

FARMERS' RIGHTS: LAW MAKING AND CULTIVATION OF PLANT VARIETY AS SEED MONOPOLIES

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Abstract

“Plant variety protection can be linked to agricultural protection, innovation as well as to the conservation of biological resources at different levels. Plant variety protection is related to the intellectual property which provides the rights holder exclusive rights to commercialise the plant varieties for a particular period”.¹ When it comes to the agricultural field it has seen many changes in the past few years in laws, and policy frameworks both nationally and internationally. Efforts were made by countries to provide food security, especially in LDCs and developing countries and knowledge related should be in the public domain, common to all.

This paper aims to discuss the issue concerning new plant varieties and the rights of commercial breeders and farmers over seeds.

Keywords: Plant Variety Protection, Biological Resources, Farmers, Plant Breeders, IP Rights.

1. Introduction

1.1. Plant Variety Protection Regime: An International History, Legal Framework and Current Status

Earlier in the twentieth century, there was more growth and development in the private sector which included the secondary and tertiary sectors. The government paid more attention towards the development of these sectors and agriculture was given less importance, this led to degradation in the agriculture sector in countries like USA and Europe. Also, this gave the market to the development of private seed industries which could be reused several times by the farmers once purchased. These kinds of seeds curtailed any further expansion because of their nature². This is the reason why there was an urgent need to introduce patent protection for plant varieties, which was also opposed

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¹ Suman Sahai, “India’s plant variety protection and Farmer’s Rights Act, 2001” 84 *Current Science* 408 (2003).

² V.K. Ahuja, *Law Relating to Intellectual Property Rights* 614 (Lexis Nexis, Haryana, 2nd ed., 2013).

earlier because no patent can be taken on life forms of biological resources, seed is something that has been exchanged by farmers traditionally and by protecting it through patent privatisation of seeds cannot be done. All these oppositions by various groups led to the development of a new kind of right known as plant breeder's right,³ which was recognised by the UPOV convention for the first time, this was done in compliance with the TRIPS. Plant breeder's rights (PBRs) benefitted commercial breeding and it was increasing, in this, there was no system of providing any compensation or reward to the community of farmers who were traditionally involved in conserving the resources and maintaining the sustainability of biological resources through their practices.

Ultimately this led to the development of farmer's rights with the recognition in 1989, internationally in the plant genetic resources for food and agriculture treaty (PGRFA), 2001. This recognition of plant genetic resources and breeder's right into the intellectual property regime is very important as it is directly related to the development and management of the environment, agriculture and economic needs of people for food and their rights.

1.1.1. International Legal Regime

TRIPS is the international agreement which was established under WTO governing intellectual property regimes in all signatory countries. It lays down the minimum standard of intellectual property rights which all the countries who are signatories have to follow and adopt the same in their national legislation⁴. These standards laid down by TRIPS are very significant when it comes to providing exclusive rights to the holder of intellectual property. These rights given to the owners are often not satisfying in nature because for developing LDCs farmers' rights, rights related to agriculture, plant genetic rights or traditional knowledge are of more importance where this framework is lacking behind. Due to this reason developing countries are often overburdened with the obligations of adopting the international regime and also accepting the laws that are of more concern to them even if those laws are either not developed

³ Rashmi Venkatesan, "TRIPS and Plant Variety Protection in India: Complicating the Globalisation Debate" 9 *Indian Journal of International Economic Law* 49 (2019).

⁴ Suvita Rani, Shubham Singh, *et. al.*, "Impact of India's Plant Variety Protection Act: Analytical Examination Based on Registrations Under the Act" 25 *Journal of Intellectual Property Rights* 132 (2020).

properly or non-satisfactory. Article 27(3)⁵ of TRIPS agreement provides IP protection to plant varieties,⁶ earlier which was not permitted by many developing countries to protect traditional knowledge or biological resources of any kind. Now, it has been changed. TRIPS⁷ came up with the protection of plant varieties either through the patenting of plant varieties or through sui generis or a combination of both. Though TRIPS provides the breeders with rights but at the same time it is also inconsistent with other international instruments to which the states are mostly parties, for example, the convention on Conservation of biological diversity (CBD),⁸ which through article 1 provides for the conservation of biological resources, sustainable use and fair and equitable sharing of benefits⁹ out of the use of genetic resources. This has also led to an increase in the problem of monopolisation of innovations in genetic resources which is not consistent with the principle of sustainable development and equitable share of benefits due to the protection given under IPR on genetic resources. Currently, the situation is that farmer's rights are only recognised by the PGRFA Treaty which is a legally binding instrument, but there exists a problem with this treaty. It does not provide for any concrete definition of farmer's rights and also lacks in providing IP rights to farmers over their knowledge. It can be seen that though the international laws are not very strong concerning farmers' rights through the sui generis option it can be fruitful in developing countries. The thing that is to be kept in mind while implementing these policies is that all obligations under the conventions or at the international level must be fulfilled harmoniously along with the needs.

1.1.2. Who are Farmers and Plant Breeders?

Farmers are individuals who engage in the cultivation of crops and/or the raising of livestock for food, fibre, or other products. Farmers can operate small-scale or large-scale farms, and may use various farming techniques such as organic farming, conventional farming, or sustainable agriculture.

On the other hand, plant breeders are individuals who specialise in the development of new plant varieties through selective breeding or genetic engineering.

⁵ The Agreement on Trade-Related Aspects of Intellectual Property Rights, 1995, Art. 27.3(b).

⁶ *Supra* note 4 at 133.

⁷ *Supra* note at 47.

⁸ The Convention on Conservation of Biological Diversity, 2001, Art. 1.

⁹ The International Union for the Protection of New Varieties of Plants, 1991, Art. 1.

Plant breeders work to create plants with desirable traits such as disease resistance, increased yield, and improved quality. They may work for seed companies, research institutions, or government agencies, and collaborate with farmers to ensure that new plant varieties are suitable for local growing conditions. Plant breeding is an important field in agriculture as it helps to ensure that crops are resilient and able to adapt to changing environmental conditions.

As per the Protection of Plant Varieties and Farmer's Rights Act, 2001, under section 2(c)¹⁰ The breeder is any person or group of persons or a farmer or group of farmers or any institution which has "bred, evolved or developed any variety."¹¹ Whereas, "under section 2(k) Farmer means any person who cultivates crops by cultivating the land himself or cultivates the crops by directly supervising the cultivation or land through any other person or conserves and preserves, severally or jointly, with any other person any wild species or traditional varieties or adds value to such wild species or traditional varieties through selection and identification of their useful properties".¹²

1.1.3. Rights of Farmers and Breeders

Plant variety protection (PVP) is a legal framework designed to encourage the development of new plant varieties by providing intellectual property rights to breeders. However, this framework can lead to conflicts between farmers and breeders over issues such as seed saving, access to genetic resources, and the use of protected varieties. There has been an introduction of IP rights in the field of plant genetic resources as per the requirements of the TRIPS agreement. There exists a conflict between farmers' rights and the seed industry, a conflict between rights that creates a monopoly and create private profits over the knowledge already existing in the public.¹³ Now when it comes to India, it reserved the plant varieties mostly for the public sector and didn't allow the entry of the private sector into this field, and these rights were mainly owned by the government for public sector research only. The 80s and 90s it has seen various changes in the development of plant breeding sectors within the private sector also. The change in industrial policy allowed MNCs to enter the market to invest in the production and

¹⁰ The Protection of Plant Varieties and Farmer's Rights Act, 2001 (Act 53 of 2001), 2(c).

¹¹ *Id.*, 2(k).

¹² Mukul Rani Parajuli, "Unveiling the Role of the Family for Awareness of Intellectual Property Rights" 22 *Supremo Amicus* (2021).

¹³ Vikas Kumar and Kunal Sinha, "Status and Challenges of Intellectual Property Rights in Agriculture Innovation in India", 20 *Journal of Intellectual Property Rights* 292 (2015).

manufacture of seeds and agricultural biotechnology. This brought a new seed policy in 1988,¹⁴ which permitted the import of oil, pulses, and coarse cereals seed for two years. Bringing foreign investment and providing paternal-line seeds to India for two years. Entry into the private sector was the major step taken by the government. The legislation that is being enacted under TRIPS does not completely adopt UPOV provisions¹⁵ as it is but with certain changes making varieties already existing or extant eligible for protection under the act. Breeders have got full protection under the act for varieties that they have developed. It is very important to protect the PBR as it stimulates research and development. This right also covers Farmer's rights¹⁶ which have been not covered by the UPOV, giving protection to the varieties developed by farmers with different conditions.

Another issue is access to genetic resources. Breeders may require access to certain genetic resources in order to develop new plant varieties, but farmers may be reluctant to share these resources for fear of losing control over them. This can create tension between farmers and breeders, particularly if the genetic resources are unique or valuable.

Finally, the use of protected varieties can be a source of conflict. Farmers may be required to pay licensing fees or royalties to breeders in order to use protected varieties, which can be a significant expense. In addition, farmers may object to restrictions on the use of protected varieties, such as limitations on the use of saved seeds or the requirement to use specific inputs such as fertilisers or pesticides. The breeder also has the right to commercialise registered varieties which also includes the right to sell, distribute, import, export, produce and have full control over the same. Breeders are completely protected against any infringement of their rights, for which the infringer would be liable to pay a fine or would be imprisoned if found guilty. The infringer can be made liable for infringing the variety itself or of the same or similar packaging, for which he could be also made liable for passing off. The burden of proof is on the infringer himself to prove the innocence which makes the rights more strengthening in nature.

¹⁴ *Id.* at 294.

¹⁵ *Supra* note 1 at 132.

¹⁶ K.C. Garg and Joohi Srivastava, "Knowledge Structure of IPR as Reflected by the Content Analysis of Papers Published in Journal of Intellectual Property Rights" 21 *Journal of Intellectual Property Rights* 178 (2017).

For “Plant breeders farmers are also given rights under the act to save, use, sow, exchange or sell productions including the variety-protected seed (excluding variety-protected branded seeds). Seeds of the protected variety are made available to farmers through compulsory licensing if the breeder of the protected variety is not arranging for the production or sale of seeds as per the act as provided by the ITPGRFA and the authority is plant variety and farmers rights authority”.¹⁷ Authority makes sure that seed is available to farmers through compulsory licensing whenever necessary.

Overall, conflicts between farmers and breeders under plant variety protection can be complex and multifaceted. While PVP laws are designed to encourage the development of new plant varieties, they can also limit the traditional practices of farmers and create new financial burdens for them. As such, it is important to consider the perspectives of both farmers and breeders when designing PVP policies and regulations.

There are certain rights exercised by the farmers who have the right to:

1. Own and use their land to produce crops and raise livestock.
2. Choose the crops and animals they want to produce.
3. Access information about new technologies and practices that can help them increase their productivity and profitability.
4. Receive fair prices for their products.
5. Access credit and other financial services to invest in their farms.
6. Participate in the policymaking process that affects their livelihoods.

Breeders have the right to:

1. Own and control their genetic resources.
2. Receive fair compensation for the use of their genetic resources.
3. Protect their intellectual property rights through patents and other legal means.
4. Participate in the development of policies and regulations related to genetic resources.
5. Access funding and other resources to support their research and development efforts.
6. Collaborate with other breeders and stakeholders to promote the sustainable use of genetic resources.

¹⁷ *Supra* note 16 at 178.

2. Food Security and Farmer's Rights

2.1. Food security concerning Farmer's Rights

The farmer fraternity in India is the largest seed producer and it is necessary to recognise their rights.¹⁸ They cannot be denied their right to sell seed as it would result in a big loss to them and it will boost up the sales of big corporations and will benefit them hugely. On the international front such corporations are emerging as key players in the field and are dominating the market with the help of their advanced R&D. In most parts of the world these companies are handling the whole market of seed distribution and its sales.¹⁹

The same policy will not be feasible in India because of the reason that it will push the farmers out of the market. To safeguard and protect the rights of the farmers of the country, the farmer's right clause is attached to the Plant Variety Protection. Another reason for putting off this cause in the act is that without this the country won't be secure. If the farmers who are such a big community do not have control over their seed then, in that case, the country won't be secure concerning food and seed.

The farmers have the right to use and sell non-branded seed as well as its other uses. The seed developers cannot develop a seed without giving implied consent to the farmers about the use of the advanced seed.

Any plant variety that is developed by the farmers under PVP, after its registration will have an exclusive right over its commercialisation. This right will include its right to produce, sell, distribute, import and export a seed variety.²⁰ This is a very strong protection that is granted to the plant breeders of the country. Anyone who is found infringing these rights of the breeders can be punished with jail time or a fine. The breeder will have to disclose the origination of the seed, its background and from where it came. They will also have to share some kind of royalty under the benefit-sharing clause. Also, there are some ways in which farmers contribute to food security:

¹⁸ *Supra* note 13 at 293.

¹⁹ *Supra* note 16 at 179.

²⁰ Pallavi Chakra, "Intellectual Property Protection of Traditional Medicinal Knowledge and Associated Knowledge Holders in the Light of ABS Norm: A Case Study of Odisha" 1 *Jus Corpus Law Journal* 128 (2021).

1. *Right to access and control of land:* Farmers need to have access to land to cultivate crops and raise livestock. The right to land also enables them to make long-term investments in soil fertility and irrigation systems, ensuring that they can continue to produce food in the future.
2. *Right to save and exchange seeds:* Farmers have been saving and exchanging seeds for centuries. This traditional practice has ensured that farmers have access to a diverse range of seeds that are adapted to local growing conditions. However, today, corporate seed companies are trying to monopolise the seed market, making it difficult for farmers to access and save seeds. Protecting the right of farmers to save and exchange seeds is crucial for food security.
3. *Right to access water:* Water is a vital resource for agriculture, and farmers need to have access to it to grow crops. However, in many parts of the world, water resources are becoming scarce, and corporate interests are trying to privatise them. Protecting the right of farmers to access water is crucial for ensuring that they can continue to produce food.
4. *Right to fair prices:* Farmers should receive a fair price for their produce, which covers their production costs and provides them with a decent income. However, in many cases, farmers are paid low prices, which can lead to food insecurity and poverty.

2.2. Seed Monopolisation

Seed monopolisation refers to the concentration of control over seed production and distribution in the hands of a small number of large corporations or entities. It is a form of market power that enables these entities to dominate the market and limit competition, leading to higher prices and reduced access to diverse seed varieties. This can have significant impacts on farmers, particularly small-scale farmers, who may be forced to rely on a limited selection of seed options, often at inflated prices. Additionally, seed monopolisation can lead to decreased biodiversity, as the dominant companies may focus on producing only a limited number of seed varieties that are most profitable, rather than a broad range of options that support ecological resilience and food security. In India, seed monopolisation has been a growing concern over the past few decades. The major players in the seed industry in India are multinationals such as Monsanto, Syngenta, and Dow, along with domestic companies like Mahyco, Nuziveedu Seeds, and Advanta.

These companies dominate the market with genetically modified (GM) seeds, which are protected by patents.

Farmers who buy GM seeds must sign contracts with the seed companies that restrict their use to a single planting and prevent them from saving and replanting seeds. This practice not only makes farmers dependent on the seed companies but also reduces their access to a diverse range of crops.

Moreover, the use of GM seeds has been associated with environmental concerns, such as the development of super-weeds and the contamination of non-GM crops. Indian government has taken several measures to regulate the seed industry, such as the National Seed Policy (2002) and the Protection of Plant Varieties and Farmers' Rights Act (2001).

India is under the pressure of various external organisations i.e. TRIPS, WTO, and the US to introduce new legislations which gives exclusive rights to the MNCs whereas, on the other hand, various organisations are fighting on behalf of the farmers²¹. In India various farmers' rights are considered to be ecologically, economically, culturally and politically imperative. So to protect the biodiversity as well as the rights of the farmers it cannot be wholly allowed. The farmers of the country run the risk of losing their freedom as well as their chances of survival if such legislation privatises and monopolises the seed market.²² Without giving any rights to the farmers, it would only result in the rise of multinational companies and the downfall of the farmer's community²³. It becomes very important considering the vulnerability of the community to safeguard their rights and to do so the convention on Biodiversity conservation came into existence. This convention talks about the right of communities over their biological wealth and also it has recognised the contribution of the various communities over their knowledge for the utilisation of such biodiversity. This convention also has talked about the fact that any improvement and advancement in the seeds is not only because of the efforts of that very organisation or MNC but also because some contribution of the local communities must be recognised.

²¹ *Id.* at 135.

²² Sudhir Kochhar, "Indian Perspective for Sustainable Development Agenda and Functional IPR and Abs Domains in Agriculture" 21 *Journal of Intellectual Property Rights* 10 (2016).

²³ Morten Walloe Tvedt, "Access to Plant Genetic Resources- Legal Questions for Material on its Way into the Multilateral System of the Plant Treaty" 11 *Lead Journal* 38 (2015).

The various local communities cannot be denied their right to food and survival which they have done for the past centuries with the help of biodiversity. These communities are the one who has acted as guardians of such biodiversity by taking its care for so long. Therefore, this biodiversity cannot be considered as the right of the whole of mankind and these communities and their rights must be recognised accordingly. The rights of these communities must be protected and the various governments should take steps to provide these communities with food security and other basic needs.

It is mentioned in the biodiversity convention that the communities who have preserved and protected this biodiversity for so long are the local communities and they have been dependent on this biodiversity for so long that their right to use this is inalienable. These are the communities which have a great amount of traditional knowledge, and practice and they use the same to strive and thrive.

Originally farmers have always been the supplier and breeders of seeds, but in many countries recently this position has been changed and various organizations and companies have garnered the right to sell the seeds and other related products exclusively. Various legislations have also been passed in such countries according to which farmers cannot breed their seed. In India also recently 'Plant Variety Protection and Farmers Rights Act' has been passed which although seems like is made to safeguard the rights of the farmers but it has many elements which are similar to that of the legislation of the Industrialised countries.

There have been several cases related to seed monopolisation in India. Some of the notable ones are:

1. *Monsanto v. Nuziveedu Seeds*:²⁴ In 2017, Monsanto sued Nuziveedu Seeds for non-payment of royalties for using its genetically modified Bt cotton seeds. Nuziveedu counter-sued Monsanto for anti-competitive practices and breach of contract.
2. *PepsiCo and Gujarat Farmers*: In 2019, PepsiCo sued a group of farmers in Gujarat for growing a variety of potatoes that it claimed was patented by its subsidiary. The farmers argued that they had been growing the variety for

²⁴ *Monsanto v. Nuziveedu Seeds*, Manu/DE/0838/2017.

generations and that it was not patented. The case was eventually withdrawn by PepsiCo.

3. *Mahyco v. State of Andhra Pradesh*: In 2002, the Andhra Pradesh government cancelled the license of Mahyco, a seed company, for selling substandard seeds. Mahyco challenged the decision in court, arguing that the government was biased towards state-owned seed companies. The court ruled in favour of Mahyco.
4. *Monsanto v. CCI*:²⁵ In 2016, the Competition Commission of India (CCI) initiated an investigation into Monsanto for abusing its dominant position in the market for Bt cotton seeds. Monsanto challenged the investigation in court, but the case was dismissed. The CCI eventually imposed a fine of Rs. 630 crore on Monsanto.

These cases highlight the complex issues surrounding seed monopolisation in India and the need for a balanced approach that protects the interests of farmers while also promoting innovation and competition in the seed industry.

2.3. Sui Generis in India

TRIPS require its signatories to follow the sui generis system for plant varieties. India will have to develop a system which creates a balance between the rights of the farmers and the rights of the companies developing seeds. This has been introduced in most the industrialised countries²⁶. In a country like India where a large part of seed still comes from the farmers, following the system as it is followed in industrialised countries won't be a feasible option. Such a system should be developed which keeps in mind the contribution of these communities in breeding. It should take into consideration the complexity, diversity and adaptability aspect. CBD on the other hand has recognised the rights of the local communities towards their biodiversity, its development and conservation²⁷. Without giving and recognising the farmers of the country as breeders the PVP is just for the namesake giving rights to the farmers. Therefore control and ownership

²⁵ *Monsanto Holdings Pvt. Ltd. & ors. v. Competition Commission of India & Ors.*, 2020 SCC Online Del 598.

²⁶ *Supra* note 19 at 133.

²⁷ Soumya Ranjan Barwa and Anwesha Mohanty, "Protection of Traditional Knowledge and Intellectual Property" 20 *Supremo Amicus* (2021).

over biodiversity needs to be granted keeping in mind the aspect of farming communities that have been preserving biodiversity for so long.²⁸

3. Laws and Policies

3.1. International UPOV Protection

“The TRIPS required its members to protect plant varieties either through the existing system of patent protection or through the introduction of sui generis system. This led to the formation of the International Union for the Protection of New Varieties of Plants (UPOV) an international, intergovernmental organisation, with headquarters in Geneva, Switzerland. Established in the year 1961, to provide and promote effective plant variety protection and development of new varieties”.²⁹ “Most countries base their plant variety protection regime on UPOV convention as it provides an effective and recognised system of protection aiming towards the development of new varieties and protection. The convention aims at encouraging its members to provide intellectual property rights to breeders of new plant varieties, known as plant breeder’s rights”.³⁰ Under the convention, protection is given to varieties that are new, distinct³¹, uniform, and stable and that has a suitable denomination.³² The protection excludes the variety that is been developed for non-commercial purposes, research or experiment purpose or to breed other varieties. Any state that wants to become a member of UPOV has to comply with its provisions. It was amended in the year 1991 strengthening plant breeders’ rights (PBRs). There was also pressure on developing countries to adopt the UPOV convention which would attract more foreign investment in their country, but it was all to make profits. UPOV is incompatible with the needs of developing countries, as it does not provide for farmers’ rights with no exceptions to either farmers or researchers. as we have also seen earlier in this paper.

²⁸ Kalyani Gupta, “Traditional Knowledge and IPR- An Indian Perspective” 205 *Jus Corpus Law Journal* (2021).

²⁹ *Supra* note 21 at 12.

³⁰ The International Union for the Protection of New Varieties of Plants, 1991, art. 9.

³¹ *Id.*, art. 7.

³² *Id.*, art. 8.

3.2. How Indian Legislation is different from UPOV and why it should be Preferred

Indian legislation related to plant variety protection is different from the International Union for the Protection of New Varieties of Plants (UPOV) in several ways:

Firstly, UPOV provides a standardised framework for the protection of plant varieties, which is followed by its member countries. India, however, has chosen to develop its own plant variety protection legislation, which is the Protection of Plant Varieties and Farmers' Rights Act (PPV&FR Act) of 2001. This legislation not only provides protection to plant varieties but also recognises and protects the rights of farmers who have developed or conserved traditional varieties of crops.

Secondly, UPOV's focus is on promoting plant breeding and encouraging the development of new plant varieties, which can be commercialised and protected by plant breeders. However, India's legislation, takes into account the interests of small farmers and traditional farming communities, and ensures that they are not deprived of their rights to use, exchange, and sell their seeds and planting materials.

Thirdly, the PPV&FR Act provides for the establishment of a National Gene Fund, which aims to conserve and promote the use of indigenous and traditional plant varieties. This is in contrast to UPOV, which focuses primarily on the protection of commercial plant varieties.

While UPOV provides a standardised framework for plant variety protection, India's PPV&FR Act takes into account the interests of small farmers and traditional farming communities. It also recognises and protects traditional knowledge related to plant varieties and establishes mechanisms for conserving and promoting indigenous plant varieties. Thus, depending on one's values and priorities, either UPOV or India's legislation may be preferred.

Indian economy is based on agriculture where farmers are the base of the economy that provides seeds produced by themselves instead of MNCs producing seeds. The convention takes away the rights of farmers to replant the seed and save them for future use which is highly practised in India by farmers. Conditions for registration are in

coherence with that of the UPOV convention, i.e. novel, distinct, stable and uniform.³³ In the Indian act, essential characteristics are defined as the characteristics that contribute to the principal features, value to the variety³⁴UPOV does not provide for the provisions related to benefit sharing which is being addressed by the CBD with farmers. They are not paid any royalty for the germ-plasm produced. The control of research is in the hands of agricultural organisations and not with the seed companies, which cannot be given to them to affect the research negatively. Convention has led to the erosion of biodiversity in poor countries and developing countries. Also in convention, the plant variety is protected twice, once in patents and other through the PBRs.

UPOV is silent on public interest clauses which makes it compatible with India.³⁵ Exemptions to farmers under the legislation have been restricted by the UPOV which safeguards the interest of only breeders.³⁶

India while complying with its obligations under TRIPS has adopted the plant variety protection act, of 2001. This is very progressive. The legislation provides rights to farmers and breeders equally. Acknowledgement to farmers has been given under Intellectual Property Rights because it also involves human creativity like other IPs. UPOV is not sufficient in providing equal interests of breeders versus other interests like farmers' rights in developing countries. UPOV harms genetic diversity, which is very important to developing countries as it forms an integral part of their economic and social structure. This imbalance between rights to breeders and farmers creates problems in developing countries where the economy is based on small farmers. It cannot be called an effective sui generis system, especially for developing countries like India.

4. Conclusion and Suggestions

TRIPS agreement provides the obligations that the member countries need to adhere to. TRIPS do not provide for any environmental treaty nor does it mention any overlapping. Gene campaign along with the Centre for Environmental and Agricultural Department drafted one treaty which acts an alternate treaty to solve the problems of

³³ The Protection of Plant Varieties and Farmer's Rights Act, 2001 (Act 53 of 2001), s. 15(3)(b).

³⁴ *Id.*, s. 2.

³⁵ Kartik Tyagi and Maanasa K, "Protecting Traditional Knowledge with Patents", 15 *Supremo Amicus* (2020).

³⁶ The International Union for the Protection of New Varieties of Plants, 1991, 15.2.

developing countries known as a Convention of Farmers and Breeders (CoFAB)³⁷ recognising the rights of both farmers and breeders. This can be an alternate option in place of UPOV. The plant variety act (PVP) has protected farmers but it does not allow them to sell branded seeds. The criterion for registering extant variety and farmer's variety is not³⁸ clear in the act. The new law is lacking when it comes to the monopolisation of seeds by companies and its adverse effects on farmers. Farmer's rights are being replaced by the rights of the seeds industry where farmers receive a very minimal amount as a royalty³⁹ when their varieties are used to breed new varieties. Farmers are punished for breaching the rights of breeders whereas farmers are not being protected sufficiently. The act is also silent on protection for farmers if the new variety fails.

As we have seen that there are some problems with the protection being given to the right holders under the legislation. It is very difficult to comply with different treaties of plant variety and protection for members jointly and in consonance. Although TRIPS does not mention anything on the protection of farmers' rights, the PGRFA treaty makes farmers' rights into reality. Farmer's rights also include traditional knowledge, benefit sharing, to have control over their knowledge and also sustainability and conservation of plant genetic resources.⁴⁰ The PGRFA treaty is more developed when it comes to benefit sharing than the convention on biodiversity. Developing nations getting benefits from the protection from PVP depends on how they interact with other mechanisms.

³⁷ Rohan Dang and Chandni Goel, "Sui Generis Plant Variety Protection: The Indian Perspective", 1(4) *American Journal of Economics and Business Administration* 310 (2009).

³⁸ Mohan Dewan, "IPR Protection in Agriculture: An Overview" 16 *Journal of Intellectual Property Rights* 133 (2012).

³⁹ The Protection of Plant Varieties and Farmer's Rights Act, 2001 (Act 53 of 2001), s. 39(1)(iii).

⁴⁰ *Supra* note 34 at 133.