

Progress of plant variety protection based on the International Convention for the Protection of New Varieties of Plants (UPOV Convention)

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Abstract

In reviewing the progress of plant variety protection based on the UPOV Convention, the author briefly describes the original Convention of 1961 and the revisions in 1972, 1978 and 1991. He goes on to examine the results of the substantial increases in membership and in grants of protection. One such result is greater interaction with conventions and treaties such as TRIPS and the Convention on Biodiversity. Issues described in this context include the conservation of and access to genetic resources (GR), disclosure of origin of GR, prior informed consent for the use of GR, benefit sharing and farmers' rights.

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1. Introduction

Plant variety protection based on the International Convention for the Protection of New Varieties of Plants (UPOV Convention) is a *sui generis* form of intellectual property protection, specifically designed to reflect the particularities of breeding, cultivation and use of new varieties of plants, which has seen considerable expansion in recent years. Fifty-eight States, from all continents, have now acceded to the UPOV Convention (see [Appendix A](#)). They form the International Union for the Protection of New Varieties of Plants (UPOV). The mission of UPOV is to provide and promote an effective system of plant variety protection, with the aim of encouraging the development of new varieties of plants, for the benefit of society. Increasingly, UPOV

is requested to express its views in respect of matters related to plant genetic resources in a broader context.

This article, in its first part, reviews briefly the underlying ideas which led to the adoption of the UPOV Convention in 1961. This is followed by an overview on the revisions of the Convention which took place in 1972, 1978 and 1991. UPOV's growth, in terms of membership and in terms of titles of protection granted, will then be reviewed. The following part gives some examples of how the expanding membership of UPOV has influenced the focus of UPOV's activities and influenced participation in UPOV's work with regard to practical approaches to plant variety protection, in particular. Since UPOV's growing impact has become more and more apparent, there is now considerable interest to know more about the interaction between the basic principles of the UPOV Convention and other relevant international instruments. Thus, UPOV's interfaces with the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS Agreement), the Convention on Biodiversity (CBD) and the International Treaty on

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Plant Genetic Resources for Food and Agriculture (ITPGRFA) are considered in the last part. The article complements an earlier publication in this journal.²

2. The adoption of the UPOV Convention and its revisions in 1972, 1978 and 1991³

The first sentence of the preamble to the International Convention for the Protection of New Varieties of Plants, signed in Paris on December 2, 1961, reads “Convinced of the importance attaching to the protection of new varieties of plants, not only for the development of agriculture in their territory, but also for safeguarding the interests of breeders, . . .”. Plant breeders have indeed contributed a great deal to the development of agriculture. In France, for example, the average wheat yield has jumped from 1.3 metric tons in 1910 to 7 tons per hectare in 2002. In the United States of America (USA), maize yield has grown from 1.8 metric tons per hectare in 1940 to 8.5 tons per hectare in 2000; in South Africa, the average maize yield has grown from 1 ton per hectare in 1950 to 2.7 tons per hectare in 2001 and in wheat from 0.5 tons per hectare in 1950 to 2.4 tons per hectare in 2001.⁴ It is generally recognized that 30–60% of that increase, according to the crop and the location, is due to genetic improvement, i.e. breeding.⁵

After extensive preparatory work at the initiative of the French Government, a Diplomatic Conference finished its work on December 2, 1961, with the adoption and signature of the UPOV Convention. The following thirteen European States participated: Austria, Belgium, Denmark, Finland, Federal Republic of Germany, France, Italy, the Netherlands, Norway, Spain, Sweden, Switzerland and the United Kingdom, together with the European Economic Community (EEC), the United International Bureau for the Protection of Industrial, Literary and Artistic Property (BIRPI), which later became the World Intellectual Property Organization (WIPO), the Food and Agriculture Organization of the United Nations (FAO) and the Organization for Economic Co-operation and Development (OECD), and the following four non-governmental organizations:

- International Association of Plant Breeders for the Protection of Plants Varieties (ASSINSEL).
- International Association for the Protection of Industrial Property (AIPPI).

- International Community of Breeders of Asexually Reproduced Ornamental Varieties (CIOPORA), which later became the International Community of Breeders of Asexually Reproduced Fruit Tree and Ornamental Varieties (CIOPORA).
- International Federation of Seed Trade (FIS).

The UPOV Convention was signed by plenipotentiaries from Belgium, France, Germany, Italy and The Netherlands and, during the following year when it remained open for signature, it was also signed by Denmark, Switzerland and the United Kingdom.

In recognition of the fact that new varieties of plants are a powerful tool to enhance agricultural and overall economic development, the States party to the UPOV Convention wished to provide incentives for sustainable plant breeding. Their aim was to guarantee the moral and material rights of breeders in respect of their varieties, in accordance with clearly defined and internationally harmonized principles.

Under the UPOV Convention, in order to obtain protection of a new variety, it is required to fulfill the following three technical criteria:

- It must be clearly distinguishable from existing varieties.
- It must be sufficiently uniform.
- It must be stable in its essential characteristics after repeated reproduction or propagation.

Furthermore, it must have a suitable denomination.

“Protection” means that any commercialization of propagating material of the variety is subject to the breeder’s authorization.

The UPOV Convention entered into effect on August 10, 1968, when the first three instruments of ratification were deposited by the United Kingdom, the Netherlands and the Federal Republic of Germany. This was the origin of UPOV, which chose Geneva for its headquarters.

2.1. The Additional Act of 1972

The UPOV Convention provided, in its Article 27, that it was “reviewed periodically with a view to the introduction of amendments designed to improve the working of the Union” and that, unless the Council decided otherwise, “for this purpose, conferences shall be held every five years [· · ·]”. The first revision was thus to take place in 1972.

Experience had already shown that the distribution of the financial burden caused by the expenses of the Union needed refinement. According to Article 26(2), the member States were divided into three classes, corresponding to one, three and five contribution units. The purpose of the Diplomatic Conference that was held in November 1972 was, therefore, to introduce a five-class

² See Ref. [1].

³ More information on the history of the UPOV Convention can be found in: *The First Twenty-Five Years of the International Union for the Protection of New Varieties of Plants*, UPOV Publication No. 879, Geneva 1987 [2].

⁴ See Ref. [3].

⁵ See Ref. [4], cited in Ref. [2]—pp. 28–31.

contribution system, with a span of contributions rising continuously from one to five, the Council being empowered to authorize a State, under specified circumstances, to contribute half a unit only.

The Additional Act entered into force on February 11, 1977. By that time, the work on a new revision of the Convention was already underway.

2.2. The 1978 revision

The member States of UPOV had already realized in 1973 that there was a need to revise the substantive provisions of the Convention. After extensive preparatory work under the auspices of the Council of UPOV, a Diplomatic Conference was convened in October 1978. Invitations were distributed widely and, together with the ten members of the Union, the following twenty-seven non-member States took part in the Conference: Argentina, Australia, Bangladesh, Brazil, Bulgaria, Canada, Finland, Hungary, Iran, Iraq, Ireland, Ivory Coast, Japan, Libyan Arab Jamahiriya, Luxembourg, Mexico, Morocco, New Zealand, Norway, Panama, Peru, Saudi Arabia, Senegal, Spain, Thailand, United States of America and Yugoslavia. On October 23, 1978, the Conference adopted a revised text and two recommendations by unanimous vote of the 10 member States.

The most important amendment concerned the status of UPOV as an intergovernmental organization. UPOV was endowed with legal personality and also, on the territory of each member of the Union, the legal capacity necessary to achieve this aim and carry out its functions, and it was provided that it would also enter into a Headquarters Agreement with the Swiss Confederation.

Other amendments were designed to facilitate the accession of States that were not yet members. An exception was incorporated into Article 37 to allow the United States of America to retain their dual system of protection and the demarcation of the areas of application according to the manner of propagation of the variety.⁶

The revised text adopted in 1978 ultimately differs little from the one drawn up in 1961. For the “old” member States, an essential amendment was the prolongation

from four to six years of the period during which a variety could be marketed abroad without its novelty being affected, in the case of vines, trees and their rootstocks. The provision on priority was refined. Rules on variety denominations were also revised, although the fundamental principles remained unchanged.

The provision under which the procedures for technical and administrative cooperation between UPOV and BIRPI (which in the meantime had become the World Intellectual Property Organization (WIPO)) were to be governed by rules established by the Government of the Swiss Confederation, in agreement with the Unions concerned, was deleted. The cooperation itself was not thereby affected, however. It is at present governed by an agreement, signed on November 26, 1982. According to that agreement, WIPO provides UPOV with logistical support against indemnification. The agreement also provides that the Council of UPOV appoints the Director General of WIPO to the post of Secretary-General of UPOV. Finally, subject to certain general provisions, the WIPO rules governing staff status and finances apply *mutatis mutandis* to the staff and finances of UPOV.

The 1978 Act came into force on November 8, 1981.

2.3. The 1991 Act

By 1991, some thirty years of experience had been gained in the application of the UPOV Convention and members of the Union were aware of some improvements that could be made. The discovery of the structure of DNA was announced in 1953. During the period 1961–1991, consequential scientific discoveries and technological developments took place, which had profound implications for plant improvement and also for plant variety protection. Each of the changes made in 1991 was to deal with a challenge identified through experience or arising from scientific and technical progress.

All Acts of the UPOV Convention have five *main features*. They established the:

- standard criteria for protection (novelty, variety denomination, distinctness, uniformity and stability);
- minimum scope of protection;
- minimum duration of protection;
- minimum number of plant genera and species for which variety protection must be provided;
- rules for accession to the Convention, national treatment and priority of applications.

The following section provides a general overview on important amendments brought about by the 1991 Act.

With regard to the *standard criteria for protection*, no major changes were made in 1991. However, it was decided to introduce a number of *definitions*, among them definitions of “breeder” and “variety”, which further

⁶ In the United States of America, the provisions of the UPOV Convention are applied to new varieties that are covered by the Plant Variety Protection Act of December 1970 (amended in 1994), i.e. to varieties that are sexually reproduced or are tuber-propagated (other than fungi or bacteria). The terms of the Convention are not applied to varieties that are asexually reproduced and are not tuber-reproduced varieties. For this kind of varieties, protection is available in the United States of America under Title 35, United States Code, Chapter 15 Plant Patents [5]. Furthermore, plant varieties may also be protected in the United States of America under the provisions for utility patents (see for example: <http://www.uspto.gov/web/offices/pac/plant/index.html>).

clarified the UPOV system and contributed to harmonization in its operation.

Important clarifications were also made with regard to the *scope of protection*, to the *varieties* and to the *material* of these varieties covered by a breeder's right. In that context, the concept of *Essentially Derived Varieties (EDV)* was developed: The EDV concept implies that a variety which is deemed to be essentially derived from a protected variety (the initial variety) may qualify for protection. Its exploitation, however, is subject to the authorization of the breeder of the initial variety. The aim is to provide suitable incentives to all forms of plant breeding, thereby also facilitating the integration of biotechnological inventions, which may be protected by patents, into modern plant breeding.

In respect of the *exceptions to the breeder's right*, their scope was redefined. It is now specified that the relevant acts done for experimental purposes or done privately and for non-commercial purposes are not subject to the breeder's right. The latter exceptions may be relevant, for example, in relation to subsistence farming or to private gardening.

With regard to the *use of a protected variety for breeding other varieties*, the authorization of the breeder of the protected variety is not required in either the 1978 Act or in the 1991 Act ("breeder's exemption"). In addition, acts done with these varieties (e.g. marketing) do not require the authorization of the breeder of the protected variety except for the circumstances specified in the 1978 Act or in the 1991 Act. The 1991 Act specifies that the authorization is required, *inter alia*, for the commercial exploitation of an essentially derived variety.

As an optional exception to the breeder's right, a provision on *farm-saved seed* was introduced which allows UPOV members to permit farmers, under certain conditions, to save seed within reasonable limits and in a way which safeguards the legitimate interests of the breeder.

The *minimum duration of protection* was extended to 25 years for varieties of trees and vines and to 20 years for other varieties. Of particular relevance in the context of this article is the provision on the *minimum number of plant genera and species whose varieties must be protected*. When the Convention was revised in 1991, specific provisions on the examination of the application for a breeder's right were introduced which offered a broad range of options for variety testing involving cooperation, for example, with breeders and other authorities on a national and international level. Thus, no particular difficulty was seen in providing protection for varieties of all plant genera and species. Accordingly, the 1991 Act requires the grant of protection for the varieties of all plant genera and species. Existing members of the Union are given five years to achieve this position while new members of the Union are given ten years.

In respect of the accession of future members, new provisions were adopted to allow certain *intergovernmental organizations* to become party to the Convention.

3. The expansion of plant variety protection

Breeders' rights in respect of plant varieties are granted by the members of the Union (States or certain intergovernmental organizations) for their respective territories. UPOV itself does not grant protection. Precise basic provisions in the UPOV Convention together with intensive cooperation within the Union in legal, administrative and technical matters secure a considerable degree of international harmonization and transparency in the operation of the UPOV system on a national and regional level.

Fig. 1 illustrates the growth of the Union in terms of membership and titles of protection. By 1986, some 25 years after the UPOV Convention had been adopted, 17 States had acceded to the Convention. Over the following timespan of 18 years, until 2004, a further 41 States joined the Union. The Appendix A shows the present 58 members of UPOV and their dates of accession. Furthermore, there are some 20 States and two intergovernmental organizations which have initiated the procedure to accede to the Convention⁷ which means that they have requested the Council of UPOV to examine their legislation in respect of its conformity with the provisions of the Convention. If the decision of the Council is positive, they may deposit an instrument of accession. Some 46 further States have contacted the Office of the Union with a view to developing a legislation on plant variety protection in line with the UPOV Convention.

Based on the principles of the UPOV Convention, some 7500 titles per year are granted at present, with an upward trend. The overall number of titles in force has now reached some 53,000, which means that the number of titles granted per year outweighs by far the expiration of titles of protection.

Fig. 2 represents the geographical distribution of UPOV's membership and of those States or organizations which have initiated the procedure to become members.

Another interesting indicator for the progression of plant variety protection is the accession of, up to

⁷ The two intergovernmental organizations are: The European Community, with 25 member States, which operates, since 1995, a regional system of plant variety protection which complies with the 1991 Act of the UPOV Convention. The African Intellectual Property Organization (OAPI), decided the entry into force of Annex X of the Revised Bangui Agreement to become effective on January 1, 2006, which means that plant variety protection, in line with the 1991 Act of the UPOV Convention, will be available in those 16 West and Central African States which are members of OAPI.

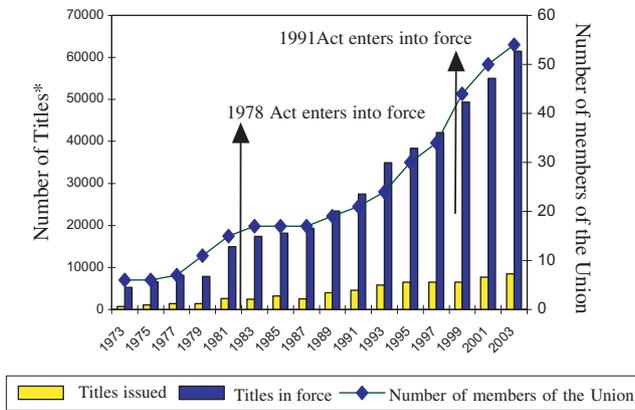


Fig. 1. Development of Plant Variety Protection. *Includes titles issued and in force based on Title 35, United States Code, Chapter 15, Plant Patents, for example in 2003: 994 titles granted; 8786 titles in force.

December 2004, 31 States to the 1991 Act, since members bound by that Act are committed to offer, after some time, protection to varieties of all genera and species (see [Appendix A](#)).

4. Broader basis and participation in plant variety protection

It is no surprise that UPOV's considerable geographical expansion is having its effects on UPOV's activities.

For a better understanding, it is worthwhile to look at UPOV's structure (see [Fig. 3](#)).

Under the supervision of the Council, the decisions of which are prepared by a Consultative Committee, and in direct interaction with the Office of the Union, two main bodies operate: The Administrative and Legal Committee which, as indicated by its denomination, advises on matters of an administrative and legal nature, and the Technical Committee, which reports to the Council on issues related to the practical implementation and international harmonization of the technical approach to plant variety protection. The Technical Committee is assisted by the following Technical Working Parties and a Working Group:

- Technical Working Party for Agricultural Crops (TWA).
- Technical Working Party for Fruit Crops (TWF).
- Technical Working Party for Ornamental Plants and Forest Trees (TWO).
- Technical Working Party for Vegetables (TWV).
- Technical Working Party on Automation and Computer Programs (TWC).
- Working Group on Biochemical and Molecular Techniques, and DNA-Profiling in Particular (BMT).

The attractiveness of the UPOV system is due, to a large extent, to a clear definition of the subject matter of protection, which is the variety, and the scope of the breeder's right, and to a precise and internationally harmonized understanding and application of the technical criteria for protection: Distinctness, Uniformity and Stability (DUS). UPOV, therefore, attaches



Fig. 2. UPOV membership (green/dark shading) and States/Organizations which have initiated the procedure for becoming a member of UPOV (yellow/white) (as at December 1, 2004).

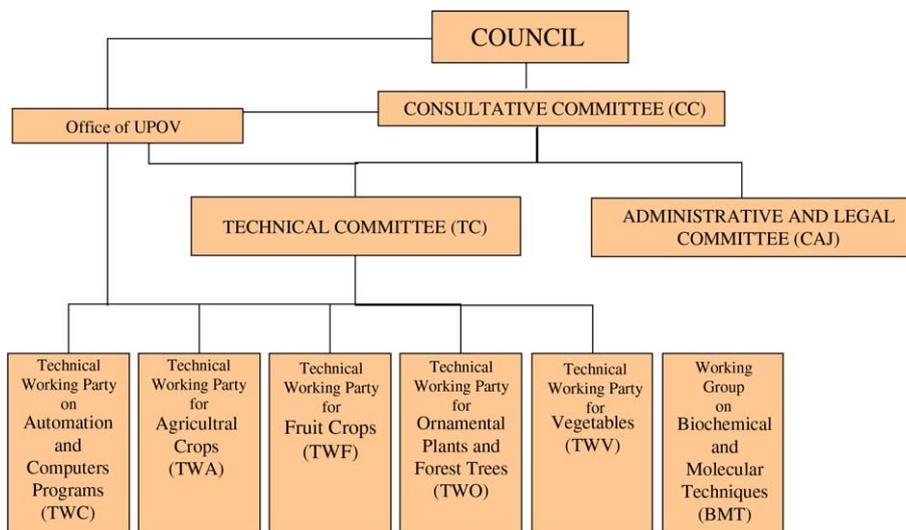


Fig. 3. Structure of UPOV.

considerable attention to these technical matters, and the activities become apparent, for example, in terms of:

- number of Guidelines for the Conduct of Tests for Distinctness, Uniformity and Stability (“Test Guidelines”);
- States being represented at sessions of UPOV’s Technical Working Parties.

4.1. Number of test guidelines

Any decision to grant a breeder’s right in respect of a variety requires an examination for compliance with the conditions of protection and may involve a growing test

for distinctness, uniformity and stability (DUS test). The quality and cost of protection is largely dependent on best practice and on an internationally harmonized approach to DUS testing. There are, at present, some 220 crop-specific Test Guidelines. Fig. 4 shows a considerable increase of Test Guidelines adopted by UPOV’s Technical Committee in recent years.

4.2. Growing participation of UPOV’s technical working parties

Sessions of the Technical Working Parties are normally held once a year and are hosted by UPOV members. Their main purpose is to consider crop-specific issues, such as draft Test Guidelines or special technical

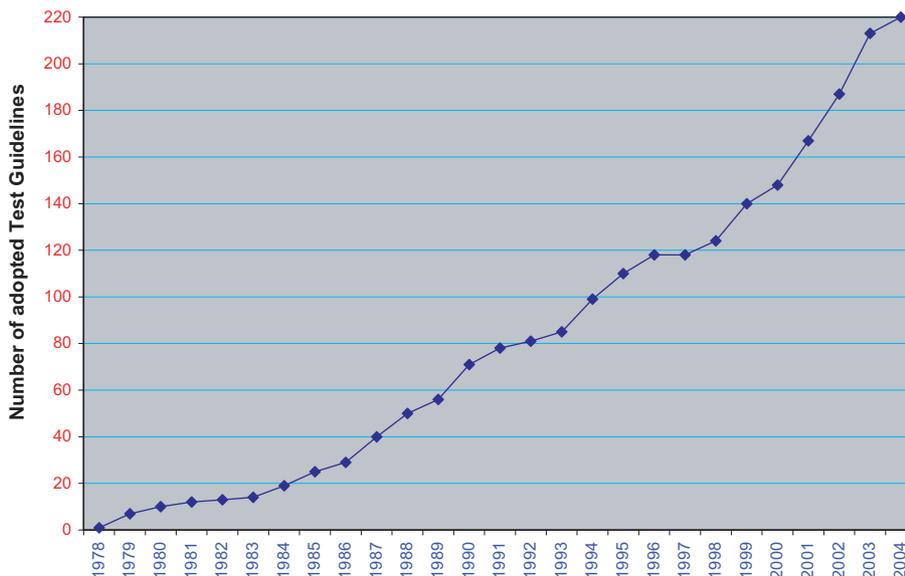


Fig. 4. Number of adopted test guidelines from 1978 to 2004.

issues of a non crop-specific nature (Technical Working Party on Automation and Computer Programs (TWC) and Working Group on Biochemical and Molecular Techniques, and DNA-Profiling in Particular (BMT)). They also offer an opportunity to provide practical training to experts in States which have recently acceded to the UPOV Convention. This explains a considerable interest to host these sessions by a broad range of UPOV members.

Table 1 shows the growing attendance at the sessions of the Technical Working Parties over a period of ten years, which goes beyond UPOV's current membership, and indicates the keen interest in UPOV's technical

approach to plant variety protection and to international harmonization.

5. UPOV'S interaction with other international treaties relevant to plant variety protection

There is no doubt that the UPOV system of plant variety protection has attracted considerable attention in other international fora in recent years, such as the World Trade Organization (WTO) and the Council for Trade-Related Aspects of Intellectual Property (TRIPS), in particular, the Food and Agriculture Organization

Table 1
Countries attending meetings of technical working parties

	1992	1997	2002
Europe	Belgium Denmark France Germany Hungary Italy Netherlands Spain Sweden Switzerland United Kingdom Israel (Austria) (Greece)	Belgium Czech Republic Denmark Finland France Germany Hungary Ireland Italy Netherlands Poland Slovakia Spain Ukraine United Kingdom Israel (Greece) (Romania)	Czech Republic Denmark Estonia Finland France Germany Hungary Italy Netherlands Poland Romania Russian Federation Spain Sweden United Kingdom Israel
Americas	Canada USA	Argentina Canada Mexico Uruguay USA (Brazil)	Argentina Bolivia Brazil Canada Chile Colombia Ecuador Mexico Uruguay
Asia Pacific	Australia Japan New Zealand	Australia Japan New Zealand (Republic of Korea)	Australia China Japan New Zealand Republic of Korea (India) (Indonesia) (Malaysia) (Pakistan) (Philippines) (Thailand) (Viet Nam)
Africa	South Africa	South Africa	Kenya South Africa
	1992 (Total 20)	1997 (Total 29)	2002 (Total 39)

() = non-UPOV member.

of the United Nations (FAO) and the Conference of the Parties to the Convention on Biological Diversity (CBD).

5.1. Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS Agreement)

The interest in plant varieties as a subject matter of intellectual property protection has led to a particular provision in Article 27.3(b) of the TRIPS Agreement, which was concluded on April 15, 1994, as part of the Marrakech Agreement establishing the World Trade Organization (WTO). The TRIPS Agreement binds all members of the WTO.

The relevant part of the TRIPS Article 27 stipulates as follows⁸:

“Patentable subject matter

1. . . . , patents shall be available for any invention, . . . , provided that they are new, involve an inventive step and are capable of industrial application . . .
2. Members may exclude from patentability . . . [ordre public, morality, life or health, environment] . . .
3. Members **may also exclude from patentability**
 - (a) . . .
 - (b) **plants** and animals other than micro-organisms, . . . 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** . . .”

While the UPOV Convention is not explicitly mentioned as a *sui generis* system, the majority of States which have implemented Article 27.3(b) up to now have adopted the UPOV system.

5.2. Relationship between the UPOV Convention, the Convention on Biological Diversity (CBD) and the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA)

As mentioned above, UPOV currently has 58 members. Many of the UPOV members are particularly rich in biodiversity and are party to the Convention on Biological Diversity (CBD) and to the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA). The CBD has, as of January 14, 2005, 188 members and the ITPGRFA has 65 members. Both the CBD and the ITPGRFA aim to encourage the conservation of biological diversity and plant genetic resources, as well as their sustainable use and the sharing of benefits arising out of their use.

The following key elements contained in the CBD (or, since its entry into force, in December 1993, developed by the Conference of the Parties) and in the ITPGRFA are relevant to UPOV:

- Conservation of genetic resources.
- Access to genetic resources.
- Disclosure of origin of plant genetic resources.
- Prior informed consent (PIC) in respect of the use of genetic resources.
- Benefit-sharing.
- Farmers’ rights.

The following paragraphs will consider UPOV’s approach to these issues, thereby summarizing views on “Access to Genetic Resources and Benefit-Sharing” which the Council of UPOV expressed at the request of the Executive Secretary of the CBD in October 2003⁹ [6].

5.2.1. Conservation of genetic resources

Fig. 5 presents a schematic of plant genetic resources which comprise: landraces and wild populations; plant varieties; and protected plant varieties. For UPOV, it is important that all these plant genetic resources be conserved because they all represent genetic variability which is needed for successful plant breeding.

By encouraging plant breeding, UPOV contributes to increasing the value of genetic resources. UPOV encourages the conservation of genetic resources because breeders are required to maintain protected varieties and need a broad basis of plant genetic resources for sustainable breeding programs.

5.2.2. Access to genetic resources

In this context, the Council of UPOV, in its letter of October 2003 to the Executive Secretary of the CBD stressed the importance of the breeder’s exemption as follows:

“UPOV considers that plant breeding is a fundamental aspect of the sustainable use and development of genetic resources. It is of the opinion that access to genetic resources is a key requirement for sustainable and substantial progress in plant breeding. The concept of the “breeder’s exemption” in the UPOV Convention, whereby acts done for the purpose of breeding other varieties are not subject to any restriction, reflects the view of UPOV that the worldwide community of breeders needs access to all forms of breeding material to sustain greatest progress in plant breeding and, thereby, to maximize the use of genetic resources for the benefit of society.”

⁹ UPOV document C/37/21, Annex III (adopted on October 23, 2003), (http://www.upov.int/en/news/2003/pdf/cbd_response_oct232003.pdf).

⁸ Emphasis added by the author.

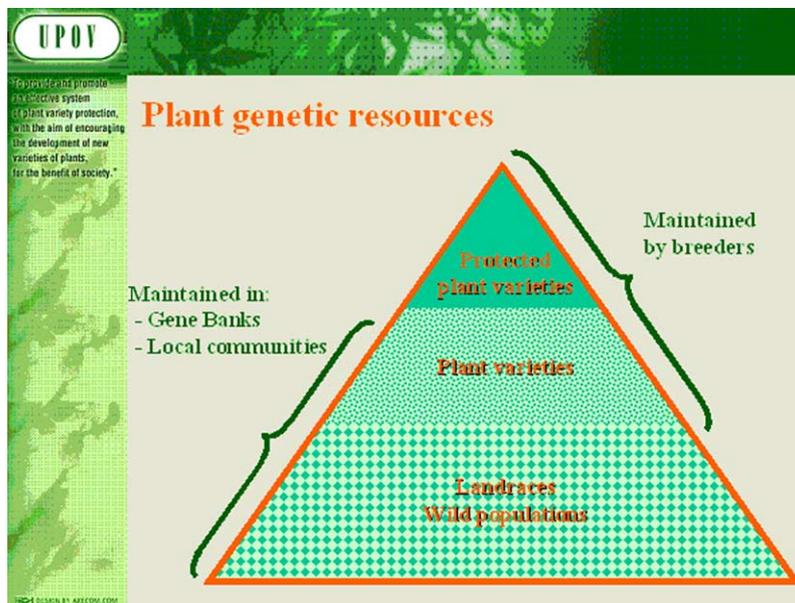


Fig. 5. Plant genetic resources.

5.2.3. Disclosure of origin of plant genetic resources

The requirement for “distinctness” in the UPOV Convention means that protection shall only be granted after an examination to determine if the variety is clearly distinguishable from all other varieties, whose existence is a matter of common knowledge at the date of filing of the application, regardless of the geographical origin. Furthermore, the UPOV Convention provides that, if it is discovered that a breeder’s right has been granted for a variety that was not distinct, that right shall be declared null and void.

The breeder is usually required, in a technical questionnaire that accompanies his application for protection, to provide information concerning the breeding history and genetic origin of the variety. UPOV encourages information on the origin of the plant material used in the breeding of the variety to be provided where this facilitates the examination mentioned above, but could not accept this as an additional condition of protection since the UPOV Convention provides that protection should be granted to plant varieties fulfilling the conditions of novelty, distinctness, uniformity, stability and a suitable denomination and does not allow any further or different conditions for protection. Indeed, in certain cases, for technical reasons, applicants may find it difficult, or impossible, to identify the exact geographic origin of all the material used for breeding purposes.

Thus, if a country decides, in the frame of its overall policy, to introduce a mechanism for the disclosure of countries of origin or geographical origin of genetic resources, such a mechanism should not be introduced in a narrow sense, as a condition for plant variety protection. A separate mechanism from the plant variety protection legislation, such as that used for phytosani-

tary requirements, could be applied uniformly to all activities concerning the commercialization of varieties, including, for example, seed quality or other marketing-related regulations.

5.2.4. Prior informed consent

With regard to any requirement for a declaration that the genetic material has been lawfully acquired or proof that prior informed consent concerning the access of the genetic material has been obtained, UPOV encourages the principles of transparency and ethical behavior in the course of conducting breeding activities and, in this regard, the access to the genetic material used for the development of a new variety should be done respecting the legal framework of the country of origin of the genetic material. However, the UPOV Convention requires that the breeder’s right should not be subject to any further or different conditions than the ones required to obtain protection. UPOV notes that this is consistent with Article 15 of the CBD, which provides that the determination of the access to genetic resources rests with the national governments and is subject to national legislation. Furthermore, UPOV considers that the competent authority for the grant of the breeders’ rights is not in a position to verify whether the access to genetic material has taken place in accordance with the applicable law in this field.

Since the legislation on access to genetic material and the legislation dealing with the grant of breeders’ rights pursue different objectives, have different scopes of application and require a different administrative structure to monitor their implementation, UPOV considers that it is appropriate to include them in different legislation, although such legislation should be compatible and mutually supportive.

5.2.5. Benefit-sharing

UPOV would be concerned if any mechanism to claim the sharing of revenues were to impose an additional administrative burden on the authority entrusted with the grant of breeders' rights and an additional financial obligation on the breeder when varieties are used for further breeding. Indeed, such an obligation for benefit-sharing would be incompatible with the principle of the breeder's exemption established in the UPOV Convention whereby acts done for the purpose of breeding other varieties are not, under the UPOV Convention, subject to any restriction and the breeders of protected varieties (initial varieties) are not entitled to financial benefit-sharing with breeders of varieties developed from the initial varieties, except in the case of essentially derived varieties (EDV). Furthermore, a benefit-sharing mechanism within the legislation to grant breeders' rights, would seem to tax only "protected" varieties and, instead of creating incentive mechanisms to develop new varieties, may provoke the opposite effect, whereby breeders would not develop new varieties or would not seek protection (favoring a legally insecure environment).

The ITPGRFA (Article 13.2. (d)(ii)) recognizes the concept of the breeder's exemption, in that breeders are exempted from financial benefit-sharing whenever their products are "available without restriction to others for further research and breeding ...".

5.2.6. Farmers' rights

The ITPGRFA, in Article 9, stipulates as follows:

"9.2. The Contracting Parties agree that the responsibility for realizing Farmers' Rights, as they relate to plant genetic resources for food and agriculture, rests with national governments. In accordance with their needs and priorities, each Contracting Party should, as appropriate, and subject to its national legislation, take measures to protect and promote Farmers' Rights, including:

- (a) protection of traditional knowledge relevant to plant genetic resources for food and agriculture;
- (b) the right to equitably participate in sharing benefits arising from the utilization of plant genetic resources for food and agriculture; and
- (c) 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.

"9.3. Nothing in this Article shall be interpreted to limit any rights that farmers have to save, use, exchange and sell farm-saved seed/propagating material, subject to national law and as appropriate."

As the implementation of this provision is subject to national law, there should be no conflict with national legislation implementing the UPOV Convention which

subjects certain acts done with material of protected varieties to the authorization of the breeder. With regard to the traditional practice of farmers of saving seed, there are two relevant provisions in the UPOV Convention: First, the breeder's right does not extend to acts done privately and for non-commercial purposes. Therefore, activities of subsistence farmers, where these constitute acts done privately and for non-commercial purposes, are excluded from the scope of the breeder's right and such farmers freely benefit from the availability of protected new varieties; Second, the provision on "farm-saved seed" is an optional benefit-sharing mechanism provided by the UPOV Convention, under which UPOV members may permit farmers, on their own farms, to use part of their harvest of a protected variety for the planting of a further crop within reasonable limits and while safeguarding the legitimate interests of the breeder.

The conclusion is, therefore, that the CBD and ITPGRFA can be implemented in harmony with the UPOV Convention.

6. Conclusion

The impact of the UPOV Convention has considerably grown in recent years. There has not only been a geographical expansion and an increase in titles of protection, but also an expansion in terms of genera and species and scope of protection. The enhanced interest in the UPOV Convention is reflected in the context of discussions on the development and/or implementation of other international treaties, such as the TRIPS Agreement, the ITPGRFA and the CBD. They have highlighted the advantages of the UPOV system as a carefully balanced approach in respect of effective protection of new varieties, conservation of and access to plant genetic resources and benefit-sharing.

Appendix A. States party to the international convention for the protection of new varieties of plants

International Convention for the protection of new varieties of plants¹⁰ UPOV Convention (1961), as revised at Geneva (1972, 1978 and 1991) Status on January 14, 2005.

(Total: 58 States)

¹⁰ The International Union for the Protection of New Varieties of Plants (UPOV), established by the International Convention for the Protection of New Varieties of Plants, is an independent intergovernmental organization having legal personality. Pursuant to an agreement concluded between the World Intellectual Property Organization (WIPO) and UPOV, the Director General of WIPO is the Secretary-General of UPOV and WIPO provides administrative services to UPOV.

State	Date on which State became member of UPOV	Latest Act ¹ of the Convention to which State is party and date on which State became party to that Act	
Argentina	December 25, 1994	1978 Act	December 25, 1994
Australia	March 1, 1989	1991 Act	January 20, 2000
Austria	July 14, 1994	1991 Act	July 1, 2004
Azerbaijan	December 9, 2004	1991 Act	December 9, 2004
Belarus	January 5, 2003	1991 Act	January 5, 2003
Belgium ²	December 5, 1976	1961/1972 Act	December 5, 1976
Bolivia	May 21, 1999	1978 Act	May 21, 1999
Brazil	May 23, 1999	1978 Act	May 23, 1999
Bulgaria	April 24, 1998	1991 Act	April 24, 1998
Canada	March 4, 1991	1978 Act	March 4, 1991
Chile	January 5, 1996	1978 Act	January 5, 1996
China	April 23, 1999	1978 Act ³	April 23, 1999
Colombia	September 13, 1996	1978 Act	September 13, 1996
Croatia	September 1, 2001	1991 Act	September 1, 2001
Czech Republic	January 1, 1993	1991 Act	November 24, 2002
Denmark ⁴	October 6, 1968	1991 Act	April 24, 1998
Ecuador	August 8, 1997	1978 Act	August 8, 1997
Estonia	September 24, 2000	1991 Act	September 24, 2000
Finland	April 16, 1993	1991 Act	July 20, 2001
France ⁵	October 3, 1971	1978 Act	March 17, 1983
Germany	August 10, 1968	1991 Act	July 25, 1998
Hungary	April 16, 1983	1991 Act	January 1, 2003
Ireland	November 8, 1981	1978 Act	November 8, 1981
Israel	December 12, 1979	1991 Act	April 24, 1998
Italy	July 1, 1977	1978 Act	May 28, 1986
Japan	September 3, 1982	1991 Act	December 24, 1998
Jordan	October 24, 2004	1991 Act	October 24, 2004
Kenya	May 13, 1999	1978 Act	May 13, 1999
Kyrgyzstan	June 26, 2000	1991 Act	June 26, 2000
Latvia	August 30, 2002	1991 Act	August 30, 2002
Lithuania	December 10, 2003	1991 Act	December 10, 2003
Mexico	August 9, 1997	1978 Act	August 9, 1997
Netherlands	August 10, 1968	1991 Act ⁶	April 24, 1998
New Zealand	November 8, 1981	1978 Act	November 8, 1981
Nicaragua	September 6, 2001	1978 Act	September 6, 2001
Norway	September 13, 1993	1978 Act	September 13, 1993
Panama	May 23, 1999	1978 Act	May 23, 1999
Paraguay	February 8, 1997	1978 Act	February 8, 1997
Poland	November 11, 1989	1991 Act	August 15, 2003
Portugal	October 14, 1995	1978 Act	October 14, 1995
Republic of Korea	January 7, 2002	1991 Act	January 7, 2002
Republic of Moldova	October 28, 1998	1991 Act	October 28, 1998
Romania	March 16, 2001	1991 Act	March 16, 2001
Russian Federation	April 24, 1998	1991 Act	April 24, 1998
Singapore	July 30, 2004	1991 Act	July 30, 2004
Slovakia	January 1, 1993	1978 Act	January 1, 1993
Slovenia	July 29, 1999	1991 Act	July 29, 1999
South Africa	November 6, 1977	1978 Act	November 8, 1981
Spain ⁷	May 18, 1980	1961/1972 Act	May 18, 1980
Sweden	December 17, 1971	1991 Act	April 24, 1998

Appendix A (*continued*)

State	Date on which State became member of UPOV	Latest Act ¹ of the Convention to which State is party and date on which State became party to that Act	
Switzerland	July 10, 1977	1978 Act	November 8, 1981
Trinidad and Tobago	January 30, 1998	1978 Act	January 30, 1998
Tunisia	August 31, 2003	1991 Act	August 31, 2003
Ukraine	November 3, 1995	1978 Act	November 3, 1995
United Kingdom	August 10, 1968	1991 Act	January 3, 1999
United States of America	November 8, 1981	1991 Act ⁸	February 22, 1999
Uruguay	November 13, 1994	1978 Act	November 13, 1994
Uzbekistan	November 14, 2004	1991 Act	November 14, 2004

¹ “1961/1972 Act” means the International Convention for the Protection of New Varieties of Plants of December 2, 1961, as amended by the Additional Act of November 10, 1972; “1978 Act” means the Act of October 23, 1978, of the Convention; “1991 Act” means the Act of March 19, 1991, of the Convention.

² With a notification under Article 34(2) of the 1978 Act.

³ With a declaration that the 1978 Act is not applicable to the Hong Kong Special Administrative Region.

⁴ With a declaration that the Convention of 1961, the Additional Act of 1972, the 1978 Act and the 1991 Act are not applicable to Greenland and the Faroe Islands.

⁵ With a declaration that the 1978 Act applies to the territory of the French Republic, including the Overseas Departments and Territories.

⁶ Ratification for the Kingdom in Europe.

⁷ With a declaration that the Convention of 1961 and the Additional Act of 1972 apply to the entire territory of Spain.

⁸ With a reservation pursuant to Article 35(2) of the 1991 Act.

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