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PROTECTION OF PLANT VARIETIES AND FARMERS RIGHT WITH SPECIAL REFERENCE TO INDIA

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Abstract

The Protection of Plant Varieties ad Farmers' interests (PPVFR) Act, 2001, which is an important piece of Indian law, attempts to strike a balance between the interests of farmers and plant breeders. This Act offers a special framework for intellectual property rights (IPR) that gives plant breeders the sole right to use their inventions while guaranteeing that farmers maintain their customary seed-related privileges. India's PPVFR Act acknowledges farmers' roles as plant genetic resource creators and conservators, in contrast to the UPOV framework, which largely benefits breeders. As long as they don't sell them under trademarked names, farmers are allowed to store, use, trade, and sell farm-saved seeds according to this law. By providing them with awards and recognition, it also recognises the contributions of traditional farming communities. In order to guarantee that any commercial use of plant genetic resources adequately pays the communities engaged in their protection, the Act also requires benefit-sharing arrangements. Globally, the PPVFR Act is in line with international accords like the Convention on Biological Diversity (CBD) and the Trade-Related Aspects of Intellectual Property Rights (TRIPS) Agreement, providing adherence to international standards while giving national interests top priority. In order to prevent monopolistic control over important plant types and to promote agricultural sustainability, it also offers options for compulsory licensing. In conclusion, by protecting farmers' rights and encouraging plant breeding innovation, the PPVFR Act sets an example for other developing countries and exemplifies a balanced approach to IPR in agriculture. The efficacy of this progressive law can be further increased by stepping up implementation and raising awareness.

1.INTRODUCTION

Feeding the world's growing population is one of the biggest problems humanity is currently facing and will face more keenly in the years to come. This involves a variety of factors, including fast industrialisation and urbanisation, due to which the amount of land available for agriculture is steadily declining in many nations. Increased agricultural output would be required to keep up with population growth. The only option left is to boost agricultural output because there is no chance of expanding agricultural land—instead, it is getting smaller every day. Economic and technical considerations, such as the adequate use of fertilisers, pesticides, herbicides, and enhanced plant varieties, will all play a role in increasing agricultural productivity.[470] The most crucial and vital of these variables would be the development and adaptation of new or enhanced plant kinds. A point has been

[470] Jack Ralph Kloppenburg Jr., First the Seed: The Political Economy of Plant Biotechnology,1492-2000, Cambridge University Press (1988)

reached when industrial operations are essentially replacing agriculture due to scientific and technological advancements.

2.The Genesis of Breeders and Farmers Rights

Since plant varieties have historically been viewed differently by numerous legal regimes, their protection under intellectual property rights is unique. This problem predates life patents and offers important insights, particularly when considering the TRIPS Agreement. Plant variety management has historically disregarded intellectual property rights since it was believed that agriculture was necessary for food security rather than for financial gain. This supported the idea that food production shouldn't be influenced by profit and seed-saving techniques. Government involvement in seed development was curtailed in the early 20th century due to the economic downturn in agriculture, which facilitated the expansion of private seed companies. However, in order to promote private sector investment, legal protection for plant types was developed because farmers could reuse seeds.[471] Opposition to patenting life forms, worries that seed privatisation would upend established trade customs, and worries that patenting plant variations would erode the notion of inventiveness were some of the challenges facing the establishment of patents for plant types.

3.The Historical Development of Plant Variety Protection:

Understanding the history of plant variety protection in key jurisdictions is crucial in shaping future protections. The growth of this system in leading countries is discussed below.

Plant Protection in the United States:

Agricultural machinery boosted crop production for the market during the Industrial Revolution. Large farmers purchased fresh seeds every season, while modest farmers stored theirs. Although seed firms arose, there were few types that were scientifically developed.[472]

Plant Patent Act:

Breeders of asexually reproduced plants (except from tubers) were granted intellectual property rights in 1930 when the United States passed the Plant Patent Act (PPA). Thomas Edison was a fervent supporter of the law, which sought to encourage plant breeding. Private nurseries that concentrated on asexual reproduction profited substantially from the PPA, even as state institutions bred the majority of seed-bearing crops. The written description requirement was eased in the PPA, requiring merely a decent description. It gave one plant and its asexual offspring rights. To safeguard farmers' rights, plants that bore tubers were not allowed, and discoveries of wild plants could not be patented because they were not regarded as inventions.[473]

Plant Variety Protection Act:

Between 1930 and 1970, plant breeding evolved rapidly. The seed industry struggled due to limited scientific knowledge, free government seed, and farmers' seed-saving practices. The development of hybrid crops allowed seed companies to sell high-yield hybrids while retaining parental lines. Since hybrids did not reproduce true to type, farmers had to buy new seeds yearly, providing natural protection without patents. However, self-pollinating plants like soybeans remained unprotected. By 1970, concerns over U.S. breeders' global competitiveness led to the Plant Variety Protection Act (PVPA), extending patent-like protection to sexually reproduced and tuber-propagated plants. To qualify, a variety must be new, distinct, uniform, and stable. The PVPA protects against unauthorized sale, reproduction, and use but includes exemptions

[471] Commission on Genetic Resources for Food and Agriculture, Possible Formulas for the Sharing of Benefits based on Different Benefit-Indicators, Rome, 8th Sessions, 19-23 April, 1999, Doc CGRFA-8/99/8

[472] Dwijen Rangnekar, Intellectual Property Rights and Agriculture: An Analysis of the Economic Impact of Plant Breeders Rights (Action aid UK, 2000)

[473] Plant Patent Act (PPA), Pub. L. No. 71-245, 46 Stat. 376 [codified as amended at 35 U.S.C. 161 (2000)]

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for seed saving, research, and compulsory licensing.[474]

Plant Protection in Europe:

European nations acquired plant variety protection later, but U.S. fruit growers were protected by the PPA. They ratified the UPOV Convention in 1961, which mandated that plants that reproduce sexually and asexually be protected. Plant breeding was resurrected as a result of national laws such as the Plant Varieties and Seeds Act in the UK. Germany (1953, 1968) and the Netherlands (1942, 1967) have passed legislation protecting plant varieties. Later, in 1978 and 1991, the UPOV Convention underwent revisions. Most European countries are UPOV members, issuing plant breeder's certificates for new varieties.[475] The U.S. joined UPOV in 1981, with its Plant Variety Protection Act aligning with UPOV standards.

4.International Intellectual Property Rights Regimes for protecting Plant Variety and Farmers Rights

Plant variety protection under intellectual property rights has long been handled differently than life patents, which has affected the application of the TRIPS Agreement. Since agriculture was viewed as necessary for food security rather than profit, in line with seed-saving and exchange practices, plant variety management has historically excluded intellectual property rights. There currently exists no universally accepted framework for safeguarding the intellectual property of plant breeders. The majority of European nations employ plant breeder's certificates, whereas the United States gives three types of protection. Due to poor implementation, protection is frequently limited in underdeveloped nations, which presents difficulties for farmers, breeders, and germplasm collectors. PBRs are exempt for private, non-commercial, and experimental usage under Article 15 of the 1991 UPOV Act. It is not permitted for others to breed new variations from protected ones unless the new variety is "essentially derived." There is no agreement on what constitutes fundamentally derived, though, because it is still uncertain what genetic distinction is necessary.

Although breeders' rights were expanded under the 1978 and 1991 modifications, UPOV is still breeder-focused. As a result, emerging countries like India are wary of implementing UPOV as a sui generis PBR system. According to critics, UPOV 1991 is unbalanced and ineffectual under TRIPS Article 27.3 because it provides feeble eligibility requirements, disproportionate breeder rights, and few exceptions.[476]

5.Indigenous Farmers:

Indigenous farmers play a critical role in maintaining agricultural diversity, which is necessary for the security of the world's food supply. They produce many traditional kinds by enhancing plants through natural mutations. Their profound understanding of plants and ecosystems promotes biodiversity, which is the basis of contemporary crops and medications. Human intervention is essential to agriculture, and innovation is needed to adapt to changing environmental conditions.[477] This is best accomplished through local farming systems that are sustainable and rich in biodiversity.

6.Intellectual Property Rights and Agriculture:

IPRs in plant types restrict adaptation to environmental changes, endangering biodiversity and conventional farming. They exclude diverse, farmer-bred varieties from patent protection while favouring commercial crops from wealthy countries. According to critics, this deters conventional farmers from preserving agricultural methods, developing, and protecting biodiversity. The majority of the world's plant genetic resources are found in developing nations, primarily in their varied

[474] Plant Variety Protection Act (PVPA) of 1970, Pub. L. 91-577, 84 Stat. 1542
[475] Keith Aoki, Weeds, Seeds & Deeds: Recent Skirmishes in the Seed Wars, 11 Cardozo J. Int'L & Comp. L. 247, 289 (2003)
[476] Commission on Genetic Resources for Food and Agriculture, Possible Formulas for the Sharing of benefits based on different benefit indicators, Rome, 8th Session, 19-23 April, 1999, Doc CGRFA-8/99/8
[477] Gerald Moore & Witold Tymowski, Explanatory Guide to the International Treaty of Plant Genetic Resources for Food and Agriculture 4 (2005)

tropical forests. In the past, affluent countries that lack these resources have received seeds from these biodiversity-rich areas. Interestingly, none of the top 20 food crops in the world came from North America.

Plant variety is crucial since mating with wild relatives provides the basis for crop advances like increased yield and pest resistance. Because their own seed businesses have reduced genetic diversity, developed countries rely on underdeveloped nations for unique genetic resources. The conservation of these plants is greatly aided by small farmers. But as wealthier countries prioritise genetic variety for their own research while reluctant to share its benefits, international collaboration has turned into competition. By patenting its plant varieties and reselling them at exorbitant prices, developed countries make money off of the labour of farmers in underdeveloped countries. Biodiversity loss has been caused by high-yield crops, industrial agriculture, commercial forces, and intellectual property rights. To remain competitive, indigenous farmers are pressured to switch to expensive, genetically stable crops, which could lead to the extinction of regional cultivars. Farmers are forced to give up traditional methods like storing seeds because of IPRs, which make them dependent on agro-biotechnology. This puts immediate financial gain ahead of sustainability and food security. The rights of farmers could support ecological farming and safeguard genetic variety.

7.India's Plant Variety Protection Regime

India saw plant varieties as a shared legacy for many years, with food security guaranteed by public-sector breeding. India achieved food self-sufficiency by the late 1970s. The government supplied reasonably priced seeds in order to avoid agricultural monopolies. Nonetheless, calls for IP protection increased in the 1980s as a result of the arrival of international seed companies. India had to change its previous strategy and implement a plant variety protection system in order to comply with TRIPS as a WTO member.[478] WTO pressure and foreign business entry led to the creation of India's Protection of Plant Varieties and Farmers' Rights Act, 2001. India employed a sui generis approach to balance the rights of farmers and breeders rather than following the UPOV model. India is required to protect farmers' rights through national legislation as a member of the ITPGRFA.

8.Indian initiative for the protection of Plant Varieties and Farmers Right (PPVFRA):

In contrast to UPOV, the PPVFRA places a strong emphasis on farmers' rights to share and conserve plant genetic resources. As it preserves indigenous knowledge, it enables farmers to save, utilise, trade, and share seeds. It does, however, still support UPOV 1991 in several areas of breeder rights, which is controversial. Through IPR protection, the PPVFRA seeks to strike a balance between advancing plant breeding and safeguarding the rights of small farmers. It creates a framework to protect farmers and breeders and promote creativity in the creation of new plant varieties. PPVFRA safeguards plant breeders' rights to promote R&D investment and expand the seed industry, guaranteeing farmers' access to high-quality seeds, in order to promote agricultural growth. Additionally, it complies with the TRIPS rules for the protection of plant varieties.[479]

9.Impacts of Plant Varieties Protection

UPOV's stringent provisions restrict farmers' traditional rights to reuse, resow, exchange, and sell seeds, treating such practices as offenses under its regime.

Right to seed:

In order to choose and preserve seeds from the healthiest plants, farmers in impoverished nations rely on informal seed contributions. Through natural and human selection, this process has produced heirloom varieties, genetically unique crops that have adapted to

[478] Article 27.3 (b) of TRIPS Agreement
[479] Id at preamble

local conditions over time. Using local knowledge and natural mutations, traditional farmers improve crops to produce a variety of types. Farm-saved seeds are used by about 80% of farmers in poor countries. However, under UPOV 1991, farmers are not allowed to save registered seeds, which forces them to purchase new seeds every season, giving international seed companies more power. Farmers in developing nations have limited market power and struggle to sell their produce at reasonable rates. Under the WTO Agreement on Agriculture, government assistance is subject to limitations that restrict access to new seed types and farm subsidies. In contrast to UPOV 1978, UPOV 1991 imposes more stringent regulations, increasing the cost of seeds and disregarding farmers' dependence on agriculture. Because of this, the majority of developing nations are still reluctant to implement UPOV 1991, which is generally preferred by wealthy countries.[480]

Right to Traditional Knowledge:

Using traditional knowledge, farmers in underdeveloped nations have been managing and conserving plant genetic resources (PGRs) for generations. Nevertheless, biotechnology companies in wealthy nations take advantage of this variety to produce plant varieties that are protected by intellectual property rights (IPRs) without paying the original growers. Developing nations must pay for genetically modified crops, but they are free to donate genetic resources. Businesses ignore traditional farmers' efforts to preserve genetic variety while defending IPR protection and pay for their cutting-edge varieties.

Only 1% of the world's plant species have been studied for possible advantages, despite the fact that about 50% of them are found in the forests of developing nations. Biotechnology, medications, and novel plant kinds all depend on this biodiversity. On the other hand, the plant genetic resources of affluent nations have been substantially exhausted. However, as high-yielding, genetically homogeneous crops supplant traditional landraces, the diversity of plants worldwide is diminishing. Because seed companies in developed countries have depleted their own genetic diversity through extensive breeding and commercialisation of uniform plant varieties, small farmers play a crucial role in conserving these wild varieties. Developed countries rely on the rich genetic resources of developing nations for crop improvement, including higher yields and disease resistance.[481]

Right to participate in decision making process:

National and worldwide farmer engagement is necessary for the ITPGRFA's Farmers' Rights implementation. Representation in consultative procedures is essential to effective actions. The majority of farmers in emerging nations, however, are still unorganised and do not participate in decisions pertaining to the natural resources that they have protected for many generations**.** Farmers' rights are violated when they are excluded from decision-making processes. Decision-makers must acknowledge their critical role in plant genetic resource conservation if they want to increase their engagement. Building farmers' capacity is also necessary for them to participate in intricate decision-making processes.[482]

Genetic erosion:

Reliance on a small number of crop species in agriculture reduces genetic diversity and causes genetic degradation. Farmers have historically improved plant genetics by testing and developing new cultivars. However, access to genetic resources is restricted by intellectual property rights on seeds, which hinders breeders' capacity to create robust crops. This

[480] Genetic Resources Preservation, Seed Savers Exch., www.seedsavers.org/Preservation/Genetic-Resources-Preservation/ (last accessed on January 3, 2015)

[481] Nijar, G. S. 1998. "Community Intellectual Property Rights Protect Indigenous Knowledge" Biotechnology and Development Monitor (36): 11-12

[482] Remigius N. Nwabueze, Ethnopharmacology, Patents and the Politics of Plants' Genetic Resources, 11 Cardozo J. International & Competition Law 587 (2003)

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lack of diversity raises the possibility of large-scale failures by making crops more susceptible to disease and drought. Food security is under risk because of the seed industry's limitations, which make it difficult to adjust to changing environmental conditions. Terminator technology contributes to genetic degradation by stopping seeds from procreating. Genetic material patents give seed companies power and impede scientific advancement. These businesses endanger biodiversity and food security by producing plants that destroy their own embryos, so impeding natural reproduction.[483]

10.Impact on Biodiversity:

Farmers are essential to the development of genetic material for plant breeding and the preservation of biodiversity. However, local breeding that is tailored to particular conditions is neglected since plant variety protection and intellectual property rights (IPRs) favour centralised research. The loss of biodiversity results from seed firms' attention being drawn to highly profitable crops while neglecting less profitable ones. An unsustainable agricultural system is strengthened by the growth of IPRs, which leads to a seed market controlled by a small number of businesses. Although its uniformity rules result in crop homogeneity and biodiversity loss, critics contend that Plant Variety Protection (PVP) increases biodiversity. Green Revolution cultivars raised yields but also made crops more susceptible to disease, raising similar worries.[484]

Research indicates that neither technology transfer nor private-sector R&D has been substantially enhanced by Plant Variety Protection (PVP). Large breeding companies have not supported local capacity growth, despite their claims. As governmental agricultural financing decreased, developing countries anticipated PVP would promote private breeding, but the evidence does not support this expectation.[485]

11.SUGGESTION

1. UPOV 1991 expanded Plant Breeders' Rights (PBR) to near-patent levels, restricting farmers from using, saving, exchanging, and selling farm-saved seeds—rights they had long enjoyed. Unlike UPOV 1978, it failed to recognize "farmers' privilege," offering only an optional exemption for personal use, without allowing seed exchange or sale. Due to this, most developing countries have rejected UPOV 1991, favoring sui generis protection to safeguard their national interests. For broader acceptance, UPOV must recognize and protect farmers' rights.
2. Small farmers are denied an interest in choices that impact them due to Plant Variety Protection (PVP) under UPOV, which limits their ability to exchange and resow seeds. Additionally, genetic degradation brought on by PVP could endanger biodiversity and sustainable agriculture. Food security is at risk from excessive PVP use since small farmers could find it difficult to purchase GM seeds every season, which could result in a food crisis. Although farmers' rights to use, conserve, exchange, and sell seeds are officially recognised by the ITPGRFA, member nations are ultimately responsible for putting this recognition into practice. However, countries who are parties to both ITPGRFA and UPOV 1991 are faced with a conflict because providing farmers the ability to exchange and sell seeds under ITPGRFA would be against UPOV 1991. In order for developing nations to embrace UPOV 1991, this disagreement must be resolved.

[483] Vandana Shiva, Stolen Harvest: The Hijacking of the Global Food Supply 90 (2000)
[484] Anthony J. Stenson & Tim S. Gray, The Politics of genetic resource control 76-77 (1999)
[485] Graham Dutfield, Intellectual Property Rights, Trade and Biodiversity, Earthscan, London, 2000

3. Through Access and Benefit Sharing (ABS) and Prior Informed Consent (PIC), the CBD acknowledges the rights of farmers. PIC requires permission from local people or farmers to use their Traditional Knowledge (TK) and genetic resources. Benefit-sharing, however, is dependent on agreements between nations and breeders and is not a direct right, frequently compromising the interests of farmers.
4. Since it is impracticable to designate particular nations or groups as the exclusive conservators of Plant Genetic Resources (PGR), the benefit-sharing mechanism of the ITPGRFA is multilateral. Those that produce new varieties using MLS resources are not required to share benefits, and farmers who contribute to the system do not directly gain. PGR frequently violates farmers' rights even if its goal is to increase food production. Despite giving access to important PGR and Traditional Knowledge (TK), farmers receive little credit in the politics of Plant Breeders' Rights, which primarily ignores their role as conservers.
5. International recognition of farmers' rights has replaced national recognition. Countries, not farmers or farming communities, are the beneficiaries of the International Fund under the International Undertaking on Plant Genetic Resources. Rather than paying farmers for their contributions to the development of plant varieties, it serves more as a development aid for the growth of agricultural capacity.

12.CONCLUSION

While indigenous groups in developing nations frequently receive no recompense for donating the genetic material, researchers and firms in wealthy nations benefit financially via Plant Breeders' Rights (PBR). In order to strike a balance between the rights of plant breeders and the contributions of farmers who have protected biological resources for generations, the idea of farmers' rights was born. In order to guarantee ongoing access to the raw materials required for creating new plant kinds, it is imperative that these rights be acknowledged. Plant Breeders' Rights (PBR) are protected by international agreements such as the TRIPS Agreement and UPOV, but farmers' rights are not acknowledged. To conserve plant varieties while preserving national interests and farmers' rights, TRIPS permits member nations to create a sui generis system. Farmers' rights were initially recognised by the International Undertaking on Plant Genetic Resources, and the Convention on Biological Diversity recognised the importance of local communities in protecting genetic resources. Benefit-sharing and prior informed consent were reaffirmed by the Bonn Guidelines and Nagoya Protocol. In addition to establishing a multilateral access and benefit-sharing mechanism for food security, the legally enforceable International Treaty on Plant Genetic Resources for Food and Agriculture further protects farmers' rights. Breeders gain the most from international plant variety protection, whereas farmers are marginalised and do not receive any compensation or recognition for their Traditional Knowledge (TK) and Plant Genetic Resources (PGR). Breeders are granted exclusive rights under IPR rules whenever they create new kinds using these resources. Despite initially supplying the genetic material, farmers are later required to pay for access to these types. Breeders gain the most from international plant variety protection, whereas farmers are marginalised and do not receive any compensation or recognition for their Traditional Knowledge (TK) and Plant Genetic Resources (PGR). Breeders are granted exclusive rights under IPR rules whenever they create new kinds using these resources. Despite initially supplying the genetic material, farmers are later required to pay for access to these types. The UPOV's Plant Variety Protection (PVP) limits small farmers' ability to exchange and resow seeds, depriving them of a say in choices

that impact them. Additionally, PVP may cause genetic erosion, which would be detrimental to sustainable agriculture and biodiversity. A food crisis could result from excessive PVP use since small farmers might not be able to pay GM seeds every season.