

The Multilateral System of Genetic Resources Exchange: Why trade in food genetic resources matters?

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For many years, WTO Members have fruitlessly debated whether the provisions of the Agreement on Trade-related Aspects of Intellectual Property Rights (TRIPS) should be modified to ensure that trade rules are compatible with the Convention on Biological Diversity and the International Treaty for Plant Genetic Resources for Food and Agriculture (IT). Both agreements contain obligations for the preservation of plant genetic resources, as well as for sharing benefits from the commercial exploitation of such material with those who conserved it through centuries of stewardship. In this article, Susan Bragdon explains what the IT is and how it fits in the complex web of instruments that touch on intellectual property rights.

From the beginning of agriculture some ten thousand years ago, humans have relied on genetic diversity available in plants to develop a wide range of genetically diverse crops that have enhanced human survival. Diversity remains a critical component of agricultural production and food security today. The loss of individuals and populations narrows the genepool of a species and restricts its ability to adapt and evolve to changing circumstances. The US corn blight in the early 1970s and the failure of a high-yielding wheat variety planted almost exclusively in the Ukraine during the winter of 1971-72 were harsh lessons in the importance of diversity but also of the importance of being able to access this diversity to solve imminent threats.

Today, the agriculture of virtually all countries depends on a supply of resources from other parts of the world.¹ Even the countries considered richest in biodiversity are dependent on plant genetic resources from other parts of the world. Rich or poor, impeded access to plant genetic resources for food and agriculture (PGRFA) raises the vulnerability of farmers by increasing risks and undermines the stability of agriculture.

Establishing International *Ex Situ* Collections of PGRFA

Motivated by the twin goals of research facilitation and conservation, national and international efforts to collect, evaluate and conserve PGR became concerted and organised in the 1960s. To facilitate research, stores of germplasm were centralised in genebanks accessible to all rather than haphazardly stored in various jurisdictions around the world. The second incentive recognised the need to conserve the genetic information upon which the development of newer and better crops depended.

These international efforts catalysed a dramatic change in world agriculture. What came to be known as the ‘Green Revolution’ was instigated by the public sector in the 1960s. It began with the development of a new set of high-yielding varieties that greatly increased agricultural production and hence the world food supply. Interestingly, intellectual property rights had little role in this process.

The push toward commercially mass-produced varieties led to the abandonment of diverse landraces. In 1967, an FAO technical conference proposed the creation of a global network of genebanks to store representative collections of the main varieties of food. Priority was given to preserving the landraces, many of which were immediately threatened.

As noted above, the risks of crop uniformity were felt in the early 1970s. In response to famine² and fear of potential widespread famine in the future, collecting missions were organised and genebanks established in an atmosphere of crisis with little contemporaneous thought to legal issues of ownership and control. In 1971, the FAO, the World Bank and the United Nations Development Programme founded the Consultative Group on International Agricultural Research (CGIAR). The CGIAR is an association of public and private donors who support a network of 16 international research centres (IARCs). The CGIAR conserves approximately 600,000 seed samples which may amount to up to 40 percent of the world’s unique germplasm in storage worldwide. There is no dispute that the vast majority of crop germplasm held in the IARCs was collected primarily from the fields and forests of the South’s farming communities. But at least partially because of the atmosphere in which they were originally assembled, issues of ownership, accountability and whether or not the CGIAR germplasm can be subject to intellectual property protection by any party, were topics of controversy and debate.

Legal Regimes Affecting Trade in Plant Genetic Resources

While controversies over the ownership, control and exchange of plant genetic resources for food and agriculture (PGRFA) may be old, the array of interests and hence legal instruments affecting those resources have become increasingly complex. Trade relations, intellectual property rights, conservation and the rights of indigenous peoples are examples of the myriad of areas where there are now legal instruments or arrangements of relevance to PGRFA.

Because of its importance to food security this note will focus on the newest developments in international law governing the exchange of PGRFA, in particular the multilateral system of exchange (MLS) established by the International Treaty for Plant Genetic Resources for Food and Agriculture (IT). The issue of ownership and control of the resources in the IARCs were central in the IT negotiations and were partly resolved by the creation of the MLS and provisions inviting the CGIAR to join in the system. Many issues, however, remain unresolved and will be determined by decisions of the Parties to the Treaty and through its implementation.

A brief history of the IT and the IARCs

The FAO Commission on Plant Genetic Resources was established in 1984 as the first permanent intergovernmental forum in the United Nations System to deal with agricultural biological diversity. Since its establishment the Commission has coordinated, overseen and monitored

the development of a Global System for the Conservation and Sustainable Utilisation of Plant Genetic Resources for Food and Agriculture. The keystone of this system was the 1983 International Undertaking on PGRFA (IU) which was the first comprehensive international agreement dealing with PGRFA. In accordance with IU Article 7.1(a) – and because of the uncertainty regarding the legal situation of *ex situ* germplasm in genebanks – the Commission called for the development of an International Network of *Ex Situ* Collections in 1989. Subsequently, in 1994 twelve IARCs signed agreements with the FAO placing most of their collections in the International Network. Through these agreements, the Centres recognised “the intergovernmental authority of the FAO and its Commission in setting policies for the International Network” and accepted to hold the designated germplasm “in trust for the benefit of the international community” and “not to claim ownership, or seek intellectual property rights over the designated germplasm and related information.”

In 1993, the FAO Commission began a negotiation process to revise the IU primarily to:

- bring it in harmony with the Convention on Biological Diversity (CBD);
- consider the issue of access to plant genetic resources including *ex situ* collections not addressed by the CBD; and
- realise Farmers’ Rights.

On 3 November 2001, the thirty-first FAO Conference adopted the IT by unanimity.³ Thus far, 20 countries have ratified the IT, which will enter into force after ratification by 40.

The International Treaty contains 35 Article and 2 annexes. While its scope covers all PGRFA, this note focuses on the articles in Part IV of the Treaty that establishes the MLS for the particular crops listed in Annex I.

The Multilateral System of Access and Benefit-Sharing

Major changes established by the MLS

The MLS should help reduce tensions around the transfer and use of Annex I PGRFA and thus should facilitate collection and exchange of these resources. Annex I contains approximately 35 crops and a modest number of forage species. While an important list, some important crops are not included. Access to materials of others crops – including some important excluded crops such as soyabean, groundnut, sugar cane and most tropical forages – will likely be more difficult, requiring a specific agreement with the country providing access. The concept of designated germplasm from the 1994 FAO Agreements will be dropped, replaced by the new distinction between PGRFA of crops that are part of the MLS and those that are not. Access to material in the MLS will be provided under terms specified in a standard material transfer agreement (MTA). The terms of the MTA are to be agreed to by the IT’s Governing Body and will bind recipients to benefit-sharing arrangements in particular defined circumstances. Farmers’ Rights are largely assigned to national governments, which can define and implement them as they see fit.

Overview of MLS provisions

Access is to be provided to both *in situ* and *ex situ* materials other than those “under development” (these are available at the discretion of the developer during the period of development). The Annex I resources must also be under the management and control of the contracting party and in the public domain. The International Treaty does not cover access for purposes that are not related to food and agriculture. While intellectual property rights (IPRs) are to be respected, the the Treaty nevertheless prohibits a recipient from claiming any IPR that would “limit facilitated access to PGRFA, or their genetic parts and components, in the form received from the Multilateral System.”

Benefit-sharing in the form of a payment into an international fund at FAO will be mandatory when genetic material from the MLS is used to produce a “product that is a PGRFA” (e.g., a line or cultivar) that is commercialised, unless this product is made available without restriction for further research and development. In effect, patenting will likely trigger the benefit-sharing mechanism; plant breeders’ rights probably will not. Material accessed from the MLS

can therefore be used in breeding programmes and the resulting varieties or lines protected by IPRs although benefit-sharing provisions may be triggered depending on the availability of the PGRFA-product. The precise terms of benefit-sharing are to be determined by the IT’s Governing Body. The IT states only that the benefits will be “in line with commercial practice.” The MTA text noted above will need to operationalise this requirement. Once received, the monetary benefits are to be used to support PGRFA-related programmes.

Information that is “associated, available, non-confidential and descriptive” must be made available by Parties to the Treaty and by CGIAR Centres. Information is interpreted as data and knowledge, not as genetic material.

Outstanding Issues

The ethical, legal and moral debate surrounding the relationship between IPRs and germplasm is not new. Some of the proposals arising in the context of the TRIPs review of Article 27.3(b)⁵ have been to amend TRIPs to prohibit IPRs over life forms. The IT explicitly recognises IPRs in relation to germplasm and hence shifts the question of whether or not the international community should sanction IPRs in relation to germplasm to questions of interpretation and definition of how exactly they will apply. In this way, the IT can arguably be seen as weakening the position in other fora that IPRs related to germplasm in any form are unacceptable.

The ambiguities contained in the IT that will likely be most difficult to clarify are those that relate to precisely what is being accessed under the MLS, how it can be used and protected and under what conditions access might be denied or granted. As noted above, in dealing with IPRs, the IT uses the term ‘genetic parts and components’ and the even more problematic phrase ‘in the form received’.

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For countries considering protection systems under TRIPs Article 27.3(b), it is worth noting that patenting is likely to trigger the IT’s mandatory benefit-sharing requirement while a plant variety protection system (because products are usually available for further research and breeding) probably will not.

ACP Ministers: No Patents on Life

At the WTO Council for TRIPs, as well as other fora, a number of Members have repeatedly called for living organisms to be exempted from patenting obligations. Most recently, trade ministers of the African, Caribbean and Pacific (ACP) Group of States called for the review of TRIPs Article 27.3(b) to “conclusively clarify that all living organisms including plants, animals and parts of plants and animals, including gene sequencing and biological and other natural processes for the production of plants, animals and their parts should not be patented.”¹

In June, trade ministers of the least-developed countries made a similar statement, adding that WTO Members “shall ensure that the TRIPs Agreement is fully compatible with the provisions of the Convention on Biological Diversity and the International Treaty on Plant Genetic Resources for Food and Agriculture (Bridges Year 7 No.5, page 19).

ACP ministers called on WTO Members to “develop mechanisms that require, as a condition for the grant of a patent, patent applications to disclose the country or area of origin of any biological resources and traditional knowledge used or involved in the invention, and to provide confirmation of compliance with all regulations in the country of origin, including prior informed consent, and access and benefit-sharing arrangements.” Nevertheless, the ministers noted that such disclosure requirements, could not address the basic concern that patents on plants, animals, micro-organisms and their parts, as per Article 27.3(b) “give patent holders exclusive rights over the use of the resources and thus deny communities the ability to determine the conditions for their use.”

¹ TRIPs Article 27.3(b) – currently under review at the WTO – requires Members to protect plant varieties through either an “effective *sui generis* system” or patents. Patents are obligatory for micro-organisms and “non-biological and microbiological processes” for the production of plants and animals.

Neither is defined and each is clearly subject to multiple interpretations. Some countries were of the opinion that this paragraph would preclude the kind of patenting of isolated, purified genes which is allowed in some countries because the patented gene would be the same as that received. Others believed that the isolated and purified form is different from the ‘form received’ from the MLS.

For countries considering protection systems under TRIPs Article 27.3(b), it is worth noting that if all the definitional hurdles requiring benefit-sharing in the IT are met, it is likely that a patent system (because the products are more likely to not be freely available) will trigger the mandatory benefit-sharing requirement while a plant variety protection system (because products are usually available for further research and breeding) probably will not. Nevertheless, even when benefit-sharing is triggered, the level, form and manner of payment must be “in line with commercial practice.” As ‘commercial practice’ is not defined in the Treaty, the definition will need to be taken up by the Governing Body.

In terms of access, Article 12.3(e) states that “access to PGRFA under development, including material being developed by farmers, shall be at the discretion of the developer, during the period of its development.” It is not clear what constitutes ‘development’ and, when it is determined that development is occurring, when the ‘period’ begins or ends.

Conclusion

The IARCs hold some of the largest and most useful and used collections around the world. The Centers have formally welcomed the IT and indicated their intention to associate themselves with it. Sixty-seven countries plus the European Union have signed the Treaty, and 20 countries have ratified it. The IT, and its MLS, have wide support, indicating an understanding of the importance of the availability of these resources. During the negotiations proposals were made that would have undermined this goal. These included, for example, proposals for repatriation of germplasm in the IARC collections and calls for farmers to take ownership of these resources in the name of Farmers’ Rights. In establishing the MLS and inviting the CGIAR to affiliate, the negotiators rejected these proposals and embraced the principles of the 1994 FAO-CGIAR Agreements which stated that the resources were to be “conserved and used in research on behalf of the international community, particularly developing countries.”

There are legitimate concerns for equity and the recognition of the rights of indigenous and local communities reflected in various fora including, *inter alia*, WIPO, the WTO and the CBD. There is no reason that proposals to include, for example, rights for local communities in intellectual property protection under Article 27.3(b), cannot be drafted to be consistent with the provisions of the IT. What is important is for parties in other fora, such as the WTO TRIPs review, to be aware of the IT and to recognise that it reflects not only the broad support of the international community but its understanding that the system of facilitated access established was the best way to see that the resources of the *ex situ* collections are conserved and used to achieve food security and end hunger.

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ENDNOTES

- ¹ Sub-Saharan Africa, for example, is estimated to be 87 percent dependent on other parts of the world for the plant genetic resources it needs.
- ² Crop uniformity was one factor in the epidemics. Other factors were also important, including, for example, the international oil crisis and the Sahelian drought.
- ³ With two abstentions: the United States and Japan.
- ⁴ Article 15 calls upon the IARCs to sign agreements with the Governing Body of the Treaty to make PGRFA listed in Annex I and in their collections available in accordance with the provisions of Part IV of the IT.
- ⁵ Article 27.3(b) requires WTO Members to provide for the protection of plant varieties by patents or a *sui generis* system (or some combination of the two).