

Plant Genetic Resources and Intellectual Property

In the late 70s biodiversity was still regarded a common heritage with the perception that everybody should have access to genetic resources for breeding purposes. In the late 80s this perception changed; now biodiversity is regarded a treasure under national sovereignty. This article is about the cross-roads of crucial issues currently negotiated in agriculture (FAO International Undertaking), environment (Convention on Biological Diversity) and trade (TRIPS). Christina Grieder

The paradigm shift from the free flow of genetic resources to a restricted exchange was officially introduced when the *Convention on Biological Diversity (CBD)* came into force in December 1993 (1). The idea behind it is that if genetic resources are used to develop commercial products such as new plant varieties, a subsequent benefit has to be shared with the provider(s) of the genetic resources.

Rules governing access to biodiversity and *benefit sharing* arising from the use of it, are still being negotiated in the various fora. To address these questions regarding plant genetic resources for food and agriculture, efforts are underway to establish regulations by a multilateral system in the framework of the *FAO International Undertaking on Plant Genetic Resources (IU)* (2). The IU is currently under revision. It is aimed at making the IU a legally binding instrument which determines access to

plant genetic resources for food and agriculture. Access to genetic resources for other purposes may be determined by bilateral agreements, as currently negotiated under the CBD. Overall, one of the most important unsolved questions is what *benefit sharing* implies.

In the past the rationale for having encouraged free exchange of genetic material was that commercial interests should not prevail over the fulfillment of basic needs. During the last 20 years, however, new technologies, mainly biotechnology, dynamised the development of new plant varieties, mainly in the private sector. The possibility to identify genes of a specific trait, such as drought or pest resistance, and insert them into a plant, has put genes into the focus of intellectual property.

As a consequence, patents and plant breeders' rights were progressively granted to give the private sector incentives to enter the seed industry. The growing interest for patent application, especially in the OECD (3) countries, reflects the rapid development of biotechnology and its application in agricultural research and development in the private sector. However, the demand to extend patentability to lifeforms is controversial. In plants, for example, patents may apply to a variety of biological materials and processes, ranging from isolated DNA (4) sequences to plant varieties. Several international negotiations address the intellectual property right (IPR) issue, including patentability, of genetic resources.

The TRIPS Agreement

An important component of the World Trade Organization's (WTO) treaties is the Agreement on *Trade-Related Aspects of Intellectual Property Rights* (TRIPS). The legally binding TRIPS agreement came

«The bone of contention»:

TRIPS - Art. 27.3 (b)

According to Art. 27.3 (b) of the TRIPS Agreement WTO-Members may 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.»

For more information see: <http://www.wto.org/wto/intellect/1-ipcon.htm>

into effect on 1 January 1995 and – among others – sets standards regarding the applicability and scope of intellectual property rights. The relevant – and controversial – part regarding agriculture and IPRs is Article 27.3.(b) (see Box). It states that any country excluding plant varieties from patent protection must provide an effective *sui generis system* of protection. However, the agreement on TRIPS does not define the scope of a *sui generis system*. Possible elements were presented in a study carried out by the International Plant Genetic Resources Institute (IPGRI) (5). Because of the difficulties in reaching consensus in this matter, the Parties agreed to review the controversial Article 27.3.(b). However, final decisions on whether or not Article 27.3.(b) is to be reopened and renegotiated, are still pending.



Genetic diversity.

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The UPOV Convention

Founded in 1961, UPOV (Union Internationale pour la Protection des Obtentions Végétales) is an intergovernmental body that establishes international rules under which countries grant IPRs to the developers (mainly breeders) of new plant varieties (6). The original UPOV Convention was revised in 1972, 1978 and 1991, adapting to the development of new breeding techniques and the respective use of plant genetic resources. Today, the vast majority of UPOV members are party either to the 1978 or the 1991 Act. The latter entered into force in 1998. The UPOV Convention is regarded as one possible option for a *sui generis* system mentioned in Art. 27.3.(b) of the TRIPS.

Implications for breeders and farmers

There are two groups that are particularly concerned by the ongoing discussions on *IPR*, *access* to genetic resources and *benefit sharing* and where clarifications are needed: the plant breeders and the farmer community. IPR regulations for plant breeders (plant breeders' rights) are contained in the UPOV Convention. Compared against earlier versions, the protection of the UPOV Act 1991 given for plant breeders is closer to the protection given by patents. *Breeders' exemptions* means that the use of genetic material of pro-

tected varieties for creating new varieties, and the commercial exploitation of these new varieties, to a certain extent, is free (core principal of plant breeders' rights in the UPOV Act 1991). This exemption was introduced since patents do not allow for using protected material. In the same Act the UPOV member states can (but do not need to) define *farmers' privilege*. This means that farmers are allowed to save their own seed or to exchange it with other farmers, if the seed is suitable for their conditions.

Issues regarding *Farmers' rights* are mainly addressed in the ongoing negotiations and associated revision of the FAO *International Undertaking*. *Farmers' rights* are based on a far more comprehensive underlying concept (see Box). The procedures and modalities on *how* to recognize and reward the farmer communities' contributions to the conservation and selection of genetic resources are currently being sought.

The current challenge

The different fora like CBD, WTO-TRIPS, IU represent different processes and negotiations with different priorities, but they are interrelated. Since decisions made in the various fora may affect food security and a sustained agricultural development by conditioning access to and the use of plant genetic resources

Farmers' rights:

The concept of *Farmers' rights* was developed in the FAO Commission on Genetic Resources for Food and Agriculture. *Farmers' rights* are defined as «rights arising from the past, present and future contributions of farmers in conserving, improving, and making available plant genetic resources, particularly those in the centres of origin/diversity» (see also: <http://www.fao.org/ag/cgrfa/farmers.htm>)

essential for food and agriculture, adaptation and harmonization among treaties is needed. Yet, it is important that the negotiating parties find solutions to the needs in relation to plant genetic resources for food and agriculture in the context of these current negotiations.

- (1) For more information on CBD: <http://www.biodiv.org/>
- (2) For more information on IU, its current revision and key documents: <http://www.fao.org/ag/cgrfa/iu.htm>
- (3) Organisation for Economic Co-operation and Development
- (4) DNA: the genetic material that controls expression of a plant's or animal's traits
- (5) IPGRI 1997. Intellectual Property Rights and Plant Genetic Resources: Options for a *Sui Generis* System. Issues in Genetic Resources No. 6 June 1997 (see also <http://www.cgiar.org/ipgri/publicat/issues.htm>)
- (6) For more information on UPOV: <http://www.upov.int/index.htm>



A glimpse into a local market in South-America.

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