basmati rice. Others, such as Argentina, with a large segment of the population tracing their roots back to Europe and with tastes for European type foodstuffs, fear that production of local versions of many products will become much more difficult if they are prevented from using terms associated with the foodstuff which are likely to be reserved to products such as cheeses, from Europe.

There are, however, problems of the misappropriation of traditional knowledge of food crops, and the lack of a system for ensuring benefit sharing with traditional and indigenous communities, despite the CBD.[50] Other kinds of instruments than IPRs may be needed to protect their knowledge as well as excluding plants and animals from patentability as allowed in TRIPS. Moreover, if indigenous crops such as quinoa or nuna or yellow beans are patented in developed countries, in what is now called biopiracy, this may foreclose export markets there or if other crops have look-alikes produced which are trademarked and widely marketed this may also undermine the potential markets for developing country crops.

**Ethics and equity**

The role of IP in helping shape the future food system, then, is complex and often indirect. The concerns and ethical questions raised by an expanding IP regime also go far wider than its effects on the food system. In the Food Ethics Council (FEC) discussions we draw on three ethical principles - respect for autonomy, justice and wellbeing. The latter term combines, for simplicity, the principles of respect for beneficence [be of benefit] and nonmaleficence [do no harm] – which are often closely and reciprocally interrelated. Respect for wellbeing corresponds to issues prominent in utilitarian theory, which characteristically employs a form of consequentialist analysis to decide on 'right action'. The consequentialist analysis involves both a conception of the good to be produced and a principle of maximisation - in other words, the aim is to produce as much of the good as possible. Respect for autonomy corresponds to the notion of 'rights' advanced in the eighteenth century by Immanuel Kant, which appeals to our responsibilities and duties to 'treat others as ends in themselves': in essence, the Golden Rule: 'Do as you would be done by'. Respect for justice corresponds to Rawls' notion of 'justice as fairness'.

In looking at the rules on IP we are not talking about rules on the application of a technology, per se, but about how we devise some of the rules, as a society and a global community, that affect what technologies are developed. They also affect who gets particular benefits from them, who carries the costs they may involve, and the relationships between people, food and farming, particularly when it means food for survival.

Drahos argues that "Property rules, more than most rules, are rooted in the fundamental morality of a

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[49] David R Downes and Sarah A Laird et al (1999) "Innovative Mechanisms Mechanisms for Sharing Benefits of Biodiversity and Related Knowledge - Case Studies on Geographical Indications and Trademarks". Paper prepared for UNCTAD Biotrade Initiative, Geneva

[50] Carlos Correa (2001) "Traditional Knowledge and Intellectual Property: Issues and options surrounding the protection of traditional knowledge", QUNO, Geneva, available on www.quno.org

society" .[51] He also suggests that "when it comes to justifying intellectual property, the crucial choices are not between first order ethical theories (natural law versus utilitarianism) but rather the concept of community and the metaphysical scheme upon which that concept of community is dependent".[52] The FEC concept of community includes both public and private rights and responsibilities as well as an intellectual and environmental commons upon which we all draw and to which we may all contribute. This has been particularly important in farming and remains so in most low-and middle-income countries. IP rules affect the existence of and access to this commons, as well as the balance between public and private interests, in our communities, and with food, in a prime area of our existence.

The FEC report *TRIPS with everything – intellectual property and the farming world*, from which the above discussion is taken, discusses in more detail the impact of the rules on inventors and innovation, agricultural R&D, plant breeding and seed provision, farmers, citizens, balancing private rights and public interests, the effects on provision of public goods and social benefits, the role of market structures, and effects on consumers and biodiversity. Here, through, I want to focus on one particular aspect that relates to the work I have been doing with the Quaker United Nations Office in Geneva and others on the rule-making processes themselves. For irrespective of the content of the TRIPS rules, the FEC expressed grave concerns about the fairness of the whole process involved in arriving at them. Indeed, a Church of Scotland Society, Religion and Technology Project working party has argued that there is a growing democratic deficit that is developing in our increasingly globalized society where momentous decisions which could alter the whole future course of humanity are taken in fora which are outside democratic control.[53]

**Quaker UN Office (QUNO) in Geneva**

The first phase of the Quaker United Nation Office (QUNO) programme on the TRIPS process in Geneva had its origins in concerns in the early 1990s by British Quakers about the environment and development. These concerns led to the creation of an Environmental Intermediaries Programme (EIP) of Britain Yearly Meeting to see what contribution Friends (i.e. members of the Religious Society of Friends or 'Quakers') could make. The programme drew its inspiration from the long-standing interest in peace and justice issues of Quakers, a commitment to non-violence and peace, and a history of mediation in disputes.

The EIP began work in two areas where there were or were expected to be conflicts of interest over environmental resources - large scale dams and hydropower, and genetic resources. The Convention on Biological Diversity signed at the Rio Earth Summit was the key event that led to the establishment of the EIP. Its work initially focussed on the little known negotiations to revise the International Undertaking on Plant Genetic Resources at the UN's Food and Agriculture Organisation (FAO). The aim was to help the countries of Southern Africa to play an effective part in these negotiations. At the time, most Southern African countries played almost no role in the IU negotiations and efforts focussed on trying to ensure they were fully informed about what was going on and the issues due to be considered.

***Just processes***

The programme focus has been on the processes that bring about new rules and that these should be just and equitable. This is based on the experience gathered over decades of Quaker involvement in conflict resolution work.[54] An important insight from this is that agreements reached by gross unequals or in ways where one side feels considerably disadvantaged or dominated, tend to sow the seeds of future disputes.

By the mid 1990s, it was clear that new rules agreed during the Uruguay Round and which came into effect with the establishment of the WTO also affected the future of genetic resources. Following

[51] Drahos (1996) p 15

[52] ibid, p 33

[53] Donald Bruce and Ann Bruce (eds) (1998) *Engineering Genesis - The Ethics of Genetic Engineering in Non-human Species*, Working Group of the Society, Religion and Technology Project, Church of Scotland, Earthscan, ch 10

[54] See, for example, Sydney D Bailey (1993) *Peace is a process*, Quaker Home Service, London, and Sue and Steve Williams (1994) *Being in the middle by being at the edge: Quaker experience on non-official political mediation*, Quaker Peace and Service, London

discussions with a range of missions in Geneva in 1998, and specialists from various perspectives, it was decided that the genetic resources work of the EIP would be switched from London to QUNO in Geneva. This was a long established mission to the international agencies in Geneva (going back to 1923 in an earlier form) and provided a quiet space for those with very different perspectives to meet and discuss issues of mutual concern. These initially focussed on traditional Quaker concerns of peace and disarmament, human rights and then trade and development issues.

A scoping exercise revealed that the negotiation the TRIPS Agreement and Article 27.3(b) in particular had left a legacy of ill-feeling and a range of concerns about its impact and validity. Developing countries expected them to be addressed in the mandated review of the Article in 1999. However, many developing country missions felt unprepared for this and wanted an overview of the policy issues and to develop a greater analytical and negotiating capacity in this area. There was also a sense that, while some of the larger developing countries had been involved in negotiating TRIPS and helped secure some safeguards for their interests, many had little or no knowledge about its impact and felt unprepared to deal with the review. There was a feeling, moreover?, that the TRIPS Agreement as a whole was something they had acceded to only reluctantly or under pressure in order to gain benefits from other elements of the Uruguay agreements, especially in agriculture, that are yet to be achieved. Even some developed country negotiators regarded TRIPS as a bad deal for developing countries. The Quaker UN Office focus was on creating more equitable negotiating processes not on the substantive positions countries should take.

***More informed negotiators***

A considerable gap in capacity to deal with these issues existed between developed and developing countries, both in the missions in Geneva and in capitals. As a small contribution to redressing this balance a policy discussion paper on Food, Trade, Intellectual Property and Biodiversity was produced, financed by the UK's Department for International Development.[55] The paper was launched in Geneva and Brussels and was distributed widely as a contribution to informing the participants in the negotiations and various stakeholders of the issues involved. This reviewed the differing perspectives on intellectual property rights (IPRs) in development, the specifics of the TRIPS article 27.3(b), initial positions on the review and development assistance opportunities. While the main aim was to provide a balanced overview of the issues to produce a more informed negotiating process, the study did conclude that the current level of uncertainty about the impact of IPRs on development cautioned against any further strengthening of the rules.

After publication, QUNO began a series of informal, off-the-record, unattributable meetings in 1999, mostly at lunchtimes, but with a couple of overnight retreats. These allowed developing country missions to meet and develop their understanding of these issues, hear from a range of perspectives about them and engage with developed countries too.

The meetings provided a space for missions to debate issues and develop confidence to engage with developed countries whose interests they saw as different from their own. Despite the expectation of a short programme in 1999, it has, in response to developing countries growing concerns, continued to the present. As developing country negotiators confidence and capacity grew, their concerns about the review of Article 27.3(b) have also grown to include issues of importance for their food security and biodiversity policies. They also requested QUNO work on a new area – health – and subsequently other issues.[56] The Quaker International Affairs Programme, Ottawa, also became involved in this work[57].

**Substantive concerns**

In the course of the first couple of years of the QUNO work, apart from imbalances in the negotiating processes - not simply a very unlevel playing field but widely differing negotiating capacities and power - a range of substantive issues were raised during the discussions. These include:

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[55] Geoff Tansey (1999) *Trade, Intellectual Property, Food and Biodiversity: Key issues and options for the 1999 review of Article 27.3(b) of the TRIPS Agreement*, Quaker Peace and Service, London, available on www.quno.org

[56] A review of several projects, including the QUNO one, can be found in Policy and Operations Evaluation Department (2005) *Aid for Trade – An Evaluation of Trade-related Technical Assistance*, IOB Evaluation No 300, October, Ministry of Foreign Affairs, The Netherlands, http://www.euforic.org/iob/

[57] see http://www.qiap.ca/

*Balance*

- Many question the current balance between the IP rights granted and the obligations of those holding them. Given the public welfare objectives of IPRs, replacing the term rights with the term privileges might be more appropriate.
- In developed countries, strong IPRs are accompanied by strong anti-trust or other rules to prevent abuse of power and these are lacking in many developing countries.
- Conflict between the need to share knowledge to secure development and the enclosure of knowledge under IPRs - removing the opportunity to copy to catch up, as has historically been the approach of current developed countries.
- A sense of grievance at having no returns on the use of biological resources originating in developing countries and being commercialised in developed countries, especially plant genetic resources for pharma or agriculture.
- A strong sense of being let down by developed countries over the transfer of technology, which is a key objective of TRIPS, and a sense that TRIPS provides for greater control of technology not transfer.
- Lack of understandable, non-vested interest based research and information to help inform thinking rather than push them in a particular direction - and indeed to follow-up the concerns raised about IPRs in major international reports such as UNDP's Human Development Report and the World Development report on Knowledge for Development.[58] Linked to this is a lack of confidence in certain major multilateral agencies to provide the kind of research and information they need, able to question dogmas and received ideas, especially WIPO (whose mandate is the promotion of IPRs) or the World Bank.[59]
- That a key problem is the way the US patent system is developing and pressures to extend that globally.

*Appropriateness*

- There is concern among some that the WTO, which is essentially a trade liberalisation body, is not the appropriate place for IPRs, which are essentially restrictive.

*Effects on agriculture*

- That an IPRs dominated research approach will undermine public good provisions of R&D aimed at farmers.
- That patenting of plant varieties and PVP systems will undermine traditional seed production and distribution systems in developing countries and between farmers, and promote over-rapid commercial development of the farming sector and marginalisation of poorer sections of it.
- That IPRs underpin moves to corporate-dominated inputs provision, reducing autonomy of farming communities.
- That poor countries lack the ability to bear the costs and requirements of implementing PVP requirements.
- That pressure to adopt the UPOV system as the *sui generis* system for PVP undermines the apparent flexibility in 27.3(b) and that there is inadequate support for developing alternatives that might include farmers rights and protection of traditional and indigenous knowledge.
- That the focus on IPR protected commercially driven agricultural R&D skews the allocation of R&D effort into a narrow, genetics-based approach to agricultural innovation and development to the

[58] World Bank (1998) *Knowledge for Development - World Development Report 1998/99*, OUP; see also Commission on Intellectual Property Rights (2002) *Integrating Intellectual Property Rights and Development Policies*, op cit

[59] Geoff Tansey (2004) "The role and Perspectives of "Non-Traditional" Providers of IPR Technical Assistance" in final report of workshop "Reflection on IPR Technical Assistance for Developing Countries and Transition Economies", Burnham Beeches, 15-17 September, available online at http://www.iprsonline.org/resources/iprs.htm

detriment of other approaches and use of traditional and indigenous knowledge in developing more productive, culturally appropriate forms of agricultural development.

*On indigenous and traditional knowledge*

- That there is a lack of voice and interest in taking on board the concerns of indigenous peoples about the use of an IPRs model to avoid misappropriation of their knowledge.
- That the use of an IPRs approach is inimical to the cultural basis of their world view.

*On capacity*

- That there is insufficient co-ordination or coherence in many governments in policy making in this complex area with various overlapping international negotiations and instruments spanning different ministries.
- That trade negotiators lack sufficient knowledge of the agricultural issues, and have tended to think of genetic resources from a mining, pharmaceutical perspective.
- A questioning of the minimum 'one size fits all' and the adequacy of the procedures in TRIPS to allow for modulation of the agreement and fears that the only way is up for IPR protection - which may not be in developing countries' interests.

**Flawed processes**

What this experience has shown is that the processes by which rule-making operates are flawed and unfair. Major trading partners often demand concessions from developing country markets while offering strikingly unequal access to their markets and technologies. Moreover, unilateral pressures are often applied to demand developing country compliance in multilateral agreements. The sense of injustice this leaves behind, along with subsequent experience in trying to address developing country concerns, for example in health, has contributed to a certain loss of trust in the WTO as a multilateral institution in which the interests of developing countries and their peoples can be taken sufficiently into account.

This experience also illustrates the great difficulties faced by developing countries not just in WTO but through pressure to go beyond what was already agreed there in bilateral and other multilateral arenas. Within the framework of the WTO itself, and specifically the TRIPS Agreement, it has shown the difficulty of treating issues on their merits and seeking solutions that would address particular development needs without requiring trade-offs in other areas. Developing countries seem to feel that the supposed benefits in other areas, such as agriculture and textiles, have not materialised while the obligations under TRIPS have.

That a small non-governmental organisation (NGO), with only modest resources, should be important for countries in their ability to understand and have advice on drafting text to frame what they want, is, in any rational world, crazy. Sadly, as events all too clearly show, we do not live in a rational world, but one in which multilateralism is under threat. Our challenge is, at least in part, to make it more rational so that all human interests are well represented and catered for. At present, too many under-resourced developing country missions, with relatively little back up from capitals, have to compete with much better resourced and supported developed country missions, backed up with legal and technical expertise from capitals, in shaping rules that become global. The result is, to say the least, all too often one-sided. It cannot be left to small NGOs to fill the gaps.

Some of these problems can be partly addressed through capacity building, for example, in the UNCTAD/ICTSD TRIPS and Development Capacity Building Project.[60] Many cannot. They require something of a rethink about both the way we make rules and the substantive effects that they have. For it seems that in many areas the IP regime that is developing is not meeting human needs but rather bolstering a rather dubious status quo.

If we look back to the 19th century, I think a powerful case can be made that it was a rewriting of the rules, on IP, on treating corporations as real persons, and on limited liability that have helped shape the

[60] see http://www.iprsonline.org/unctadictsd/description.htm

institutional economy we see today. In the 19th century, technological innovation was already seen as a way of entering an industry, and patent-protected innovation as a means of gaining legal quasi-monopolistic control of certain products and sectors, as inventors like George Eastman (Kodak) and Thomas Edison sought patents to enable them to capture monopoly profits. Even then, by institutionalising innovation in R&D labs "large corporations sought to control technological change as a means of protecting and fortifying their positions in the industry".[61] They still do today – and very extensively in biotechnology.

While it often seems that innovation is assumed to be a good thing automatically to be desired for its own sake, with a built in bias in the IP system, we are less ready to look at innovation in our institutions and the rules that shape them. For so much of the current pressure to expand and extend IP protection is, in reality, a very conservative force, likely to protect the institutional structure of narrow private interests rather than expand and help innovation in more public interest-based structures.

Why should it seem that there is a divine right for corporate forms of institutions to survive and be protected behind more and more IP legislation – from copyright extensions for long dead creators to patent rights given in lax regimes for dubious inventiveness? Should we not in fact see the current consequences of the IP regime as helping bolster the creation and maintenance of unaccountable oligopolies and giving them almost government like power to impose a kind of private taxation on the population built around their so called 'Intellectual Property Rights'. Software companies and big pharma as agencies of private taxation as much as innovation, perhaps?

**Realistic language**

Here is where I think we need to change the language we use to talk about IP – in the way feminists did about gender - to reflect more nearly the reality of what it is and what it allows. Then we will be better able to have a debate that balances public and private interests, and one into which more people will feel able to enter. Creativity is a fundamental aspect of human beings and it is fair and just that people should have the opportunity to be creative and be rewarded for it. But IPRs are not necessarily the way to do so.[62] Both the property and rights language are problems.

Human rights are inalienable. They cannot be divorced from or assigned by anyone to someone else, but are integral to individual people. The various forms of IP may be a way of providing material rewards but should not be confused with human rights. IPRs can be assigned, licensed, bought and sold. And for many people today, whether in universities or companies, the IP in their creativity and invention belongs to their institution. Companies themselves, of course, are also a legal fiction, one which has been given the, again fictional, judicial equivalence of a real person. But they are not people. For it is human beings who are creative, who enjoy that creativity and also share knowledge and receive recognition. What we have developed are various institutional forms to harness and organise that creativity and in so doing produce a motor to drive the interests of institutions through their capacity to harness and appropriate the skills of their employees.

The generic term, intellectual property rights (IPRs), masks the different nature and origins of the various forms of IP, and conflates ideas and justifications that might be appropriate for one, such as copyright, with another, such as patents. If, as Peter Drahos, argues "The privilege that lies at the heart of all intellectual property is a state-based, rule governed privilege to interfere in the negative liberties of others."[63] then as a way of changing our understanding of them we should use language that more accurately reflects what they are. It is time to take up his suggestion that "the language of property rights would be replaced by the language of monopoly privilege." [64]

So what we should, perhaps, start talking about are intellectually-based monopoly privileges (IMPs) to

[61] Reese V Jenkins (1975) op cit, pp 6-7

[62] See Committee On Economic, Socialand Cultural Rights, General Comment No 17 (2005) "The right of everyone to benefit from the protection of the moral and materialinterests resulting from any scientific, literary or artistic production of which he or she is the author (article 15, paragraph 1 (c), of the Covenant) available on http://www.unhchr.ch/tbs/doc.nsf/(Symbol)/E.C.12.GC.17.En?OpenDocument

[63] Peter Drahos, *A Philosophy of Intellectual Property*, Dartmouth, Aldershot, 1996, p 213

[64] ibid, p 223

more accurately reflect what they are – privileges granted by society to a few to exclude the rest, which can enrich the few, in the name of producing things society wants or as a means of rewarding their creativity, but often as a means of protecting investment and minimising corporate risk. Such a change in language can help in restructuring the debate about the kind of IP system and rules we want, whom we want to benefit and the range of things we want them to cover. It will help regain sight of the social contract that lies behind IP policy, which is essential in food and farming.

**Broader involvement**

We also need to improve the process of making these rules. It would, I suggest, improve the substance of what they are and the effects they have, if there was a much broader involvement of a wide range of people and interests. So, for example, the main UN body dealing with IP, the World Intellectual Property Organisation (WIPO), should have a wide range of NGOs there, not simply those representing the vested interests and their lawyers that IPRs serve today. Such a broad involvement also needs to be happening nationally.

What recent developments have shown is that while IP might be full of legal and technical questions, at heart it is not a legal and technical matter but one that affects the relations between us all as human beings. It affects our access to and ability to share knowledge, medicines, food, music, and a whole host of other things. And the rules that we as societies invent – for they are truly inventions – can help constrain or liberate the human spirit and human life. Therefore they must be drawn up with wide public participation and recognition of public interests, today's and future generations, and enhance the development capacity of the poor and excluded.

That means not treating IP as a domain of its own, but one that crucially affects the development goals and objectives of society. It means ensuring that the privileges they grant are matched by not just responsibilities but also liability regimes, prevention of restrictive practices, unfair contracts law and so on. The IP rules should not be used to promote narrow sectional or national interests of the currently powerful but, if possible, to empower the poor and weak, and, if not, be rejected in favour of something better. And that may mean changing the rules of the game internationally, and certainly resisting processes and pressures to seek ever higher levels of IP protection.

For that to happen, they need to become accessible as a topic of the public interest, of political importance to societies at large. Only then will pressures arise to make the connections often not made at present between the various interests affected. The challenge then is to take the discussion and debate from here to a more general public and engage them in ways that will help shape the rules for a new millennium. But not simply that. It is also to make the rule-making processes more just within and between countries and to do so in ways that prioritise the needs of the poor and will empower them in their development. For without that, the danger, and prospect, is of rules that will bolster the current and growing divide in wealth and power around the world. A division that is not only immoral and unsustainable but a threat to all our futures. There is no room for a return to any form of feudalism, information or otherwise.

**Conclusions**

Fundamentally, then, the IP rules matter because they increasingly affect who has what power and wealth, who drives and controls the direction and pace of change and who gets what out of it. I've always remembered a Wizard of ID cartoon from years ago in which the king says "he who make the rules gets the gold". And that, in essence, is what today's IP rules are about. The globalised rules on IP are part of a broader rewriting of the rules of the world. The IP rules, however, seem to me to be a fundamental part of shaping who controls the food system in the future – a system where I argue we need to focus on four key words: power, control, risks, benefits – who has what power to control their part of the food system, minimising or optimising risks and maximising or optimising benefits.

The key questions we as citizens must ask are, are they the right rules, who helps shape and make them, in whose interests do they operate and are they just and fair? How true are the justifications based on utility and rights, and how far are they a mask for a reality of protection for corporate investment? How can we balance the private interests of some with the public interest of humankind in the sharing of

knowledge, a sound and healthy environment, food security, human health and equitable development? Indeed, there are enormous philosophical and ideological differences in how different groups see the public and private sphere. There are often very different perceptions between many in the US and Europe and between both these regions and those in developing countries.

I concluded my introduction to a recent book on *Negotiating Health: Intellectual Property and Access to Medicines*[65] by saying "I suggest the challenge is not to get lost in the detail and to remember that intellectual property is always about power, interests and benefits – whose interests are being served and who is benefiting. The details of any particular form of intellectual property, whether a patent, copyright or trademark may be complex legally and technically, but that should not mask the context in which it should be seen. When it comes to health, this issue is how far intellectual property is producing the social and societal benefits it is supposed to. Treatments for the diseases affecting poor people, the ability to access the medicines available and sharing of the knowledge necessary to spread the capacity to research these diseases are key measures against which the system should be judged. If the legal fictions are not delivering, then they should be rewritten, not people made to conform to them." What is true for health is also true for food and biodiversity.

[65] Pedro Roffe, Geoff Tansey and David Vivas-Eugui (2006) *Negotiating Health: Intellectual Property and Access to Medicines*, Earthscan, London

## Annex – Related International Agreements

### The Convention on Biological Diversity (CBD)

The CBD is a framework agreement that leaves parties free to implement it through their own legislation. Its three objectives are:

- the conservation of biological diversity;
- the sustainable use of its components; and,
- the fair and equitable sharing of the benefits arising out of the utilisation of genetic resources.[66]

The CBD recognises, in Article 8 (j), the need for *in situ* conservation of biodiversity and the need to protect indigenous knowledge. Article 8(j) requires states, subject to their national legislation, to preserve the knowledge, innovations and practices of indigenous and local communities insofar as that knowledge, innovation and practice serves the goals of conservation and sustainable use of biodiversity. In agriculture, this comes about through its use and development in farming communities. Thus, the impact of changes brought about by IPRs-protected innovation in agriculture on those communities is an issue. The CBD also requires states to diffuse that knowledge, innovation and practice with the cooperation of the holders of that knowledge and encourage the sharing of any benefits that arise from such diffusion.

The Convention requires the equitable sharing of benefits arising from the commercial use of communities' biological resources and local knowledge (Art 15.7). It also requires that access to generic resources is subject to 'prior informed consent of the Contracting Party providing such resources, unless otherwise determined by that party' (Art15.5). At the sixth meeting of the Conference of the Parties (COP) in April 2002, parties agreed to a set of the voluntary guidelines on access and benefit sharing (ABS) that aim to facilitate access to genetic resources on 'mutually agreed terms' (MAT) and on the basis of the country of origin's 'prior informed consent' (PIC) by providing guidance to Parties in the development of ABS regimes while promoting capacity building, transfer of technology and the provision of financial resources.[67]

Moreover, a section on the role of IPRs in implementing ABS arrangements, contained in the Decision, invites Parties to encourage the inclusion of disclosure requirements in IPR applications and requests the CBD Executive Secretary and WIPO to provide further information on this issue.

In the CBD, which the USA has signed but not ratified, parties agree to undertake to provide and/ or facilitate access and transfer of technologies to other parties under fair and most favourable terms (Art 16.1 & .2). Such technologies include biotechnology and others 'that are relevant to the conservation and sustainable use of biological diversity or make use of genetic resources and do not cause significant damage to the environment' (Art 16.1). Access to such technologies must be 'on terms which recognise and are consistent with the adequate and effective protection of intellectual property rights'(16.2). This language mirrors that in TRIPS.

It also aims to enable developing countries, which provide genetic resources, to have access to technology which makes use of those resources, on mutually agreed terms, including technology protected by patents and other IPRs (Art 16.3). The parties to the treaty should also cooperate to ensure that patents and other IPRs 'are supportive of and do not run counter to' the CBD's objectives (16.5). This reflects disagreement about whether or not IPRs support the CBD's objectives, and implicitly accepts that conflicts may well arise between IPRs and the CBD. A study for the EU argued that legally

[66] The CBD uses the following definitions: **Biological resources** includes genetic resources, organisms or parts thereof, populations, or any other biotic component of ecosystems with actual or potential use or value for humanity. **Genetic resources** means genetic material of actual or potential value.

[67] Reported in Bridges, Weekly Trade News Digest, Vol 6 No 15, 23 April, 2002, www.ictsd.org

TRIPS and the CBD are not in conflict but that conflicts may arise when they are implemented, depending upon how that is done[68], however, this is not universally accepted.

**The International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGFA)**

Only in decisions of the COP to the CBD did members recognise the special needs of agriculture. The CBD developed from an approach which equated riches to be found in compounds in plants with minerals in the ground. Some developing countries felt they had undervalued wild biodiversity of use to developed countries and industries, such as pharmaceuticals, which had been making use of them in patented products bringing enormous returns. For agriculture, this mining, winner-takes-all mentality towards the exploitation of wild biodiversity pays scant attention to the differing nature of agricultural genetic resources, which have been developed, exchanged and mixed up around the globe for millennia. Indeed, some 'wild' biodiversity rich countries like Brazil are agriculturally biodiversity poor, depending for most of their food on crops that came from elsewhere.

COP supported the renegotiation of the existing International Undertaking on Plant Genetic Resources for Food and Agriculture (IU) agreed in 1983 at the UN Food and Agriculture Organisation (FAO) , which was premised on germplasm as a common heritage of humankind, to be in harmony with the CBD. The IU recognised that today's crops have been developed by the activities of farmers over millenia. Renegotiating the IU began in 1994 and concluded in November 2001 when an International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) was agreed at the FAO conference in Rome.

The treaty creates a mechanism that avoids the high transaction costs involved in bilateral exchanges of breeding material for food crops and establishes a multilateral system to facilitate access and benefit sharing. It aims to ensure future food security by facilitating exchange of these materials through this system which will use material transfer agreements (MTAs). Such exchange is a necessity for future breeding work. A rather limited range of 35 crops and 29 grasses and forages are included as well as the *ex situ* collections of those crops held by the International Agricultural Research Centres (IARCs) belonging to the Consultative Group on International Agricultural Research (CGIAR). It does not cover animals although there is much working going on with them too and many breeds are threatened with extinction.

The Treaty includes provisions on IPRs in Articles 12 and 13. These recognise that should any germplasm be taken out of the general pool available for further breeding by having patents taken out on it then this would create a loss to society as a whole that should be compensated by some payment into a fund to promote the use of genetic resources. Exactly what this means remains to be seen. Considerable work remains to be done to determine exactly how the various provisions of the treaty will be implemented. This is true also for Farmers' Rights, which the treaty recognises in Article 9 but leaves to parties to realise as they wish. Governments should include at least three measures in their attempts to promote Farmers' Rights according to Article 9.2:

- protection of traditional knowledge relevant to plant genetic resources for food and agriculture;
- the right to equitably participate in sharing benefits arising from the utilisation of plant genetic resources for food and agriculture;
- the right to participate in making decisions, at the national level, on matters related to the conservation and sustainable use of plant genetic resources for food and agriculture.

Both the CBD and the ITPGRFA have had a wider range of civil society participation in their deliberation, both domestically and internationally, than has been the case with the WTO TRIPS Agreement, or the other IP related bodies of WIPO and UPOV. In keeping with the Farmers' Rights provisions, wider consultation with farmers is also needed in framing IPRs in agriculture.

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[68] CEAS Consultants et al, "Study on the Relationship between the Agreement on Trade-Related Aspects of Intellectual Property Rights and Biodiversity Related Issues" for Directorate-General for Trade of the European Commission, 2000, available on http://europa.eu.int/comm/trade/csc/dcs_trips.htm

**International Union for the Protection of New Varieties of Plants (UPOV)**

A *sui generis* (of its own kind) system of protection is a special system adapted to a particular subject matter, as opposed to protection provided by one of the main systems of intellectual property protection, e.g. the patent or copyright system. Thus, countries can make their own rules to protect new plant varieties with some form of IPR provided that such protection is effective. The TRIPS Agreement does not define the elements of an effective system. In the last resort it will be a WTO Dispute Settlement Panel which will interpret the provision.

One possible *sui generis* system likely to be recognized as effective is the UPOV system of Plant Breeders' Rights (PBRs). PBRs were developed because plant breeders found it difficult or impossible to meet two of the fundamental requirements of patent law: inventiveness, and a written description of how to make and use. UPOV began in Europe in the 1960s and by early 2002 had 50 members, of which 14 were developing countries. PBRs were developed in response to the needs of commercial breeders and allow for the registration of a plant variety that has been discovered. UPOV defines a breeder to mean the person who bred, or discovered and developed, a variety. Such a variety must be distinct, stable, sufficiently uniform and novel. Most varieties developed and used by small farmers in developing countries and by traditional and indigenous communities do not normally meet these criteria. Various countries are trying to develop their own systems of PVP although there is considerable pressure for most to adopt the UPOV system.

There are two major differences from the level of protection patents offer, which made PBRs less restrictive. They provide both a breeder's or research exemption, which allowed use of the protected varieties for further R&D, and a farmer's exemption or 'privilege', which allowed farmers to save and replant seed from the first harvest of the protected crop. The scope of these exemptions has changed during various amendments to the UPOV convention. The 1961 version prohibited both patents and PVP on a variety but not the 1978 and 1991 Acts, and the 1991 Act no longer requires a farmer's exemption but leaves it as an option.

The UPOV system, however, produces a quite strong IPRs regime for plant varieties geared to institutional breeding which may not suit all countries. The alternative is for countries to develop their own solution with special legislation protecting plant varieties appropriate to their situation. Both are possible but developing an appropriate *sui generis* system is a challenging task that may take some time.[69] The OAU has developed a model law and India has introduced legislation that attempts to implement a new *sui generis* model and which encompasses Farmers' Rights as outlined in the ITPGRFA.

The International Plant Genetic Resources Institute (IPGRI), in producing a checklist for use in developing a *sui generis* system argues that an IPR suitable for an industrialised system of production geared towards export is unlikely to be suitable or appropriate for an agricultural sector characterised primarily by subsistence farming.[70] Since both systems may exist in the same country they suggest it may be worthwhile for countries to explore how options can be mixed and matched, including the prohibition of double protection and providing different levels of protection for varieties of the same species depending upon their intended use.

IPGRI also stresses the need, whatever IPRs are used, for appropriate mechanisms to prevent any monopolist effects of IPRs particularly patents. These include: anti-trust laws; shifting the burden of proof in the 'enablement entitlement' in patent law, i.e. so patent claimants have to prove wide-ranging claims will work rather than the challengers that they will not; rigorously applying the inventive step and industrial application requirements; mechanisms to balance the claims of initial and subsequent innovators; and, limiting or prohibiting the use of functional claims.

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[69] For a detailed discussion of this see Biswajit Dhar (2002) *Sui generis Systems for Plant Variety Protection: Options under TRIPS*, Quaker UN Office, Geneva, available on www.quno.org

[70] IPGRI (1999) *Key Questions for Decision-Makers – Protection of Plant Varieties under the WTO Agreement on Trade-Related Aspects of Intellectual Property Rights*, Rome, available at http://www.ipgri.cgiar.org/system/page.asp?frame=institute/contact.htm

**World Intellectual Property Organisation (WIPO)**

WIPO is the specialised UN agency 'to promote the protection of intellectual property throughout the world through cooperation among States and, where appropriate, in collaboration with any other international organization'[71]. Developments here could provide the basis for additional issues to be included in the TRIPS Agreement. An Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore (IGC) was set up in 2001 to consider the difficult issues arising in those areas. This will discuss IPRs in relation to access to genetic resources and benefit sharing, the protection of traditional knowledge and expressions of folklore. Following two meetings of the committee in 2001, the WIPO secretariat is preparing model IPR clauses for contractual agreements on ABS – although these will need to take into account both the CBD code and the ITPGRFA. They are also working on documenting public domain TK to ensure patent examiners can use them to prevent misappropriation of this knowledge, as has happened on a number of well-publicised occasions and given rise to concern in developing countries about biopiracy – the unauthorised commercial exploitation of the knowledge and resources of traditional and indigenous communities in developing countries.[72]

Although the IGC is most directly concerned with genetic resources and traditional farming communities, other deliberations in WIPO could affect the bigger picture in use of IPRs and remove the apparent flexibilities negotiated into TRIPS, for example through moves to harmonise requirements in national patent regimes. Harmonisation would make the patent system of countries more like each other in terms of administrative procedures and rules, enforcement standards and substantive law.

A final area where WIPO may affect the nature of IPRs in developing countries is through the technical assistance provided to countries to help them frame their laws and develop expertise in these areas. There have been concerns raised by those outside WIPO that this is too narrowly focussed and has not supported countries enough in using the flexibilities contained with TRIPS.[73]

[71] Article 3, Convention Establishing WIPO. July 14, 1967.

[72] See web site of the Action Group for Erosion, Technology and Concentration(ETC), formerly RAFI, for ngo coverage of biopiracy cases http://www.etcgroup.org

[73] Tansey (2004) op cit and MSF (Médecins sans Frontières), Consumer Project on Technology (CPTech). Oxfam and Health Action International (HAI) (2002) "Implementation of the Doha Declaration on the TRIPS Agreement and Public Health: Technical Assistance–How to Get It Right" Conference Report on the, March 28, 2002 meeting, Geneva

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