CURRENT TRENDS TOWARD INTELLECTUAL PROPERTY PROTECTION FOR FARMERS IN INDIA: AN ANALYSIS

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Abstract

Significant contribution has been made by farmers in conserving and developing new varieties of plants worldwide. However, their status as conserver and developer of plant genetic resources remains a task to be achieved in most of the countries. One may argue that an efficient sui generis system of intellectual property protection for farmers shall enhance their status. But, the question, what does constitute efficacy of such sui generis system remains unanswerable. Efficacy of Indian sui generis system may be examined having in mind the number of applications received under such system. The present paper examines the efficacy of Indian sui generis system. It also analyses data available at Indian PPV&FR Authority to understand its current trend.

Key words

Farmer's Rights, Breeder's Rights, Plant Variety Protection, Intellectual Property and Sui generis system.

I. INTRODUCTION

Farmers have made significant contributions in the development of new crops through use of their knowledge.[1] They have been an important agency in conservation and supply of plant genetic resources to seed companies, plant breeders, and research institutions. Contributions made by these people are also vital for ensuring present and future food security. This endorses for realization of farmer's contribution to ensure conservation and the availability of sufficient funds for these purposes; assisting farmers and farming communities throughout the world, and allowing the full participation of farmers and their communities in the benefits derived.[2] It is in this context, the concept of farmer's rights has been recognized in many jurisdictions.

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[1] *See,* Enrico E. Bertacchini, "Coase, Pigou and the Potato: Whither Farmers' Rights?", 68 *Ecological Economics*, 2008, pp.183-193, at 183; *See also,* Elizabeth Verkey, "Shielding Farmer's Rights", 2(12) *Journal of Intellectual Property Law and Practice*, 2007, at 826

[2] Juanita Chaves Posada, "Achieving Farmers Rights in Practice", *Discussion Document,* Global Forum on Agricultural Research, 2013, at 11

It is argue that farmer's rights do not fit comfortably into intellectual property (IP) frame work because it concern with the stimulation of innovations, providing incentive of monopoly rights for a limited period. On the other hand, farmer's rights are retrospective reward of unlimited duration for the conservation of plant genetic resources and it is often difficult to identify beneficiaries. However, importance of these rights becomes more compelling with the grant of plant breeders rights (PBR) to commercial plant breeders under intellectual property protection regime.[3] In this context the debate over farmer's rights protection has attracted much attention in the recent time all over world.[4] The Agreement on Trade Related Aspects of Intellectual Property Rights, 1994 (The TRIPs Agreement) does not explicitly provides for IP protection for farmers but, it gives option to the member states to legislate on the matter.[5] India has opted for sui generis system, which explicitly provides for various rights of farmers.[6] The present paper outlines historical development of concept of farmer's rights in brief and examines international instruments for its protection. Further, having in mind the genetic pool of the country and the mandates of World Trade Organization (WTO), it focuses on IP protection for farmers in India. It also analyses data available at Protection of Plant Variety and Farmer's Rights Authority (PPV&FR Authority) of India to understand the current trend towards IP protection for farmers in India.

II. FARMER'S RIGHTS: ORIGIN AND JUSTIFICATION

Farmer's rights are traditional rights which farmers have on the seeds or the propagating materials of plant varieties. It is about enabling farmers to continue their works as stewards and innovators of agricultural biodiversity, and recognizing and rewarding them for their contribution to the global pool of genetic resources.[7] These rights arise from the important role farmers have been playing to conserve and enrich varieties and the knowledge they hold on the total genetic variability of the country. Farmer's rights fall within one of two main aspects.[8] First, the ownership approach refers to the right of farmers to be rewarded for genetic material obtained from their fields and used in commercial varieties and protected through intellectual property rights.[9] Second, the stewardship approach refers to the rights that farmers must be granted in order to enable them to continue as stewards and as innovators of agro-biodiversity. Legal space is required for farmers to continue their works and their role should be recognized and rewarded for their contributions. The following part traces origin and gives justification for protection of farmer's rights.

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[3] Elizabeth Verkey, *supra* note 1, at 827.

[4] Mohan Dewan, "IPR Protection in Agriculture: An Overview", 16 *Journal of Intellectual Property Rights,* 2011, pp.131-138, at 135.

[5] The Agreement on Trade Related Aspects of Intellectual Property Rights, 1994 (The TRIPs Agreement), Article 27(3)(b) gives three options to member states, which are patent, *sui generis* system or combination of these two.

[6] India has enacted the Protection of Plant Variety and Farmer's Rights Act, 2001. It is considered as one of the first legislation worldwide which explicitly provides for farmer's rights protection.

[7] S. Bala Ravi, "Manual on Farmers Rights", *M.S. Swaminathan Research Foundation*, 2004, at 17.

[8] Available at: *http://www.farmersrights.org/about/fr_contents.html*

[9] The idea is that such a reward system is necessary to enable equitable sharing of the benefits arising from the use of agro-biodiversity and to establish an incentive structure for continued maintenance of this diversity.

Origin of Farmer's Rights

The origin of farmer's rights are traced in the debates held within the Food and Agricultural Organization (FAO) on the asymmetry in the distribution of benefits between farmers as donors of germplasm and the producers of commercial varieties that ultimately rely on such germplasm. The basic concept is that while a commercial variety could generate returns to the commercial breeder on the basis of plant breeder's rights (PBRs) no system of incentives for the providers of germplasm had been developed.[10] The International Undertaking on Plant Genetic Resources (IUPGR) for Food and Agriculture, 1983 first time recognized the rights of farmers in response to the broadening scope of plant variety protection (PVP) afforded to commercial plant breeders under the International Union for the Protection of New Variety of Plant, 1961 (UPOV).[11] The undertaking recognized enormous contributions made by farmers worldwide in conserving and developing crop genetic resources, and provides for measures to protect and promote rights of farmers, however, the description of the farmer's rights does not seem to be granting any positive right to farmers over their intellectual assets.[12]

The Resolution 5/89, defines farmer's rights as rights arising from the past, present and future contribution of farmers in conserving, improving and making available plant genetic resources, particularly those in the centre of origin/diversity. These rights are vested in International Community, as trustee for present and future generations of farmers, for the purpose of ensuring full benefits to farmers and supporting the continuation of their contributions.[13] The purpose of these rights is stated to ensure full benefit to farmers and supporting the continuation of their contributions. Further, Resolution 3/91 endorses that nations have sovereign rights over their plant genetic resources and farmer's rights will be implemented through an international fund on PGR which will support PGR conservation and utilization programmes, particularly but not exclusively in the developing countries. Further, the Convention on Biological Diversity, 1992 (CBD) attempted to establish for the fair and equitable sharing of benefits to indigenous people arising from the utilization of genetic resources.[14] The Agreement on Trade Related Aspects of Intellectual Property Rights, 1994 (the TRIPs Agreement) obliges members to provide protection for plant varieties either through patent or through an effective sui generis law or through any combination of the two.[15] Though it does not explicit provide for protection of farmer's rights.

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[10] Carlos M. Correa*, "Options for the Implementation of Farmers Rights at National Level"*, 8 *South Centre TRADE Working Papers*, 2000, at 3.

[11] The UOPV, 1961 provides an international legal framework for plant breeder's rights which is important in encouraging breeders to pursue and enhance their search for the improvement of varieties.

[12] Available at: *http://www.farmersrights.org/about/index.html*

[13] Available at: *www.farmersrights.org/about/fr_history_part4.html; See also*, Gerald Moore and Witold Tymowski, *Explanatory Guide to International Treaty on Plant Genetic Resources for Food and Agriculture,* IUCN Environmental Policy and Law Paper No. 57, IUCN- The World Conservation Union, 2005, at 8.

[14] Thomas Greiber, Sonia Peña Moreno, Mattias Åhrén, Jimena Nieto Carrasco, Evanson Chege Kamau, Jorge Cabrera Medaglia, Maria Julia Oliva and Frederic Perron-Welch in cooperation with Natasha Ali and China Williams, *An Explanatory Guide to the Nagoya Protocol on Access and Benefit-sharing,* IUCN Environmental Policy and Law Paper No. 83, 2012, at xvii.

[15]The TRIPs Agreement, 1994, Article 27(3)(b).

The FAO Commission on Genetic Food Resources for Agriculture, 2001 (CGFRA) agreed on the text of IUPGR and accepted that each contracting party should, subject to its national legislation, take measures to protect and promote farmer's rights. It includes protection of traditional knowledge relevant to plant genetic resources for food and agriculture; the right to equitably participate in sharing benefits arising from the utilization of plant genetic resources for food and agriculture; and the right to participate in making decisions at the national level.[16] In addition to above, it also provided for rights of farmers to save, use, exchange and sell farm-saved seed, subject to national law. This agreed provision was later incorporated in the FAO International Treaty on Plant Genetic Resources (ITPGR), 2001.[17] However, the understanding of farmer's rights and the modalities for their implementation still remained vague.[18]

Justification for Farmer's Rights

John Locke says that mankind has a right to possession of property and labourer is entitled to payment for his labour.[19] In the same manner concept of farmer's right provides the means for the farmer to obtain reward for his labour because value of plant genetic resources is preserved and enhanced by their utilization. Traditional farmers create economic value for others, but cannot benefit themselves from it. There is no market for the value they create, however, other agents in the plant genetic resources system do benefit from the materials provided by traditional farmers and obtain specific rights over the germplasm that incorporates what traditional farmers have developed in the past.[20] The development of the concept of farmer's rights may be regarded as the result of natural justice considerations under which there is a moral obligation to ensure that traditional farmers receive a fair share of the benefits arising from the use of plant genetic resources that they conserve and improve.[21]

Conservation of plant genetic resources involves investment of time, patience, skill, creative endeavour and money. Such investment should be protected and if it is not protected farmer will lose the incentive to undertake the project. Consequently it is necessary to give farmers the incentive to carry out their work by providing intellectual property protection.[22] Justification for farmer's rights protection is advanced in the text of IUPGR, which recognizes the enormous contribution that the local and indigenous communities and farmers of all region of the world, particularly those in the centers of origin and crop diversity, have made and will continue to make for the conservation and

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[16] Shawn N. Sullivan, "Plant Genetic Resources and the Law Past, Present, and Future", 135(1*) Plant Physiol*ogy, 2004, pp.10–15, at 12.

[17] The FAO International Treaty on Plant Genetic Resources for Food and Agriculture, 2001 (ITPGR), Article 9.

[18] "Farmers Rights in the International Treaty on Plant Genetic Resources for Food and Agriculture", available at: *http://www.farmersrights.org/about/fr_in_itpgrfa.html*

[19] J.A.L Sterling, *Word Copyright Law* (London: Sweet & Maxwell Publication 1998) at 56.

[20] Carlos M. Correa, *Traditional Knowledge and Intellectual Property Issues and Options Surrounding the Protection of Traditional Knowledge* (2001) A Discussion Paper, Quaker United Nations Office Geneva, at 6.

[21] Anil K. Gupta, *Rewarding Conservation of Biological and Genetic Resources and Associated Traditional Knowledge and Contemporary Grassroots Creativity* (2003) *Indian Institute of Management Ahmedabad (India), Working Paper No. 2003-01-06,* at 5.

[22] J.A.L Sterling, *supra* note 19, at 57.

development of plant genetic resources.[23] The provision puts responsibility for realizing farmer's rights, as they relate to plant genetic resources for food and agriculture, on the national governments. A farmer's rights regime predicates that farmers are in the centers of origin and crop diversity will continue to use landraces and traditional varieties in preference to the modern high yielding varieties which are available in the market.

III. IP PROTECTION FOR FARMERS: INTERNATIONAL PERSPECTIVE

The industrialized countries initiated for plant variety protection in domestic and international markets. The International Union for the Protection of New Varieties of Plants, 1961 (the UPOV Convention)[24] was the first inter-governmental treaty dealing with protection of plant varieties.[25] It provides and promotes an effective system of plant variety protection, with the aim of encouraging the development of new varieties of plants for the benefit of society through the grant of protection, which serves as an incentive to those who engage in commercial plant breeding.[26] It provides an international legal framework for the grant of plant breeder's rights which is important in encouraging breeders to pursue and enhance their search for the improvement of varieties.[27] According to Jay Sanderson, by influencing the development and use of new plant varieties, the UPOV Convention is also a key aspect of a global push to promote food security, reduce climate change and enhance economic development.[28] It is important to note that the developing countries argue that the Convention is a western platform regulating plant breeder's rights for the industrial nations and it is controlled by the life science corporations.[29]

The UPOV Convention constitutes an alternative to patents insofar as plant breeder's rights provide slightly weaker rights to commercial breeders.[30] However, it does not recognize farmers as breeders, and does not provide for rights of farmers over their varieties. It implies that plant varieties are developed in laboratories and assumes that the development of plant varieties is only undertaken for commercial gain.[31] It thus, provides a partial framework which is inherently incapable of granting rights to farmers despite the fact that an overwhelming majority of seeds planted are farm-saved seeds. In

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[23] The International Undertaking on Plant Genetic Resources (IUPGR) for Food and Agriculture, 1989, Art. 10.

[24] The Convention was signed in 1961 and entered into force in 1968. The Convention has been revised three times in 1972, 1978, and 1991.

[25] Philippe Cullet, *The International Treaty on Plant Genetic Resources for Food and Agriculture, IELRC* Briefing Paper, 2003, at 99.

[26] S.K. Verma, "TRIPs *and Plant Variety Protection in Developing Countries" 17(*6) *European Intellectual Property Review,* 1995, pp.281-289, at 282.

[27] Elizabeth Verkey, *supra* note 1.

[28] Jay Sanderson, "Why UPOV is Relevant, Transparent and Looking to the Future: A Conversation with Peter Button", *Journal of Intellectual Property Law and Practice,* 2013, pp.1-9, at 1.

[29] S. Sahai, "Plant Variety Protection and Farmers' Rights Law", XXXVI(35) *Economic and Political Weekly,* 2001, pp.3338-3342, at 3338.

[30] Philippe Cullet, "Farmer's Rights in Peril" 17(7) *Frontline,* 2000, available at: *http://www.frontline.in/static/html/fl1707/17070710.htm*

[31] *Ibid.*

the 1978 revision of the UPOV Convention provided two important exceptions to breeder's rights for the protection of farmer's interest. First, the freedom of other breeders to use the protected variety as starting material for breeding further variety without any requirement for an authorization and any payment of royalty (known as the breeder's exemption) and second, the freedom of farmers to re-use saved seed of the protected variety (known as farmer's privilege).[32] The first was explicitly provided while the second was an implicit consequence of the minimalist scope of protection and in effect it is optional.[33] Farmer's privilege refers to the privilege of farmers to save seed or reproductive material of the protected variety from their harvest for sowing on their land to produce a further crop.[34] This saving of seed from their harvest out of the protected variety is not an infringement under the 1978 version of UOPV. However, the 1991 revision of the UPOV Convention strengthen the protection offered to the breeders and dilutes the privilege granted to the farmers. The Convention does not allow the farmers to save seed unless individual government with the consent of the breeders, allow limited exemptions.[35]

The International Undertaking on Plant Genetic Resources (IUPGR), 1983 provides that plant genetic resources were freely exchanged on the reasoning that they constitute the common heritage of mankind. The undertaking seeks to ensure that plant genetic resources are of economic and social interest, particularly for agriculture will be explored, preserved, evaluated and made available for plant breeding and scientific purposes.[36] It provides a hope for equity for farmers to receive their share of benefits from Plant Genetic Resources (PGRs) they have long been providing to the world.[37] It provides a measure of counter balance to formal IPRs that compensate for the latest innovation with little consideration of the fact that, in many cases, these innovations are only the most recent step of accumulation of knowledge and inventions that have been carried out over millennia by generation of men and women in different parts of the world.[38] In subsequent years the principle of free exchange was gradually narrowed. In November, 1989 the 25th session of the FAO Conference adopted two resolutions providing an agreed interpretation that plant breeder's rights were not incompatible with the IUPGR. The acknowledgement of plant breeder's rights obviously benefited countries in the North, which were engaged in commercial seed production. In exchange of these conclusion developing countries endorsed of the farmer's rights as parallel to breeder's rights.[39]

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[32] Jayashree Watal, *Intellectual Property Rights in the WTO and Developing Countries* (New Delhi: Oxford University Press, 2001) at 137.

[33] *Ibid.*

[34] S.K. Verma, *supra* note 26, at 285.

[35] Michael Blakeney, "Protection of Plant Varieties and Farmers' Rights", 24(1) *European Intellectual Property Review*, 2002, pp.9-19, at 9.

[36] *Ibid.*

[37] *Patricia Lucia Cantuaria Marin, Providing Protection for Plant Genetic Resources Patents Sui generis System and Bio-partnerships* (New York: Kluwer Law International 2002) at 49.

[38] Available at: *http://www.fao.org/docrep/x0225e/x0225e03.htm* at 2

[39] *Ibid.*

The International Undertaking on Plant Genetic Resources in the Conference Resolution 5/89 defines farmers' rights as:

> "Rights arising from the past, present and future contribution of farmers in conserving, improving and making available plant genetic resources, particularly those in the centre of origin/diversity. These rights are vested in International Community, as trustee for present and future generations of farmers, for the purpose of ensuring full benefits to farmers and supporting the continuation of their contributions."[41]

One of the objectives of farmer's rights is to allow farmers, their communities, and countries in all regions, fully to participate in the benefits derived, at present and in the future, from the use of plant genetic resources, through plant breeding and other scientific methods.[42] The concept of farmer's rights was adopted with a view to realizing the objective of balancing the rights of traditional breeders and of plant breeders, while allowing the farmers to benefit, in some way, from the value that they have creatively contributed.[43] Though the concept only defines it imprecise manner, it recognized the role of farmers as custodians of biodiversity and helped to call attention to the need to preserve practices that are essential for a sustainable agriculture.[44] The adoption of the concept fostered an intense debate on the ways to recognize and reward traditional farmers, not only to the current benefit of such farmers but in order to ensure the continuity of activities that are crucial for humanity at large.[45]

As part of this Resolution, the 25th Session of the FAO Conference endorsed the concept of farmers rights with a view to ensure global recognition of the need for conservation and the availability of sufficient funds for these purposes; to assist farmers and farming communities throughout the world, especially those in areas of original diversity of plant genetic resources, in the protection and conservation of their PGR and of the natural biosphere; and to allow the full participation of farmers, their communities and countries in the benefits derived, at present and in the future, from the improved use of PGR[46]. During the 26th Session of the Conference, Resolution 3/91[47] was also adopted unanimously, endorsing that nations have sovereign rights over their plant genetic resources and farmers rights will be implemented through an international fund on PGR which will support PGR conservation and utilization programmes, particularly, but not exclusively, in the developing countries.[48]

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[40] The Twenty-Fifth Session of the FAO Conference, Rome, 11-29 November, 1989.

[41] *Ibid*.

[42] Jay Sanderson, *supra* note 28, at 3.

[43] Carlos M. Correa, *supra* note 10, at 4.

[44] Kamalesh Adhikari, "Farmers Rights over Plant Varieties in South-East Asian Countries" (2008) *SEACON*, at 15.

[45] Carlos M. Correa, *supra* note 10, at 4.

[46] *Ibid*.

[47] The Twenty-Sixth Session of the FAO Conference, Rome, 9-27 November 1991.

[48] Jayashree Watal, *supra* note 32, at 137.

In 1991, the Conference adopted Resolution 3/91which recognizes the sovereign rights of nations over their own genetic resources. Further, Resolution 7/93 called for the revision of the International Undertaking in harmony with the Convention on Biological Diversity. It recognized that certain matters which the Convention had not addressed such as the issue of access to ex situ collections not acquired in accordance with the Convention, and the realization of farmer's rights were to be dealt with by the FAO's Global System on Plant Genetic Resources, of which the International Undertaking was the corner stone.[49]

The Convention on Biological Diversity, 1992 does not explicitly address the issue of farmer's rights. However, an obvious vehicle for the enactment of farmer's rights legislation is pursuant under Article 8, which provides that each Contracting Party shall as far as possible and as appropriate subject to its national legislation, respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilization of such knowledge, innovations and practices.[50] This provision is programmatic in nature and requires to be implemented by the Contracting Parties through specific measures to be adopted at the national level.[51] Since these collections are invariably made up of germplasm contributed by traditional farmers, farmer's rights could be built into the rules for the utilization of national ex situ collections.[52] Convention may be considered as a relevant framework for the implementation of some components of such rights, particularly with regard to the sharing of benefits[53] and for funding. These benefits[54] include access to and transfer of technology, which makes use of the genetic resources;[55] participation in biotechnological research[56] using such genetic resources and priority access to the results and benefits arising from such biotechnological research. It is argue that the Convention does not conflict with intellectual property rights.[57] For example, Article 16(2) contain the statement that in the case of technology subject to patents and other intellectual property rights, such access and transfer shall be provided on terms which recognize and are consistent with the adequate and effective protection of intellectual property rights. Similarly, Article 15(4) provides that access to genetic resources where granted shall be upon mutually agreed terms and Article 19(2) provides

[49] Philippe Cullet, *supra* note 30, at 2.

[50] The Convention on Biological Diversity, 1992, Article 8.

[51] Carlos M. Correa, *supra* note 10, at 26.

[52] Michael Blakeney, *supra* note 35, at 15.

[53] Benefit sharing refers to the compensation to farmers who contributed to the creation a new variety or the development and conservation of existing varieties. It essentially refers to the rights and reward that farmers deserve for contribution to agricultural innovation and growth.

[54] The Convention on Biological Diversity, 1992, Article 15(7).

[55] *Id.,* Article 16(3).

[56] *Id.,* Article 19(1).

[57] Michael Blakeney, *supra* note 35, at 14.

that access to the result and benefits arising from biotechnologies shall be on mutually agreed terms. Since 'mutually' is a precondition for an agreement of any sort, it is apprehended that these provisions may only remains mere rhetoric.

The TRIPs Agreement establishes minimum standards for protection and enforcement of intellectual property rights.[58] A proper interpretation of several provisions can considerably assist developing countries to overcome the problem which IP regimes may bring in the area of agriculture.[59] While the entire system of patent protection is based on some basic tenets, it has left wide void in the matter of protection of natural assets which are owned by nation states, communities or individuals. Such assets include biological resources of plant, animal and microbial origin as well as intangible assets of traditional knowledge (TK), practices, cultural expressions, art forms and even folklore belonging to rural communities in many countries of the world.[60] According to Article 7 of the Agreement, the protection and enforcement of intellectual property rights should contribute to the promotion of technological innovation and to the transfer and dissemination of technology. The most obvious provision which assist for farmer's rights regime is those dealing with patents, and as well as Article 27.3(b) which obliges member of WTO to exclude from patentability plants and animals other than micro-organisms, and essentially biological processes for the production of plants or animals other than non-biological and micro-biological processes.[61] However, this provision makes it mandatory that WTO members provide for the protection of plant varieties either by patents or by an effective sui generis system or by any combination thereof. The wording of this obligation reflects the differences between the existing legal systems.[62] For example, the insertion of farmer's rights into TRIPs Agreement will bind those countries which failed to ratify the CBD and if a state chooses to implement its obligation under Article 27.3(b) by means of sui generis system that system would have to be effective. In this sense the TRIPs Agreement appears to be in conflict with other international agreements, such as the International Undertaking on Plant Genetic Resources for Food and Agriculture, which provide for the right of farmers to save seed.[63] While TRIPs Agreement calls for an effective sui generis system, there is no reference to

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[58] Jayashree Watal, *supra* note 32, at 137.

[59] M.D. Nair, "GATT, TRIPs, WTO and CBD: Relevance to Agriculture", 16 *Journal of Intellectual Property Right,* 2011, pp.176-182, at 178.

[60] M.D. Nair, "TRIPS, WTO and IPR: Protection of Bio-resources and Traditional Knowledge", 16 *Journal of Intellectual Property Rights,* 2011, pp.35-37, at 35.

[61] It is worth mentioning that this provision follows the European Patent Convention level of protection, not the more protectionist level of the US law, where article 53(b) EPC provides that patents shall not be granted in respect of plants or animals varieties or essentially biological processes for the production of plants or animals; this provision does not apply to microbiological processes or the products thereof.

[62] J. Straus, "*Bargaining Around the* TRIPs Agreement*: The Case for Ongoing Public-Private Initiatives to Facilitate Worldwide Intellectual Property Transactions", A Comment on the Paper Presented by David Lange and J.H. Reichman, 9(91) Duke Journal of Comparative & International Law,* 1998, at 100.

[63] *Ibid.*

UPOV or call to adhere to any version of it. Developing countries were of the view that farmer's rights aspect has been dealt adversely in the UPOV Convention and accordingly they took advantage of this clause to device their own sui generis system.[64]

The FAO Commission on Genetic Food Resources for Agriculture (CGFRA) considered a number of negotiating text of IUPGR between 1994 and 2001, with a view to its adoption as a binding legal obligation by members of the FAO. At its Sixth Extraordinary Session in June, 2001 the members of CGRFA agreed on farmer's rights.[65] This agreed Article on farmer's rights was later incorporated in Article 9[66] of the FAO International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGR)[67] which replaced the IUPGR, 1989. The ITPGR affirms the rights to save, use, exchange and sell farm-saved seed and other propagating material, and to participate in decision-making regarding, and in the fair and equitable sharing of the benefits arising from the use of plant genetic resources for food and agriculture are fundamental to the realization of farmer's rights, as well as the promotion of farmer's rights at national and international levels.[68] It further gives broad guidelines to states concerning the scope of the rights to be protected under the concept of farmer's rights. This includes the protection of traditional knowledge, farmer's entitlement to a part of benefit-sharing arrangements, and the right to participate in decision-making regarding the management of plant genetic resources. However, the Treaty is silent with regard to farmer's rights over their landraces.[69] In 1996, the International Technical Conference on Plant Genetic Resources (ITCPGR) adopted the Global Plan for the Conservation and Sustainable Utilization of Plant Genetic Resources for Food and Agriculture, which also shared the vision of the need to recognize and protect farmers' rights.[70]

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[64] R.K. Singh, "Protection of Farmer's Rights under the Plant Varieties Protection Regime: National and International Perspectives", *National Capital Law Journal,* 2004, at 137.

[65] The FAO Commission on Genetic Resources for Food and Agriculture, Sixth Extraordinary Session Rome, 25-30 June, 2001 agreed on farmer's rights.

[66] The ITPGR, 2001, Article 9: Farmers' Rights: 9.1 The Contracting Parties recognize the enormous contribution that the local and indigenous communities and farmers of all regions of the world, particularly those in the centers of origin and crop diversity, have made and will continue to make for the conservation and development of plant genetic resources which constitute the basis of food and agriculture production throughout the world. 9.2 The Contracting Parties agree that the responsibility for realizing Farmers' Rights, as they relate to plant genetic resources for food and agriculture, rests with national governments. In accordance with their needs and priorities, each Contracting Party should, as appropriate, and subject to its national legislation, take measures to protect and promote Farmers' Rights, including: a) Protection of traditional knowledge relevant to plant genetic resources for food and agriculture; b) The right to equitably participate in sharing benefits arising from the utilization of plant genetic resources for food and agriculture; and c) The right to participate in making decisions, at the national level, on matters related to the conservation and sustainable use of plant genetic resources for food and agriculture.9.3 Nothing in this Article shall be interpreted to limit any rights that farmers have to save, use, exchange and sell farm-saved seed/propagating material, subject to national law and as appropriate.

[67] The International Treaty on Plant Genetic Resources on Food and Agriculture was adopted on 3 November 2001 under the auspices of FAO, after seven years of negotiations. This legally binding treaty, which replaced the non-binding International Undertaking on Plant Genetic Resources, covers all plant genetic resources relevant to food and agriculture.

[68] The ITPGRFA, 2001, Preamble.

[69] Philippe Cullet, *supra note 25,* at 2.

[70] Kamalesh Adhikari, *supra* note 44, at 15.

Farmers are not granted any exclusive right over their varieties, but rather the Treaty find a way to provide a counterbalance to intellectual property rights by establishing benefit sharing arrangements consonant with notions of community as opposed to individual or private, property.[71] The recognition of farmer's contribution to plant genetic resources conservation and enhancement under the ITPGR are residual rights to save, use, exchange and sell farm-saved seeds.[72] Although the ITPGR enhances farmer's rights, the treaty is silent with regard to the form of legal protection. The adoption of the ITPGR was not sufficient to create meaningful realization of farmer's rights internationally. It is now the responsibility of individual states to vindicate the rights outlined in the ITPGR in the face of TRIPs Agreement by creating national policies that support the rights of farmers. Countries like India lead the way in creating national legislation that supports farmers as stewards of PGR.

IV. INDIAN APPROACH TOWARDS IP PROTECTION FOR FARMERS

The flexibility that the TRIPs Agreement contains relating to the sui generis system of plant variety protection is of immense importance and advantage to developing countries as a viable option. Therefore, it is for developing countries to make the most of the inbuilt flexibility and India has responded to the TRIPs requirement by enacting a sui generis legislation which grants rights to both breeders and farmers under the Protection of Plant Varieties and Farmers' Rights Act, 2001 (PPV&FR Act).[73] It recognizes the phenomenal contribution of farming communities in conserving biodiversity and developing new plant varieties.[74] The Act attempts to evolve a multiple rights system which could pose several obstacles to the utilization and exchange of plant genetic resources among farmers. The Indian law emerged from a process that attempted to incorporate the interests of various stakeholders, including private sector breeders, public sector institutions, non-governmental organizations and farmers within the property rights framework.[75] This Act recognizes intellectual property protection for new plant varieties. The need for a sui generis system for PVP in India is to enable the nation to protect and preserve its farmer's rights on the one hand and at the same time grant rights to plant breeders on the other hand.[76] It is the only legislation in this area that grants formal rights to farmers in a way that prevents their self reliance from being jeopardized while at the same time recognizing the efforts of the plant breeders in developing new plant varieties.[77]

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[71] Daniel J. Gervais, "*The Internationalization of Intellectual Property: New Challenges from the Very Old and the Very New",* 12(4) *Fordham Intellectual Property Media & Entertainment Law Journal,* 2002, at 972.

[72] Philippe Cullet, *supra* note 25, at 2.

[73] Mrinalini Kochupillai, "The Indian PPV&FR Act, 2001: Historical and Implementation Perspectives", 16 *Journal of Intellectual Property Rights,* 2011, pp.88-101, at 89.

[74] Shanti Chandrashekaran and Sujata Vasudev, "The Indian Plant Variety Protection Act Beneficiaries: The Indian Farmer or the Corporate Seed Company?", 7 *Journal of Intellectual Property Rights,* 2002, pp.506-515, at 506.

[75] *Ibid*.

[76] *Ibid*.

[77] Sumit Chakravarty, Gopal Shukla, Suman Malla and C.P. Suresh, "Farmers Rights in Conserving Plant Biodiversity with Special Reference to North-East India", 13 *Journal of Intellectual Property Rights,* 2008, pp.525-533, at 531.

The existing Indian legal framework under the PPV&FR Act, 2001 allows farmers to save, sow, resow, exchange, share or sell farm produce, including seeds of the protected variety.[78] However, the farmer in India is not entitled to sell branded seed of a protected variety. This is inhibitory, since as long as the farmer continues to be just a 'grain producer' and is not given the right to be called a 'commercial seed seller' of the developed plant, he would lose his rights as an innovator.[79] The legal right to the exclusive ownership, provided by a patent for a limited period of time, ensures that entities who invest heavily in research and development have an opportunity to earn those costs and are provided a return for their investors through subsequent marketing.[80] But, in case of plant variety protection non recognition of farmer's role as innovator leads huge economic loss to the traditional farming community. The Act seeks to protect farmers from exaggerated claims by seed companies regarding the performance of their registered varieties.

Section 39 of the Act deals with farmer's rights and provides that any farmer who has bred or developed a new variety of plant shall be entitled for registration and other protection in the like manner as a breeder of a variety. The farmer's variety shall also be entitled for registration. Any farmer who is engaged in the conservation of genetic resources of landraces and wild relatives of economic plants and their improvement through selection and preservation shall be entitled to recognition and reward. Farmer shall be deemed to be entitled to save, use, sow, re-sow, exchange, share or sell his farm produce including seed of a variety protected under this Act. Farmer's rights under the Act define the privilege of farmers and their right to protect varieties developed or conserved by them.[81]

One may identify following nine rights accorded to farmers under this Act:[82]

Rights to Seed

The PPV&FR Act, 2001 aims to give farmers the right to save, use, exchange or sell seed in the same manner as entitled before the enactment of Act. However, right to sell seed is restricted in that the farmer cannot sell seed in a packaged form labeled with the registered name.[83]

Right to Register Varieties

Farmers like commercial breeders can apply for IPR over their varieties. The criterion for registration of varieties is also similar to breeders but novelty is not a requirement.[84] The

[78] The Protection of Plant Variety and Farmers Rights Act, 2001, Section 39.

[79] Mohan Dewan, *supra* note 4.

[80] *Ibid*.

[81] *Pratibha Brahmi, Sanjeev Saxena, and B.S. Dhillon*, "The Protection of Plant Varieties and Farmers' Rights Act of India", 86(3) *Current Science,* 2004, at 394.

[82] Saksham Chaturvedi and Chanchal Agrawal, "Analysis of Farmer Rights: In the Light of Protection of Plant Varieties and Farmers' Rights Act of India", 33(11) *European Intellectual Property Review,* 2011, pp.708-714, at 712.

[83] *Supra* note 78, Section 39(1)(iv).

[84] *Id*., Section 39(1)(i)&(ii).

ability to gain IPRs type rights over "farmer's varieties"[85] is a unique aspect of Indian law.[86] The Act provides that a farmer who has bred a new variety is entitled for registration and protection as a breeder of a new variety.[87] The definition of breeder also clarifies this position by including within the fold of breeder, farmer or group of farmers.[88] Apart from the right of registration of a new variety, the farmer has the right to register a farmer's variety. This allows ownership rights to the farmers apart from privileges.

Right to Reward and Recognition

A farmer who is engaged in conservation of genetic resources of landrace and wild relatives of economic plants and their improvement through selection and preservation shall be entitled in the prescribed manner for recognition and reward from National Gene Fund (NGF). Provided that material so selected and preserved has been used as donors of genes in varieties registrable under the Act.[89]

Right to Benefit Sharing

Benefit sharing would be facilitated through NGF to the farmers/community who can prove that they have contributed to the selection and preservation of material used in the registered variety. The authority invites claims of benefit sharing.[90] It is important to note that the Indian law allows claims of benefit sharing only once the breeder's variety is registered. The Act further recognizes the rights of communities because of their role in conserving traditional knowledge in area of farming plant varieties.[91] It provides that any person, group of persons (irrespective of whether actively engaged in farming) or any governmental or non-governmental organization may file claim on behalf of any village or local community which is attributable to the contribution of that village or local community in the evolution of any variety for the purpose of staking a claim on behalf of such village or local community. It may be argued that the settlement of benefit sharing aspect must be a precondition for registration of a variety.

Right to Information and Compensation for Crop Failure

The Act provides that breeders must give information about expected performance of the registered variety. If the material fails to perform, the farmers may claim for compensation.[92] This provision attempts to ensure that seed companies do not make exaggerated claims about the performance to the farmers. It enables farmers to apply to the authority for compensation in case they suffer losses due to the failure of the variety to meet the targets claimed by the companies.[93] The provision, however, does not sound

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[85] Farmers varieties is defined as "A varieties which has been traditionally cultivated and evolved by farmers in their fields; or is a wild relative or land race of a variety about which the farmers possess common knowledge".

[86] Saksham Chaturvedi and Chanchal Agrawal, *supra* note 82, at 712.

[87] *Supra* note 78, Section 39(1).

[88] *Id.*, Section 2(c).

[89] *Id.*, Section 39(1)(iii).

[90] *Id.*, Section 26.

[91] *Id.*, Section 41.

[92] *Id.*, Section 39(2).

[93] Saksham Chaturvedi and Chanchal Agrawal, *supra* note 82, at 713.

practical in the context of India. Indian farmer, particularly small farmers may not be able to provide the input required by the breeder and thus the farmer's claim for compensation may never be allowed. However, it may be ensured at the time of registration that breeder must not make out of proportion claims and promises about the performance of the variety.

Right to Compensation for Undisclosed Use of Traditional Varieties

When breeders have not disclosed the source of varieties belonging to a particular community, compensation can be granted. NGO, individual or government institution may file a claim for compensation on behalf of the local community in cases where the breeders has not disclosed traditional knowledge or resources of the community.[94]

Right to Adequate Availability of Registered Material

The breeders are required to provide adequate supply of seeds or material of the variety to the public at a reasonable price. If after three years of registration of the variety, the breeder fails to do so, any person can apply to the authority for a compulsory licence.[95] It is not out of context to mention that the corresponding provision in the Patent Act uses the words reasonably affordable price rather than reasonable price as used in the plant variety legislation.

Right to Free Services

The PPV&FR Act exempts farmers from paying fees for registration of a variety, for conducting tests on varieties, for renewal of registration, for opposition and for fees on all legal proceedings under the PPV&FR Act.[96]

Protection from Legal Infringement in Case of Lack of Awareness

Taking into account the low literacy rate in the country, the Act provides safeguards against innocent infringement by farmers. Farmers who unknowingly violate the rights of breeder shall not be punished if they can prove that they were not aware of the existence of breeder's rights.[97]

The above list of farmer's rights indicates that the initiative taken by Indian Government has definitely yielded results but the true impact of the law will unfold in years to come. A full chapter on farmer's right is a big step forward and we need to propose strong arguments to prove that Indian law is consistent with the TRIPs. The sui generis plant varieties protection system in India has been developed in such a manner that farmers have been given different positive rights. It takes into consideration IPR on plant varieties as well as equitable prior rights on genetic resources. In the light of foregoing observation, the various provisions in respect of farmer's rights envisaged in the Indian

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[94] *Supra* note 78, Section 40.

[95] *Id.,* Section 47(1).

[96] *Id*., Section 44.

[97] *Id*., Section 42.

[98] Sudhir Kochhar, "Rights and Obligations in Context of the Indian *Sui Generis* Plant Variety Protection System" *National Capital Law Journal,* 2001, at 7.

sui generis PVP system appear to be in conformity with the TRIPs Agreement.[98] Further a key requirement is that the sui generis system must be an effective system. In order to ascertain its effectiveness, there must be effective implementation of the mechanism for the realization of rights and obligations provided for in the system.

V. CURRENT TREND TOWARDS IP PROTECTION FOR FARMERS IN INDIA

India sui generis system recognizes the rights of commercial plant breeders and also grants positive right to farmers and goes beyond the widely recognized international sui generis regime represented by the International Union for the Protection of Plant Varieties (UPOV).[99] The Indian sui generis system for protection of plant varieties was developed integrating the rights of breeders, farmers and village communities, and taking care of the concerns for equitable sharing of benefits.[100] It offers flexibility with regard to protected genera/species, level and period of protection, when compared to other similar legislations existing or being formulated in different countries.[101]

The Plant Variety Registry of India has started the process receiving application for registration and protection of eligible varieties of notified genera of crops from 21st May 2007. In the meanwhile eight years have passed since the registration of plant varieties started in India. The assessment of applications for registration of plant variety would help us to conclude the working of this institution. As it has been provided in the Act that the Central Government shall specify the genera/species for the purposes of registration of varieties other than extant varieties and farmer's varieties and one of the function of the Authority is that it has to advice the Central Government for specifying the genera/species for the purposes of registration of new varieties of plant. Provisions are made for the protection of extant varieties so as to make their best use in Indian agriculture. Registration of extant varieties in the country has to be completed in a fixed time limit of within five years of the gazette notification for the genera/species eligible for PVP.[102]

Specified Genera/Species of Crops

In exercise of power conferred under section 29(2) and section 14, first time the Central Government specified twelve crops[103] for registration in 2006,.[104] The first list covered genera of only food crops of five coarse cereals/millets (rice, bread wheat, maize, sorghum, pearl millet), and seven pulse crops (chickpea, pigeon pea, green gram, black gram, lentil, field pea and kidney bean).With this first notification for registration of

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[99] Prabhash Ranjan, "Recent Developments in India's Plant Variety Protection, Seed Regulation and Linkages with UPOV's Proposed Membership", 12(3) *The Journal of World Intellectual Property,* 2009, pp.219–243, at 220.

[100] *Pratibha Brahmi, Sanjeev Saxena and B.S. Dhillon*, "The Protection of Plant Varieties and Farmers' Rights Act of India", 86(3) *Current Science,* 2004, pp.392-398, at 392.

[101] *Ibid*.

[102] The Protection of Plant Variety & Farmers Rights Rule, 2003, Rule 24.

[103] These twelve crops were rice, lentil, maize, green gram, kidney bean, black gram, chickpea, pearl millet, pigeon pea, sorghum, field pea, and bread wheat.

[104] The Gazette of India: Extraordinary, Part II, Section 3, Sub-section (ii) No. 1316, New Delhi November 1, 2006.

varieties the office of the Registrar has started receiving applications for registration in India. In 2007,[105] two other crops were specified for registration[106]. In 2009, three[107] other crops with its genera and species were specified for registration.[108] In 2010, the Central Government specified two notifications in the Official Gazette for registration of crops. In the first notification it specified eleven crops[109] eligible for registration.[110] In the second notification other eleven crops[111] were specified by the Central Government as eligible for registration.[112] These varieties were other than extant varieties and farmer's varieties. In 2011, the Central Government specified nine new crops[113] with its genera or species for registration.[114] In 2012, the Central Government specified three[115] new species for registration.[116] On 15th April, 2014 the Central Government has specified twenty[117] other new crop with their genera/species eligible for registration under the Act on 15th April.[118] Further, in the same year seven[119] new genera or species were specified eligible for registration.[120] In 2015, the Central Government notified four[121] new genera or species eligible for registration under the Act on 21st January.[122] Further, the Central Government

[105] These two crops were cotton and jute.

[106] The Gazette of India: Extraordinary, Part II, Section 3, Sub-section (ii), No. 1619New Delhi, December 31, 2007.

[107] These three crops were sugarcane, ginger and turmeric.

[108] The Gazette of India: Extraordinary, Part II, Section 3, Sub-section (ii), No. 1200 New Delhi, August 3, 2009.

[109] These eleven crops were Black Pepper, Small cardamom, Indian Mustard, Rapeseed, Sunflower, Safflower, Castor, Sesame, Lineseed, Groundnut, and Soyabean.

[110] The Gazette of India: Extraordinary, Part II, Section 3, Sub-section (ii) No. 828 New Delhi April 30, 2010.

[111] These eleven crops were Onion, Tomato, Brinjal, Cabbage, Cauliflower, Lady's finger, Rose, Mango, and Chrysanthemum.

[112] The Gazette of India: Extraordinary Part II Section 3 Sub-section (ii) No. 2445 New Delhi December 2, 2010.

[113] These nine new crops were Wheat (Triticum Durum Desf), Wheat (Triticum Dicoccum L.), Wheat (Triticum Species other than Triticumaestivum L., Triticum Durum Desf and TriticumDicoccum L.), Coconut, Periwinkle, Indian Pennywort, Rose, Blond Psyllium, and Menthol Mint.

[114] The Gazette of India: Extraordinary, Part II, Section 3, Sub-section (ii), No. 1595, New Delhi, August 18, 2011.

[115] These three bamboo leaf orchid or boat orchid, spray orchid or singapore orchid, and vanda or blue orchid.

[116] The Gazette of India: Extraordinary, Part II, Section 3, Sub-section (ii), No. 536, New Delhi, March 27, 2012.

[117] These twenty crops are Pomegranate, Orchid (Cattleya Lindl), Orchid (Phalaenopsis Blue), Eucalyptus, Casurina, Bitter Gourd, Bottle Gourd, Cucumber, Pumpkin, Barley, Coriander, Fenugreek, Almond, Apple, Pear, Apricot, Cherry, Walnut, Grapes, and Indian Jujube.

[118] The Gazette of India: Extraordinary, Part II, Section 3, Sub-section (ii), No. 900, New Delhi, April 15, 2014.

[119] These seven crops are Tea, Acid Lime, Mandarin, Sweet Orange, Banana, Orchid, and Bougainvillea.

[120] The Gazette of India: Extraordinary, Part II, Section 3, Sub-section (ii), No. 2116, New Delhi, October 15, 2014.

[121] These four crops are Canna, Gladioulus, Muskmelon, and Watermelon.

[122] The Gazette of India: Extraordinary, Part II, Section 3, Sub-section (ii), No. 141, New Delhi, January 21, 2015

[123] These ten crops are Jasmine, Tuberose, Papaya, China Aster, Peach, Japanese Plum, Strawberry, Chilli, Bell Pepper and Paprika, Finger Millet, and Foxtail Millet.

[124] The Gazette of India: Extraordinary, Part II, Section 3, Sub-section (ii), No. 1415, New Delhi, July 2, 2015

again notified ten[123] new genera or species eligible for registration under the Act on 2nd July.[124] Thus, by the end of 2015 total 92 genera/species were notified eligible for registration by the Central Government.

Application for Registration

The Plant Variety Registry of India has started the process receiving application for registration and protection of eligible varieties of notified genera of crops, which opened up a new era of protection of intellectual property rights on the varietal products used in Indian Agriculture.[125] A perusal of the applications to assess the working of the Act may be relevant. A total of 1,654 applications from 17 notified crops with their genera and species were filed at the Plant Variety Registry Office as on 10 June, 2010 which included 1,130 applications for extant varieties. The number rose to 5840 applications with 1843 for extant varieties by August 2013. Further, by 30 January, 2014 number of total applications rose to 6222 and by end of 2015 total number of applications rose to 10998 out of which 6322 applications were filed for farmers varieties.

The above figures assume importance to understand current Indian trend. It is important to note that the situation prior to 2009 was very poor. The PPV&FR Registry issued only 66 certificates of registration of extant varieties until 30th September, 2009 and 112 certificates up to 10th June, 2010. Initial post-implementation experience has indicated that the farmers in India had little overall interest in the IPR domain in plant varieties as is evident from a negligible number (18) of applications of only 4 crops filed for protection of farmer's varieties in the country in nearly two-and-a-half years till 30th September, 2009. It is obvious that on the expiry of the grace period for the registration of extant varieties of food crops, where maximum variability is expected in farmer's varieties, only the new farmer's varieties would be left eligible for their PVP. Therefore, the implementation and enforcement of new, sui generis PVP law in India was crucial for availing the due advantage of this safeguard provision in the early period of the PVP regime. Now, the current data shows that Indian farmers are becoming inclined towards registration of their varieties with approximately half of the applications.

VI. CONCLUSION

Farming communities have substantially contributed in conserving and developing new plant varieties and it has been widely agreed that there should be some form of recognition to their contribution to genetic pool of diversity. It is the need of hour to make a concerted effort to ensure that emerging IPR regime must not undermine the contribution of farming community. Indian sui generis law, which goes beyond the widely recognized international sui generis regime, is significant both in the domestic and international context. It offers flexibility with regard to protected genera/species, level and period of protection, when compared to other similar legislations of different countries. The efficacy of institutional framework established under Indian sui generis law adds to the cause of promoting farmer's rights as intellectual property rights, but it still facing the task of implementation. The initial trends of registration of farmer's variety and extent variety were alarming but it is good to observe that now Indian farmers are becoming inclined towards registration of their plant varieties. The trend of

[125] Sudhir Kochhar, "How Effective is *Sui Generis* Plant Variety Protection in India: Some Initial Feedback", 15 *Journal of Intellectual Property Rights,* 2010, pp.273-284, at 273