EMERGING PROBLEMS IN ENFORCING THE RIGHTS OF PLANT BREEDERS AND FARMERS IN INDIA

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ABSTRACT

After India signed the Trade Related Aspects of Intellectual Property Rights Agreement (TRIPs) in 1994, a legislation was required to be enacted for protecting plant breeders' rights in India. Article 27.3 (b) of this agreement requires member countries to preserve plant varieties by a patent, an effective sui generis system, or a combination of the two. As a result, member countries had the option of drafting legislation tailored to their own systems, which India took advantage of. Consequently, the Protection of Plant Varieties and Farmers' Rights (PPVFR) Act was enacted by the Indian Parliament in 2001. The sui generis system for plant variety protection was designed by merging the rights of breeders and farmers while also taking into account the concerns about equitable benefit sharing. However, two and a half decades later many gaps are created between the law and its practice. This paper attempts to critically analyse the cases involving serious issues in enforcing the rights of plant breeders and farmers in India and to examine scope for reforms.

Keywords: PPVFR Act, TRIPs, intellectual property, sui generis, judiciary etc.

Introduction

While India now meets the majority of its own food needs, it had significant famines and severe food shortages until the mid-1960s. India achieved agricultural self-sufficiency as a result of the Green Revolution (and, to a lesser extent, an increase in cultivated and irrigated land). At the time the Protection of Plant Varieties and Farmers' Rights Act, 2001 (PPVFR Act) was established, Indian agricultural production was adequate to feed the whole population of India, while also accounting for 15 to 20% of total export value. India was and continues to be a major participant and contributor to worldwide agricultural research and development initiatives, including wheat, maize, and rice.[1] Indian plant breeders and geneticists have generated a huge number of improved crop varieties (conventional and hybrids) that have played a critical role in increasing agricultural yield and productivity and ensuring the nation's food security.[2]

Farmers have been the foundation of the maintenance and development of indigenous varieties in India, conserving genetic variety while also enriching it via human selection. Farmers pass down traditional varieties from generation to generation, and many of them are well-suited to local circumstances. The Green Revolution was successful largely because it increased agricultural output significantly via the use of high yielding crop varieties and sophisticated farming technologies. Despite its effectiveness, the green revolution's extensive implementation had a negative impact on soil fertility, crop diversification, and water table erosion.[3]

Modern plant breeding began in the early 1900. The earlier research work was done by British scientist like Barber in sugarcane and Howards in wheat crop.[4] In 1905, Bihar founded its first research centre (the Imperial Agriculture Research centre). The Imperial Council of Agriculture Research (ICAR) was created in 1929, and its name was later changed to the Indian Council of Agricultural Research. Pantnagar built its first agricultural university in 1960 for research purposes. Following independence, the state assumed responsibility for plant breeding

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[1] Mrinalini Kochupillai, "The Indian PPV and FR Act, 2001: Historical and Implementation Perspectives," 16(2) *Journal of Intellectual Property Rights*, 1-21, 3 (2011).

[2] B. S. Dhillon, Pratibha Brahmi and S. Saxena, "Crop Improvement Programmes in India – Emerging Scenario," 90(6) *Current Science*, 780-783, 780 (2006).

[3] Suvita Rani, Shubham Singh and Sujit Bhattacharya, "Impact of India's Plant Variety Protection Act: Analytical Examination Based on Registrations Under the Act," 25(5) *Journal of Intellectual Property Rights*, 131-139, 132 (2020).

[4] Vinay Kumar, Mukul Kumar, and Awaneet Kumar, "Plant Breeders: The Major Contributor of Agricultural Research" 1 *Krishi Science, 10-13,* 12 (2020).

research by establishing specialist organisations and agricultural colleges. This began in the late 1950s, with the introduction of high-responsive cultivars created by worldwide agricultural research institutions. Until the mid-1980s, private enterprise had little influence on plant breeding.[5] Until then, there was no need for plant variety conservation or farmer rights protection. That is why India first declined to join the UPOV scheme. Until the 1970s, when India's structured seed market began to emerge, new plant variety breeding and seed supplies were mostly in the public domain. The seed industry's diversification strategy began with the expansion of the seed market, and was accelerated in 1988 with the establishment of the New Policy on Seed Development. Diversification occurred at several stages of the seed system, including plant variety formation, multiplication, and seed dispersal.[6]The concept of IPR in plant varieties gained momentum with increased investment of private sector in agriculture and flourishing private seed industry.[7] Agriculture was formerly exempt from intellectual property legislation in India. Prior to the PPVFR Act, plant varieties were not included in India's intellectual property rights regime. Since seed firms joined the seed market in 1988 under the National Seed Policy, there has been an increase in demand for plant breeder rights. Furthermore, as a founding member of the WTO and ratifier of the TRIPS Agreement, India was required to pass a legislation protecting plant varieties in order to comply with Article 27 of the TRIPS Agreement's Part II.

Since the 1980s, India has under pressure from advanced capitalist nations and institutions such as the General Agreement on Tariffs and Trade (GATT) and, subsequently, the World Trade Organisation (WTO) to create legislation that included plant varieties in the concept of intellectual property.[8] The TRIPS Agreement was developed as part of the WTO framework, which went into effect on January 1, 1995. The TRIPS Agreement establishes baseline requirements for intellectual property rights, which WTO contracting states must apply through national legislation. These basic criteria have resulted in a dramatic change in the IPR regime, away from public interest and towards monopolistic rights for IPR holders. Agriculture was formerly exempt from intellectual property legislation in India. Prior to the PPVFR Act, plant

5 C. N. Rao, "Indian Seed System and Plant Variety Protection" 39(8) *Economic and Political Weekly,* 845-852, 845 (2004).

6 P. Venkatesh and Suresh Pal, "Determinants and Valuation of Plant Variety Protection in India," 18(5) *Journal of Intellectual Property Rights*, 448-456, 448 (2013).

7 Manoj Srivastava, Vijaya Chaudhary and D S Pilania, "Intellectual Property Rights on Plant Varieties in India: A Sector-Wise Analysis," 20(2) *Journal of Intellectual Property Rights*, 81-88, 81 (2015).

8 Kaye Lushington, "The Registration of Plant Varieties by Farmers in India: A Status Report," 2(1) *Review of Agrarian Studies*, 112-128, 113 (2012).

varieties were not included in India's intellectual property rights regime. Since seed firms joined the seed market in 1988 under the National Seed Policy, there has been an increase in demand for plant breeder rights. Furthermore, as a founding member of the WTO and ratifier of the TRIPS Agreement, India was required to pass a legislation protecting plant varieties in order to comply with Article 27 of the TRIPS Agreement's Part II.[9]

Prior to the TRIPS Agreement, many developing nations prohibited the patenting or intellectual protection of living organisms, biological resources, and traditional knowledge. This changed totally with Article 27(3)(b), which expressly addresses the protection of plant varieties through either a patent regime, a sui generis system, or a combination of the two, with a time limit of January 1, 2000. The plant breeders' rights regime established by the UPOV Conventions served as the sole fallback option for many developing nations that lacked the time and resources to construct their own locally applicable sui generis regimes.[10] India has not joined the UPOV Convention. However, because India is a founding member of the World Trade Organisation, it is bound by the TRIPS Agreement, which went into effect on January 1, 1995. As a developing nation, India was entitled to a five-year transition period ending on January 1, 2000, for the majority of TRIPS Agreement terms.[11]

Major Problems in Enforcing the PPVFR Act

The PPVFR Act has three major critiques in procedural and administrative aspects. Firstly, the Act proposes that the Gene Fund will maintain revenue from farmers’ variety use, with some of this money used for administrative expenses. This could be seen as a government responsibility for farmers’ benefit. Secondly, the Act provides compensation to farmers from commercial breeders if seeds fail to yield as declared by the breeder. However, the PPVFR Authority has complete discretion in determining the compensation amount. Guidelines for compensation should be provided, such as at least twice the projected crop harvest value. Thirdly, the Act protects farmers from innocent infringement of breeders' rights, but the burden of proof lies on farmers, which could be seen as a deviation from the general principle. The Act does not provide a specific reason for this deviation. Lastly, the Act's rights are also

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[9] P. Venkatesh, I. Sekar, G. K. Jha, Premlata Singh, V. Sangeetha and Suresh Pal, “How Do the Stakeholders Perceive Plant Variety Protection in Indian Seed Sector?” 110(12) *Current Science*, 2239-2244, 2239 (2016).

[10] Rohan Dang and ChandniGoel, “Sui Generis Plant Variety Protection: The Indian Perspective,” 1(4) *American Journal of Economics and Business Administration*, 303-312, 305-306 (2009).

[11] Ganesh Motiram Kapse, “Intellectual Property Rights in Indian Agriculture,” 11(3) *Ajanta*, 174-184, 180 (2020).

criticized for affecting farmers' classic property rights.[12]

Categorizing farmers' variety can lead to economic inadequacy in prosecuting claims for registering, as farmers can also be breeders. A community of farmers creating a new variety will not qualify for registration of the breeders' variety. The main purpose of a farmers' variety is to create community property rights, different from that of the breeders' variety. Critics argue that farmers' variety is limited to traditional cultivated materials or common knowledge, while breeders' variety is based on IP rights in developed countries. However, creating two different registration systems has led to operational issues, as the number of registered farmer varieties is significantly smaller than new and extant varieties.[13]

The PPVFR Act acknowledges farmers' rights to register varieties, but it imposes a heavy fee to protect them, contradicting the Act's objectives. The registration period for farmers' rights varieties is initially six years, and renewals require a fee. The fee is categorized as Individual (Rs. 5,000), Educational (Rs. 7,000), and Commercial (Rs. 10,000) in Rule 54 of the PPVFR Rules (2003).[14]The PPVFR Act has limitations in protecting farmers' rights, as it focuses on distinctiveness, uniformity, and stability for plant variety protections, which were designed for commercial breeders. There is uncertainty about Indian farmers' varieties meeting these criteria, and the Act provides protection for both new and essentially derived varieties, which could lead to uncertainty regarding farmers' rights in the international sphere.[15] The tests for DUS within worldwide PVP systems rely on accurate morphological and agronomic descriptions of cultivars and varieties. Indian guidelines for DUS testing in different crops are useful for characterizing varieties. However, there are no empirical studies to determine issues. There is a need to find scientific bases for reliance on UPOV guidelines in national guidelines and redefine concepts for distinctiveness and uniformity in open pollinated crop varieties and composites due to inbuilt variability.[16]

Although rights of plant breeders and farmers have been recognised in various countries, India

[12] Sujith Koonan, "Farmers' Rights in India: Assessing Conceptual and Implementation Issues," 4 (1) *Dehradun Law Review*, 29-53, 49 (2012).

[13] Rohit Moonka and Silky Mukherjee, "Trips Flexibilities and India's Plant Variety Protection Regime: The Way Forward," 5 (1) *BRICS Law Journal*, 117-139, 125 (2018).

[14] Parameswaran Prajeesh, "Farmers' Rights to Seeds: Issues in the Indian Law," 50 (12) *Economic and Political Weekly*, 16-18, 17 (2015).

[15] Abhinav Gupta and Pranshu Negi, "Protection of 'Plant Varieties' Vs. Balancing of Rights of Breeders and Farmers," 7(4) *International Journal of Reviews and Research in Social Sciences*, 741-745, 744 (2019).

[16] S. K. Chakrabarty and Dipal Roy Choudhury, "DUS Testing for Plant Variety Protection: Some Researchable Issues,"79 (1) *Indian Journal of Genetics and Plant Breeding*, 320-325, 321 (2019).

has adopted *sui generis* system of it. However, there are many gaps between law and practice of it. These gaps have been filled up by the Indian judiciary through various judicial decisions are as follows:

I. Ambiguity Regarding Sale and Propagation of Hybrid Seeds

In *Maharashtra Hybrid Seed Co.* v. *Union of India*[17] the petitioners impugned Registrar, PPVFR Authority's order which held that parent lines of known hybrid varieties cannot be registered as 'new' plant varieties under the PPVFR Act. It was held that if the hybrid falls under the category of 'extant variety' about which there is common knowledge, then its parental lines cannot be treated as novel. There were several issues regarding certain provisions in the Act which the Delhi HC clarified, the first one being that a hybrid seed does not fall within the definition of 'propagating material' as it is incapable of regenerating any of the parent line varieties. While the Act does not define "harvested material", "propagating material" has been defined under Section 2(r) of the Act defining it as a plant or a seed that is capable of regenerating. Furthermore, the court held that the sale of hybrid varieties does not comply with Section 15(3)[ii] of the Act, in case of those varieties that may germinate into either parent plants, amounting to the exploitation of such plants. Going by the petitioner's interpretation of the Act, they would gain exclusive rights over the hybrid and the parent seeds for a maximum of 45/54 years, which is significantly more than the period 15/18-year period provided in the Act.

The High Court used the mischief rule to decide against the petitioners even though the language of Section 15(3) is ambiguous. The court did so because it is well established that when there is ambiguity in the language of a statute, a purposive interpretation that furthers the intent of the Legislature must be adopted. The Legislative intent of the PPVFRA is to safeguard farmer's and plant breeders' rights. Moreover, the Administrative and Legal Committee of UPOV as per Article 6 (1) of the 1991 Act of the UPOV Convention, had held in a similar dispute that the novelty of the parent lines is lost by commercial exploitation of its hybrid, and therefore such interpretations are not viable.

II. Question of Patentability of Life Forms

a. Dispute regarding BT Cotton Variety

[17] (2015) 217 DLT 175.

The technology involved in *Mahyco Monsanto Biotech Ltd.* v. *Nuziveedu Seeds Ltd.,*[18]is Monsanto's well known BT technology. To be more familiar with the science of it, this technology involves the introgression of certain genes of *Bacillus Thuringiensis* (BT), a naturally occurring bacterium, into the genome of cotton seeds to ensure the resulting crop's resistance to certain pests. In particular, Monsanto's technology is known to act against the Bollworm, known to attack and destroy the cotton crop. The use of this technology is to reduce or in some cases even eliminate the pesticides that are required to be used by farmers. While the first generation of BT technology was never patented by Monsanto in India, the second generation BT technology, licensed under the trademark Bollguard-II variety is patented.[19]

Mahyco Monsanto Biotech Pvt Ltd (India), the Indian joint venture of Monsanto has been licensing its BT products to various seed companies in India. Monsanto entered into a licensing agreement with Nuziveedu Seeds and its subsidiaries Prabhat Agri Biotech and Pravardhan Seeds on 21 February 2004. Monsanto licensed its patent IN214436 relating to BT cotton for an initial period of 10 years. Recurring trait-value compensation along with lifetime fee of Rs. 50 Lacs was charged by the Company. These patented seeds were resistant to boll-worm attacks and thus produced higher yield. Monsanto was asked to reduce the trait-value fee by Indian Companies as new policies for price control were being passed by various State Governments of India. The Indian Companies stopped paying royalties when Monsanto refused to reduce the fee.

Monsanto filed an application for injunction on 14 November 2015 for trademark infringement and violation of registered patent in view of termination of licensing agreement and also initiated arbitration proceedings for recovery of amount of Rs. 400 Crores from the companies. The defendants claimed for revocation of patent under section 64of Indian Patents Act, 1970 as it was allegedly in violation of section 3(j) of the said Act in respect of plants and seeds that contained DNA sequences and argued that the patent is invalid. They also contended that their rights were protected under the Protection of Plant Varieties and Farmers' Rights Act, 2001.The legal argument underpinning a limitation of the scope can be found in Section 3(j) Indian Patent Act, which stipulates since 2005 that "plants and animals in whole or any part thereof other than microorganisms but including seeds, varieties and species and essentially biological processes for production or propagation of

[18] AIR 2019 SC 559.

[19] Anam Gubitra, "The Monsanto Case: Intellectual Property and Competition Law," 6 (4) *Journal of Legal Studies and Research*, 128-136, 129 (2020).

plants and animals" are not considered to be inventions. As a consequence, they are not patentable. The legal argument essentially boils down to the following: if plants or other plant materials that pass through the hands of farmers would be within the scope of product claims pertaining to genes, then they would be patent protected and the prohibition of Section 3(j) on patents on plants, parts of plants, seeds etc. would become obsolete.[20]

b. Decision by the Single Judge

While the dispute between Nuziveedu Seeds Ltd. and Mahyco Monsanto Biotech Ltd. is long-standing and has been in litigation for years, the DHC in a dispute between the two, gave the landmark judgment in 2017. The Single Judge of the Delhi High Court reinstated the sub-licence that was terminated by Monsanto. It allowed Nuziveedu Seeds and other Indian companies to continue using the patented technology till the suit is disposed, wherein, the trait fee must be paid in accordance with the government set rates. The Single Judge also rejected the arguments of the defendant about the validity of the patent.The Single Judge however rejected the defense that there is a statutory bar to the jurisdiction of the Civil Courts in matters pertaining to the intellectual property rights of seeds/hybrids and parents thereof, under the PPVFR Act. The Court though noted that Section 24 (5) of the PPVFR Act protects the interest of a breeder during the period between filing of application for registration and the decision taken by the Registrar on such application, and thus the jurisdiction of the Court was barred under Section 89, it observed that the Division Bench of the High Court had in the case of *Prabhat Agri Biotech Ltd.* v. *Registrar of Plant Varieties,*[21] struck down the provisions of Section 24(5). The Court, hence, was of the view that there being no other provision in the PPVFR Act empowering any of the authorities created there under to grant relief at the pre-registration stage, this Court would have jurisdiction.

c. Decision of Division Bench of High Court

Both the parties appealed before the Division bench of Delhi High Court against the decision. Monsanto challenged the single judge decision for re-instating the agreement. Nuziveedu challenged the order for the rejection of claims regarding validity of patent. Division bench of Delhi High Court considered that the subject matter was un-patentable according to section 3(j)

[20] Lodewijk Van Dycke and Geertrui Van Overwalle, "Genetically Modified Crops and Intellectual Property Law Interpreting Indian Patents on Bt Cotton in View of the Socio Political Background," 8 (2) *Journal of Intellectual Property, Information Technology and Electronic Commerce Law*, 151-165, 161 (2017).
[21] W.P.(C) 7102/2011, C.M. APPL.16215/2011.

of Patent Act, 1970. The decision of single judge regarding payment of trait value fee was upheld and Monsanto was given a time of three months to register and seek protection of the already patented invention under Protection of Plant Varieties and Farmers' Rights Act, 2001.

d. Decision by Supreme Court

An appeal was filed in Supreme Court and the Supreme Court stated that Division bench did not confine to its adjudication by answering the question of grant of interim or permanent injunction. The Supreme Court also stated that before a patent is revoked, Section 64 of the Patents Act and the Civil Procedure Code, 1908 require consideration of the claims in a suit and the counter claims, as well as the examination of expert witnesses and inspection of documents. The court said that issues raised are technical in nature and the Division bench's decision based on mere examination of documents without any input from experts and witness was not justified. The Supreme court stated that the decision given by single judge was satisfactory and the case was remanded to the single judge for disposal.[22]

The decision established the BT crops as important innovations that can be protected under patents and quashed all questions relating to validity of such inventions under the Patent Act. This decision will not only reassure the companies to continue the innovation and seek protection under Patents Act, 1970 but also solve issues in Patent law related to biotechnological inventions including DNA, RNA, rDNA and research in the area.

III. Controversy regarding Constitutionality of Section 24(5)

Section 24(5) of the Protection of Plant Varieties and Farmers' Rights Act, 2001, has long been contentious in intellectual property law. Even before a plant variety has been registered, the section enables an applicant to seek injunctive relief and damages against any abusive act committed by a third party. In *Prabhat AgriBiotech* v. *Registrar of Plant Varieties,*[23] a division bench of Delhi High Court held this provision to be *ultra vires* because it conferred untrammelled power on the registrar, a situation open to misuse. The petitioners, Prabhat Agri Biotech Ltd. (Prabhat), Nuziveedu Seeds (Nuziveedu) and Kaveri Seed Company Ltd. (Kaveri), challenged the vires of Section 24(5) of the Act. Nuziveedu, a sister company to

[22] Mohan Raj S, "Patents on Plants: Sell Out of Genes a Threat to Farmers – Comparative Analysis of USA, UK and India Scenario," 10 (3) *Journal of Pharmacognosy and Phytochemistry*, 166-172, 172 (2021).
[23] MANU/DE/3293/2016.

Prabhat, had, over the course of several years, various hybrid and parental cotton lines copied from one of the respondents, Maharashtra Seeds (Maharashtra). In fact, Maharashtra filed an application to register a hybrid variety of cotton which was alleged to have been developed using Nuziveedu's proprietary parent lines. After filing its application, Maharashtra filed an application under Section 24(5) against Prabhat and Nuziveedu. The third petitioner, Kaveri, was not subject to an application under Section 24(5) by any third party.

During the proceeding, the Solicitor General, on behalf of the government of India, argued that Section 24(5) was necessary for the public interest. Specifically, the Solicitor General argued that this section of the Act was based on Article 13 of the International Convention for the Protection of New Plant Varieties, 1991 (UPOV), which necessitated Article 24(5) because it obligated parties to take suitable steps to safeguard the rights of applicants during the period during which their application was under evaluation. Specifically, the Solicitor General pointed to the statements in Article 13 of UPOV which states:

> "Each Contracting Party shall provide measures designed to safeguard the interest of the breeder during the period between the filing or the publication of the application for the grant of a breeder's right and the grant of that right. Such measures shall have the effect that the holder of a breeder's right shall at least be entitled to equitable remuneration from any person who, during the said period, has carried out acts which, once the right is granted, require the breeder's authorization as provided in Article 14. A Contracting party may provide that the said measures shall only take effect in relation to persons whom the breeder has notified of the filing of the application."[24]

According to the Solicitor General, Section 24 (5) was based on sound public policy due to the fact that Article 13 of UPOV required a measure of interim protection. As a result, Section 24 (5) had to be enacted. In its decision, the Court stated that the power conferred upon the Registrar in Section 24(5), namely, the ability to make an interim order anytime during the pendency of an application, was simply too broad. Specifically, the Court stated: "The provision is broad and sweeping; its exercise is not in any manner conditioned upon consideration of any objective material: the solitary guidance given is that such order can be made if someone is indulging in an "abusive act". Significantly abusive act is undefined; its

[24] *Id*., para. 14.

breadth can comprehend a range of behaviour ranging from suspicion of infringement or using someone's material, to genuine use of material legitimately developed by a rival."[25] According to the Court, an "abusive act" contemplated a range of behaviours from suspicion of infringement or use of someone's material to the genuine use of material legitimately developed by a rival. As such, the Court stated:

> "In other words, 'abuse' is not only wide and vague in its import, but 'abuse' by which entity – a specified third party, or generically all other parties (consider third parties) in the subject-object verb relationship sharpens the concern that the power (to issue interim orders) is overbroad and without any guidance. To illustrate, an abuse could be a case of theft of variety and its exploitation by sale; if demonstrable, that it is an abuse might be capable of injunctive relief. However, at the other end of the scale, if there is no theft or allegation of theft but rather claim by the applicant that it has developed the variety first and is, therefore, entitled to protection as opposed to the assertion of a rival that such a position is incorrect and the variety is an extant one, or a farmers' variety, a possible view can be that use by such rival of the variety is an abusive act. Therefore, the basis for grant of an order under the impugned provision is existence of a vague and undefined state of affairs."[26]

The Court noted that the Act clearly provided the conditions that an applicant had to fulfil to secure the registration of a new variety. In contrast, the Act was less than clear and even vague in terms of what a Registrar had to scrutinize when deciding whether or not to grant interim relief under Section 24(5). What seemed to trouble the Court was the fact that the power of Section 24(5) was exercisable at any stage, even the moment after an application was filed, regardless of the merits of the case (namely, whether the applicant claimed to be a breeder or farmer of even if the variety was entitled to protection).

Additionally, the Court was further troubled by the fact that while the Act clearly spelled out the rights and obligations of the applicants, the qualifications to be fulfilled and the conditions to be made as well as the various steps involved in the granting or refusal of an application, it failed to specify the requirements and/or qualifications of individuals suitable to hold the office

[25] *Id*., para. 30.
[26] *Id*., para. 32.

of Registrar. In fact, the Court noted that there was nothing in the Act that required that the Registrar have any judicial or quasi-judicial expertise. In view thereof, according to the Court, it was constitutionally impermissible to give the Registrar the power to make significant legal determinations such as those contemplated under Section 24(5) given the potentially far-reaching implications.

The Court concluded stating:

> "Given the importance of the Act, there is enormous danger in empowering authorities with unguided and uncanalized power through provisions that can implicate livelihoods and limit or impair food access to tens of thousands – potentially hundreds of thousands of farmers and users of plant varieties. The existence of a large section of farmers unschooled in the provisions of the Act and unaware of their rights renders unethical bio-prospecting practices and spurious claims to development of new or other registrable varieties, entitled to registration, a real possibility. Section 24(5) of the Protection of Plant Varieties & Farmers' Rights Act as cast as present may undoubtedly be an adequate remedy to prevent abusive practices (assuming that what is abusive can be defined over a period of time); yet the danger of abuse of the provision itself and the attendant (likely) long term injury to innocent breeders, framers and those in the business of development of hybrids and plant varieties far outweighs its benefits, in view of the unguided nature of the power, which is destructive of the rule of law and contrary to Article 14 of the Constitution of India. Section 24 (5) of the Protection of Plant Varieties and Farmers' Rights Act, 2001, is, therefore, declared void." [27]

Later, this decision was stayed by the Supreme Court in *Pioneer Overseas Corp* v. *Kaveri Seed CoLtd.*[28] Recently, a single judge of Delhi High Court in *UPL Limited* v. *Registrar,*[29] analysed the ramifications of the Supreme Court's stay order, concluding that section 24(5) was not excised from the statute. Having applied for registration of hybrid "Raadhika Okra" varieties, the appellant, in its application under section 24(5) claimed that the second respondent, by commercialising "Bindu" varieties was abusing its commercial interest. The appellant sought

[27] *Id*., para. 40.
[28] C.A. No. 19652/2017.
[29] C.A.(COMM.IPD-PV) 3/2022, I.A. 16633/2022.

relief from the registrar of the PPVFR Authority, the first respondent. The registrar dismissed the appellant's application on the grounds that an application under section 24(5) could be maintained only after the grant of a plant variety registration and not while the application for registration was being considered. The court analysed the registrar's decision. On a plain construction of the provision, the court held that section 24(5) explicitly gave the registrar power to issue directions between the application for registration and the final decision. The registrar also admitted that its decision was wrong in principle. The court held that the order of the registrar was contrary to the statute.

The court then turned to the central issue of whether the Supreme Court's stay in Pioneer Overseas nullified the effect of the appellate high court's holding that section 24(5) was ultra vires. Citing various authorities dealing with the legal effect of a stay, the second respondent argued that the Supreme Court's stay merely suspended the execution or enforcement of the decision without dismissing its findings. The respondent contended that section 24(5) continued to be unconstitutional and therefore without legal effect. The court was not persuaded; on the contrary, it emphasised that the distinction between a dispute involving individual parties and one raising questions of wider legal or constitutional significance was a significant factor in analysing the implications of any stay.

In the present case, the court quoted the division bench in *Prabhat Agri Biotech*, which specifically addressed the constitutional validity of the provision. That bench had ruled that the danger of long-term harm to participants in the agribusiness of developing hybrids and plant varieties far outweighed the benefits of section 24(5), in view of the unguided nature of the power it conferred. That bench therefore declared the section void because it contravened article 14 of the Indian Constitution.

The court in the present case found that this precise determination of the unconstitutionality of section 24(5) had been put on hold by the Supreme Court's interim stay order without condition or limitation. That showed the Supreme Court's intention to suspend the effect and operation of the division bench's declaration of unconstitutionality. The court held that the declaration that section 24(5) as ultra vires did not remove the provision's existence and was no longer binding because the Supreme Court had stayed it. In consequence, the court set aside the registrar's order, restored the appellant's application under section 24(5) and directed the registrar to decide it on its merits.

The court cautioned against a one-size-fits-all approach to the effects of a stay. Each order must be considered on its merits, taking into account its unique facts and legal issues. In the present dispute, the single judge held that the Supreme Court's interim order was a temporary stay of the division bench's declaration. This ruling maintained the status quo of section 24(5) until the Supreme Court delivered a final judgment. The court, in its deft handling of the issue not only revived the enforceability of section 24(5) of the act but also reopened the debate surrounding it.

IV. No Rights in A Plant Variety Until Grant of Registration

In *Sungro Seeds Ltd* v. *S. K. Tripathi*,[30] the Delhi High Court reiterated the requirement of registration under the Protection of Plant Varieties and Farmers' Rights Act, 2001 for rights to exist in a plant variety. It also reiterated that when the grant of such a right is pending and not yet established, it is not possible to claim common law rights in the same or enforce the same as confidential information. The Plaintiff developed a hybrid variety of Cauliflower under the name 'Katreena'. The Plaintiff came across the Defendant No. 3's hybrid cauliflower seeds under the name 'Riya'. The Plaintiff submitted that it conducted tests which disclosed that the seeds of the Defendant had 100% identical characteristic features as that of the Plaintiff's hybrid variety. The Plaintiff argued that the Defendant had illegally acquired Plaintiff's confidential information relating to breeding from its ex-employees (Defendant Nos. 1 and 2) and knowingly misappropriated its trade secret. Accordingly, the Plaintiff instituted the instant suit seeking permanent injunctions against the Defendants, restraining them from using or disclosing any of the confidential information related to Plaintiff's breeding strategies.

The Defendant filed an application for rejection of the plaint on the ground that both the Plaintiff's and Defendant's applications for registration of their respective plant varieties are pending before the Registrar under the PPVFR Act and the issue of breeder's rights is yet to be resolved. The Defendant argued that the instant suit could have been initiated by the Plaintiff only if its plant variety was registered and the breeder's rights had been conferred upon it. The Court perused the arguments made by both parties and held that "…the plaintiff, prior to obtaining registration under the PPVFR Act, cannot maintain a suit to restrain the defendants from infringing the rights which are yet to be conferred on the plaintiff on grant of registration…the plaintiff is not found to be having any rights, asserting which the suit was

[30](2020) 05 DEL CK 0078.

filed and the suit is dismissed”.[31]

V. Concern over Protection of Farmers’ Rights: Contract Farming

According to the case of *Pepsico India Holdings Pvt. Ltd.* v. *Bipin Patel,*[32]the firm misrepresented a plant variety as a ‘new’ variety rather than a ‘extant’ one. Experts have questioned the latter approach of registration since it allows firms to register known varieties and then sue farmers for using them. Furthermore, the case brought to light the vagueness of the law in this area, and it became a question of perspective after campaigners raised concern that this could infringe farmers’ rights.

In 2019, PepsiCo India sued four farmers in Gujarat, claiming that they had been illegally growing, producing, and selling its registered potato variety FL 2027 It demanded a permanent injunction restraining the farmers from producing the variety and sought estimated damages worth Rs. 10,500,000/- (around 140,000 USD) from each farmer. However, after public backlash, it withdrew the cases. It stated that the cases were withdrawn, “relying on its discussion with the government to find a long term and an amicable solution of issues around its seed production.”[33]

The farmers contended that they were not aware of the PepsiCo’s registered variety and also about its proprietary rights. The farmers also claimed that they had innocently purchased and were cultivating them without any knowledge of PepsiCo’s exclusive rights. They contended that the variety they were cultivating weren’t novel or distant and had been cultivated in the particular region for many years before PepsiCo obtained the registration. They argued that PepsiCo should not be granted exclusive rights over a variety which has already existed in the public domain for a long time. They argued that the enforcement of PepsiCo’s claims could result in adverse effects in their socio-economic lives. Also, they mostly relied upon the cultivation of these varieties for their income. The farmers claimed that this variety has been cultivated as a result of traditional knowledge and also by common knowledge or practice. On the other hand, the traditional knowledge and agricultural practices should not be monopolized by private entities through intellectual property rights. According to farmers, their agreement with Frito Lay was solely for the collection of potatoes with a diameter larger than 45 mm.

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[31] *Id.,* paras. 41 and 42.

[32] Commercial Trademark Suit Number 23 of 2019, Commercial Court at City Civil Court, Ahmedabad.

[33] Saurav Ghimire, “Revocation of PepsiCo India’s Rights Over Lay’s Potato Variety,”17(3) *Journal of Intellectual Property Law and Practice*, 213-214, 213 (2022).

They would store the smaller potatoes for future sowing without any contractual agreement. They had been using these smaller potatoes for the past four years and were unaware that they were growing a registered variety until they received a court notice.

The PepsiCo Corporation contended that it had obtained exclusive rights over the registered variety through the protection of Plant Varieties and Farmers Rights Act, 2001. They argued that the farmers were using the trade marked variety named FL2027 without permission and also cultivating and selling the registered variety without obtaining proper licensing or authorization. Therefore, they contended that the unauthorized use of the trademark caused confusion among consumers and infringe the trademark rights. They also highlighted that they had entered into contracts with some farmers, wherein the farmers agreed to purchase seeds from PepsiCo and sell the produce back to the company but the farmers breached the contractual agreement and violated the terms and conditions agreed upon.

PepsiCo India, which calls itself a snacking company, initiated legal proceedings against four farmers in Gujarat for illegally using its potato variety registered under the Protection of Plant Varieties and Farmers' Rights Act (PPVFRA). The case has given rise to a number of issues regarding the PPVFR Act, arising from its contentious provisions and the manner of its implementation. The case has given rise to a number of issues regarding the PPVFR Act, arising from its contentious provisions and the manner of its implementation. If these issues are not dealt with keeping the spirit of the law, and perhaps more importantly, their potential impact on the farming communities, the crisis facing Indian agriculture could only accentuate in the coming days.

Contract farming is an agreement between a buyer and farmers, to carry out agricultural production that refers to production and supply of agricultural produce under a forward contract. It is a commitment to provide an agricultural product at a fixed price, time and required quantity to a known buyer. The companies often meet farmers to introduce them to the best agronomy practices. It has been observed that Indian Companies are mainly embracing contract farming to support their export demands where they have to ensure product qualities and other specifications. However, farmers perceive contract farming as a relationship with the firm while from the purchaser's point of view, it is a good quality, timely availability of material at a predetermined price, which is the basic requirement for any successful agro-business firm whether operating at National /International market.

How is contract farming work? Firstly, an agreement is made between buyer/company and farmer agrees to the terms and conditions of the contract. Secondly the planning of production is made based on the contract where the farmers plan and prepare for production, like crop selection, cultivation techniques, seeds and fertilizers etc., or the buyer/company provides necessary inputs (seeds, fertilizers, technical guidance) to enhance the production quality and quantity. Thirdly the farmers carry out the production activities according to the contract. Fourthly, once the crops are ready to harvest and deliver them in the designated location and time. Finally, the buyer/company compensates the farmers for delivered outcomes based on the terms and conditions to the contract this way the payment system works. Later the company/buyer processes or sells the agricultural products in the market under their own brand or consumers or retailers.

The farmers provide their land and labour while PepsiCo officials provide seeds, technical equipment, and guidance throughout the cultivation process. After the harvest, PepsiCo takes the produce to their own storage. The farmers receive Rs. 6 for every kilo of potato they produce. One advantage for the farmers is that they are informed about the procurement price before they start planting the seeds. They also receive crop insurance, seeds, and loans from PepsiCo agents, which they are required to repay after the harvest. Contract Farming for Potato by PepsiCo in 1987, Frito Lay, a PepsiCo company, opened its first potato chips plant in Punjab, India. They later opened two more plants in Maharashtra and West Bengal. However, meeting the demand for processed potatoes have been a challenge. While India is the third largest producer of potatoes, getting a year-round supply of the quality needed for chips is uncertain. The main issue is the lack of processing grade varieties. The Central Potato Research Institute has unveiled new varieties to help bridge this gap. Another challenge is the seasonality of potato production in India, with most potatoes being harvested during short winter days in certain regions. To meet their demand, Frito Lay performs contract farming in various states and has established long-term relationships with over 14,000 farmers. The company follows a "Partners in Progress Model" where they work with cooperatives or farmers' organizations to identify suitable farmers who can meet their requirements. They provide advanced seed tubers, extension services, and assistance with grading and transport. Farmers are incentivized based on the quality of their production. The company also helps farmers access inputs at reduced rates and provides low-interest loans and crop insurance. This farmer connect program has improved the lives of small and marginal farmers across India.

PepsiCo's lawsuit against the farmers raises a number of critical issues, which the court seems to have glossed over. The first issue is that production of the registered variety by farmers is per se not an offense since protected varieties can be re-used by farmers and shared with their neighbours in keeping with the provisions of Farmers' Rights. The company has claimed before the Court that FC-5 was licensed to farmers "firstly in Punjab to bring potatoes of the said Variety on the buyback system". The company has not made it clear where else FC-5 was available other than in Punjab. The second issue is that FC-5 has been registered as an "Extant Variety", which is also a "Variety of Common Knowledge", in other words, this variety of potato was already available in the country before it was registered and that there was "common knowledge" about this variety. This implies that PepsiCo's variety would surely have been produced in the country before it was registered. Further, it can be gleaned that the company may have given incorrect information that FC-5 is a "new" variety instead of an "extant" variety. Registration of extant varieties was allowed in the PPVFRA despite opposition from several experts, and the justification used was that farmers' varieties can be registered. The benefits that the farmers are deriving are not clear, but can easily be understood is that companies like PepsiCo that got the opportunity to register their older varieties, can now sue the farmers for using known plant varieties. A third issue that arises relates to the modus operandi of PepsiCo to push the farmers to the brink. There are reports that the company employed a private intelligence agency to collect samples from the farmers' fields. This reported surveillance was the exact copy of the infamous Canadian case[34], in which Monsanto raided the field of a Canadian farmer, Percy Schmeiser, and claimed that the latter was illegally using its genetically modified canola. Percy became the icon of the global resistance by farmers against commercial plant breeders, because of which Monsanto was not able to secure damages from him.

VI. Revocation of Registration of Potato Variety

In *Pepsico India Holdings Pvt. Ld.* v. *Kavitha Kuruganti*[35]subsequent to this controversy in 2023 the Delhi High Court dismissed an appeal by PepsiCo India Holdings against an order[36] passed by the Protection of Plant Varieties and Farmers' Rights Authority in 2021, thereby effectively revoking PepsiCo's registration of the FL 2027 potato variety. While there has been a lot of controversy and uproar against the Government's policy measures and decisions, a new

[34] *Monsanto Canada Inc* v. *Schmeiser* [2004] 1 SCR 902: (2004) SCC 34.
[35] C.A.(COMM.IPD-PV) 2/2022 & IAs 7898/2022 and 7900/2022.
[36] *Kavitha Kuruganti* v. *Pepsico India Holdings Private Limited*, MANU/OT/0192/2021.

chapter has been opened up in the same debate as the Protection of Plant Varieties and Farmers' Rights (PPVFR) Authority revoked the PVP certificate granted to PepsiCo India Holding (PIH) on a potato variety FC5 in India (originally registered in the US as FL-2027 variety), on multiple grounds, including that the grant of the certificate of registration had been based on incorrect information furnished by the applicant.

With 80 percent moisture content, as compared to the usual 85 percent, the FC5 variety is considered more suitable for processing and therefore, for making snacks such as potato chips. The variety was first cultivated by Dr Robert W. Hoopes, who holds the most potato patents and potato variety protections in the whole world. The FL2027 variety was registered in the US in 2005 and was put to commercial use in India in 2009. The FL-2027 variety of potatoes (FL stands for Frito Lays, the name of PepsiCo's food arm, and owner of the famous 'Lays' brand of potato chips) was introduced by PepsiCo in 2009 through a contract farming arrangement with some 12,000 farmers, to whom the company supplied the seeds and bought back the produce. This arrangement allows the company to buy all the produce from these farmers at pre-decided rates.

In India, PepsiCo's FL2027 potato variety was registered in 2016 after being applied for registration in 2011. In 2019, PepsiCo sued nine farmers for infringement of its rights under the Act, claiming Rs.1 crore in damages. This led to a nationwide backlash and a boycott. In response, PepsiCo withdrew all lawsuits and said it wanted to settle the issue amicably. Farmers' rights activist Kavitha Kuruganti petitioned the PPVFR Authority for the revocation of intellectual protection granted to PepsiCo's FC5 potato variety, arguing that government rules do not allow a patent on seed varieties. The PPVFR Authority agreed with Kuruganti's contention and on 3rd December, 2021, issued an order revoking the PVP (plant variety protection) certificate granted to PepsiCo (India) Holdings Pvt. Ltd for the FC5 potato. The PPVFR Authority ruled in favour of Kuruganti, stating that PepsiCo cannot claim a patent over a seed variety, and subsequently revoked the PVP certificate granted to the FC5 potato variety. The following were the grounds of opposition under the PPVFR Act:

(i) The grant of the certificate of registration has been based on incorrect information furnished by the applicant.[37]

[37] Protection of Plant Varieties and Farmers' Rights Act, 2001, Section 34(a).

(ii) The certificate has been granted to a person not eligible for protection.[38]

(iii) The breeder did not provide the registrar with such information, documents, or material as required for registration.[39]

(iv) The breeder has not complied with the provisions of this Act or the rules or regulations.[40]

(v) The grant of the certificate of registration is not in the public interest.[41]

The plaintiff further contended that the defendant had filed the application mentioning the type of variety as new variety instead of extant variety. Moreover, the defendant had sued nine farmers for infringement of rights under the Act, and claimed Rs.1 crore in damages from them, including some small farmers in a bid to tackle competition from local potato chip-makers. This led to a widespread backlash, with farmers threatening a boycott.

The defendant in reply to the arguments provided by the plaintiff contended that the company was a subsidiary of PepsiCo Inc., world's premier consumer products company. The defendant further stated that the assignment made by Dr. Hoopes was an inter-assignment between group companies and thus was valid. The defendant had informed the Authority that they had applied under the new variety category for applying for extant variety category. Further, the defendant stated that the actions initiated by it against public interest were baseless. Instead it had initiated the suits against the farmers for countering infringement of its registered variety with bona fide intentions and in complete accordance with the provisions of the Act.

The Authority opined that from the case facts and sequence of events followed, there remains no doubt that several farmers have been put to hardship including the looming possibility of having to pay huge penalty on purported infringement that didn't take place as without being the registered breeder, the defendant filed infringement suit against the farmers. The Authority further stated that this was in violation of public interest. PepsiCo filed an appeal against the revocation decision in the Delhi High Court, which addressed the crucial issue of the validity of the Authority's decision in revoking the registration granted to the appellant by invoking the

[38] *Id.*, Section 34(b).
[39] *Id.*, Section 34(c).
[40] *Id.*, Section 34(g).
[41] *Id.*, Section 34(h).

grounds mentioned in Section 34 (a), (b), (c) and (h) of the Act. The Court considered the submission made by both the parties and held that though the appellant has nothing to gain by misrepresenting FL 2027 as a 'new variety' as against what it truly was, an 'extant variety' but the revised application filed, admittedly, had an error. The Registrar instead of calling upon the appellant to amend the application, proceeded to consider the application as if such amendment had been made. Therefore, the appellant could not have been held guilty of having obtained the registration by providing incorrect information and said mistake could not have provided ground to the Authority to revoke the registration under Section 34(a) of the Act. Regarding *the bona fide* mistake of the appellant on the incorrect date of commercialisation of the variety, the court held that the date of the first sale of the variety is important and material information for the application and the applicant must provide correct information in the application, failing which it opens itself up to revocation of the registration granted under Section 34 (a) of the Act. In the present case, the appellant had filed the proof of right form (PV-2) in blank without the signature of the breeder or FLNA, the alleged assignee of the breeder.

Additionally, the breeder did not provide the Registrar with such documents as required for registration. The court held that it remains the fact that the application filed by the appellant contained deficiencies and the Authority, under Section 34 (b) and (c) of the PPVFR Act, was justified in revoking the registration granted. Regarding Section 34 (h), the court held that mere filing of the litigations by the appellant against the farmers, even presuming the same to be completely frivolous, cannot be construed as satisfying the test of the grant of registration itself not being in the public interest. Therefore, the Authority had erred in revoking the registration granted under Section 34 (h). Given the above, the court found no merits in the appeal and the same is dismissed without cost. The court's decision emphasised that the application for registration of a variety should be filed strictly in conformity with the Act, the Rules, and the Regulations. The onus for providing the correct information in the application is on the applicant and the application if filed casually is liable to be revoked under Section 34 by the Authority, even if it is granted a certification of registration under the PPVFR Act.

VII. Revival of PepsiCo's Registration Setback for the Farmers

In *Pepsico India Holdings Pvt. Ltd.* v. *Kavitha Kuruganti*[42] PepsiCo filed an appeal against the order of the single judge which uphold the PPVFR Authorities decision of revoking registration

[42] MANU/DE/0100/2024.

of their potato variety. The Division Bench of the Delhi High Court set aside the order of the Single Bench and concluded:

> "We accordingly come to the conclusion that the learned Single Judge rightly came to the conclusion that the mistake of styling the candidate variety as "new" was remediable and in any case not fatal to the cause especially since the Registrar itself had decided to process the same as relating to the "extant" category. We also affirm the impugned judgment insofar as it negatived the challenge based on Section 34 (h). We, for reasons aforenoted find no merit in the challenge raised by the respondent-appellant to paragraphs 69 and 91 of the impugned judgment. We however find ourselves unable to uphold the view taken by the learned Single Judge insofar as it holds against PepsiCo and pertaining to an incorrect mentioning of the date of first sale as well as the conclusions ultimately rendered in the context of the eligibility of PepsiCo to apply for registration and non-submission of relevant documentation. The appeal of PepsiCo, LPA 590/2023 is allowed. The impugned judgment and order dated 05 July 2023 shall consequently stand set aside to the extent indicated above. We consequently also set aside the order of the Authority dated 03 December 2021 and the letter issued by the Authority dated 11 February 2022. The renewal application as made by PepsiCo shall stand restored on the file of the Registrar who shall dispose of the same in accordance with law and in light of the findings recorded hereinabove."[43]

VIII. Parent Lines of Known Hybrid Varieties, Could Not Be Registered as "New" Plant Varieties

In *M/S Bayer Bioscience Pvt Ltd* v. *Union of India*[44]an order was passed by the Registrar, Protection of Plant Varieties and Farmers' Rights Authority holding that parent lines of known hybrid varieties, could not be registered as "new" plant varieties under the Protection of Plant Varieties and Farmers' Rights Act, 2001. It was held that if the hybrid falls under the category of extant variety about which there is common knowledge then its parental lines cannot be treated as novel. The principal question to be decided was whether the parent lines of extant

[43] *Id.,* para. 77.

[44] MANU/DE/0038/2015.

hybrid varieties can be considered as novel plant varieties for the purposes of registration under the Act.

The learned counsel for the petitioners contended that the hybrid seeds, obtained from crossing the parental lines, are distinct in traits and characteristics from the parent lines and cannot be considered as propagating or harvested material of the parental line varieties. It was contended that the propagating/harvested material of a variety would mean any part of a plant or seed, which is capable of regeneration into a plant having same characteristics as the original plant. Since regeneration of hybrid seed would not result in the parental lines but the hybrid plant variety that is distinct from the parent line varieties, the hybrid seeds obtained from crossing of parent lines could not be said to be propagating or harvested material of the parental lines.

It was submitted on behalf of the petitioners that a 'variety' is defined 'by the expression of the characteristics' and as the characteristics of the hybrid variety are different from the parental line, the parent lines could not be considered the same as the hybrid variety. It was also submitted that the development and sale of hybrid seeds would not amount to exploitation of the parental lines. It was contended that the words 'disposed of' as used in Section 15(3) of the PPVFR Act, could not be read in isolation and would not include 'self-use' and ought to be read synonymous to 'sale'. It was submitted that the word 'disposal' contemplates transferring of title from one party to another party and in the process of hybridization, the title of parent lines was not parted with or transferred to third parties and, therefore, the sale of hybrid seeds would not amount to disposal of parent lines. The Delhi High Court affirmed the decision of the Registrar, Protection of Plant Varieties and Farmers' Rights Authority.

Conclusion

Indian policymakers drew inspiration for The Protection of Plant Varieties and Farmers' Rights (PPVFR) Act, 2001 from international accords like the Trade Related Intellectual Property Rights Agreement (TRIPS Agreement) and the United Plant Breeders' Organisation (UPOV). However, they did not give due consideration to the International Undertaking, which was renamed as the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA).[45]The PPVFR Act is progressive in that it seeks to equally share rights across several sectors. However, several sections must be seriously reconsidered in order to meet the

[45]Anitha Ramanna, "India's Policy on IPRs and Agriculture: Relevance of FAO's New International Treaty" 36 (51) *Economic and Political Weekly*, 4689-4692, 4689 (2001).

legislative goal. The law allocates cash to the National Gene Fund, but it remains unclear how those monies should be used. Unless a recognised farmer's variety is employed, it has been proposed that agricultural communities jointly access the funds placed in the National Gene Fund and choose appropriate avenues of expenditure. The Plant Varieties Protection Appellate Tribunal anticipated under the PPVFR Act was never established; in fact, the transitional clause authorising the IP Appellate Board to exercise the tribunal's authority (with the appointment of a technical member) has never been implemented.[46] Ultimately in 2021 the provisions relating to the Plant Varieties Protection Appellate Tribunal were omitted by the Tribunals Reforms Act, 2021.[47]

Farmers' rights as consumers are facing challenges due to the private sector developing more hybrids than varieties, making their rights to reuse seeds irrelevant. Experts in India face similar challenges in determining essential derivation (EDV) status as breeders in UPOV member countries. The question of phenotypic resemblance between EDV and original varieties is difficult to answer, and breeding records and pedigree information are crucial for dispute resolution. Determining essential derivation is optimally based on genotypic data, but the availability of suitable molecular marker data only extends to a few crops. The availability of suitable molecular marker data is limited to a few crops.[48]

The PPVFR Act is a key piece of Indian intellectual property rights legislation, with far-reaching implications for agriculture. In order to establish a strong system for the preservation of plant varieties, it is critical to preserve farmers' and plant breeders' rights while encouraging the production of new varieties. For that, the above discussed problems need to be addressed through necessary reforms.

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[46] Upendra Grewal and Vipin Kumar, "The Fundamental Issues Related to The Legal Control Mechanism of Protection of Plant Varieties and Farmers' Rights in India," 9 (4) *Econspeak: A Journal of Advances in Management IT and Social Sciences*, 38-46, 40 (2019).

[47] Tribunals Reforms Act, 2021, Section 23 (with effect from April 4, 2021).

[48] John Stephen C. Smith, "The Future of Essentially Derived Variety (EDV) Status: Predominantly More Explanations or Essential Change,"11(6) *Agronomy*, 1261-1274, 1265 (2021).