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**SUSTAINABILITY AND PLANT VARIETY PROTECTION: A
CHALLENGE TO BALANCE EQUILIBRIUM**

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ABSTRACT

India being a developing country recognizes the significance of sustainable agriculture in the context of economic development and progress in modernizing traditional plant varieties by farmers and breeders for promoting food security. The researchers intend to comprehend the history of plant variety protection, giving a detailed analysis of its need and recognizing the difficulties in its implementation.

The paper emphasizes the significance of plant variety legislations for developing nations and their effect on sustainable agriculture, research and development, and the rights of traditional farming communities. The researchers wish to highlight the contribution of farming communities in conserving, improving, and making available plant genetic resources for the development of plant varieties and their role in sustainable agriculture.

To conclude, critical analysis of international laws and its emphasis on the rights of plant breeders facilitates research and development as compared to that of farmers' rights and sustainable agriculture will be appreciated vis-à-vis domestic law, Protection of Plant Varieties and Farmers' Rights Act, 2001 striking a balance between the rights of farmers and plant breeders without compromising both sustainable agriculture and development of seed industries.

INTRODUCTION

Back in the 19th century when the United States of America and European countries reduced their involvement in the development and supply of seeds to farmers due to the economic slowdown, the need for legislation regarding Plant Variety Protection ["PVP"] was required.²

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²Suman Sahai, *India's plant variety protection and Farmers' Rights Act, 2001*, 84 CURRENT SCI. 407, 407-412
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The PVP agreements which include both International Conventions and Domestic Legislations are dealt with at length later in this paper not only consider the development of the seed industry by increasing public and private investments and regular supply of new variety seeds to farmers but also helps to establish food security.

UPOV and TRIPS agreement were introduced to promote PVP by allowing the new varieties to be protected under intellectual property laws which in return would increase investments in the development of new plant varieties sector. The agreements were successful to provide rights to plant breeders, but an emphasis on the rights of farmers was brought into the legal picture by the Plant Variety Protection and Farmer's Rights ["PPV&FR"] Act 2001³ of the Indian government.

EVOLUTION OF PLANT VARIETY PROTECTION

After the adoption of the Agreement on Trade-Related Aspects of Intellectual Property Rights ["TRIPS"]⁴, the protection of new plant varieties has become an important topic for discussion. The agreement talks about the measures to solve the problem of food security as well as encouraging investments of the private and public sectors in the development of the seed industry.⁵ Thus, the agreement triggered the discussion on the topic of protection of plant variety but it is not the only relevant treaty. Convention on Biodiversity⁶ and the International Treaty on Plant Genetic Resources for Food and Agriculture⁷ also play important role in helping countries to strike a balance between rights provided to farmers and breeders respectively. The mentioned Convention and Treaty are legally binding instruments and have an important bearing on the large public good. They talk about the fair and equitable sharing of benefits arising from genetic resources.

INTERNATIONAL LAWS AND BREEDERS' RIGHTS

Plant variety protection and Breeders' rights are the rights granted to breeders for the protection of new plant varieties and provide exclusive control over them. These are the treaties that came into the picture for providing impetus to farmers' rights and giving a boost to their creation and innovation. Currently, two main treaties are functioning in this field and helping breeders in enlarging their scope of thinking. These breeders choose to become a marketer and license to

(2003).

³ Protection of Plant Varieties and Farmers' Rights Act, 2001, No. 53, Acts of Parliament, 2001 (India).

⁴ Agreement on Trade Related Aspect of Intellectual Property Rights, Apr. 15, 1994, 1869 U.N.T.S. 3.

⁵ S BalaRavit, *Effectiveness of Sui Generis Law on Plant Variety Protection and its Potential to attract Private Investment in Crop Improvement*, 9 J. INTELL. PROP. RTS. (2004).

⁶ Convention on Biodiversity, June 5, 1992, 1760 U.N.T.S. 79.

⁷ International Treaty on Plant Genetic Resources for Food and Agriculture, Nov. 3, 2001, 2400 U.N.T.S. 303.

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carry forward their trade as they get protection and freedom to exercise whatever they feel to grow with strong strategic policies. The two main treaties working at the international platform to regulate these issues are established under the auspices of the International Union for the Protection of New Varieties of Plants [“UPOV”] and TRIPS. Both the agreements have an extensive and comprehensive set of rules for member countries in the field of Intellectual Property Rights.

Need Of The Plant Variety System At International Platform

To understand any concept, it is always advisable to trace its history. One cannot understand the idea behind anything without knowing development in its ambit⁸. Agriculture is considered to be the backbone of developing countries; it is through the primary sector only that low-income group countries add to GDP. It has been observed that these countries follow traditional methods for agricultural production and sticking to those could not enhance GDP growth⁹ For that reason new varieties of the plant have been developed, these are found to be high-yielding, resilience to pest and disease as well as cost-effective. Many other plant varieties and modern technologies need to be combined for better results without affecting nature and the environment.

As the population keeps on increasing one needs to search for other alternatives where production can be increased without affecting nature and keeping the pace of development sustainable. Therefore, it is essential to find ways where output increases through high yields and less wastage of land, manpower resources, money, and resources which are very scarce these days.

But plant breeding has very important benefits economically as well environmentally:

1. Increases food production,
2. Sustainable development,
3. Usage of modern technology,
4. Reduces wastage,
5. Increases market value of products,
6. Provide an opportunity to developing countries to increase their weightage in the world,
7. Plant breeding provides high quality thus enhances the market value,

⁸ Dr. Rolf Jördens, *Benefit of Plant Variety Protection*, WIPO MAGAZINE (Mar. 18, 2021, 9:30 PM), http://www.wipo.int/wipo_magazine/en/2010/03/article_0007.html.

⁹HariEswaran, *Sustainable Agriculture in Developing Countries: Challenges and US Role*, THE Y.B. AGRIC. (USA) 199, 199-204 (1991).

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8. Increases rural income and helps in developing¹⁰, and
9. The exploitation of new plants and resources

Due to the provided benefits, farmers tend to go for plant breeding but at the same time in the initial, it requires lots of investment which provides a reward to them in later stages.¹¹

Thus looking at the extent of investment many countries come forward for providing rewards to such breeders who are involved in plant breeding, therefore with intent to provide them boost and support, effective system of plant variety protection, came up for the development of new varieties of plants, for the benefit of society.

UPOV System Of Plant Variety Protection

The UPOV system of plant variety protection came into being after the adoption of the International Convention for the Protection of New Varieties of Plants by a Diplomatic Conference in Paris on December 2, 1961. This was the first time when intellectual property recognition was provided to plant breeders and plant varieties at an international platform. UPOV is a unique agreement that provides protection to plant varieties and promotes breeders in expanding their innovation and product. UPOV treats farmers' rights as negotiated exemptions of breeders' rights¹².

The 1978 UPOV Act adopted most of the international IPR obligations set out in Part I, including a definition of the applicable subject matter and protected material, eligibility requirements, exclusive rights, national treatment, reciprocity, terms of protection, and exceptions, and limitations to exclusive rights. It is a general obligation of the convention to protect the breeders of member states.

Conditions of providing protection are that plant varieties have to be *new, distinct, stable, and uniform*. The grant of protection is limited to only these four conditions.

¹⁰1 S.G. GABEL, THE DEVELOPMENT OF INTERNATIONAL COMPARATIVE CHILD AND FAMILY POLICIES. IN: KAMERMAN S.B., PHIPPS S., BEN-ARIEH A. (EDS) FROM CHILD WELFARE TO CHILD WELL-BEING. CHILDREN'S WELL-BEING: INDICATORS AND RESEARCH 175-188 (Springer, Dordrecht 2010)

¹¹LAURENCE R. HELFER, INTELLECTUAL PROPERTY RIGHTS IN PLANT VARIETIES: INTERNATIONAL LEGAL REGIMES AND POLICY OPTIONS FOR NATIONAL GOVERNMENTS (FAO, 2004)

¹²Pegu, R., *Will India's proposed membership of UPOV jeopardize farmers' rights: An interview with Dr.SumanSahai*, http://www.kisanwatch.org/eng/features/dec02/fea12_suman_sahai.htm.

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Scope Of Breeder's Rights

The following acts in respect of the propagating material of the protected variety require the authorization of the breeder:

- Production or reproduction (multiplication),
- conditioning for propagation,
- offering for sale,
- selling or other marketing,
- exporting,
- importing,
- Stocking for any of the purposes mentioned above.

Agreement On Trade-Related Aspects Of Intellectual Property Rights (TRIPS)

TRIPS was negotiated at the end of the Uruguay Round of the General Agreement on Tariffs and Trade (GATT) in 1994. Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) is an international legal agreement between all the member nations of the World Trade Organization (WTO). It sets down minimum standards for the regulation by national governments of many forms of intellectual property (IP) as applied to nationals of other WTO member nations.

The TRIPS agreement was the pioneer in the development of laws into the international trading system with respect to intellectual property laws. The best part of this agreement is, it remains the most comprehensive and exhaustive law on intellectual property law till date. The option or exception of a *sui generis* system was generated as a viable alternative to the patent system for plant varieties as it provides sufficient flexibility to developing countries to design a system that best fits their circumstances and meets their goals and objectives.¹³

TRIPS agreement is unique in its own way as it provides a great deal of protection to Intellectual Property Rights. Differentiating from other treaties, TRIPS is not only concerned with IPRs but is linked to other trade-related agreements, concerning subjects such as trade in goods and services, agriculture, textiles, and health-related restrictions on imports. All of these

¹³H. Singh, *Plant variety protection and food security: Lessons for developing countries*, 12. J. INTELL. PROP. RTS. 391, 391-399 (2007).

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agreements were adopted within the WTO during the Uruguay Round of trade negotiations held between 1988 and 1994.

TRIPS As A Spur To Plant Variety Protection

TRIPS' influence on plant variety protection stems from the following sources:

1. its link to other international trade agreements;
2. its widespread adherence by states in both the industrialized and developing world;
3. it is novel enforcement, review, and dispute settlement provisions;
4. the requirement in TRIPS Article 27.3(b) that its signatories must protect plant varieties "either by patents or by an effective *sui generis* system or by any combination thereof";
5. A formal review of article 27.3(b) was scheduled to be held in 1999.

CRITICISM

1. Many consider TRIPS as a poor policy. It attracts criticism from a scholar, Non-Governmental Organizations, developing countries. They argue that the concentration of wealth is moving from progressing countries to highly evolve copyright and patent right possessing countries.
2. Failure of TRIPS in increasing investment in low-income countries and access to modern technology as low-income first need to fight with their basic problem of shelter, food and politics then only they would able to avail the benefit of such policies.
3. As already seen, protection provided under TRIPS is of 20 years, therefore a longer duration of protection is eliminating the chances of inventing generic substitutes.
4. Though both TRIPS and UPOV tries to provide protection to plant breeders but fail to look at the position of developing and under-developed countries where farmers are fighting for existence.
5. Many argue that the supporters of UPOV and TRIPS over-estimated the policies and failed to figure out their role in the least developed countries.

DOMESTIC LAWS

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Under the TRIPS agreement, neither any explanation of the *sui generis* system is given nor does it suggest any particular model like the UPOV to be followed. Due to the lack of any legal definition of the term *sui generis*, the Indian government created a model keeping in mind food security, economic development, and rights of farmers under the name of Plant Variety Protection and Farmers' Rights (PPV&FR) Act 2001 which is effective and within the obligation of TRIPs agreement. The flexibility provided by International Laws is very important especially for developing countries like India mainly because it helps us to preserve our culture and tradition along with developing private sectors and enhancing the livelihood of the farming community at the same time.

The Plant Variety Protection and Farmers' Rights (PPV&FR) Act 2001 has 11 Chapters which contain 97 sections. Also besides, there are 76 sections in 9 Chapters with 4 Schedules and 45 Forms. The main objective of this act is to provide intellectual property protection of plant varieties and farmer's rights.

Protection Of Farmer's Rights Under PPV&FR Act 2001

As read before, the Indian legislation was made with the purpose to protect farmers' rights from being violated by allowing intellectual property rights on the living organism which was restricted under the definition of the term "invention" under the Patents Act 1970¹⁴. Under the Patents Act, 1970, plants and their varieties were not under the scope of protection via IPR laws. But after the introduction of the PPV&FR Act 2001, the scope of IPR protection has widened. Hence, protection to farmers is important under the PPV&FR Act 2001.

The Pepsico-Gujarat farmers' controversy of 2019 highlighted this issue of "patenting" plants. The company had registered two-hybrid potato varieties, namely FL 1867 and FL 2027 under the PPV&FR Act in February 2016 for 15 years, and subsequently marketed the FL 2027 variety under the trademark FC-5. This potato variety was also patented by the company and was exclusively grown for its potato chips brand. In 2019, the food giant, Pepsico filed cases against nine potato farmers in Gujarat for infringement on the variety of potato already registered by it claiming that the Gujarat farmers were illegally using this variety.¹⁵ The Company sought an amount of Rs. 1.05 crores from each farmer as compensation.¹⁶ When approached the courts of law in this matter, the Ahmedabad Commercial Court also granted a

¹⁴ The Patents Act, 1970, § 3, No. 39, Acts of Parliament, 1970 (India).

¹⁵ **Karthikeyan Hemalatha**, *Pepsicovs farmers: Plant varieties cannot be patented, emphasise legal experts*, MONGABAY (May 15, 2019), <https://india.mongabay.com/2019/05/pepsico-vs-farmers-plant-varieties-cannot-be-patented-emphasise-legal-experts/>.

¹⁶ *Id.*

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temporary injunction order in favour of the company stopping the farmers from growing or selling the potato varieties registered by Pepsico.¹⁷ However, legal experts took a completely different stance on this matter. According to them, such claims of royalties were not tenable since the laws in India do not allow a patent on plant varieties.¹⁸ Furthermore, under PPV&FR Act, planting a registered variety by the farmers is not an offence per se. The Act allows the farmers to re-use and even share such varieties, provided they are not selling a “branded” variety of seeds protected under the Act.¹⁹ The term “branded seed” refers to “any seed put in package or any other container and labeled in a manner indicating that such seed is of a variety protected under the Act.”²⁰ Besides, it was also argued that since FC-5 was registered as an “extant variety” which is also a “variety of common knowledge”, the variety of potato in question was already available in the country before it was registered because there was common knowledge about it. Therefore, owing to the widespread opposition, Pepsico ultimately withdrew all the cases it had filed against the farmers of Gujarat in this matter.²¹

Section 15 of the PPV&FR Act 2001 provides the essential criteria that have to be fulfilled for a plant variety to be eligible to register for the patent. The criteria mainly revolve around the distinctiveness, uniformity, and stability of the plant variety that is subject to registration. The criterion of distinctiveness requires the plant variety to be distinguishable by at least one essential characteristic.²² A plant variety is said to be “uniform” if the variety remains uniform in its essential characteristics even if it is subjected to variation from its particular features of propagation.²³ Further, if even after repeated propagation, the essential characteristics of a plant variety remain unchanged, it is said to be “stable”.²⁴ All these criteria need to be fulfilled by the extant and farmer’s variety within 3 years from the date of its notification. Apart from these requirements, a plant variety also needs to fulfill the criterion of “novelty” in order to be considered for registration under the PPV&FR Act. According to this, a plant variety should not have been sold or disposed of in India, earlier than one year and outside India, earlier than 6 years in the case of trees and vines, and earlier than 4 years in any other case.²⁵ Testing of plant varieties in India involves field and multi-location trials in accordance with the guidelines prescribed and notified by the PPV&FR authority. This test is conducted for at least two

¹⁷*Id.*

¹⁸*Id.*

¹⁹ *Supra* note 2, § 39(iv).

²⁰*Id.*

²¹ *Supra* note 13.

²² *Supra* note 2, § 15.

²³*Id.*

²⁴*Id.*

²⁵*Id.*

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seasons and at least on two locations. Since the PPV&FR Act has borrowed these testing criteria from UPOV, 1991, India has to develop its own testing procedures for crops not notified in the UPOV. India is not able to adopt any other testing criteria used in other countries for registration; making it 'cost-intensive'.²⁶

According to the provisions of the PPV&FR Act, the application for registration filed after fulfilling the conditions in Section 15 must comply with the requirements stated in Section 18 of the Act. The most important requirement under Section 18 is an affidavit that states that the plant variety that needs to be registered is not obtained by restricted technology along with a declaration providing the geographical location of the parent material of the new plant variety. Along with the application, a prescribed amount of fees is also to be paid except when farmers are applying for any plant variety. But not all applications filed are accepted. Section 20 of the Act gives the power to accept applications conditionally that is, verifying the given information and sufficient investigation. The filled application can also be advertised as given under Section 21, to check if there is any opposition to the said plant variety and it becomes easier to check if such variety already exists or not.

Thus the Act provides a transparent and well-defined procedure to grant exclusive rights of the applied plant variety to the applicant. This gives the farmers the right to oppose the varieties they can prove already exists and there is no distinctiveness or uniqueness in it. Apart from protecting traditional knowledge of farmers from being registered and used by the breeders, the Act also takes into account innocent infringement²⁷ by farmers which allows them to exempt from paying any fees for such infringement.²⁸ This unique feature of the PPV&FR Act is really important from the Indian perspective in order to avoid harassment of farmers by the big companies. The provisions of this act, thus, aim at the protection of diversity and stimulating agriculture innovation along with supporting farmers of the country.

PPV&FR Act 2001 Supporting Breeder's Rights

The Act provides exclusive rights to breeders who successfully register their plant variety. A breeder can be a person, university, and even of a private organization or public-funded institution. The Act helps them to protect their new, innovative, and distinctive creation as only the breeders, their legal successor or agent they appoint or consent to be allowed to produce, sell, import, or export the registered variety. Farmers are also eligible for applying for new

²⁶PratibhaBrahmi&VijiyaChaudhary, *Protection of plant varieties: systems across countries*, 9 PLANT GENETIC RESOURCES, 392–403 (2011).

²⁷*Supra* note 2, § 42.

²⁸*Supra* note 2, § 44.

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extant, EDVs or farmer's variety. The term "farmer's variety" is very clearly defined in the Act. It is a variety that has been traditionally cultivated by the farmers or is a relative of a variety about which common knowledge is already possessed by the farmers. It is pertinent to note that only the crops that have been notified by the central government in PPV&FR Authority Gazette are available for registration in India. So far only 157 crop species have been notified by the Central Government for the purpose of registration.

Furthermore, the Act also includes provisions to ensure 'benefit sharing'. The expression 'benefit sharing', in this context, implies that a reasonable and fair share of profit has to be given from commercial gains of newly registered varieties by breeders that are developed using the plant genetic resource provided by farmers or other legal entities.²⁹ It aims at helping farmers to get due recognition from breeders and also get reasonable and rightful compensation for their efforts. In order to achieve this, an institutional mechanism 'National Gene Fund' has been created under the PPV&FR Act.³⁰ According to Section 27, the breeders are required to deposit a sample of the variety they wish to register with the National Gene Bank. The protection provided to the registered variety is for 18 years for vines and trees variety, and 15 years for other varieties according to Section 24 (6). To keep the registration valid, the breeders have to make annual payments as per Rule 39 default of which could result in a forfeit of registration. This particular provision addresses the issue of benefit sharing that was articulated in the National Biodiversity Act, 2002 as well.

The Act also takes care of repeated infringement by farmers in the new variety which is registered by the breeder. This helps to protect breeder's rights as well as provide farmer's new variety plants.

Importance To Sustainable Development

A healthy balance has to be maintained between a private gain of enterprises that invest or invent plant variety and public benefit which affects the food security of the country. The exclusive rights that are given to the breeders provide them monopoly rights towards selling and manufacturing the new registered variety, this eventually leads to encouraging them to invest or invent in a new variety. The new variety is then provided to the farmers to help them increase the yield and their income by using high-quality seeds. To ensure that farmers are regularly provided with the new high variety seeds, Section 47 to 53 provides scope for compulsory licensing when the breeder fails to meet the farmer's demand for seeds at

²⁹*Supra* note 2, § 2(b).

³⁰*Supra* note 2, § 27.

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reasonable and fair prices.

These provisions help to accelerate the development of agriculture in India, which is one of the main concerns of the Indian government. Thus, the Act is successful in providing benefit sharing³¹ of the new variety with the farmers who are responsible for the conservation of the resource that has been the parent gene in developing a new variety. The benefit-sharing provision in the Act attracts Section 6 of the Biodiversity Act and successfully complies with the provisions of CBD, which is legally binding to India.

NEED FOR PLANT VARIETY PROTECTION

Plant Variety Protection plays an extremely important role to make the inventors of new variety and investors who risk a huge amount of money in research and development of a new variety secure about appropriate repayments of their hard work and money respectively. Encouraging public and private sector investment in the development of seed industry and availability of new variety and high-quality seeds, eventually helps to curb the problem of food security in a country like India where the yield from the agricultural sector is not sufficient enough to feed the ever-increasing population of India.³² The protection is not only provided to varieties that are new or just developed by the breeders, it also covers the varieties which belong to the farmers through traditional knowledge.

Thus, the action was taken by the Indian government by implementing the Plant Variety Protection and Farmers' Rights (PPV&FR) Act 2001, which secures the rights of farmers varieties and rights of breeders on their new and distinct plant variety. This in turn helps to safeguard the public interest at large.

ROLE OF FARMING COMMUNITY

The protection of farmer's rights is the main concern of the Indian legislation, keeping in mind that the foreign guidelines, rules, and regulations do not appreciate these rights enough. All the international agreements mentioned in this paper pay more emphasis on the protection of breeder's rights which will help them to develop and invest more in the seed industry. But India being a nation whose large population is engaged in agricultural activity cannot neglect the rights of farmers.

The basis of providing these rights is the traditional knowledge that the farmers possess by spending years in the field of agriculture, which makes them capable enough to learn about the seeds and improve their productivity by traditional means and knowledge. Also, they conserve

³¹ *Supra* note 2, § 26.

³² Dr. Philippe Cullet and Radhika Koluru, *Plant variety Protection and Farmers Right*, 24 DELHI L. REV. 41, 41 (2003).

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plant genetic resources and enhance agro-biodiversity through their innovations.

CRITICAL ANALYSIS

The rights and benefits given to breeders and researchers in the international agreements are valid keeping in mind that their financial resources are at stake to create a new plant variety. But the Indian legislation has, to a certain extent, accomplished to combine both breeders' rights and farmer's rights. However, since India is a signatory of many international agreements related to plant variety protection it will be difficult to implement all the agreements along with ensuring complete protection to farmers. While talking about farmer's rights, protection of traditional knowledge comes into the picture which under the current legal regime has provisions for protecting it but does not empower holders of knowledge to stop or prevent unwanted appropriation in the first place.

Apart from the broader conception of farmers' rights, the greatest disadvantage of the legal system is having various Acts which are inconsistent in origin and are a response to different international obligations under different departments and ministries. Such inconsistency leads to a lack of uniformity in serving the purpose for which the legislation was enacted, in this scenario the purpose to safeguard the rights of farmers as well as breeders and researchers.

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