

Plant Breeder's Rights, Farmer's Rights and their Status in Present Condition

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ABSTRACT

The Protection of Plant Varieties and Farmers' Rights (PPV&FR) Act, 2001 was enacted by the Parliament of India in accordance to the Article 27.3(b) of TRIPS (Trade Related Aspects of Intellectual Property Rights) Agreement. The Indian legislation has made sufficient provisions to protect the interests of plant breeders from both private and public sectors with overarching recognition of the farmers as conservers of traditional plant varieties, landraces, wild relatives of crops for specific traditional practices of saving, producing, sharing or exchanging seed amongst farmers as their farm produce while fully recognizing the contributions of both commercial plant breeders and farmers in plant breeding activity in developing new varieties. Protection of a plant variety is an intellectual property right (IPR) that the breeder (who could be an individual, farmer, community of farmers, institution or a government) enjoys over the variety along with designation in the notified plant species as the said variety's owner, who is entitled to plant breeders' rights on the variety with the exception of farmers' rights on the variety as provided in the Act. This is a system not identical to the UPOV model favored by most developed countries, trying to strike an equilibrium between the interests of the breeders and the need to protect farm-grown biodiversity and to award breeders with the traditional rights and benefit of saving, using, trading and selling farm-grown seeds. The application of PPV&FR 2001 protected the farmers rights in many instances where petition filed against the companies in the court was validated for the favour of farmers and farmers got protected about their activities.

Keywords: Intellectual Property Rights, Landraces, Wild relatives, Biodiversity, Private sector, Public sector

Introduction

In order to provide for the establishment of an effective system for the protection of plant varieties, the rights of farmers and plant breeders and to encourage the development of new varieties of plants it has been considered necessary to recognize and protect the

rights of the farmers in respect of their contributions made at any time in conserving, improving and making available plant genetic resources for the development of new plant varieties. The Govt. of India enacted "The Protection of Plant Varieties and Farmers' Rights (PPV&FR) Act, 2001" adopting a sui generis

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system. Indian legislation is not only in conformity with International Union for the Protection of New Varieties of Plants (UPOV, 1978), but also has sufficient provisions to protect the interests of public sector plant breeding institutions and the farmers. The legislation recognizes the contributions of both commercial plant breeders and farmers in plant breeding activity and also provides to implement TRIPs (Trade Related Aspects of Intellectual Property Rights) in a way that supports the specific socio-economic interests of all the stakeholders including private, public sectors and research institutions, as well as resource-constrained farmers. The idea underlying IPR protection for technological innovations is that, in the absence of any form of IPR protection, people will have no incentive to innovate, as any third party/competitor would be perfectly capable of free-riding on the efforts of the one who discloses the fruit of his innovative effort (Stiglitz, 2008). This foundational rationale is also applicable to plant breeders' rights (PBRs), even though it must be admitted that the PBR system is quite different in some respects compared to the other typical IPR-protecting technological innovations, i.e., patent rights (Savale, 2016; Posner, 2005).

Objectives of the PPV and FR Act, 2001

1. To establish an effective system for the protection of plant varieties, the rights of farmers and plant breeders' and to encourage the development of new varieties of plants.
2. To recognize and protect the rights of farmers in respect of their contributions made at any time in conserving, improving and making

available plant genetic resources for the development of new plant varieties.

3. To accelerate agricultural development in the country, protect Plant Breeders' Rights; stimulate investment for research and development both in public and private sector for the development new of plant varieties.
4. Facilitate the growth of seed industry in the country which will ensure the availability of high quality seeds and planting material to the farmers (PPV and FR ACT, 2001).

Implementation of the Act

To implement the provisions of the Act the Department of Agriculture, Cooperation and Farmers Welfare, Ministry of Agriculture and Farmers Welfare established the Protection of Plant Varieties and Farmers' Rights Authority on 11th November, 2005. The Chairperson is the Chief Executive of the Authority. Besides the Chairperson, the Authority has 15 members, as notified by the Government of India (GOI). Eight of them are ex-officio members representing various Departments/ Ministries, three from SAUs and the State Governments, one representative each for farmers, tribal organizations, seed industry and women organizations associated with agricultural activities that are nominated by the Central Government. The Registrar General is the ex-officio Member Secretary of the Authority.

General Functions of the Authority

1. Registration of new plant varieties, essentially derived varieties (EDV), extant varieties;
2. Developing DUS (Distinctiveness, Uniformity and Stability) test guidelines for new plant species;

3. Developing characterization and documentation of varieties registered;
4. Compulsory cataloging facilities for all variety of plants;
5. Documentation, indexing and cataloguing of farmers' varieties;
6. Recognizing and rewarding farmers, community of farmers, particularly tribal and rural community engaged in conservation and improvement;
7. Preservation of plant genetic resources of economic plants and their wild relatives;
8. Maintenance of the National Register of Plant Varieties and
9. Maintenance of National Gene Bank.

Registration of Varieties

A variety is eligible for registration under the Act if it essentially fulfills the criteria of Distinctiveness, Uniformity and Stability (DUS). The Central Government issues notifications in official Gazettes specifying the genera and species for the purpose of registration of varieties. So far, the Central Government has notified 157 crop species for the purpose of registration.

The PPV&FR Authority has developed "Guidelines for the Conduct of Species Specific Distinctiveness, Uniformity and Stability" tests or "Specific Guidelines" for individual crop species.

Certificate of Registration

The certificate of registration issued will be valid for nine years in case of trees and vines and six years in case of other crops. It may be reviewed and renewed for the remaining period on payment of renewal

fees subject to the condition that the total period of validity shall not exceed eighteen years in case of trees and vines from the date of registration of the variety, fifteen years from the date of notification of variety under the Seeds Act, 1966 and in other cases fifteen years from the date of registration of the variety.

Rights of Community

1. It is compensation to village or local communities for their significant contribution to the evolution of variety which has been registered under the Act.
2. Any person/group of persons/ governmental or non- governmental organization, on behalf of any village/ local community in India, can file in any notified centre, claim for contribution in the evolution of any variety.

Convention Countries

Convention country means a country which has acceded to an international convention for the protection of plant varieties to which India has also acceded or a country which has a law of protection of plant varieties on the basis of which India has entered into agreements for granting plant breeders' rights to the citizens of both the countries. Any person if applies for the registration of a variety in India within twelve months after the date on which the application was made in the convention country, such variety shall, if registered under this Act, be registered as of the date on which the application was made in the convention country and that date shall be deemed for the purpose of this Act to be the date of registration.

Plant Varieties Protection Appellate Tribunal

There is transitory provision by which it is provided that till the PVPAT is established the Intellectual Property Appellate Board (IPAB) will exercise the jurisdiction of PVPAT. Consequently the Plant Varieties Protection Appellate Tribunal (PVPAT) has been established by appointing a Technical Member. All orders or decisions of the Registrar of Authority relating to registration of variety and orders or decisions of the Registrar relating to registration as agent or licensee can be appealed in the Tribunal. Further, all orders or decisions of Authority relating to benefit sharing, revocation of compulsory license and payment of compensation can also be appealed in the Tribunal. The decisions of the PVPAT can be challenged in High Court. The Tribunal shall dispose of the appeal within one year.

Plant Breeder's Rights

What Are PBRs and Why Do We Have the System?

A plant variety has been defined in Article 1(vi) of the UPOV Convention (UPOV, 1991) : 'Variety' means a plant grouping within a single botanical taxon of the lowest known rank, which grouping, irrespective of whether the conditions for the grant of a breeder's right are fully met, can be defined by the expression of the characteristics resulting from a given genotype or combination of genotypes, distinguished from any other plant grouping by the expression of at least one of the said characteristics and considered as a unit with regard to its suitability for being propagated unchanged".

A basic example can illustrate the definition. A "Golden Delicious" apple is (1) a plant grouping within a single botanical taxon of the lowest known rank, being a grouping of apples. (2) It is defined by the expression of the characteristics resulting from a given genotype or combination of genotypes, which means that it has certain phenotypical characteristics, which can relate to both morphological and physiological traits of the variety. (3) It is distinguished from any other plant grouping by the expression of at least one of the said characteristics, which are the specific characteristics of "Golden Delicious" apples, i.e., golden color and a mild sweet flavor, amongst other things. (4) The variety must also be capable of being propagated unchanged, which means that the specific characteristics of the variety must remain present after propagation (be it that slight variations will be inevitable when propagating plants). For instance, if a certain white rose would, after propagation, turn red, it would not fulfil this requirement and could not be labeled a plant variety.

In order to obtain PBR protection, a variety must fulfill the following requirements. According to Article 5(1) UPOV Convention, the plant variety for which protection is sought must be: i) new, ii) distinct, iii) uniform and (iv) stable (UPOV, 1991, 2002).

The abovementioned four requirements, the so-called DUS criteria, which need to be fulfilled in order to attain PBR protection, are further defined in UPOV 1991 as follows.

Novelty: Article 6 UPOV Convention

"The variety shall be deemed to be new if, at the date of filing of the application for a

breeder's right, propagating or harvested material of the variety has not been sold or otherwise disposed of to others, by or with the consent of the breeder, for purposes of exploitation of the variety (i) in the territory of the Contracting Party in which the application has been filed earlier than one year before that date and (ii) in a territory other than that of the Contracting Party in which the application has been filed earlier than four years or, in the case of trees or of vines, earlier than six years before the said date" (UPOV, 1991, 2002).

Distinctness: Article 7 UPOV Convention

"The variety shall be deemed to be distinct if it is clearly distinguishable from any other variety whose existence is a matter of common knowledge at the time of the filing of the application. In particular, the filing of an application for the granting of a breeder's right or for the entering of another variety in an official register of varieties, in any country, shall be deemed to render that other variety a matter of common knowledge from the date of the application, provided that the application leads to the granting of a breeder's right or to the entering of the said other variety in the official register of varieties, as the case may be" (UPOV, 1991, 2002).

Uniformity, Article 8 UPOV Convention :

"The variety shall be deemed to be uniform if, subject to the variation that may be expected from the particular features of its propagation, it is sufficiently uniform in its relevant characteristics" (UPOV, 1991, 2002).

Stability, Article 9 UPOV Convention :

"The variety shall be deemed to be stable if its relevant characteristics remain

unchanged after repeated propagation or, in the case of a particular cycle of propagation, at the end of each such cycle" (UPOV, 1991, 2002).

The Plant Breeders' Rights programme was first established in 1987 under the Plant Variety Rights Act (PVRA), which was succeeded by the current Plant Breeders' Rights Act (PBRA).1994 (Savale, 2016). Plant breeders' rights (PBR), also known as plant variety rights (PVR), are intellectual property rights granted to the breeder of a new variety of plant. Plant Breeders Rights are granted to novel plant varieties that are distinctive uniform, and stable (e.g., cultivars breed true - to- type for desired traits). The legal protection of a new plant variety is granted to the breeder or his successor. The effect of PBR is that prior authorization is required before the material can be used for commercial purposes.

The Procedure for Registration of Plant Breeders' Rights

Registration is essential to get legal rights. There is no protection without registration. The registration consists of following steps :

1. Filing application in the prescribed for,
2. Payment of prescribed processing fee along with application. The registration fee varies from country to country. In USA, after registration annual renewal fee (300 Dollars) is payable.
3. Examination of the application by the experts, and
4. Issue of protection certificate, if application is found to meet the desired requirements. Normally the registration takes about 2.5 years for most of the species.

The Rights Provided to the Breeder of a New Variety

The Plant Breeders' Rights Act provides plant breeders the exclusive right to produce and sell new plant varieties which they have developed. In other words, It provides exclusive rights to the breeder for commercial production and marketing of his variety. The important Plant Breeders' Rights are as follows :

Rights for Commercial Seed Production : PBR provide legal right to the breeder of a variety for large scale seed production. This he can do either on his own farm or on the farms of authorized farmers on payment basis.

Rights for Marketing : The breeder or owner of a variety has exclusive rights to regulate marketing of his variety.

Rights to Export and Import : The breeder or owner of a variety has full rights to regulate export and import of his or her variety.

Rights of Authorization : The breeder or owner of a protected variety has rights to authorize other interested persons for commercial production, and marketing, export and import of his variety. However, prior authorization of the breeder or owner of a variety is required for such purpose.

Rights to Prevent Infringement : The breeder or owner of a variety has rights to prevent others from unauthorized commercial production and marketing of his variety.

Infringement of Plant Breeders' Rights

Unauthorized production and marketing of a registered variety by another

person renders infringement. The owner has the right to take legal action against the infringer and claim damages. The PBR Authority may initiate legal action against a person who is involved in the infringement of a protected plant variety. The Authority can recover both damages and profits from such person. The Plant Breeders' Act (PBRA) provides for heavy penalties against infringement of the breeders' right. In the USA it is 5500 dollars for individuals and 275000 dollars for companies.

What is Meant by Breeders' Exemptions?

The legal rights that are provided to plant breeders to use protected material for further research refer to breeders' exemptions. Breeders' exemptions are also called research exemptions or breeders' privilege. The UPOV Act 1978 provides Breeders' act where authorization is required for the production, sale, and marketing of propagating material. However, the Act 1991 has curtailed Breeders' Exemptions.

There are several advantages of Plant Breeders' Rights which are listed below :

- i. Breeders get benefit of their variety.
- ii. PBR helps in faster development of seed industry.
- iii. PBR leads to improvement in quality because of competition.
- iv. PBR is useful in procurement of good material on payment basis.
- v. PBR helps in enrichment of genetic resources.

There are some disadvantages of Plant Breeders' Rights which are listed below :

- i. It will promote monopoly.
- ii. It will encourage unhealthy practices.
- iii. It may lead to increase in prices.
- iv. There will be reduction in genetic variability.
- v. There will be compulsion to purchase fresh seed every year.

Farmer's Right

Farmers' rights refer to the rights arising from the past, present and future contributions of farmers in conserving, improving and making available plant or animal genetic resources, particularly those in the centres of origin/diversity. In other words, the legal rights provided to farmers to save, use, sow, replant, exchange, share or sell their farm produce including seed of a variety protected under the Plant Variety Protection Act refer to Farmers Rights. The purpose of these rights is to "ensure full benefits to farmers and support the continuation of their contributions.

The FAO Conference held in Rome from 11-29 November, 1989 endorsed the concept of Farmers Rights with a view to:

- i. ensuring global recognition of the need for conservation and the availability of sufficient funds for these purposes.
- ii. assisting farmers and farming communities throughout the world, especially those in areas of original diversity of plant genetic resources, in the protection and conservation of their PGR and of the natural biosphere.
- iii. allowing the full participation of farmers, their communities and countries in the benefits derived, at present and in the future, from the improved use of PGR.

Is Registration Required for a Farmers' Variety?

A farmer who has bred or developed a new variety shall be entitled for registration and protection of his variety like a breeder.

What is the procedure of registration of Farmers' Variety?

The registration process consists of the following steps :

- i) Filing of application: The application is to be filed in the prescribed form and submitted in the office of the registrar of Plant Variety Protection and Farmers' Rights Act. The application should contain all the desired documents and information
- ii) Examination of the application: The application is examined by experts in the registrar office. If found correct, it is advertised for opposition. Three months time is given for filing opposition.
- iii) Registration: If there is no opposition, and the registrar and Authority are satisfied, the variety is registered and the registration certificate is issued to the breeder, farmer or other owner of the variety.

What are the Requirements for Registration of Farmers' Variety?

The farmers variety shall be entitled for registration if it meets the following requirements.

- i. It should have a denomination name assigned by the applicant.
- ii. An affidavit that the variety does not contain terminator gene.

- iii. A complete passport data of parental lines from which the variety has been derived.
- iv. The contribution of any farmer, village community, institution or organization in the development of the variety.
- v. The source of genetic material used in developing the variety and the parental material used in developing new variety was lawfully acquired.
- vi. A brief description of the variety about its novelty, distinctiveness, uniformity and stability.
- vii. A proof of the right to make the application.

How much Fee is Charged from Farmers for Registration of a Variety?

In India, a farmer or group of farmers or village community shall not be liable to pay any fee in any proceeding before the Authority or Registrar or the Tribunal or the High Court under Plant Variety Protection and Farmers' Rights Act or the rules made thereunder.

The Farmers' Rights Act provides the following rights to the farmers in India even for the variety protected under the PVP and FR Act.

- i. Rights to save, use, sow or replant seeds of his farm produce.
- ii. Rights to exchange or share his farm produce.
- iii. Rights to sell seeds of his farm produce
- iv. However, the farmer cannot sell the seeds or planting material under a brand name.

Authorization of Farmers' Variety

The authorization for an essentially derived variety from farmers' variety cannot be given by the breeder of such farmers; variety except with the consent of the farmers or group of farmers or community of farmers who have made contribution to the preservation or development of such variety.

What is Benefit Sharing?

If the variety has been developed by a particular farmer, he can get benefits of hit variety. In case of community rights, the sharing of benefits becomes difficult and the money is deposited in the gene fund.

The Protection of Plant Varieties and Farmers' Rights Act (PPV&FR Act) seeks to address the rights of plant breeders and farmers on an equal footing (Jördens, 2005). It affirms the necessity of recognizing and protecting the rights of farmers with respect to the contribution they make in conserving, improving and making Plant Genetic Resources (PGR) available for the development of new plant varieties (Godden, 1984).

The PPV&FR Act recognizes the multiple roles played by farmers in cultivating, conserving, developing and selecting varieties. With regard to developing or selecting varieties, the Act refers to the value added by farmers to wild species or traditional varieties/ landraces through selection and identification for their economic traits. Accordingly, farmers' rights encompass the roles of farmers as users, conservers and breeders. Farmers are granted nine specific rights, which are as under :

Right 1 : Access to seed [Section 39(1)(iv)]: Farmers can save, use, sow, re-sow, exchange, share, or sell their farm produce, including protected varieties, as before the PPV&FR Act, but cannot sell branded seed (UPOV, 1991).

Right 2 : Benefit sharing [Section 26]: The PPV&FR Act integrates access and benefit-sharing provisions with Plant Breeder's Rights (PBRs) for plant breeders and legal entities. It permits accession of genetic resources used in breeding, but requires breeders to declare their geographical origin and accession.

Right 3 : Compensation [Section 39(2)]: Registered seed must be sold with full disclosure of agronomic performance under recommended management conditions. If seed fails, farmers can claim compensation from breeder through PPV&FR Authority intervention.

Right 4 : Reasonable seed price [Section 47]: Farmers have the right to access registered varieties' seeds at reasonable prices, but if not, breeders must license production, distribution, and sales to a legal entity. Most plant variety protection laws require compulsory licensing to ensure adequate seed supply.

Right 5 : Farmers' recognition and reward for contributing to conservation [Section 39(i)(iii) & Section 45(2)(C)]: Since 2007, farmers engaged in PGR conservation and crop improvement receive recognition and rewards from the national gene fund. The Plant Genome Saviour/Community awards, established in consultation with the Indian government, reward farming communities and individuals for their contributions to PGR selection.

Right 6 : Registration of farmers' varieties [Section 39(1)(iii)]: Farmers can register existing farmer varieties under the PPV&FR Act, meeting distinctiveness, homogeneity, stability, and nomenclature criteria, with one-time registration opportunities, eligible for all PBRs.

Right 7 : Prior authorization for the commercialization of essentially derived varieties [Section 28 (6)]: Farmers must provide prior authorization for commercialization of derived varieties when used by third parties, allowing negotiation of terms like royalties and benefit-sharing.

Right 8 : Exemption from registration fees for farmers [Section 44]: The PPV&FR Act grants farmers exemption from fees for variety registration, DUS tests, and legal proceedings related to infringement or other causes.

Right 9 : Farmer protection from innocent infringement [Section 42]: Farmers can avoid charges if they prove they were unaware of rights infringement under the PPV&FR Act, considering centuries-old unrestrained rights, novel Act nature, and poor legal literacy among farmers.

Current Issues

Issues about Essentially Derived Variety Concept

Plant breeders' rights (PBRs) are an important Intellectual Property right, and as plant breeding has a crucial role to play in sustainability, it is vital that innovations in plant breeding receive the appropriate innovation incentives. The exemption of full breeders ensures that there is always free access to the plant variety protected by a

PBR for developing new varieties. The price to pay for this exemption is that PBR holders cannot prevent third parties from taking advantage of their efforts and investments in developing a new variety. This invites free-riding, at the detriment of the PBR holder. The concept of “essentially derived varieties” (EDV), introduced in 1991, provided a “fix” for this problem (UPOV, 1991). It allows PBR holders to extend, at least to some extent, the scope of protection of their PBR to those varieties which use all or most essential characteristics of the initial protection variety. Decades have passed, but no adequate interpretation of the complex EDV concept has been found. The advent of new breeding techniques (NBTs) has made the discussion about a fair scope of protection of PBRs all the more relevant. This necessitates a modernization of the EDV concept, if the PBR system is to remain relevant and continue to be an innovation-incentivizing mechanism, (Lawson, 2014).

It deserves furthermore mentioning that even though private investment in agricultural research and development (R&D) is growing considerably, public investment, due to market failures, is still important (Keith, 2016). This should not detract, however, from the above argument made regarding the potential (whether this is in the near or more distant future) for market concentration, compounded by the existence of important IP portfolios (largely patent rights), which, in the case of more platform-based technologies (such as CRISPR-Cas), could lead to important market control. For this reason, and adding to what has been said earlier, a broader interpretation of the EDV concept is required.

Other Issues

The Delhi High Court recently upheld the decision made by Protection of Plant Varieties and Farmers’ Rights Authority (PPVFRA) regarding the revocation of PepsiCo India’s intellectual property protection for a potato variety (FL 2027).

The case of FL 2027 Potato Variety

About FL 2027 Variety

FL 2027 is a potato variety developed by Robert W Hoopes at Frito-Lay Agricultural Research. It is specifically bred for chip production by PepsiCo’s Lay’s brand. FL 2027 is an ideal potato variety for chip manufacturing due to its high dry matter, low sugar content, and lower moisture content. These qualities minimize dehydration and energy costs during processing while reducing the risk of blackening when fried.

Case : PepsiCo India Holdings was granted a certificate of registration for FL 2027 as an “extant variety” on February 1, 2016 by PPVFRA.

It implied that during the validity period, nobody else could commercially produce, sell, market, distribute, import or export it without the breeder’s authorization. This period was 6 years from the date of registration and extendable up to 15 years. However, PepsiCo in its 2012 application had sought the registration of FL 2027 as a “new variety” which due to failing to meet certain criteria was rejected.

Criteria for a “new variety” of Plant

A “new variety” has to conform to the criterion of novelty - the propagated or harvested material from it should not have been sold in India earlier than one year

before the date of filing the application for registration. FL 2027 variety could satisfy only the criteria of distinctiveness, uniformity and stability, but not novelty.

Reasons for the Registration Revocation : PepsiCo had also provided an incorrect first date of commercialization of the variety (17 Dec 2009), when it was already commercialized in 2002 in Chile. Hence, PPVFRA revoked the protection in December 2021 and rejected PepsiCo's application for renewal in February 2022. It also made it clear that India's rules do not allow a patent on seed varieties. PepsiCo challenged PPVFRA's decision in the Delhi HC.

Ruling by the Delhi HC : The Delhi HC upheld the revocation of intellectual property protection faulting PepsiCo's application, stating that the company wrongly applied for registration of FL 2027 as a "new variety" and provided incorrect information regarding its first commercialisation date.

What is PPVFRA?

The PPVFRA is an organization responsible for safeguarding the rights of plant breeders and farmers in India. It is an authority established under the Protection of Plant Varieties and Farmers' Rights (PPVFR) Act, 2001. The PPVFRA plays a crucial role in granting intellectual property protection to plant varieties and ensuring the rights of breeders and farmers are upheld. It reviews applications for plant variety registration, conducts examinations, and grants certificates of registration to eligible applicants. The authority also has the power to revoke or cancel the registration of plant varieties if deemed necessary.

Other Foreign Companies in India have been involved in Patent Infringement Issue

Monsanto vs. Nuziveedu Seeds : This case involved a patent infringement suit by Monsanto against Nuziveedu Seeds, an Indian seed company, for using its patented Bt cotton technology without paying royalties. The Delhi HC granted an interim injunction in favour of Monsanto in 2016, directing Nuziveedu Seeds to pay royalties based on the percentage of the net selling price of its seeds. The parties later settled the dispute through arbitration in 2017.

Novartis vs. Union of India : This case involved a patent application by Novartis for its anti-cancer drug Glivec, which was rejected by the Indian Patent Office and the Intellectual Property Appellate Board on the grounds that it was not a new invention, but only a modified form of an existing compound.

The Supreme Court of India upheld the rejection in 2013, ruling that the drug did not satisfy the criteria of novelty.

Conclusion

Plant Breeders Rights are an important Intellectual Property Right and deserve our focus and attention. Plant Breeders Rights play an essential role in innovation in plant breeding, and innovation in plant breeding is of huge importance, in a time where sustainability is at the forefront of most agendas. Some characteristics of Plant Breeders' Rights (PBR) are distinctive within the framework of intellectual property protection. Foremost among these is the full breeders' exemption, which guarantees unrestricted access to a PBR-

protected variety for the purpose of developing new varieties. However, this openness entails a trade-off: PBR holders cannot stop third parties from benefiting from their substantial efforts and investments in developing a new variety. During the negotiations leading to UPOV 1991, it was acknowledged that the absence of any additional protection against third parties who exploit most or all of the essential characteristics of a protected variety to create a new one was inherently unfair and could undermine innovation in plant breeding, whether for crops, flowers, or fruits. Such a situation would encourage free-riding, to the disadvantage of the PBR holder. To address this concern, a corrective mechanism was introduced in the form of the Essentially Derived Variety (EDV) concept, which enables PBR holders to extend, to a certain degree, the scope of their protection to varieties that are derived from and retain all or most of the essential characteristics of the initially protected variety. Still there are some issues which may arise in future due to which the laws should be ratified from time to time.

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