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INTELLECTUAL PROPERTY RIGHTS FOR WHOM?



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This briefing on the Convention on Biological Diversity was drawn up by Genetic Resources Action International (GRAIN) for the second intergovernmental meeting on the Convention, held in Nairobi from 20 June to 1 July 1994. It is meant to stimulate discussion on important issues related to the Convention. It consists of 4 parts. This is part 2.

Summary

Of all the policy issues surrounding the conservation and use of biodiversity, the question of who has ownership rights over it comes across as one of the most profound, fundamental and far-reaching. The current IPR systems provide for biased benefits: towards those in white lab coats in the North, and against those living in and from the fields and forests of the Third World. While it is now generally recognised — including in the Convention — that local communities conserve, use and innovate on biodiversity, no mechanisms are in place to ensure that they also rightfully benefit from it.

The governments meeting in Nairobi to further develop the Convention on Biological Diversity have an important task in front of them: to ensure that the Convention's articles related to equitable benefits turn into reality. The request for effective rights for biodiversity innovators, as formulated in the Convention, should include *all* innovators and not only those functioning within the official research system or corporate labs.

Recommendations

In its deliberations on ownership of and access to genetic resources, as well as in its discussions on Farmers' and other rights, the Second Session of the Intergovernmental Committee of the Convention on Biological Diversity should:

- ⇒ examine to what extent current IPR systems and practices run counter to the objectives of the Convention. The Interim Secretariat should be asked to prepare a detailed study on whether and to what extent this is the case, for discussion at the first meeting of the Conference of Parties later this year.
- ⇒ resolve that equitable rights of farmers, indigenous peoples and local communities to use, manage and benefit from their biological resources and indigenous knowledge need to be promoted through the Convention; start developing an effective mechanism to recognise and implement such rights within a multilateral framework as soon as possible.
- ⇒ for agricultural biodiversity, Farmers' Rights, as developed at FAO, should be broadened, strengthened and operationalised as an integral part of the Convention. Options on rights to intellectual property should meet national and local needs, and not threaten or damage biological diversity. Additional mechanisms to promote local control over bio biodiversity — as outlined in the paper — should be considered.

All these issues should be put on the agenda of the first meeting of the Conference of Parties.

Of all the policy issues surrounding the conservation and use of biodiversity, the question of who has ownership rights over it comes across as one of the most profound, fundamental and far-reaching. Intellectual property rights (IPRs), and especially patents, are presented by their proponents as an incentive to invest in risky research and a mechanism to stimulate innovation and therefore benefit society through technical progress. Nevertheless, a growing number of Third World governments and local communities increasingly feel that patents serve more to extract wealth from them, than to provide incentives and return benefits (box 1).

IPRs — benefits for whom?

The difference in perspective on the patent system essentially depends on whether you import or export technology. Importers want access and the freedom to build on other innovations. Exporters are keen to keep a grip over their lead in the market place. A look at who gets Third World patents might show their main function in this context: securing the growing markets in the South for technology producers in the North. In 1975, UNCTAD and WIPO did a joint study with startling results. Of the 3.5 million patents worldwide in the 1970s, only about 200,000 were granted by developing countries. The vast majority of these, some 84%, were owned by foreigners, especially by TNCs from the five richest countries. Less than 5% of those patents were actually used in production processes in the developing countries. The study pointed out with concern that most foreign-owned patents in the Third World are never used there, but rather function to secure, protect or monopolise import flows: *"Instead of being used in production, an overwhelming majority of patents granted to foreigners through national laws of developing countries have been used to secure import monopolies."*

Source: UNCTAD/WIPO, "The Role of the Patent System in the Transfer of Technology to Developing Countries", UN, New York, 1975.

The issue is becoming even more controversial now the patenting of life forms is moving to reality in many industrialised countries. Patents with immense economic potential have already been granted on all sorts of genetic material extracted from the forests and fields of the developing countries. Worse yet, patents are being sought for human cell lines, including those of indigenous peoples. In 1993, two new international treaties

came into the scene which espouse patents on life as means to regulate trade and technology transfer. That trade negotiators gave in to TRIPS, a special agreement on IPRs within GATT, might come as no surprise. But that environment negotiators gave in to the same language about IPRs on life in the Convention on Biological Diversity must be cause for alarm.

People and communities as inventors

Lost from view in the push for life patents is a sense of reality, a sense of who are the real innovators. Most of the biological diversity which forms the cornerstone of high tech breeding and pharmaceutical industries originates in the developing countries. That material did not develop spontaneously in nature: it has been created, modified, maintained and conserved by numerous generations of farming and indigenous communities. Something must have gone wrong if biotechnologists, by just inserting a gene here and there, are now being allowed to claim ownership over other peoples' rightful genius and intellectual heritage.

The current patent system has developed under Western reductionist thinking, which sees an invention only when it comes out of its own research establishment. The Western IPR tradition completely ignores the intelligence, science and creative efforts of farmers and indigenous communities in developing, using and conserving biological diversity in the first place. The accompanying table gives a number of examples of this inherent bias. It shows how the patent system ignores the intellectual contributions of indigenous communities and legitimises piracy of the South's innovations. It also shows how the patent system can block innovation in the official sector, as some patent claims are so broadly defined (across entire crops or characteristics) that they effectively stifle any further research by others.

If the Convention's stated objectives on the equitable sharing of biodiversity and its benefits are to be met, the governments meeting in Nairobi must address the issues related to rights and ownership. As explained below, the text of the Convention provides ample room to do so.

IPRs: effective for whom?

The negotiations on Articles 15 (access to genetic resources) and 16 (access and transfer of technol-

ogy) were difficult and tedious. Article 16 reflects an uneasy consensus in its final text (see box 2), leaving the whole question on ownership wide open to different and conflicting interpretations. Some developing country representatives question the Convention's language on IPRs, fearing that they will be pushed into accepting a Western-based IPR system, not necessarily in their national interests or even in the interest of biodiversity conservation. A fear which is not without grounds. The United States of America and other developed country signatories are preparing interpretative statements for deposit upon ratification. In their view, Article 16 is to be understood as meaning that all parties to the Convention are obliged to set up a strong patent system for plants and animals.

The language of Article 16.2 (see box 2), on which some industrialised countries base their hopes to get stronger IPRs installed in Third World countries, bears an interesting resemblance with an article in the GATT-TRIPs agreement which allows member countries to exclude from patentability plants and animals as long as they "provide for the protection of plants varieties either by patents or by an effective *sui generis* system". Both the "effective *sui generis* system" required in GATT and the "effective protection of intellectual property rights" for biodiversity-based technology required in the Convention's article 16.2 offer the new legal framework within which future international battles on intellectual rights will be fought.

The Convention should not be used to sneak in through the back door additional IPR obligations on Third World countries. Instead, governments should use it as a mechanism to establish intellectual property or other rights that truly promote the equitable sharing of benefits, between and within countries. There is no "effective" protection of IPRs if it only applies to companies, individuals and research institutions, as is the case now. The concept of "effective protection" in the Convention and an "effective *sui generis* system" in GATT should specifically include rights for farmers, indigenous and local communities as well. The Contracting Parties to GATT and to the Convention have a unique and historical opportunity to devise systems, based on national needs, that provide for incentives for *all* innovators in the area of biological diversity.

Box 2: Language on IPRs in the CBD

In the negotiations of the final text of the Convention, pressure from a number of industrialised countries led to the following text in article 16:

.. In the case of technology subject to patents and other intellectual property rights, such access and technology shall be provided on terms which recognise and are consistent with the adequate and effective protection of intellectual property rights. (16.2)

But then, the negotiators put a series of clear conditions on these rights. Each contracting party has to make sure that:

- * In particular those that are developing countries (...) are provided access to and transfer of technology (...) including technology protected by patents (16.3)
- * The private sector facilitates access to and transfer of technology (16.4)
- * Ensure that such rights are supportive of and do not run counter to its objectives (16.5)

The question the negotiators now have on the table is: what is really meant by the "effective protection" of IPR required in para 16(2)? A system that is mainly geared towards the interests of a number of high tech companies and rich nations? Or a more balanced system that takes into account *all* actors and interests in the conservation and use of biodiversity?

Towards an equitable concept of rights

Apart from its stipulations on IPRs, the Convention requests governments to respect and maintain the knowledge and technologies held and developed by indigenous peoples and local communities, and to encourage the equitable sharing of the benefits from them (Article 8.j). The Interim Secretariat has prepared a special paper on this article alone (item 4.2.4 of the agenda). This otherwise excellent discussion paper misses the point on one important issue: it assumes that no multilateral mechanisms are needed to recognise and implement the rights of local communities, as the Convention's Article states that this is subject to national legislation. While this might be true, it is also true that unless the parties to the Convention provide for some binding minimum standards for such national legislation in this respect, one of the central objectives of the Convention — to promote equity — could remain wishful thinking indeed.

There are several ways of devising such minimum standards, all of which should receive proper attention in the Convention's implementation. Below we examine three:

1. *Rights to Intellectual Property.* By effectively monopolising the control over biodiversity in the hands of a few, there are many elements in the current IPR practices that could run counter to the objectives of the Convention. A possible response by those who currently have no legal protection over their biological diversity, both countries and communities, could be to establish an alternative or parallel IPR system which meets their needs. There are numerous challenges and pitfalls in this approach, one of them being the high level of technical and legal expertise required. The Interim Secretariat of the Convention should be asked to prepare a detailed study on all options. It should also be asked whether, and how, the current IPR system, including GATT-TRIPS, might run counter to the objectives of the Convention.

2. *Rights to compensation.* Indigenous communities and farmers have been — and still are — the custodians, developers and conservers of a large part of biodiversity and related knowledge, especially that part which is of most direct commercial interest to pharmaceutical, personal health care and plant breeding industries. A possible way to guarantee equity would be the recognition of this role and the need for just compensation. In the area of agricultural biodiversity, the concept of "Farmers Rights" to compensation has already been accepted by the international community through the FAO Undertaking for Plant Genetic Resources and the International Fund. But since the Undertaking is not a legally binding treaty, little effective action has taken place as of yet. The Parties to the Convention must address this outstanding issue and translate it into effective compensation rights and mechanisms for indigenous, farming and local communities.

3. *Rights to Common Resource Management.* Neither the IPR option nor the compensation schemes discussed above necessarily result in better control over biodiversity by those who have nurtured it for centuries. If local communities are recognised as true actors in the conservation and use of biodiversity, as the Convention explicitly states, they need to have proper management-rights over those resources: to be able to exploit, use and conserve them. The right to effective control is perhaps broader and more ambitious than the former ones, but if the Convention negotiators are serious about their stated intention to promote the equitable sharing of biodiversity benefits, the rights to effectively manage local resources have to be developed. Better seen as a bundle of rights, common resource management for the conservation and use of biodiversity implies that:

- » local communities are given security of tenure related to land and other resources
- » common property systems are respected and not destroyed by development schemes
- » research and infrastructure projects are redirected to strengthen local community biodiversity management systems
- » funding is allocated to community initiatives
- » the bias against indigenous knowledge systems, traditional farming systems, and local cultivars is lifted from agricultural policies and development programmes.

None of the above mentioned options are mutually exclusive, and all need serious consideration. With national sovereignty over biodiversity as one of the main principles of the Convention, national legislation on rights to conserve, use and benefit from biodiversity should be based on national and local realities and needs. At the same time, the Convention offers the international community the opportunity to place effective equity considerations as priority criteria for the sustainable use and management of biological diversity.

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PATENTS ON LIFE: FROM PLANTS TO HUMANS

SELECTED CASES

(by Genetic Resources Action International - GRAIN)

HOLDER	PATENT COVERAGE	COMMENTS AND IMPLICATIONS
University of Pennsylvania (USA)	A technique for correcting defective genes in sperm of human beings. Applied for in 1994.	First attempt to patent a technique for human germ-line therapy. By "correcting" their own genes, people could bear children with specifically designed genetic traits. While ostensibly geared to change the fate of families burdened with inherited diseases, germ-line therapy raises the spectre of eugenics. The patent application specifically covers use in human beings.
US Dept. of Health	T-cell line of people from Papua New Guinea	In May 1989, blood samples were taken from 24 people of the Hagahai people of Madang Province, Papua New Guinea. After screening, the cell line of one of the individuals expressed viral antigens which are potentially useful in treating or diagnosing individuals infected with an HTLV-1 variant virus. HTLV-1 is associated with adult leukemia and with a chronic neurologic disease. The "novel" cell line is of potential value in understanding the enhancement or suppression of an immune response to this virus. The US government has applied for a patent on this persons' cells.
US Dept. of Commerce	T-cells of a Guaymi woman (Panama)	US Govt recently applied for patent rights over the cell line of a 26 year old Guaymi woman of Panama. The woman, suffering from leukemia, produced special T-cells in her blood which protected her from the disease. Protest from the Guaymi General Congress, World Council for Indigenous People and World Council of Churches brought the US government to withdraw its claims in November 1993.
Plant Genetic Systems (BEL)	Insect resistant plants carrying Bt gene	PGS holds a series of patents related to insect resistance of crops through the transfer of endotoxins from <i>Bacillus thuringiensis</i> . One of them is EPO 0 193 259 B1. This patent gives the company broad rights to any crop which can be transformed with agrobacterium techniques and are engineered to contain any Bt gene or Bt gene construct controlling any lepidopteran insect. Bt is the most widely used source of insect resistance in transgenic crop R&D today, and this patent could effectively block research on this approach to pest control by others. The patent aims to cover any introduction of Bt constructs into plants, by whatever method. Some of the crops covered are maize, soybean, rice, wheat, cotton, canola, tomato, cabbage, melons, potato, other vegetables and trees.
University of California & Lucky Biotech (USA)	Transgenic plants modified to produce thaumatin & monellin	The University of California and Lucky Biotech have recently submitted a patent application for the sweetening proteins naturally derived from two African plants: katempfe (which produces thaumatin) and the serendipity berry (which produces monellin). (patent number: WO 92/01790) Thaumatin is 2,000 times sweeter than sugar yet caloric-free, and could be highly profitable in the food processing industry. The plants are native to Western and Central Africa where they were long used by local peoples for their sweetening properties. Any transgenic form of a plant producing these proteins, and the foodstuffs deriving therefrom, would now be covered by the patent. As far as known to GRAIN, no arrangements have been made to return benefits to African farmers.

HOLDER	PATENT COVERAGE	COMMENTS AND IMPLICATIONS
Agracetus (WR Grace) (USA)	Transgenic rice developed through meristem culture or bombardment	Agracetus has applied for a patent on any transgenic rice developed through meristem disc culture or particle-mediated bombardment of cultured embryos. Both japonica and indica rices are claimed. Rice is the world's most important staple food crop. Agracetus is inserting herbicide tolerance genes into a number of massively grown rice varieties developed by the International Rice Research Institute in the Philippines. Meristem culture and bombardment technologies are important tools in transgenic rice research. If granted, it is yet to be seen if Agracetus will license out the technology and at what price.
Agrigenetics (Lubrizol) and Pioneer Hi-Bred (USA)	Improved oil characteristics of sunflower	In 1986, the US PTO granted the patent 4,627,192 to Agrigenetics securing the company with monopoly rights to any sunflower seed producing a high level of oleic acid. In 1988, Agrigenetics received patent 4,743,402 which extended to the crop oil. To the shock of the seed industry at the time, the patent covered a crop characteristic and was so broadly defined that its issuance "effectively stopped most research on high-oleic acid sunflowers" in the US. The patent has been attacked by Pioneer Hi-Bred and others which claim that the invention was not novel but a fraud. With the law suit in suspense at the moment, Pioneer has just received a similar patent on low-saturated fat, high-oleic acid sunflower. Coined by some as "driftnet patenting", such broad patents could block off entire fields of research to others.
Agracetus (WR Grace, USA)	All genetically engineered soybeans and cotton	One patent (EPO 0 301 749) covers any genetically engineered soybean, another one (US 5,159,135) any varieties of genetically engineered cotton, regardless of the methods used. Both are held by the same company. Could effectively block genetic improvement of soybean (a US\$ 27 billion crop worldwide) and cotton (US\$ 20 billion worldwide). The soybean patent has been granted in Europe, is still pending in US and is allegedly being applied for in other major producing countries, including Brazil and China. The cotton patent was already granted in the USA, and is still pending in Brazil and China. The Indian Parliament summarily revoked the patent in India because of its "far reaching implications" for the national cotton economy.
WR Grace (USA), NPI (USA), Japanese Terumo (JPN)	Various uses of the neem tree	Over a dozen patents have been recently granted in the industrialised countries on the medicinal and insecticidal properties of the neem tree (<i>Azadirachta indica</i> and <i>Melia azadirachta</i>). The neem tree, native to Asia, has been used by local people for centuries for manifold uses: pesticide, medicine, antiseptic, contraceptive, building material, fuelwood and agriculture. While Asians consider the neem to be part of a collective heritage, companies in the North are now patenting it. Monopoly rights have been assigned for the use of neem bark against cancer, stable and storable forms of the insecticidal component, neem-based toothpaste, etc. All of these uses derive from centuries of indigenous knowledge and local innovation, as well as Asian people's efforts to nurture and conserve the valuable tree. Patenting of neem in the North has struck many as a classic case of intellectual piracy, where scientists have added nothing fundamental to the understanding and use of the indigenous neem and yet are granted an intellectual and commercial monopoly over it.

Table compiled by Genetic Resources Action International (GRAIN) from different sources, including "New Scientist", "RAFI Communiques", original patent applications and industry sources.